

**MSC ASSESSMENT REPORT
The United States North Pacific Halibut Fishery**

Final Report

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PREAMBLE

This report is the sole responsibility of SCS. All advice and comments from Assessment team members, peer reviewers, stakeholders, and the MSC have been reviewed by SCS and changes to the report made where SCS deemed it warranted.

1 INTRODUCTION

The Marine Stewardship Council (MSC) is a non-profit organization dedicated to the long-term protection or “sustainability” of marine fisheries and related habitats. First started as a joint initiative between Unilever and the World Wildlife Fund (WWF), the MSC is now a fully independent organization that is governed by an independent Board of Directors advised by a panel of scientific, economic, and fishery experts.

The MSC’s original mission statement promoted responsible, environmentally appropriate, socially beneficial, and economically viable fisheries practices, as well as the maintenance of biodiversity, productivity and ecological processes of the marine environment. The current MSC mission statement (redrafted in 2001) provides a slightly more focused mission and reads,

“To safeguard the world’s seafood supply by promoting the best environmental choice”.

Dedicated to promoting “well-managed” or “sustainable” fisheries, the MSC initiative intends to identify such fisheries through means of independent third-party assessments and certification. Once certified, fisheries will be awarded the opportunity to utilize an MSC promoted eco-label to gain economic advantages in the marketplace. Through certification and eco-labelling, the MSC intends to promote and encourage better management of world fisheries, many of which have been suggested to suffer from poor management.

The Marine Stewardship Council developed standards for sustainable fisheries management in a three-step process (May, Leadbitter, Sutton, and Weber, 2003): 1) Assemble a group of experts in Bagshot (UK) to draft an initial set of Principles and Criteria; 2) Conduct an 18-month process to review the standard in 8 major international venues; and 3) Convene a second set of experts in Warrenton, Virginia (Airlie Conference Center, USA) to revise and finalize the MSC Principles and Criteria.

The final MSC Fisheries Certification standard was issued in 1998, and has since been used as the basis by which fisheries are evaluated under the MSC program.

1.1 The Fishery Proposed for Assessment

The fishery evaluated in this report is:

Species:	<i>Hippoglossus stenolepis</i>
Geographic Area:	Bering Sea, Alaska, Washington
Fishing Method:	Longline
Fishery Management:	International Pacific Halibut Commission (IPHC), National Marine Fisheries Service (NMFS), North Pacific Fisheries Management Council (NPFMC), Pacific Fisheries Management Council (PFMC), State of Washington.

1.2 Key Issues for the Assessment

There were few areas of significant note in this assessment that needed some additional attention. The ones worth mentioning, and that are discussed in greater detail in Section 8, Assessment Team Performance Evaluation, are:

1. Interactions between management organizations:

Little concern was raised over the interaction of agencies involved in the management of pacific halibut. However, the fact remains that several different entities are involved in the management of the fishery (and its subcomponents), which makes it an area worthy of some inquiry to ensure that all the agencies working together actually cover all the necessary components of a good management system.

2. Verification Systems for Bycatch Reporting and Reduction:

The MSC Principles and Criteria are the standard by which all fisheries are evaluated under the Marine Stewardship Council (MSC) program. Principle 2 under the MSC requires that the fishery management system fully understands, analyses, and reports on those aspects of the fishery that either potentially or actually cause effects to the ecosystem in which the fishery operates. The concern that surfaced during this assessment is the ability of the fishery management system to properly identify potential ecological effects from fishing. There appears to be no comprehensive assessment of ecological or ecosystem impacts from fishing. While there is a general summary of ecological considerations in annual SAFE reports, these reviews do not examine the impacts of fishing. In addition, in areas where there are known effects (bycatch of fish and seabirds) there appears to be a lack of verification processes (such as observer data as in other groundfish fisheries). Both these issues are dealt with in greater detail in the body of this report.

2 THE PACIFIC HALIBUT FISHERY

A brief description of the Pacific Halibut fishery assessed in this project is provided in the following subsections. The descriptions are general in nature and brief, since a good deal of this information is more fully discussed in Section 8, Assessment Team Performance Evaluations.

2.1 Pacific Halibut

2.1.1 The Target Species

The fishery targets Pacific Halibut. Pacific halibut (*Hippoglossus stenolepis*) is a flatfish which inhabits the continental shelf of the United States and Canada, ranging from California to the Bering Sea, and extends into Russia and Japan. Because halibut can grow to be as much as 500 pounds, is firm textured, and has relatively few bones compared to other fishes, it is a popular food fish.

2.1.2 Life History

Pacific halibut are among the largest teleost fishes in the world with lengths reported up to 9 feet (2.7 m) and growth to weights of several hundred pounds. Although the average age taken in the fishery is from about 10 to 13 years, halibut are known to live to an age exceeding 50 years.

Mature halibut collect on spawning grounds during the period from November to March and normally spawn along the continental slope at depths from 200 to over 450 meters. A 50 pound female will spawn close to a half a million eggs while a female over 200 pounds will spawn several million eggs. The eggs and larvae are heavier than the surface seawater and drift passively in deep ocean currents. The larva grow and transform into adult form at about 6 months, at which time they settle to the bottom and join the community of demersal fin fish. The adults undertake considerable spawning migrations moving north and south and from shallow to deepwater, depending on the season. Juvenile halibut, those under 7 years of age, also migrate long distances apparently counter balancing the northwesterly drift of the eggs and larva in the Northeast Pacific.

Maturity varies with sex, age, and size of the fish. Females grow faster but mature slower than males reaching maturity at about 12 years. Most males mature around eight years old. Fecundity is size dependent with a 50-pound female producing about 500,000 eggs, while a female over 250 pounds may produce as much as 4 million eggs.

Eggs are about 3 mm in diameter when released and fertilization takes place externally. Developing ova are typically found at depths of 300 to 600 feet, but have been known to occur at depths as great as 1,500 feet. Egg hatching is moderated by temperature occurring around 15 to 20 days at 5-6 degrees Celsius, and 12 to 14 days at 7-8 degrees Celsius. The eggs and larvae drift passively in deep ocean currents. As the larvae grow, they decrease in specific gravity, gradually moving towards the surface and drifting to shallower waters on the continental shelf. Larval transport can occur over many hundreds of miles by the Alaskan Stream which flows counter-clockwise in the Gulf of Alaska and westward along the Alaska Peninsula and Aleutian Islands. Some larvae are carried into the Bering Sea. At about 6 months old, young fish have the characteristic adult form and settle to the bottom in shallow inshore areas.

Halibut are occasionally eaten by marine mammals but seem to be rarely found as prey for other fish.

2.1.3 Distribution and Migration

Pacific halibut have a wide distribution in the North Pacific Basin ranging from Southern California north to Nome, Alaska. They also occur along the Asiatic Coast from the Gulf of Anadyr, Russia to Hokkaido, Japan. Depending on life stage, they may occur from the

shallow waters of the continental shelf and down the continental slope to depths of 1200 meters (IPHC, 1998).

Halibut are demersal, living on or near the bottom. Halibut are most often caught between 90 and 900 feet (27 and 274 meters), but have been caught as deep as 1,800 feet. Young halibut migrate in a clockwise direction to counter the effects of egg drift in ocean currents. One and two-year old Pacific halibut are commonly found in inshore areas, whereas 2 or 3-year olds tend to move further offshore. Pacific halibut enter the commercial fishery at about 8 years old, after most of the extensive counter-migration to balance egg and larval drift has apparently taken place. Adult halibut continue to migrate annually, moving to deeper waters on the edge of the continental shelf during the winter for spawning, and into shallow coastal waters in the summer months for feeding.

2.1.4 Food and Feeding

Halibut are carnivorous. Larval halibut feed on plankton, while halibut from 1 to 3 years old feed on small shrimp-like organisms and small fish. Larger halibut feed on fish, with the percent of the diet occupied by fish increasing with size and age. Species of fish found in the diet of halibut include cod, sablefish, pollock, rockfish, sculpins, turbot, and some flatfish. In addition, halibut have been found to consume a variety of crustaceans, or to leave the bottom to feed on other species of fish.

2.2 Overview of the Pacific Halibut Fishery

2.2.1 General Area of the Fishery

The physical oceanography of the region has been described by Dodimead et al., 1963. Surface and waters down to 200 meters flow easterly across the Pacific Ocean into the southern Gulf of Alaska and then swing counter clockwise through the Central Gulf of Alaska and westerly along the Aleutian Islands. The wind-driven surface currents may break through the Aleutians and move northward through the Bering Sea. Deeper water flows on to the west entering the Bering Sea at the western extremities of the Aleutian Island chain. The biological productivity of the region is influenced by the annual variation in these current patterns.

The traditional major U.S. commercial exploitation of groundfish off Alaska occurred in the Bering Sea; whereas, the contemporary longline fisheries for halibut is also largely conducted in the Gulf of Alaska.

The Gulf of Alaska, which is an important fishing ground for the U.S. halibut longline fishery, does not constitute a unique geological feature, such as the Bering Sea, and has not supported the level of scientific investigations which are descriptive of the Bering Sea. Regardless, in recent years, there have been a number of scientific studies of the region regarding its marine resources, bottom topography, sediments and general oceanography. These studies have been fostered by the IPHC, NMFS, Bureau of Land Management, Alaska Department of Fish and Game (ADFG), University of Alaska, University of Washington, North Pacific Fisheries Management Council, and other interested scientific groups.

The continental shelf in the Gulf of Alaska varies in width and substrate characteristics. Along the Alexander Archipelago in the south, the shelf is narrow and the slope to the abyssal plain steep. However, north of Cape Spencer, the shelf broadens to form the most extensive shelf area south of the Bering Sea. Several submarine canyons interrupt the shelf in this region and are known to be productive fishing areas. The shelf in this region extends some 50 miles seaward as it swings west towards Kodiak Island. West of Kodiak and south of the Alaska Peninsula the shelf remains relatively wide, but narrows as it approaches Unimak Pass.

2.2.2 Fishery Background

Pacific halibut have been fished for hundreds of years by various indigenous peoples of the Pacific Northwest and Alaska. The North American commercial fishery officially started in 1888, when halibut were landed in Tacoma, Washington. The catch was subsequently shipped to Boston. In the 1890s a large fleet of sailing vessels fished with 2 man dories, but the fishery soon shifted to company owned steam powered vessels using large crews (up to 35).

By about 1910, it became evident to commercial halibut fishermen from the U.S. and Canada, the abundance of halibut on the grounds was declining and suffering from "overfishing." As a result, the commercial fishermen from both countries asked the two governments to manage the resource (IPHC, 1998). An attempt to put together an international agreement failed in 1919. But, after further efforts, the U.S. and Canada signed a Convention in 1923, making it the first treaty of any kind signed by Canada independent of Great Britain. The Convention later lead to the formation of the International Fisheries Commission (later to become the International Pacific Halibut Commission). The Convention has been modified a number of times and following the extension of national jurisdiction by the U.S. and Canada the recommendations of the Commission have been reviewed and implemented by fishery agencies of the two countries (IPHC, 1992).

The halibut fishery has been limited to hook and line gear almost since its inception although for short periods, deep diving gillnets were used. Over the past several decades, sport fishing for halibut has become increasingly popular requiring increased monitoring of the catch. Halibut are also taken as bycatch in trawl, cod and sablefish longline fisheries as well as pot and jig fisheries.

The longline fishery for halibut occurs along the continental shelf and slope from California to the Bering Sea. Major fishing grounds occur off British Columbia, through the Gulf of Alaska, the Aleutian Islands and the Bering Sea. For many years the longline fisheries constituted the only major offshore fisheries conducted by U.S. fishermen off Alaska. Trawl fisheries in Alaska were confined to the harvest of inside waters and limited to harvesting several species of groundfish and shrimp. The latter harvested using beam trawls. The halibut stocks off Alaska with the exception of the Bering Sea were considered fully utilized by U.S. fishermen at the time of the large-scale development of foreign fisheries which occurred during the 1950s and 1960s.

To some extent the participation of Alaskan fishermen in the harvest of both halibut and sablefish was influenced by the regulatory regime governing vessel sizes and limits in the Alaska salmon fishery. That is, larger multipurpose vessels (over 50 feet) were excluded from the salmon fishery. Knowledge of the extensive groundfish resources off Alaska was limited until the results of the early Japanese fisheries (prior to WWII) and resources surveys conducted by the USSR became public. The major development of most of the marine resources off Alaska, except halibut, followed the great expansion of Japanese, Korean, Soviet and other foreign fishing activities. The major U.S. exploitation of groundfish off Alaska occurred in the Bering Sea whereas the contemporary longline fisheries for these species are largely conducted in the Gulf of Alaska.

Studies of the marine fishery resources of the Gulf of Alaska were pioneered by the IPHC. However, during the late 1950s, NMFS investigations into the marine fish complex, general ecological relationships between the various species, and large scale oceanographic investigations of the region was stimulated by the threat and concern of Japanese high seas salmon fishing and the development of the foreign herring, crab and groundfish fisheries in the Northeast Pacific Ocean. The IPHC studies on MSY and OY along with the Commission's strict control of harvest of the stock set standards for fishery management on a global scale. The Commission (along with the International Pacific Salmon Commission) established a pattern for rational use of fishery resources in the North Pacific region.

3 FISHERIES MANAGEMENT SYSTEM

The International Pacific Halibut Commission (IPHC) has managed the halibut resources off the U.S. and Canada since 1923. IPHC has continued to form the basis of national regulations in the two countries. Canada moved to a limited entry program in 1979, shortly after establishing extended jurisdiction, but the U.S. did not follow suit until 1995. In the interim, the U.S. fishery effort continued to grow until the halibut season became a bizarre derby with a fishing season of only 24 hours in the Gulf of Alaska.

The Commission established by a Convention between the U.S. and Canada has been revisited several times to extend its authority and/or to adjust to new conditions in the fishery or jurisdictional changes. The latest change in the Protocol of the Commission, which occurred in 1979, was precipitated in 1976 by the U.S. and Canada changing their jurisdiction over ocean space to 200 nautical miles. The 1979 Protocol change, along with legislation, that gave effect to the protocol (North Pacific Halibut Act of 1982), has affected the manner in which the fishery is conducted and redefined the role of IPHC in the management of the fishery during the 1980s.

The U.S. MFCMA of 1976 required renegotiations of all international fisheries treaties. As a result, the two countries negotiated an amendment to the 1953 Halibut Convention during 1978 and early 1979. The amendment termed Protocol was signed by both countries in March, 1979. The Protocol provided the following changes to the 1953 convention:

Altered the Commission's mandate from managing on the basis of maximum sustained yield to that of optimum yield (OY);

Rescinded reciprocal fishing privileges between the two countries after March 31, 1981 (the actual phase-outs occurred before this date);

Required 60 percent of the catch in Area 2 (off both Canada and the U.S.) to be taken in Canada (Exhibit 10);

Allowed either party to establish additional regulations which are more restrictive than those adopted by the Commission; and

Eliminated the Commission's authority to regulate departures of vessels.

The tasks given the Commission staff as a result of Protocol, among others included:

1. To conduct investigations, as are necessary, into the life history of halibut; and
2. Maintain or develop stocks of halibut to the optimum yield levels.

And, for the purpose of achieving this goal:

1. Divide the Convention waters into areas;
2. Establish one or more open or closed seasons to each area;
3. Limit the size of the fish and the quantity of catch to be taken from each area within any season which fishing is allowed;
4. During both open and closed seasons, permit, limit, regulate or prohibit the incidental catch of halibut that might be taken, retained, possessed or landed from each area or portion of an area, by vessels fishing for other species;
5. Fix the size and character of halibut fishing appliances to be used in any area;
6. Make such regulations for the collection of statistics of catch of halibut as it shall find necessary to determine condition and trend of the halibut fishery and to carry provisions of this convention; and
7. Close, to all taking of halibut, any area or portion of an area that the Commission finds to be populated by small, immature halibut and designates as nursery grounds.

The change in the Commission's mandate to optimum yield, made the Halibut Convention consistent with the pronounced national goals of the U.S. and Canada, which according to the U.S. definition of optimum yield, allowed the Commission to set regulations that consider social and economic factors. Nevertheless, the optimum yield has never been well defined

and interpretations by both governments have not allowed the Commission to limit entry or explicitly allocate harvest among users groups. Maximizing long-term physical yield has been the primary goal of the Commission, but in more recent years the Commission has begun to explore with the Commissioners and industry “what constitutes long term optimum yield. This dialogue had included subjects such as minimizing risk, minimizing fluctuations, long term economic yield, etc.

For the record, in reality the Commission scientists continue to evaluate the status of the resource and establish quotas for harvest, which is shared in one statistical management region by (Area 2) the new protocol. However, each nation can establish more restrictive regulations consistent with its own set of conservation principles. Thus, the goals and objectives for management of the longline fishery off Alaska must take into account the conservation and management objectives of the Commission as well as the MFCMA. (The goals and objectives of the latter are spelled out in the NPFMC and PFMC groundfish plans.)

Halibut, as sablefish, are managed under an IFQ (Individual Fishing Quota) system. The establishing of quotas results from recommendations submitted to the NPFMC and PFMC by the scientific staff of the NMFS, which are reviewed by the NPFMC's and PFMC's SSC (Scientific and Statistical Committee) and passed on (at times with suggested changes) as recommendations to the NPFMC and PFMC. Public debate and discussions of the recommendation(s) take place at council meetings along with consideration of written commentary.

4 PROCESSING AND TRANSHIPMENT

For the Pacific Halibut fishery, all commercial landings are required to be recorded and reported. In Alaska, compliance in the fishery is monitored and enforced by the NMFS' Alaska region Restricted Access Management (RAM) Division. Quota share holders are issued Landing Cards by NMFS-RAM, which must be presented at registered “transaction” locations when catch is off-loaded. The catch weight is then electronically debited from the holder's IFQ for that year. All Landing Card data is transmitted directly to NMFS-RAM databases. Fishermen must also alert the “transaction” station six hours prior to arrival to allow NMFS-RAM officials to observe landings.

Most processing occurs at shore-side plants where landings are monitored. On freezer-processor vessels (over 120 ft.), fishery observers remain on-board to assure compliance (National Research Council 1999).

This report does not cover transshipments at sea or processing beyond the point of landing. This report acknowledges that sufficient monitoring takes place to identify the fishery of origin for all landed halibut. This is sufficient to allow a Chain of Custody to be established from the point of landing forward for all products derived from the commercial halibut fishery. MSC chain of custody certifications were not undertaken in this project, and

therefore, need to be undertaken on a separate and individual basis for those entities that may wish to identify and/or label products derived from the US Halibut Fishery as MSC certified.

5 THE ASSESSMENT PROCESS

Scientific Certification Systems, Inc. (SCS) conducted a pre-assessment of the US Pacific Halibut fishery as required by the MSC program. After review of the pre-assessment, the applicants for certification authorized the formal, full assessment of the fishery. All aspects of the assessment process were carried out under the auspices of Scientific Certification Systems, Inc., an accredited MSC certification body, and in direct accordance with MSC requirements (MSC Fisheries Certification Methodology Version 5).

In order to ensure a thorough and robust assessment process, and a process in which all interested stakeholders could participate, SCS took the approach of allowing additional time as needed for both industry and stakeholders to respond to requests for information and participation.

Originally, the assessment of the US halibut fishery was linked to an allied assessment on Canada's pacific halibut fishery. Both fisheries were to be assessed simultaneously to ensure continuity and consistency of assessments. The simultaneous assessments were also designed to keep costs to a minimum for both fisheries, since the information pertaining to all aspects of Principle 1 (Status of Stocks) and portions of MSC Principles 2 and 3 are handled through IPHC. It is unnecessarily duplicative to charge each client individually for examining the same information. Unfortunately, factors beyond the control of SCS caused the Canada assessment to lag behind. SCS tried to maintain parity between the two fishery assessments, but eventually had to separate the two projects at the request of the clients.

To be thorough and transparent, SCS provided opportunities for input at all stages of the assessment process, whether required or not by MSC procedures. The general steps followed were:

- Team Selection

At this first step of the assessment process, SCS sought input from interested parties both in Alaska and Canada. SCS sent out advisories through direct email, fax, listing on email list servers, and posting on select web sites requesting comment on the nominations of persons capable of providing the expertise needed in the halibut assessment. Comments were compiled and a second advisory released (through the same mechanisms) listing the final team of 3 scientists chosen to serve as assessment team members for SCS. The three scientists chosen are assisting with the assessment of both US and Canadian fisheries.

- Setting Performance Indicators and Scoring Guideposts

As required by the MSC assessment process, the assessment team drafted a set of performance indicators and scoring guideposts to correspond to the MSC Principles and Criteria. These were posted for more than the required comment period to allow stakeholders to provide comments. The period was longer than 30 days primarily due to allowances for receiving comments from stakeholders in both the US and Canada. In addition, SCS sought comments from National Marine Fisheries Service (NMFS), IPhC, and the Department of Fisheries and Oceans (DFO) in Canada.

- Input on fishery performance

Once performance indicators were finalized, SCS requested that the applicants compile and submit written information to the assessment team illustrating the fishery's compliance with the required performance indicators. At the same time, SCS requested that stakeholders submit their views on the fishery management system's functions and performance. In the case of the US commercial halibut fishery, the client provided most of the information needed prior to the actual interviewing process. However, a number of documents and/or data were provided on an ongoing basis as the assessment team, the managers, or the applicants found them to be relevant.

- Meetings with industry, managers, and stakeholders

SCS planned for and conducted meetings with stakeholders, industry, fishery managers, and fishery scientists as required.

- Scoring fishery

The assessment team scored the fishery using the required MSC methodology and without input from the client group or stakeholders.

- Drafting report

The assessment team in collaboration with the SCS lead assessor, Chet Chaffee, drafted the report in accordance with MSC required process.

- Selection of peer reviewers

SCS, as required, released an announcement of potential peer reviewers soliciting comment from stakeholders on the merit of the selected reviewers. No comments were received other than from the client.

- Public Comment on Draft Report

The MSC requirements are that the draft report be made available for public comment for a period of no less than 30 days. Under the newest MSC Certification Methodology (version 5, April 2004) there is a formal requirement that the public

comment period be held after the peer review process. This requirement was met as part of this assessment.

5.1 Evaluation team

Project Manager: Dr. Chet Chaffee, SCS (USA)
Assessor MSC Principle 1: Dr. Rick Deriso (IATTC, La Jolla, California, USA)
Assessor MSC Principle 2: Dr. Robert Furness (University of Glasgow, Scotland)
Assessor MSC Principle 3: Dr. Mike Shepard (Michael Shepard and Associates Ltd.)

5.2 Other Fisheries in the area and summary of previous certification evaluations

There are a number of other fisheries that operate in the areas where halibut are caught. There are fisheries in Alaskan and US national waters for a variety of species such as salmon, groundfish, crustaceans, and rockfish. Both Alaska salmon fisheries and Bering Sea and Gulf of Alaska pollock fisheries have been assessed and certified under the MSC program. In addition, there are several other MSC assessments ongoing for fisheries in the same general area. These include the British Columbia salmon fisheries, British Columbia halibut fishery, the US black cod fishery, and the freezer/longline portion of the Pacific cod fishery.

Additionally, the Alaska salmon fisheries (statewide) are going through a re-assessment process as required by the MSC to maintain a fishery certificate after its original time period of 5 years has elapsed.

6.0 THE MSC EVALUATION PROCESS

The Marine Stewardship Council standards for sustainable fisheries management were developed through an 18-month process (May, Leadbitter, Sutton, and Weber, 2003). An original draft was developed by an expert working group, which met in Bagshot, UK in 1996. The draft standard was then presented through a series of 8 workshops that lasted 3 days each. Comments from the workshops, and from written submissions to the MSC were compiled and made available to a second expert working group at Airlie House in Virginia, USA.

The final MSC standard (see below) was issued in 1998, and has since been used as the basis by which fisheries are evaluated under the MSC program. The US Pacific Halibut fishery was evaluated using this same standard.

The scope of the MSC Principles and Criteria relates to marine fisheries activities up to but not beyond the point at which the fish are landed. The MSC Principles and Criteria apply at this stage only to marine fishes, fresh water fishes, and invertebrates (including, but not limited to shellfish, crustaceans and cephalopods). Aquaculture and the harvest of other species are not currently included. Issues involving allocation of quotas and access to marine resources are considered to be beyond the scope of these Principles and Criteria.

6.1 MSC Principles and Criteria

MSC PRINCIPLE 1

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

Intent:

The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favor of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

MSC Criteria

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

MSC PRINCIPLE 2

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Intent:

The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

MSC Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.
2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimizes mortality of, or injuries to endangered, threatened or protected species.

3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

MSC PRINCIPLE 3

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Intent:

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

MSC Criteria:

A. Management System:

The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

1. demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;
2. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;
3. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
4. incorporates an appropriate mechanism for the resolution of disputes arising within the system;
5. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
6. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;
7. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;
8. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;

9. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
10. setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
11. identifying appropriate fishing methods that minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
12. providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
13. mechanisms in place to limit or close fisheries when designated catch limits are reached;
14. establishing no-take zones where appropriate;
15. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

B. MSC Operational Criteria:

Fishing operations shall:

16. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimize mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
17. implement appropriate fishing methods designed to minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
18. not use destructive fishing practices such as fishing with poisons or explosives;
19. minimize operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;
20. be conducted in compliance with the fishery management system and all legal and administrative requirements; and
21. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

6.2 Interpretation of MSC Principles for Performance Evaluations

Along with developing a standard for sustainable fisheries management, the MSC also developed a certification methodology that provides the process by which all fisheries are to be evaluated. The MSC accredits certification bodies (businesses) that can show that the expertise and experience necessary to carry out MSC evaluation is present in the organization. In addition, each certification body must demonstrate its fluency with the MSC standards and evaluation methods through the use of these in a fishery evaluation

The methods are provided in great detail through documents that can be downloaded from the MSC website (www.msc.org). At present, the Fisheries Certification Methodology is in its 5th version, issued April 2004.

The MSC Principles and Criteria are general statements describing what aspects need to be present in fisheries to indicate that they are moving toward sustainable management. The

certification approach or methodology adopted by the MSC requires that any assessment of a fishery or fisheries move beyond a management verification program that simply provides third-party assurances that a company's stated management policies are being implemented. The MSC's 'Certification Methodology' is designed to be an evaluation of a fishery's performance to determine if the fishery is being managed consistent with emerging international standards of sustainable fisheries.

Using its expertise in fisheries management, fisheries biology and ecology, ecosystem monitoring, and stock assessments, the assessment team developed a set of performance indicators (see Section 9) to be consistent with the intent and extent of the MSC Principles and Criteria.

The performance indicators developed for MSC Principles 1 and 2 are structured such that all the Subcriteria and Performance Indicators are directly associated with a single MSC Criterion within a Principle.

The structure of the Subcriteria and Performance Indicators developed under MSC Principle 3 is somewhat different. Under MSC Principle 3, the Evaluation Team noted significant difficulty in developing a logical hierarchy of measures that remained unique to each MSC Criterion but also maintained a logical connection between indicators. Much of the difficulty stemmed from the fact that the 17 MSC Criteria under MSC Principle 3 vary in nature from general objectives to specific measures, but are not presented in a hierarchical framework from the very broad to the specific. Instead, the 17 MSC Criteria under MSC Principle 3 describe factors with significant redundancy. As a result, the Evaluation Team felt it would be better to construct a logical hierarchy that incorporates all the requirements spelled out by the 17 MSC Criteria and note the relationship of each Performance Indicator to the various MSC Criteria, as many of the Performance Indicators proposed can be linked to a more than one MSC Criterion.

The performance indicators and scoring guideposts adopted in this evaluation are based on the evaluation team's interpretation of the MSC Principles and Criteria, as applied to the particular case of halibut (the same performance indicators and scoring guideposts are being used in the assessment of sablefish as it is also a quota fishery managed by the North Pacific Fishery Management Council and NMFS). The standards set may not be exactly identical to those used for other MSC certified fisheries, although the indicators considered are very similar. The MSC has made it clear that each fishery should be judged according to its particular circumstances and requirements, in line with the principles and criteria that they have set. In particular the performance indicators and scoring guideposts used to judge this fishery are meant to be similar to, but not necessarily identical to, those used to judge similar fisheries elsewhere. It is also worth noting that the standards for MSC certification may not correspond exactly to the standards required by the fishery management plan or by the national legislation under which it operates. Therefore, if the assessment points out areas where the fishery management does not exactly meet the MSC standards, it is not automatically suggestive of poor management, but a reflection of how well the fishery management system may comply with the standards for well-managed and sustainable fisheries set by the Marine Stewardship Council.

Also, it is important to remember when reading the scoring guideposts under each performance indicator that the scoring criteria established are regarded as cumulative. Thus, the fishery must first satisfy the criteria specified for a score of 60, before being assessed against those scoring guideposts required to score at the 80 level. In turn, those required for the 80 level must be attained before attempting to assess the fishery against those criteria specified to score 100.

6.3 Submission of Data on the Fishery

One of the most significant, and difficult, aspects of the MSC certification process is ensuring that the assessment team gets a complete and thorough grounding in all aspects of the fishery under evaluation. In even the smallest fishery, this is no easy task as the assessment team typically needs information that is fully supported by documentation in all areas of the fishery from the status of stocks, to ecosystem impacts, through management processes and procedures. In the halibut fishery, this is further complicated by the fact that the fishery is not managed by a single entity; instead it is managed partly through a large multistakeholder process under an international treaty.

Under the MSC program, it is the responsibility of the applying organizations or individuals to provide the information required by the assessment team. It is also the responsibility of the applicants to ensure that the assessment team has access to any and all scientists, managers, and fishers that the assessment team identifies as necessary to interview in its effort to properly understand the functions associated with the management of the fishery. Last, it is the responsibility of the assessment team to make contact with stakeholders that are known to be interested, or actively engaged in issues associated with fisheries in the same geographic location.

In the U.S. commercial halibut fishery the applicant (Fishing Vessel Owners Association or FVOA) provided an annotated bibliography identifying the documents relevant to each MSC Principle and Criteria as well as each performance indicator.. In addition, the client arranged for the assessment team to meet with the appropriate scientists, managers, and enforcement officials at the International Pacific Halibut Commission and in Alaska and Washington.

In contrast to the applicant's role in MSC assessments, the stakeholders in the fishery are under no specific obligation, other than personal preference, to provide the assessment team with information. During this fishery assessment, numerous attempts were made to gather direct information and/or opinions from stakeholder groups known to participate in various aspects of the management of North Pacific groundfish fisheries. No official or directed stakeholder comments were received during this assessment. In large part, the lack of stakeholder participation from the conservation sector in this assessment was purposeful. Many of the well-known and active conservation groups interested in fisheries in the North Pacific have been in discussions with the Marine Stewardship Council regarding what they consider to be technical concerns about the way in fisheries are assessed under the MSC program. The current stance adopted by many of the groups is that they will not actively engage in MSC assessments until these technical differences are sorted out. Stakeholders

from industry and government were equally silent, yet it is not thought that this has anything to do with lack of communication or differences of opinion. For the most part, it has been our experience that individuals and organizations that agree with the management of a fishery simply do not believe they have the need to make this known during the assessment process as the client for the fishery assessment is already advocating for the fishery.

7 ASSESSMENT TEAM MEETINGS AND INTERVIEWS

7.1 Justification for selection of items/persons inspected.

The sites and people chosen for visits and interviews were based on the assessment team's need to acquire information about the management operations of the fisheries under evaluation. Agencies and their respective personnel responsible for fishery management, fisheries research, fisheries compliance, and habitat protection were identified and contacted with the assistance of the client group and stakeholders. In addition, professional fisher's associations and industry associations were identified and contacted.

7.2 Fishing industry and fishery management meetings

The assessment team met with the client on more than one occasion to discuss aspects of the fishery and gather additional information. A number of meetings/phone calls were simply held to organize additional meetings and to clarify issues relating to data submissions to the evaluation team. Table 1 provides a general list of the people and organizations met during the assessment process.

Table 1 Organizations and People Interviewed as part of the Halibut Fishery Assessment Process

Full Assessment	<ul style="list-style-type: none"> ▪ Management ▪ Ecosystem ▪ Stock Assessment and Stock Status 	IPHC <ul style="list-style-type: none"> ▪ Bruce Lehman ▪ Bill Clark
		NMFS <ul style="list-style-type: none"> • Mike Sigler • Martin Loefflad • Shannon Fitzgerald • Sue Salveson • Andy Smoker • Jay Ginter • Mary Furuness • Pat Livingston
		USFWS <ul style="list-style-type: none"> • Kim Rivera
Stakeholders Meetings		None held as no stakeholders came forward during the assessment process.

7.3 Stakeholder meetings and interviews

As noted above, no stakeholders officially engaged (by email, written letter, phone, or fax) the assessment team at any time during this assessment process regardless of repeated attempts by SCS to contact and engage stakeholders in the conservation sector. It is noted here that the conservation sector stakeholders (such as, but not limited to, Trustees for Alaska, Alaska Conservation Foundation, Earth Justice, Alaska Marine Conservation Council) have declared a moratorium on participating in any MSC assessment due to disagreements with the MSC on a number of technical and policy issues associated with the MSC program.

8 ASSESSMENT TEAM PERFORMANCE EVALUATIONS

After completing all the reviews and interviews, the assessment team is tasked with utilizing the information it has received to assess the performance of the fishery. Under the MSC program, the process for assessing the fishery is performed by prioritizing and weighting the indicators relative to one another at each level of the performance hierarchy established when the assessment team developed the set of performance indicators and scoring guideposts for the fishery. Subsequent to this, the assessment team assigns numerical scores between 0 and 100 to each of the performance indicators. All of this is accomplished using decision support software known as Expert Choice, which utilizes a technique known as AHP (Analytical Hierarchy Process). A full description of the AHP process can be found on the MSC web site (www.msc.org). In essence, the process requires that all team members work together to discuss and evaluate the information they have received for a given performance indicator and come to a consensus decision on weights and scores. Scores and weights are then combined

to get overall scores for each of the three MSC Principles. A fishery must have normalized scores of 80 or above on each of the three MSC Principles to be recommended for certification. Should an individual indicator receive a score of less than 80, a ‘Condition’ is established that when met, would bring the fishery’s performance for that indicator up to the 80 level score representing a well-managed fishery.

Below is a written explanation of the assessment team’s evaluation of the information it received and the team’s interpretation of the information as it pertains to the fishery’s compliance with the MSC Principles and Criteria.

MSC Principle 1

Principle 1

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

1.1 (*MSC Criterion 1*)

The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.

1.1.1

There should be sufficient information on the target species and stock to allow the effects of the fishery on the stock to be evaluated.

1.1.1.1

The identification and reporting of target species is documented.

60 Scoring Guidepost

There is only a moderate degree of confidence in proper identification and reporting of the target species.

80 Scoring Guidepost

There is a high degree of confidence in proper identification and reporting of the target species.

100 Scoring Guidepost

There is a very high degree of confidence in proper identification and reporting of the target species.

SCORE 100

The longline fishery managed by IPHC is the only commercial gear permitted to retain halibut other than a minor amount in the commercial salmon troll fishery. Fish dealers are required to report all commercial landings of Pacific halibut to the IPHC. There is an observer program on US trawlers (primary source of bycatch of halibut) and estimates of bycatch of halibut are provided by that program (Sullivan et al 1994, Williams and Chen 2003). Juvenile and adult Pacific halibut are easily identifiable and do not resemble any other species (Bell, 1981). The guidepost is scored at 100 because it meets the criterion for that.

1.1.1.2

The life history of the target species (including age at maturity, natural mortality, growth, and fecundity) is understood.

60 Scoring Guidepost

There are some minor gaps in information but the basis of the life history is understood adequately to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

The life history of the species is clearly documented and understood well enough to support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

All aspects of the life history of the species are clearly documented and understood so as to support a very high degree of confidence in the evaluation of the fishery.

SCORE 90

Pacific halibut have been studied since the inception of the IPHC. There have been studies on virtually all aspects of the life history of the species based on direct biological sampling, tagging, laboratory studies, and quantitative modeling (e.g. Bell 1981, Best 1981, Hagen and Quinn 1991, McCaughran, St-Pierre 1992, Hardman 1969, Forrester and Alderdice 1973, IPHC Tech Rep 16 1978 and Rep 22 1987, Best and St-Pierre 1986, McFarlane et al 1991, Hilborn et al 1995). Changes in growth rates have been measured and though their cause is not known definitely, the changes in growth are likely be due to density-dependent processes (Clark and Hare 2002). Natural morality rate likely varies by year, age, and sex but that level of detail is beyond measurement capabilities and thus at most sex-specific constants have been studied in the assessments (IPHC 2003). Transport of eggs and larvae is thought to occur but the magnitude of movement and distribution of eggs and larvae is not known except in a general way (Skud 1977). Only limited information is known about the spawning behavior of halibut (St-Pierre 1984). The 80 guidepost criterion is satisfied and also some of the 100 guidepost is satisfied, but not all. We therefore scored this guidepost intermediate of the 80 and 100 guideposts.

1.1.1.3

The geographic range of the target stock is known.

60 Scoring Guidepost

An estimate of the geographical range of the target stock is available.

80 Scoring Guidepost

Management units encompass the range of the stock, except possibly a very minor component of the stock's range.

100 Scoring Guidepost

- A reliable estimate of the geographic range of the target stock is available including seasonal patterns of movement/availability.
- The complete geographic range of the stock, including seasonal patterns of movement/availability, is reliably estimated and documented each year.

SCORE 80

The geographical distribution of the halibut fishery is known very well (Bell 1981, Leaman 2004, 2005), and there is broad understanding of the habitats in which the fishery is carried out (Hoag et al. 1997). Fishing distribution is monitored in detail and information is recent (Leaman 2004, 2005).

The IPHC has divided the fishery into a number of non-overlapping regulatory areas that encompass the range of the stock (Bell 1981). Some estimates of the broad geographical distribution of halibut are made in the annual stock assessments: assessments are made separately for the major regulatory areas (IPHC 2004) and estimates are made of many demographic features within each area (e.g., abundance by age). Seasonal patterns of movement are more difficult to infer though some success has come from analyses of scattered tagging studies (e.g., Trumble et al 1990, Thompson and Herrington 1930, Thompson and Van Cleve 1936, Skud 1977). The score of 80 is appropriate because the guidepost 80 criterion is satisfied but not at all the 100 guidepost.

1.1.1.4

Information on the relationship of recruitment to parental stock is understood.

60 Scoring Guidepost

There are enough years of information available on indices of recruitment and parental spawning stock abundance to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Estimates of fecundity at size or age, growth rates, sexual maturity at size or age, and relationship of recruits to spawners are understood well enough to support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

There is comprehensive and reliable information on the fecundity at size and age, sex ratio by age, sexual maturity at size and age and factors affecting recruitment, and these are monitored

over time to detect trends and shifts and to support a very high degree of confidence in the evaluation of the fishery.

SCORE 90

There have been numerous studies by IPHC scientists that address fecundity, growth, sexual maturity, recruitment, and spawners (e.g., Bell 1981, Clark 1993, Clark and Hare 2002, Clark et al 1999, Deriso 1985, Deriso et al 1986, McCaughran 1984, McCaughran and Deriso 1988, Parma 1993, Parma 2002, St-Pierre 1992, Schmitt and St-Pierre 1997, Schmitt and Skud 1978). Recently, a study concluded that long-term changes in Pacific halibut recruitment were due to environmental variation rather than changes in spawning stock size (Clark and Hare 2002). Nevertheless a great deal of the annual recruitment variation is not explained by the environmental factor (Pacific Decadal Oscillation) found significant in that study and the measure used for spawning stock size doesn't actually use weight of females or sex ratio or fecundity (Sullivan, Parma, and Clark 1999). Longline standardized surveys make measurements of female weight at age and sex maturity possible to detect trends and shifts, but measurements of fecundity are not made. Recent detection of shifts in growth rate lead one to question whether other features affecting reproductive capacity of the stock are changing and hence annual egg production; though sexual maturity at age changed little during the late 1980's- 1990's when growth rates were substantially changing (Sullivan, Parma, and Clark 1999). Therefore, this criterion was scored 90 as intermediate of the 80 and 100 scoring guideposts.

1.1.1.5

Information is collected on the abundance/density of the stock.

60 Scoring Guidepost

- Either fishery dependent or fishery independent indices are available on the abundance of the stock biomass for some years.
- Qualitative information exists on the appropriateness of the indices as proportional indicators of stock size and to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

- Fishery dependent and/or fishery independent indices are available on the abundance of the stock for several years.
- Uncertainties in indices have been analyzed (through for example catch-per-unit-effort standardization) and those uncertainties have been reduced so as to allow trends to be determined from indices.
- The indices are understood well enough to support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

- Fishery dependent and/or fishery independent indices are available on the abundance and density of the stock for several years.
- Indices are consistent and there is clear evidence that they are proportional to the stock size and of sufficient precision to support a very high degree of confidence in the evaluation of the fishery.
- Uncertainties in indices have been fully analyzed.

SCORE 95

An extensive standardized longline survey is made of Pacific halibut on an annual basis throughout much of its range (Dykstra, Wormer, and Ranta 2004). The survey is conducted with consistent methods and it well supports the use in stock assessment as a standardized index of abundance. Nevertheless there remain uncertainties about potential time variations of catchability perhaps due to competition for hooks by dogfish (Clark, Hare, Leaman 2004). This criterion nearly satisfies the 100 guidepost, lacking only in absence of a recent comprehensive simulation study to test affects of all uncertainties on the stock assessment. Their approach in the past has been precautionary in that they examine some consequences of uncertainties to their abundance estimates then choose the more conservative estimates of abundance (Clark and Hare 2003).

1.1.1.6

The age and/or size structure of catches is measured.

60 Scoring Guidepost

Data on the age and size structure of catches are known well enough to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

- Data on the age and size structure of catches in the main fishery are of adequate accuracy and measured for enough years to support a high degree of confidence in the evaluation of the fishery.
- There are data on the age and size structure of catches from fishery independent surveys where such surveys exist and from fisheries where the target species is caught incidentally where such fisheries catch significant by-catch.

100 Scoring Guidepost

- There is comprehensive and reliable data on the age and size structure of all significant catches (including incidental catches) for several years and support a very high degree of confidence in the evaluation of the fishery.
- There is comprehensive and reliable data on the age and size structure of catches from fishery independent surveys where such surveys exist.

SCORE 100

Age and size information is obtained by stratified sampling of the longline landings, from the standardized longline survey, from NMFS trawl surveys, and from observer data (Quinn et al 1983, Hoag et al 1979, Gilroy et al 1995, Forsberg 2001, Clark 2992, Sampling and analysis papers in IPHC 2004, bycatch papers in IPHC 2004, Clark 2004, Dykstra et al 2004, Sullivan et al 1999). All components of the 100 guidepost are satisfied.

1.1.2

There should be sufficient information on the fishery to allow its effects on the target stock to be evaluated

1.1.2.1

Fishery related mortality is recorded/ estimated (including landings, discards and incidental mortality).

60 Scoring Guidepost

- Sufficient information is available to allow accurate estimates to be made of landings broken down as required for a rudimentary evaluation of the fishery.
- Estimates of discards and incidental mortality are available.

80 Scoring Guidepost

Landings, discards, and incidental mortality are well estimated for each gear type to support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

Landings, discards, and incidental mortality are accurately estimated and monitored for each gear type to support a very high degree of confidence in the evaluation of the fishery.

SCORE 90

There is no required observer program on board halibut longliners as discussed in detail elsewhere (Criterion 2.1.2.1) to accurately measure discards of under-sized halibut though estimates of under-sized discards can be made from the standardized longline surveys. Discards and incidental mortality are estimated in the observer program for groundfish. Landings are well estimated in the required fish buyer forms, which is evolving toward an electronic fishery reporting system to IPHC (Gilroy, Kong, and Geernaert 2004). This criterion satisfies the 80 guidepost but lack of longline observers prevents complete satisfaction of the 100 guidepost, therefore it was scored intermediate of those two.

1.1.2.2.

Fishing effort is recorded, estimated, and standardized to effective fishing effort.

60 Scoring Guidepost

Nominal effort data are available which can be used to estimate effective fishing effort well enough to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Accurate estimates of effective fishing effort have been made and support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

Comprehensive records are kept of fishing effort, recorded at sub-annual intervals at an appropriate degree of spatial resolution and have been standardized to effective fishing effort and support a very high degree of confidence in the evaluation of the fishery.

SCORE 80

Since the implementation of the IFQ program, commercial fishing effort data has been suspect because of the major change that took place in the conduct of the fishery. Annual variation in commercial setline catchability is estimated within the assessment model. To compensate for that uncertainty, the standardized longline survey was restarted and it now provides an independent index of abundance. Estimates of effective effort can be viewed as essentially an output of the stock assessment and they could be estimated by multiplying estimated annual catchability times observed effort (which is the estimated full recruitment fishing mortality rate). Those effective effort measures are well estimated because fishing mortality rates are well estimated in the annual stock assessments but with increasing variance as we look closer to the current year (e.g., as seen in the abundance estimates in Sullivan, Parma, and Clark 1999). To reduce the variance in catchability, research studies have taken place as the gear changed to calculate shifts in efficiency (referenced below in 1.1.2.3) that can be incorporated in the observed effort calculation. Therefore the 80 guidepost is satisfied. However no estimates of within-annual effective effort or fine spatial scale effective effort (within regulatory area) measure are made and thus the 100 guidepost is not at all satisfied. Therefore this criterion was scored 80.

1.1.2.3

Fishing methods and gear types are known throughout the fishery.

60 Scoring Guidepost

Main fishing methods and gear types are known for the fishery well enough to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Main fishing methods and gear types are known and information is available on the geographical areas of use and support a high degree of confidence in evaluation of the fishery.

100 Scoring Guidepost

- All fishing methods and gear types employed in the fishery are known.
- In-situ observations are made of fishing practices.
- The information and observations support a very high degree of confidence in the evaluation of the fishery.

SCORE 90

The longline fishery is the only commercial gear permitted to land halibut other than minor salmon troll catches and it has been studied since the inception of IPHC (Bell 1981, McCaughran 1997). The IFQ system provides fine detail of the geographic areas of use of the gear and thus the 80 guidepost is satisfied. There have been several studies of affects of changes in the longline gear, such as the effect of hook spacing (IPHC Sci. Rep. 64, Chen 2005), the effect of snap gear to fixed-hook setline gear (Myhre and Quinn 1984) and the shift from J-hooks to circle hooks in 1982-1983 (Trumble, Kaimmer, and Williams 2000). However, there is no observer program for longlines and thus in-situ observations of current fishing practices are limited to special studies and to information gained from the setline surveys; thus the 100 guidepost is not fully satisfied. Therefore, this criterion was scored 90.

1.1.2.4

Selectivity is known for the fishery (including incidental catches).

60 Scoring Guidepost

Some information is available on selectivity and qualitative changes in selectivity and support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Selectivities of all gear types including incidental fisheries are well estimated by size of fish with sufficient accuracy to support a high degree of confidence in evaluation of the fishery.

100 Scoring Guidepost

Full selectivities have been accurately estimated for all gears, locations and times of fishing over time and support a very high degree of confidence in the evaluation of the fishery.

SCORE 85

Estimates of size composition of catches, both commercial and incidental, are made each year. Those estimates for the commercial landings provide input size information used within the stock assessment to estimate parameters of the size selectivity function used in the separable fishing mortality calculations (Sullivan et al 1999). Size information collected by observers allows for sufficient information to adjust the annual total CEY (Constant

Exploitation Yield) for incidental catch losses. Thus the 80 guidepost is satisfied. However, there is some indication of differences in size-specific selectivity by regulatory area, based on the stock assessments (Clark and Hare 2005, Sullivan et al 1999) but not for finer spatial resolution and not for seasonal differences. Therefore this criterion was scored 85.

- 1.1.2.5** **Other fisheries in the area that are not subject to certification are identified and monitored.**

60 Scoring Guidepost

- There is some information relating to other fisheries in the area that are not subject to certification, although these are not adequately monitored.
- Significant removals of the subject stock by these fisheries are accounted for in the stock assessments well enough to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

- The main fisheries not subject to certification are identified.
- Significant mortalities of the subject stock from those fisheries are included in the stock assessments and support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

All fisheries (and other sources of human-induced mortality) in the area that are not subject to certification are identified, monitored, and included in the stock assessments and support a very high degree of confidence in the evaluation of the fishery.

SCORE 90

The other fisheries that catch halibut other than longliners are some smaller sports catches, smaller personal use catches, small amount of salmon troll catch, and discards from the incidental fleets. All those sources of mortality are accounted for each year when IFQ's are established. Essentially the stock assessment works by first calculating a total CEY (constant exploitation yield) which is the recommended total removals. All non-longline (except some minor sports catch and treaty subsistence) fishery mortalities are subtracted from the total CEY to reach the recommended setline CEY (which includes some minor sports and treaty subsistence catch) (Clark and Hare 2004). Because the "other removals" are all estimates of varying quality, this criterion supports a high degree of confidence (as in the 80 guidepost) but not fully a very high degree of confidence (as in the 100 guidepost) and therefore a score of 90 was assigned.

- 1.1.3** **Appropriate reference levels have been developed for stock abundance and fishing mortality rate.**

1.1.3.1

There are limit and target reference points that are appropriate for the stock and take ecosystem effects into account. These include limit fishing mortality rates and both limit and target stock abundance levels.

60 Scoring Guidepost

- Limit and target points have been chosen and are justified by general agreement among regional fishery scientists that they are appropriate to achieve management goals for the target stock.
- Ecosystem effects have been considered qualitatively.

80 Scoring Guidepost

- Limit and target points are justified based on stock biology (e.g. a stock-recruitment relationship), they are measurable given data and assessment limitations, and there is no significant scientific opposition about those points outside the management agency.
- Ecosystem effects have been considered qualitatively.

100 Scoring Guidepost

- Limit and target points are justified based on stock biology, uncertainty, variability, data limitations and statistical simulations of these factors.
- Limit and target points take account of ecological impacts and uncertainties associated with those impacts.
- They are justified by general agreement among regional fishery scientists and no significant opposition outside the region.

SCORE 90

The harvest policy now in use at the IPHC for establishing annual quotas is a modified constant harvest rate policy. A range of constant harvest rates are examined to determine the impact on yield, exploitable biomass, and spawning biomass (Hare and Clark 2005). In all analyses, two biomass reference points, termed the “threshold” and the “limit” are employed. Both terms refer to female spawning biomass. The limit point is the minimum observed historical spawning biomass in each regulatory area. The threshold is 150% of the limit. The full constant (or target) harvest rate applies as long as spawning biomass is above the threshold. The harvest rate is scaled down linearly from the full rate at the threshold to a rate of zero when spawning biomass reaches the limit. In simulation work, this methodology proved completely effective in insuring that spawning biomass never reached the limit and helping return spawning biomass above the threshold relative rapidly (Hare and Clark 2003). The use of biomass referenced points was supported in a recent workshop involving IPHC staff, one Commissioner, one scientific advisor, and several members of the IPHC Conference Board (a group of harvesters) as reported in Appendix to Hare and Clark 2005.

The modified constant rate policy replaces what had been used for several years, the constant exploitation yield (CEY) policy which incorporated the effects of environmental variability on halibut recruitment, and a harvest rate that is robust to model uncertainty. In addition to this formal procedure, the Commission's advisory bodies have traditionally been conservative about yield changes and the Commission itself has also adopted a conservative approach to stock management (Appendix to Hare and Clark 2005).

The two biomass reference points do not quantitatively take into account ecological impacts. There are no details on concerns about ecological impacts of the reference points. The use of reference points as they have are in line with international standards that call for reductions in harvest rates as the stock moves toward undesirable low levels. The conservative harvest rate that keeps the stock away from the low level of the limit reference point is precautionary. Therefore the 80 guidepost is satisfied but not fully the 100 guidepost because ecological impacts are not formally considered in the reference points. Therefore an intermediate score of 90 was assigned.

1.1.3.2 Reference points meet acceptable international standards.

60 Scoring Guidepost

Reference points recognize appropriate international standards and are being developed to meet these.

80 Scoring Guidepost

Reference points recognize, and are in line with, acceptable international standards.

100 Scoring Guidepost

Reference points meet or exceed international standards.

SCORE 90

The use of reference points as they have at IPHC are in line with international standards that call for reductions in harvest rates as the stock moves toward undesirable low levels. The conservative harvest rate they employ at IPHC very likely will keep the stock away from the low level of the limit reference point and therefore it is precautionary. The reference points establish a limit reference point which is consistent with international practices. Furthermore the establishment of a threshold reference point reduces the probability of reaching the limit and that is also consistent with the international standards. Taken as a whole the 80 Guidepost is satisfied. On the other hand, their choice of the two reference points is somewhat arbitrary. Therefore a score of 90 was assigned.

1.1.4 There is a well-defined and effective harvest strategy to manage the target stock.

- 1.1.4.1** There is a mechanism in place to contain harvest as required for management of the stock.

60 Scoring Guidepost

- Mechanisms exist to monitor and (if necessary) reduce harvest, but do not fully contain harvest, or have not been tested, but nevertheless provide a moderate degree of confidence in the management of the stock.
- Some evidence exists to show that the mechanisms can be effective.

80 Scoring Guidepost

- Mechanisms are in place to reduce harvest as and when required to maintain, or allow the target stock to return to, productive levels.
- Evidence exists to show clearly the mechanisms support a high degree of confidence in their effectiveness for management.

100 Scoring Guidepost

- Mechanisms are in place to reduce harvest as and when required to maintain (or allow the target stock to return to) productivity.
- Mechanisms are responsive, relevant, and timely. Performance of the mechanisms has been evaluated and evidence exists to show clearly that they achieve their objectives and support a very high degree of confidence in the effectiveness for management.

SCORE 100

The IFQ system is set based on annual stock assessment of the Pacific halibut resource throughout its range. Both the long-term performance of IPHC and the performance of the recent IFQ system support a very high degree of confidence in the effectiveness of their mechanisms for management. Therefore a score of 100 was assigned.

- 1.1.4.2** There are clear, tested decision rules set out for effective management of the stock.

60 Scoring Guidepost

- It can be demonstrated that decision making, though not documented, is logical and appropriate.
- Rules have not been tested, but there is a moderate degree of confidence in their effectiveness for management.

80 Scoring Guidepost

- Clear decision making rules exist, are fully documented, but have not been fully tested.

- Decision rules are reconciled with reference points and with data and assessment limitations and there is a high degree of confidence in their effectiveness for management.

100 Scoring Guidepost

- Clear, documented, and tested decision rules are fully implemented and have been fully reconciled with reference points and there is a very high degree of confidence in their effectiveness for management.
- Data and assessment limitations have been periodically evaluated.

SCORE 100

The harvest policy is clear, documented, and tested and it is designed to be based on actions involving reference points (Hare and Clark 2005). There is a dedicated staff of scientists employed by IPHC with a long history of working to improve the stock assessments with better methods and better data (see the long history of IPHC Annual Reports on their web site <http://www.iphc.washington.edu/halcom/literatu.htm>). The 100 guidepost criteria are satisfied.

1.1.5

There is a robust assessment of stocks.

1.1.5.1

There are assessment models used for robust assessment of the stock (including provision for catch and effort data, age and/or size structure of the catch and the population, attributes of the various fisheries such as gear-types and catchability, relationship of recruitment to spawning stock and other variables, and sound statistical fitting of data to the model).

60 Scoring Guidepost

- Robust assessment models are used.
- These are generic and do not account for specific characteristics of either the biology of the species or the nature of the fishery.
- The assessment models contain age and/or size structure effects, spawner-recruit relations, and statistical fitting of the data.

80 Scoring Guidepost

- Robust assessment models are used.
- Major criteria are related to the species and/or the fishery, but there are some areas of the assessment that are generic.
- The assessment models contain age and/or size structure, spawner-recruit relations, statistical fitting of the data, and deal explicitly with both process and measurement error.

100 Scoring Guidepost

- Assessment models are used and capture all major features appropriate to the biology of the species and the nature of the fishery and the nature of the management questions being asked.
- The assessment models contain age and/or size structure, spawner-recruit relations, statistical fitting of the data, and deal explicitly with both process and measurement error.

SCORE 95

The assessment model employed by IPHC is state of the art (Sullivan, Parma, Clark 1999, and the recent variant in Clark and Hare 2004) and quantitatively captures all the major features appropriate to the dynamics of halibut and it is fitted to observations based on robust statistical methods. The current models still make the separable fishing mortality rate assumption (that is gear selectivity with respect to size of fish doesn't change over time) and thus it may be susceptible to mistakes if such process error occurs. The 100 guidepost was not fully satisfied and a score of 95 was given.

1.1.5.2

The assessment takes sufficient account of major uncertainties in data (including evaluation of assumptions) to provide a robust assessment of the stock.

60 Scoring Guidepost

- Major uncertainties are identified.
- Some attempt has been made to evaluate these in the assessment.
- There is a moderate degree of confidence in the robustness of the model.

80 Scoring Guidepost

- The assessment takes into account major uncertainties in the data and functional relationships.
- The most important assumptions have been evaluated, the consequences are known.
- There is a high degree of confidence in the robustness of the model.

100 Scoring Guidepost

- The assessment addresses all significant uncertainties in the data and functional relationships and evaluates the assumptions in terms of scope, direction and bias relative to management-related quantities.
- There is a very high degree of confidence in the robustness of the model.

SCORE 90

As discussed in the previous sub-criterion, the assessment model is state of the art and that also means that significant uncertainties are addressed in the assessment procedure and that the method of fitting is designed to be robust. The IPHC staff continues to address other uncertainties (such as those relating to changes in survey catchability) and more results can be expected along those lines. As such the assessment can not be said to address all significant uncertainties but it is getting closer. The failure to detect shifts in age-specific selectivity (in retrospect due to changes in growth, Sullivan et al 1999) prevents a very high degree of confidence in the robustness. Yet their assessment model is well developed and state of the art. Taken as a whole, a score of 90 was appropriate.

1.1.5.3

Uncertainties and assumptions are reflected in management advice.

60 Scoring Guidepost

- Major uncertainties are recognized and are reported in management advice, as well as possible implications of those uncertainties on the management advice.
- There is a moderate degree of confidence in the adequacy of uncertainties addressed in the management advice.

80 Scoring Guidepost

- Major uncertainties and assumptions are addressed in the management advice and through the appropriate decision rules to address those limitations.
- There is a high degree of confidence in the adequacy of uncertainties addressed in the management advice.

100 Scoring Guidepost

- All significant uncertainties and assumptions are addressed and reflected in the management advice, including appropriate decision rules.
- There is a very high degree of confidence in the adequacy of uncertainties addressed in the management advice.

SCORE 90

The target harvest rate in their modified harvest rate policy was examined by simulation to changes in growth and variations in recruitment due to varying climate regimes (Hare and Clark 2005). Other simulation studies have been conducted throughout the years, (e.g., Clark and Hare. 2004b; Sullivan et al 1999) but uncertainties in the assessment parameter estimates themselves have not been incorporated in the simulation studies. The emphasis on simulation studies is laudable and supports an intermediate high score of 90.

- 1.1.5.4** The assessment evaluates current stock and fishing mortality status relative to reference points.

60 Scoring Guidepost

Some attempt is made to estimate the stock status relative to reference points.

80 Scoring Guidepost

The assessment makes an approximated evaluation of the stock status and fishing mortality status relative to the reference points.

100 Scoring Guidepost

The assessment makes a reliable probabilistic evaluation of the stock status and fishing mortality status relative to the reference points.

SCORE 90

The annual stock assessment for 2004 made the point that coast wide the spawning biomass is far above the minimum that occurred in the 1970s (Clark and Hare 2005). Graphs of spawning biomass over time for each of three regulatory areas show current spawning biomass is far above the threshold spawning biomass levels that have been established for them. The harvest rate appears to be in line with the target harvest rate because the IFQ total is very close to the level established by the IPHC. There are various estimates of standard deviations of the parameter estimates in the annual stock assessments but no probabilistic evaluation of current stock size relative to the reference points recently established. An intermediate high score of 90 is appropriate for this sub-criterion.

- 1.1.5.5** The assessment includes a quantitative evaluation of the consequences of current harvest strategies.

60 Scoring Guidepost

The assessment makes an initial approximation of the consequences of current harvest strategies that are adequate for moderate confidence in the robustness of the assessment.

80 Scoring Guidepost

- The assessment includes a robust approximation of the consequences of current harvest strategies.
- There is a high degree of confidence in the adequacy of the harvest evaluation for a robust assessment.

100 Scoring Guidepost

- The assessment includes the consequences of current harvest strategies, forecasts future consequences of these and evaluates stock trajectories under decision rules.
- There is a very high degree of confidence in the adequacy of the harvest evaluation for a robust assessment.

SCORE 95

Forward simulations are given for consequence of different base levels of the target harvest rate for 2005 (Hare and Clark 2005). What is missing are associated confidence intervals around the projections, but most importantly intervals for the recommended harvest rule. That paper plus previous simulation studies (e.g., Clark and Hare 2004b) show the precautionary nature of the current harvest rates and provide a high degree of confidence in the harvest evaluation. A high score of 95 is supported for this sub-criterion.

1.1.6 The stock(s) is/are at appropriate reference level(s).

1.1.6.1 The stock(s) is at or above appropriate reference levels.

60 Scoring Guidepost

Assessments show the stock is likely above the limit reference point.

80 Scoring Guidepost

Assessments show the stock is likely above the target (or threshold) reference point.

100 Scoring Guidepost

Assessments show the stock is very likely above the target (or threshold) reference point most of the time in recent years.

SCORE 100

The spawning biomass graphs in Hare and Clark (2005) show spawning biomass crossed above the threshold reference points in the early to mid-1980's and the stocks have continued to grow and now are far above the thresholds for each of the three regulatory areas where thresholds have been established. Those results justify a score of 100.

1.1.6.2 The fishing mortality rate is below the appropriate limit reference point.

60 Scoring Guidepost

Assessments show the fishing mortality rate is likely below the limit reference point most of the time in recent years.

80 Scoring Guidepost

Assessments show the fishing mortality rate is very likely below the limit reference point most of the time in recent years.

100 Scoring Guidepost

Assessments show the fishing mortality rate very likely below the limit reference point consistently for several years.

SCORE 100

The target harvest rate established for halibut is designed to be hit closely each year and there has been no need to set some higher limit reference harvest. That has been one advantage to the close management of the resource given by IPHC and also the current IFQ system. The target harvest rate itself is designed to be precautionary, as discussed above (see 1.1.3.1, 1.1.3.2, 1.1.5.3). A score of 100 is appropriate for this sub-criterion.

1.2 (MSC Criterion 2)

Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.

1.2.1

When the stock is below the target point, there are measures to rebuild the stock specified and implemented for recovery and rebuilding of the stock. This item is scored only if the stock scores below 80 Scoring Guidepost on criterion 1.1.6.1.

60 Scoring Guidepost

- Appropriate rebuilding measures through reduction in exploitation exist and are being implemented.
- Rebuilding measures other than reduction in exploitation are being considered.
- Measures are implemented even if they have not been tested. Fishing mortality is further reduced if the stock is below the limit reference point.

80 Scoring Guidepost

Appropriate rebuilding measures are being implemented to promote recovery within reasonable time frames. Measures have been tested and can be shown to be rebuilding the stock. Target fishing mortality is nearly zero if the stock is below the limit reference point.

100 Scoring Guidepost

Appropriate rebuilding measures are being implemented to promote recovery as quickly as is possible. Additional measures are being implemented to prevent problems in the future. Total fishing mortality is nearly zero if the stock is below the limit reference point.

No score because stock is not depleted.

1.3 (MSC Criterion 3) **Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.**

1.3.1. **The age/sex/genetic structure of the stock is monitored to detect significant impairment of reproductive capacity.**

60 Scoring Guidepost

- Population age/sex structure is based on some sampling and verification.
- Some genetic information is available on the stock.

80 Scoring Guidepost

- Population age/sex structure is based on adequate sampling and verification.
- Ageing errors are estimated and, if significant, accounted for in the stock assessment.
- Genetic studies of the stock have been made.

100 Scoring Guidepost

- Population age/sex structure is well estimated with only insignificant errors.
- Genetic studies of the stock are made at time intervals appropriate to the species.

SCORE 90

Sampling for age composition of commercial landings is discussed above (see 1.1.6), sampling of age, sex, size, maturity, and other biological characteristics are part of the information routinely collected in the setline surveys (Dykstra et al 2004). Recently the annual stock assessment has formally included age misclassification as a source of variance (Clark and Hare 2004) and those age misclassification rates show that in general halibut are well aged. Limited genetic studies have been made (Hauser et al., in review) but they have not been other such genetic studies in past decades. On the whole a high intermediate score of 90 is warranted.

1.3.2 **Information from stock assessment indicates any fishery induced changes in the age/sex/genetic structure that would have significantly impaired reproductive capacity.**

60 Scoring Guidepost

Any fishery-induced trends in recruitment or spawning stock levels have not been shown to be due to changes in the age/sex/genetic composition of the stock.

80 Scoring Guidepost

There are likely no downward fishery-induced trends in reproductive capacity on local stocks or genetically monitored stocks due to changes in the age/sex/genetic structure.

100 Scoring Guidepost

There is a high degree of confidence that there are no downward fishery-induced trends in reproductive capacity on local stocks or genetically identified stocks due to changes in the age/sex/genetic structure.

SCORE 100

The stock status is excellent throughout the range of halibut with spawning biomass far above the threshold reference values in the regulatory areas where those reference points are available. Longline survey information on female halibut indicate no downward fishery-induced trends in reproduction capacity. A score of 100 is warranted.

MSC PRINCIPLE 2**Principle 2**

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends

Halibut is caught by longline fishery. No pot fisheries, gillnetting, or trawling targeting halibut is permitted. Longline fisheries avoid most of the problems that can be associated with trawl fisheries, such as damage to the benthos and benthic habitat, relatively unselective capture of fish, and damage to fish in the nets before sorting of the catch (Jennings et al. 2001). Longline fisheries are able to use gear that selects strongly by fish species and size (for example by choice of hook size and design). Halibut are large fish and so employing a relatively large hook size reduces unwanted capture of smaller fish (including ‘sublegal’ halibut). In this case, the halibut fishery is also managed as an IFQ fishery, so that there is no ‘race for fish’ (Hartley and Fina 2001a,b). Among other things, this permits fishermen to fish in ways (locations, times, and gear choice) that tend to avoid unwanted bycatch and so further minimizes impact on the wider ecosystem (Pautzke and Oliver 1997).

However, a number of ecological problems are identified in longline fisheries around the world. In particular, longlines attract scavenging seabirds which attempt to steal and eat baits off hooks (Wohl et al. 1995, Cooper and Wanless 1998, Brothers et al. 1999, Cousins and Cooper 2000, Belda and Sanchez 2001, Fernandez et al. 2001). The provision of bait and of offal and discards from longline fishing vessels may alter the at-sea distributions and behavior of scavenging seabirds, and if this extra food supply is extensive it may even promote the increase in numbers of such scavenging seabirds (Garthe et al. 1996, Hüppop and Wurm 2000). However, from time to time scavenging seabirds make an error of judgment and swallow the hook as well as the bait. They are then pulled under the surface and drown (Brothers et al. 1999). Since most scavenging seabirds are naturally extremely long-lived animals (most can expect to live for 20-30 years if they achieve adulthood) the mortality of birds through longline bycatch can have a dramatic influence on their demography (Lewison and Crowder 2003). Seabird populations are often unable to withstand an increased mortality rate of adults and may decline towards extinction as a direct consequence of longline fishery bycatch. This is probably the single greatest threat to the survival of seabird species at the present time, with albatrosses the most seriously affected scavenging seabirds on a global scale (Tasker et al. 2000, Furness 2003, Earthjustice 2004). Longline fisheries may also be a problem where there are bycatches of other animals including sharks, various other fish of a slow-growing lifestyle, marine turtles and even marine mammals.

We review the halibut fishery in this broad context: a longline fishery is expected to be very much less likely to have environmental impacts than a trawl fishery, and an IFQ fishery is likely to have much less environmental impact than a ‘race for fish’ or ‘derby’ fishery, but there is a need to consider possible effects of bycatch, especially of scavenging seabirds. In the case of the halibut fishery, there is known to be a potential hazard for an endangered species, the short-tailed albatross, which not only has a distribution strongly overlapping that of the halibut fishery (USFWS 1998, 1999, Geernaert et al. 2001, Michaelson et al. 2001), but

has been reported as a victim of longline bycatch (NMFS 1998, 1999, 2001i,j, NOAA 2001, Rappoport 2003a,b).

We were assisted in considering these issues by a review (Trumble 2004) presenting the case for certification of the halibut fishery. The view that the U.S. halibut fishery is appropriate for MSC certification was also made by a large number of the fisheries scientists and managers with whom we held conversations, and we did not receive opinions to suggest that the fishery causes significant environmental problems, except for some suggestions that bycatch of rockfish in particular may be in some areas a significant issue. No species of rockfish is currently listed as an endangered or threatened species within the distribution of the U.S. halibut fishery, but the rockfish species are well known to be slow growing fish with a population dynamics that is vulnerable to fishing mortality (Clausen et al. 2003, Boldt 2004, Hiatt et al. 2004, King et al. 2004).

2.1 (MSC Criterion 1) **The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.**

2.1.1 **There is adequate understanding of ecosystem factors relevant to the distribution and life history strategy of the target species.**

2.1.1.1. **The nature and distribution of habitats relevant to the fishing operations are known.**

60 Scoring Guidepost

- Some information exists but may not be comprehensive or up to date.
- The distribution of fishing operations is mapped.

80 Scoring Guidepost

- Nature and distribution of all main habitats are known in moderate detail.
- Information is recent (defined as within the last 10 years). The distribution of fishing operations is monitored.

100 Scoring Guidepost

- The nature and the distribution of all habitats relevant to the fishing operations are known in detail.
- Information is recent (defined as within the last 10 years).

SCORE 90

The geographical distribution of the halibut fishery is very well known (Bell 1981, Leaman 2004, 2005), and there is broad understanding of the habitats in which the fishery is carried out (Hoag et al. 1997). Fishing distribution is monitored in detail and information is recent (Leaman 2004, 2005). We therefore scored this Indicator between Guideposts 80 and 100.

2.1.1.2 **Information is available on non-target species affected by the fishery.**

60 Scoring Guidepost

The main non-target species have been identified, and trends in abundance are assessed.

80 Scoring Guidepost

Information is available on non-target species affected by the fishery including their distribution and abundance.

100 Scoring Guidepost

Detailed information is available on all non-target species affected by the fishery including the distribution, abundance, and ecology.

SCORE 80

Although there is a shortage of data on the numbers of each non-target species affected by the halibut fishery, the list of affected species is well documented as a result of the halibut surveys carried out by IHPC (Leaman 2004, 2005; <http://www.iphc.washington.edu/halcom>), and the extensive history of halibut fishing by longline in this region. Thus there is a good knowledge of which species are affected by the fishery in terms of bycatch. These are scavenging seabirds, scavenging marine mammals, sublegal halibut, black cod, various species of rockfish, sharks including dogfish, Pacific cod, longnose skate and smaller numbers of a variety of other groundfish species. Because the fishery is carried out by longline and trawling for halibut is not permitted, the direct physical impact of the fishing method on biota is small, although occasionally longlines may snag corals.

The biology, numbers and seasonal distributions of most of the above listed animals is quite well known. Seabird breeding numbers and geographical distributions of colonies are well documented and are monitored (for example see Dragoo et al. 2000, 2001). Many of the scavenging seabirds are nonbreeders, visiting the region outside the breeding season from other breeding areas. The global populations of these species have all been estimated using up to date data, and in the case of the albatross species are rather precisely known. The at-sea distributions and seasonal movement patterns are also quite well documented, either from observation of bird densities at sea or in some cases from tracking of individuals (Michaelson et al. 2001, NMFS 2001j, Melvin et al. 2004a, Rivera 2004). Marine mammal distributions at sea are more difficult to survey, but there are reasonably good data on the numbers and distributions of the marine mammals that may interact with longline fisheries, such as orcas

(Dalheim 1988, Yano and Dalheim 1995), and pinnipeds (DeMaster et al. 2001, Sease et al. 2001). Sublegal halibut are caught as a bycatch that is returned to the sea, but the development of (circle) hooks has reduced the amounts of sublegal halibut being caught, while the survival of these fish is reported to be high and so the impact on the halibut stock is slight. Distribution and stock biomass is assessed for the many of the other fish species caught as bycatch in the halibut fishery, although rather little is known of the status of some of those species that are not of commercial value. In the case of the halibut fishery much of the fishing activity is in relatively shallow waters where corals may not be present, but we were unable to locate relevant information on the extent of overlap between corals and halibut longline fishing distribution.

Therefore the quality of information available varies among bycatch species, ranging from very good information on the biology, distribution and numbers of the seabirds, to rather little information on some fish species of no commercial value. Although we believe that the non-target species are essentially the bycatch species in this fishery, it is plausible that removal of a large top predator from the ecosystem would also have effects on non-target species as a result of altered trophic relationships. However, the total stock biomass of halibut appears not to be much reduced by the fishing removals, and so we believe that altered trophic relationships are unlikely to be an issue. On balance for this indicator we consider the 80 guidepost to be most appropriate across the full range of non-target species.

2.1.1.3

Information is available on the position and importance of the target species within the food web.

60 Scoring Guidepost

Key prey, predators and competitors are known. (We assume key prey represent >20% of diet, key predators are likely to be responsible for >20% of the mortality, key competitors are likely to be 1-3 species of high abundance and similar ecology).

80 Scoring Guidepost

Information is available on the position and general importance of target species in the ecosystem.

100 Scoring Guidepost

Quantitative information is available on the position and importance of the target species within the food web at all life stages.

SCORE 95

The position of the halibut as a top predator in the marine ecosystem is very well established. There has been a great deal of research into the ecology of the halibut, at all life stages (listings of IHPC Reports at <http://www.iphc.washington.edu/halcom>, Leaman 2004, 2005). There remain some areas that are less well understood in the species' ecology, but the

fundamentals are mostly very well known. Where there are gaps in knowledge, the IHPC has an ongoing and highly successful program of research that is well focused on those aspects of uncertainty that are important in the context of fish stock evaluation and management (as listed at <http://www.iphc.washington.edu/halcom>).

2.1.1.4 There is information on the potential for the ecosystem to recover from fishery related impacts.

60 Scoring Guidepost

Key elements of the functioning of the ecosystem, relevant to the fishery, are identified and suggest how the ecosystem may recover from fishery related impacts

80 Scoring Guidepost

The main elements of the functioning of the ecosystem, relevant to the fishery, have been documented and are understood, and this provides a convincing picture of how the ecosystem would recover from fishery related impacts.

100 Scoring Guidepost

Detailed information is available on the potential for affected elements of the ecosystem to recover from fishery related impacts.

SCORE 80

The main elements in this ecosystem that could be adversely affected by the longline fishery for halibut include some scavenging seabirds and some rockfish species. There is rather little knowledge of the way in which, and the extent to which, the halibut fishery impacts scavenging seabirds and rockfish. This uncertainty stems from a lack of monitoring of the halibut fishery bycatch. Thus the numbers of seabirds killed and the quantities of fish taken as bycatch are not known. On the other hand, the requirements to permit recovery of populations of scavenging seabirds such as albatrosses are very well known. Albatross populations will only recover if adult and sub-adult mortality rates can be held below critical levels. This is a consequence of the very low natural fecundity and delayed maturity of these birds. But in the situation where adult and sub-adult mortality rates can be reduced to natural levels, population recovery can be expected (Rappoport 2003a,b), as it is unusual for albatrosses to have reduced breeding success given their huge potential foraging range and low reproductive effort (as their single chick grows slowly but has no natural predators in most populations so tends to have an excellent chance of survival to fledging). Rockfish show life history characteristics that for fish are similar to those of albatrosses with respect to other birds; rockfish tend to be long-lived, slow-growing and have low fecundity. Their stocks are thus also vulnerable to elevated mortality rates resulting from fishing (whether directed or as a bycatch species). At least with rockfish, there is some indication of the amount taken in the fishery as all landings of rockfish in internal waters of the State of Alaska must be retained as well as demersal species from ADF&G's Southeast Outside management Zone. Thus overall

we score this Indicator as close to the 80 guidepost, although it scores higher on the question of how population recovery would occur and lower on the aspect of the functioning of the ecosystem relevant to the fishery (for example there is great uncertainty as to which, and how many, seabirds are caught by the halibut fishery, and which, and how many rockfish are caught, and in which regions).

2.1.2 Non-target removals are adequately determined.

2.1.2.1 Information is available on the nature and extent of the by-catch (capture of non-target species).

60 Scoring Guidepost

Qualitative information is available on significant by-catch species.

80 Scoring Guidepost

- Quantitative information is available on significant by-catch.
- If obtained by sampling, this is adequate to produce accurate data.

100 Scoring Guidepost

Accurate records are kept, for all vessels in the fishery, on the nature and extent of all by-catch species including species, size, age, and sex composition, where appropriate.

SCORE 70

Under IFQ, fishermen land more species than was the case under open access, so that there will be less discarding than before IFQ. Information on non-halibut landings (but not discards) is available from state fish tickets, but there is no observer coverage of the fishing activities on halibut fishing vessels. This means that there are no objective data on discards from the fishery. The NPFMC initially, in 1990, excluded the halibut fishery from observer coverage because of a perceived low need. The NPFMC is currently considering adding the halibut fishery to those requiring observers, but has not yet done so (Trumble 2004).

Inferences on US non-target species taken by the fishery may be possible from catches on the halibut longline surveys by IPHC, but these inferences are of dubious scientific validity because a) the catch-per-unit-effort of halibut in the IHPC surveys is much less than in the commercial fishery so it is clear that the two fisheries are not comparable, b) the survey fishery uses different gear from the commercial fishery (since it quite correctly aims to retain comparability with surveys in previous years) so that the bycatch will inevitably reflect these differences in gear, and c) the survey fishery has a different geographical distribution from the commercial fishery so will reflect differences in geographic distribution and habitat between the commercial fishery and the survey. The IPHC itself counsels against using the survey catch data to assess bycatch in the commercial fishery; for example it specifically does not report seabird bycatch on the survey on the basis that these data cannot be applied to estimate seabird bycatch in the commercial fishery (Leaman 2004). Although there is a

requirement for self-reporting of any bycatch of short-tailed albatrosses by halibut longline vessels, the incentive not to report any such incidents is extremely strong, and it would be extremely naive to imagine that a lack of reports of short-tailed albatross bycatch could be taken to demonstrate that these birds are never caught. We appreciate that the decision not to require observer coverage in the halibut fishery was made on the basis of perceived low need (and balancing high cost and operational difficulties where there are large numbers of relatively small vessels and often a lack of space for an observer). Nevertheless, given that the main issues of ecological impact of longline fisheries relate to problems of bycatch, this is a significant deficiency. Clearly the fishery fails to reach the 80 Guidepost.

CONDITION

Establish a scientifically defensible and comprehensive monitoring and reporting system for bycatch and discards taken directly from the halibut fishery. For example, this could be accomplished by extension of the existing observer program to cover a proportion of halibut vessels, or by development of electronic monitoring such as video to record catch and identify bycatch animals, if that can be shown to be suitably effective (McElderry et al. 2003).

2.1.2.2

Information is available on the extent of discards (the proportion of the catch not landed).

60 Scoring Guidepost

Information is available on the extent of discarding, including a species list and assessment of the main species represented.

80 Scoring Guidepost

Information is available to allow reliable estimates of discard to be calculated and interpreted.

100 Scoring Guidepost

Accurate information is available on the extent of all discards, and consequences of these, or the entire catch is landed.

SCORE 70

The text under 2.1.2.1 applies here. Essentially, this fishery lacks reliable data on what is discarded because there is no adequate monitoring of bycatch or of discarding behavior of the fishermen.

CONDITION

Same as for 2.1.2.1.

- 2.1.2.3** There is information on any unobserved fishing mortality (i.e. sources of mortality other than those above).

60 Scoring Guidepost

Areas of potential unobserved fishing mortality are identified but no further information is available.

80 Scoring Guidepost

Information from existing work has allowed qualitative estimates of unobserved fishing mortality to be made.

100 Scoring Guidepost

Research has been carried out on unobserved fishing mortality allowing quantitative estimates to be made (or it is known that significant unobserved mortality does not occur).

SCORE 80

Unobserved fishing mortality is considered to be rather a minor issue in most longline fisheries. There may be a few fish removed from hooks by predators (e.g. see Dalheim 1988, Yano and Dalheim 1995) and some small loss of fish and even of bycatch seabirds (Brothers et al. 1999), off hooks during the fishing operation, but these are unlikely to represent a major fraction of the total caught. It would be difficult to study such cryptic mortality. Survival rates of sublegal halibut caught on the longlines has been measured and these data are used in the estimation of fishing mortality. Information on lost gear is collected through logbook interviews and fishing logs received by mail (Leaman 2004, 2005), and used to estimate otherwise unaccounted mortality of halibut, but not of bycatch.

- 2.1.3** **There is adequate knowledge of the effects of gear-use on the receiving ecosystem and extent and type of gear losses.**

- 2.1.3.1** There is adequate knowledge of the physical impacts on the habitat due to use of gear, and impacts are kept below unacceptable levels.

60 Scoring Guidepost

- Main impacts of gear use on the habitat are identified including extent and location of use.
- Effects of habitat perturbations estimated and appear stable and at acceptable levels.

80 Scoring Guidepost

- Impacts of gear use on the habitat are identified including extent and location of use.

- Habitats appear sustainable, despite perturbations, and management acts on the basis of knowledge of physical impacts to keep these below unacceptable levels.

100 Scoring Guidepost

The physical impacts on the habitat due to use of gear have been studied and quantified, and this information has been used to reduce impacts to trivial levels.

SCORE 80

The halibut fishery avoids major impacts on habitat since it is entirely a longline fishery. Monitoring of the bycatch in the groundfish longline fishery through the observer program has shown that longlines do bring up a small bycatch of corals (Livingston 2001, 2003), but there are no equivalent data from the halibut fishery to demonstrate whether or not there is a similar impact in that fishery. Possibly the impact on corals may be less in the case of halibut longlines since these tend to be in shallower water than, for example, the black cod longlines. Based on the information existing for other longline fisheries and the fact that halibut fishing is likely to overlap less with coral distribution than the longline fishing for black cod, it would appear that the impact of the halibut longline fishery on habitats is very small, but given the deficiency in data on this we felt unable to give a score of any more than 80.

Recommendation

We are making a strong recommendation that the client and other members of the halibut fleet that participate in using the certification of the fishery, work together to promote a better understanding of the effects of longline gear on habitat in the fishery. There are a number of different interpretations about the effects of longline gear, and the differences often result due to differences in habitat types where fishing occurs. While the assessment team felt the fishery met the bare minimum for a pass on this indicator, it does not mean that the knowledge base is not in need of improvement. The better the knowledge base of habitat types in the fishery, and the effects of gear on different habitat types, the better the situation for making sustainable management decisions.

2.1.3.2

Any gear lost during fishing operations is documented, and management seeks to minimize losses.

60 Scoring Guidepost

Some recording of gear losses takes place, and management acts on the basis of this information to keep losses below unacceptable levels.

80 Scoring Guidepost

- There is knowledge of the type, quantity and location of gear lost during fishing operations.

- Estimates made show that losses do not cause unacceptable effects on the ecosystem.

100 Scoring Guidepost

- There is detailed knowledge of the type, quantity and location of gear types lost during fishing operations.
- The impact of gear loss on target and non-target species has been measured and shown to have negligible effects on habitats, ecosystems or species of concern.

SCORE 80

Information on lost gear is collected through logbook interviews and fishing logs received by mail (Leaman 2004, 2005), and used to estimate otherwise unaccounted mortality of halibut. Reported levels of gear loss are low and show little trend across years since the fishery became IFQ. It is difficult to assess the accuracy of self-reporting of gear loss, but there is evidence that loss is less under IFQ than it had been in the days of 'derby' fishing.

2.1.4

Strategies have been developed within the fisheries management system to address and restrain any significant negative impacts of the fishery on the ecosystem.

2.1.4.1

Levels of acceptable impact are determined and reviewed.

60 Scoring Guidepost

There is sufficient information to determine acceptable impacts for main target and non-target species and habitats.

80 Scoring Guidepost

Levels of acceptable impacts (e.g. biological reference points) for key aspects of the ecosystem within main fishing areas have been estimated and are reviewed no more than 10 year intervals.

100 Scoring Guidepost

Levels of acceptable impact for key populations (such as of indicator species) and habitats have been estimated and are subject to review every 1-5 years.

SCORE 85

This indicator specifically excludes consideration of threatened and endangered species, which are the focus of attention in 2.2.1.3. The NMFS reviews impacts on the ecosystem by groundfish fisheries in the annual 'Ecosystems Chapter' component of the groundfish SAFE Report (e.g. Livingston 1999, 2000, 2001, 2003, Boldt 2004) and in the groundfish PSEIS and EFH review (NMFS 2001a, NOAA 2003, 2004). Biological reference points appear to be

more implicit than explicit (which explains why the score is no more than 85), but the review of ecosystem considerations is extremely detailed and thorough, which accounts for the score exceeding 80.

2.1.4.2

Management objectives are set in terms of impact identification and avoidance/reduction.

60 Scoring Guidepost

Limited management systems exist in terms of impact identification and avoidance/reduction.

80 Scoring Guidepost

- Management objectives are set to detect and reduce impacts, although these have not been fully tested.
- These are designed to adequately protect aspects of the ecosystem within main fishing areas considered to be of high conservation value.

100 Scoring Guidepost

- Tested management objectives are set to detect and reduce impacts.
- These are designed to adequately protect ecosystems, habitats and populations of target and non-target species.

SCORE 80

The fact that halibut cannot be harvested by trawl fishing represents one strategy to restrain impacts on the ecosystem, since longline fishing has considerably less impact on benthic ecosystems than bottom trawling (Jennings et al. 2001). The objective here being to avoid significant impact on habitat structure, which trawling is often suspected of having. The development of an IFQ fishery also reduces impact, one of the objectives of the IFQ system, relative to the situation during a ‘derby’ fishery (Pautzke and Oliver 1997). Introduction of the requirement to use mitigation measures to minimize bycatch of seabirds on longlines has been an excellent example of good practice, and should avoid killing large numbers of northern fulmars as well as the particularly vulnerable and charismatic albatrosses such as Laysan and black-footed albatross which are currently not listed as threatened or endangered, but which show negative population trends that can be ascribed to increased mortality caused by longline fisheries (Rappoport 2003a,b) and which may be candidates for listing in the near future (Earthjustice 2004). The clear objective here is the regulatory minimum bycatch, as well as mitigating any other bycatch. There is, however, some uncertainty as to what impact the fishery may be having on rockfish, and there are no measures such as closed areas to protect locations with high bycatch of rockfish. Nor, without monitoring, can the requirement to use seabird mitigation measures, be demonstrated to be having the desired effect in this fishery. However, recovery of some bird populations are evident. Also, further work to

demonstrate effectiveness is being conducted by the U.S. Geological Survey staff with regard to Northern Fulmars in longline fisheries.

2.1.5

Assessments of impacts associated with the fishery including the significance and risk of each impact show no unacceptable impacts on the ecosystem structure and/or function, on habitats or on the populations of associated species.

2.1.5.1

All the significant effects of the fishery on the ecosystem have been identified.

60 Scoring Guidepost

Main impacts of the fishery on the ecosystem are known from existing information but have not been investigated in detail.

80 Scoring Guidepost

There is a comprehensive evaluation of the effects of the fishery on the ecosystem based on existing information.

100 Scoring Guidepost

The effects of the fishery on the ecosystem have been identified by appropriate comparative and/or experimental studies.

SCORE 80

The effects of longline fisheries are considered in the annual 'Ecosystems Chapter' component of the groundfish SAFE Report (e.g. Livingston 1999, 2000, 2001, 2003, Boldt 2004) and in the groundfish PSEIS and EFH review (NMFS 2001a, NOAA 2003, 2004). However, these reviews consider effects of longline fisheries other than the halibut fishery, and the assumption being made seems to be that the halibut fishery has at least no more impact than the other groundfish longline fisheries and perhaps less. While this assumption may be correct, it cannot be substantiated by data since there are no monitoring data from the commercial halibut fishery regarding bycatch or discards. For this reason, although we consider that the generic effects of each demersal longline fishery in the region are likely to be closely similar, we cannot score above 80 due to a lack of data from the halibut fishery itself. It is true to say that there is a comprehensive evaluation of the effects of the fishery on the ecosystem based on existing information, but it can also be stated that the existing information is deficient.

2.1.5.2

The impacts on ecosystem structure and function from removal of target stocks are held below unacceptable levels.

60 Scoring Guidepost

- The removal of target stocks is estimated but impacts on ecological systems are poorly known.
- A program exists that is thought to keep impacts below unacceptable levels.

80 Scoring Guidepost

- Some information is available on consequences of current levels of removal of target species.
- These suggest no unacceptable impacts of the fishery on ecological systems.

100 Scoring Guidepost

The ecological consequences of current levels of removal of target stocks have been quantified and documented to be within acceptable, pre-determined, limits that ensure no unacceptable impacts occur.

SCORE 90

Harvesting of halibut is conservative in terms of stock size and fishing mortality rate (see text in Principle 1), and there is no evidence to suggest that removal of halibut at the present fishing rate has an adverse impact on ecosystem structure or function. Ecosim and Ecopath models support the view that the current levels of harvesting of halibut are not affecting the ecosystem in an adverse manner.

2.1.5.3

The impacts on ecosystem structure and function from removal of non-target stocks are held below unacceptable levels.

60 Scoring Guidepost

- The removal of non-target stocks is estimated but impacts on ecological systems are poorly known.
- A program exists that is thought to keep impacts below unacceptable levels.

80 Scoring Guidepost

- Assessments are made of consequences of current levels of removal of non-target species.
- These suggest no unacceptable impacts of the fishery on ecological systems.

100 Scoring Guidepost

The ecological consequences of current levels of removal of non-target stocks has been quantified and documented to be within acceptable, pre-determined, limits.

SCORE 75

Although noting yet again the problem of deficiencies in data on the bycatch and discards in the halibut fishery, the fact that the fishery is managed as a longline fishery with an IFQ structure keeps environmental impacts at a low level relative to other types of fishery and management system. The implementation of seabird bycatch mitigation devices can be anticipated to reduce seabird bycatch very substantially relative to that which would occur without such regulations (Melvin et al. 2001, 2004a,b, Rivera 2004) and members of the halibut fishing community are to be congratulated on their pro-active approach to developing and implementing these mitigation measures even prior to the legislative requirement (Lundsten 1999, 2001, Smith 2001). However, a higher score is precluded by the fact that data on bycatch and discards are simply not available and so it is impossible to assess how effective the seabird bycatch measures are, or to assess the impact of the bycatch of rockfish and other fish species on their populations. In most cases it seems that rockfish bycatches are probably much less than the TAC in the rockfish fisheries, but this estimation can only be based on very insecure application of estimates of rockfish bycatch and discard rates that are really not much better than guesses.

The fishery clearly meets the 60 guidepost. We also believe it scores higher as there completed are ongoing studies to look at the effectiveness of seabird mitigation devices such as those deployed in this fishery.

CONDITION

Same as for 2.1.2.1.

2.1.5.4

Fishery impacts on habitat structure are held below unacceptable levels.

60 Scoring Guidepost

Impacts of the fishery on habitat structure within major fishing areas are estimated, although the issue has not been directly studied.

80 Scoring Guidepost

Impacts of the fishery on habitat structure within major fishing areas have been studied and are within estimated limits.

100 Scoring Guidepost

Effects on habitat structure are documented and are within acceptable tested/justified limits.

SCORE 80

There is no clear evidence that longline fishing for halibut has any impact on coral habitats. This seems unlikely to be a problem given the depths fished and the types of habitat where halibut occur. Moreover, this seems likely not to be a problem given the relatively low incidence of corals as bycatch in the black cod longline fishery which is generally in deeper water where interactions with coral habitat seem more likely to arise. Explicit considerations of impacts of groundfish longline fisheries (in general and in fact excluding consideration specifically of the halibut fishery) on habitat have concluded that there are no adverse impacts of concern (NMFS 2001a).

Recommendation

Again, we believe a recommendation is worthwhile on this point. As under indicator 2.1.3.1, we are making a strong recommendation that the client and other members of the halibut fleet that participate in using the certification of the fishery, work together to promote a better understanding of the effects of longline gear on habitat in the fishery. There are a number of different interpretations about the effects of longline gear, and the differences often result due to differences in habitat types where fishing occurs. While the assessment team felt the fishery met the bare minimum for a pass on this indicator, it does not mean that the knowledge base is not in need of improvement. The better the knowledge base of habitat types in the fishery, and the effects of gear on different habitat types, the better the situation for making sustainable management decisions.

2.1.5.5

The effects of the fishery on associated biological diversity and productivity are held below unacceptable levels.

60 Scoring Guidepost

Impacts of the fishery on biological diversity and productivity are estimated, although the issues have not been directly studied. Impacts are thought on the basis of best scientific opinion to be acceptable and sustainable.

80 Scoring Guidepost

Impacts of the fishery on biological diversity and productivity have been studied and are not unacceptable.

100 Scoring Guidepost

The effects of the fishery on biological diversity and productivity have been quantified and are within acceptable limits.

SCORE 80

Explicit considerations of impacts of groundfish longline fisheries (in general and in fact excluding consideration specifically of the halibut fishery) on biological diversity and productivity have concluded that there are no adverse impacts of concern (NMFS 2001a).

2.2 (MSC Criterion 2) **The fishery is conducted in a manner that does not threaten biological diversity (at the genetic, species or population levels and avoids or minimizes mortality of, or injuries to endangered, threatened or protected species).**

2.2.1 **Fishing is conducted in a manner that does not have unacceptable impacts on recognized protected, endangered or threatened species.**

2.2.1.1 There is information on the presence and populations of listed and protected species.

60 Scoring Guidepost

There is a program in place to identify protected, threatened and endangered species directly related to the fishery.

80 Scoring Guidepost

Key protected, threatened and endangered species directly related to the fishery have been identified.

100 Scoring Guidepost

- There is knowledge of all populations of protected species directly or indirectly related to the fishery including an assessment of temporal variability.
- The type and distribution of critical habitats have been identified.

SCORE 90

The only species listed as protected, threatened or endangered, that may be vulnerable to adverse impacts from the halibut longline fishery is the short-tailed albatross, which is at risk of increased mortality rate through bycatch (Rappoport 2003a,b). The biology, numbers, distribution and population dynamics of this species are very well known (Clark 2000, Rappoport 2003a,b). One of the less well known aspects for this species is its use of different habitats, and therefore its seasonal overlap with the distribution of halibut longline vessels. There are some data on the at-sea distribution, and these show a fairly inshore distribution, indicating a considerable overlap with halibut fishing distribution, but more data on at-sea distribution are required to identify 'hot-spots' for this seabird.

2.2.1.2 **The interactions of the fishery with listed and protected species are known.**

60 Scoring Guidepost

The main interactions directly related to the fishery are known.

80 Scoring Guidepost

Quantitative estimates are made of the effects of interactions directly related to the fishery.

100 Scoring Guidepost

Reliable quantitative estimates are made of the interactions of all populations directly related to the fishery, and qualitative information is available on indirect impacts.

SCORE 75

The hazard of longline fisheries to short-tailed albatrosses is well known; birds may inadvertently swallow or be snagged by hooks when stealing baits off longlines as they are being deployed into the sea (Brothers et al. 1999, Rappoport 2003a,b). The risk may be reduced considerably by use of mitigation devices such as tori lines (Melvin et al. 2001, 2004a,b, Rivera 2004). However, in the case of the halibut fishery, the interactions must be inferred from studies in other fisheries, as the observations and scientific studies have been based on the interactions of seabirds (including short-tailed and other albatrosses but numerically dominated by northern fulmars) with the longline fisheries for black cod and Pacific cod. There are no monitoring data on the numbers of birds killed in the halibut longline fishery, where the gear used differs in a number of potentially important ways from that used in the black cod and Pacific cod fisheries. Studies of the behavior of seabirds, including short-tailed albatrosses, in the context of the halibut longline fishery are limited to reports from fishermen rather than scientifically collected data following controlled experimental designs.

CONDITION

Same as for 2.1.2.1.

2.2.1.3

The level of interaction known to pose an unacceptable risk to such species is known, and impacts are held below unacceptable levels.

60 Scoring Guidepost

Known effects are within acceptable limits of national and international legislative requirements and are believed to create no biological threats to the species concerned.

80 Scoring Guidepost

Critical interactions are well estimated and do not threaten listed and protected species.

100 Scoring Guidepost

It is known that the direct and indirect effects of fishing on threatened and endangered species are within acceptable limits.

SCORE 75

There are no independently collected data on the numbers of short-tailed albatrosses killed as a result of bycatch in the halibut fishery. There is a clear need for monitoring studies to demonstrate that the mitigation measures now standard in the halibut fishery are achieving their objective of reducing seabird bycatch and specifically keeping the bycatch of short-tailed albatrosses at a negligible level.

CONDITION

Same as for 2.1.2.1.

While observer sampling 100% of the halibut fishing activity would be impractical, a lower level of observer sampling would, over years, provide a reasonable estimate of the rate of capture of short-tailed albatrosses, while an alternative may be use of video recording of the catch being brought onboard, allowing identification of seabirds from sampled video records.

2.2.2

Strategies have been developed within the fisheries management system that address and restrain impacts of the fishery to adequately protect threatened or endangered species.

2.2.2.1

In the case of threatened or endangered species, management objectives are set in terms of impact identification and avoidance/reduction.

60 Scoring Guidepost

Limited management systems exist in terms of impact identification and avoidance/reduction in relation to threatened and endangered species.

80 Scoring Guidepost

- Management objectives are set to detect and reduce impacts on threatened and endangered species.

- These are designed to adequately protect aspects of the ecosystem within main fishing areas, considered to be of high conservation importance.

100 Scoring Guidepost

- Tested management objectives are set to detect and reduce impacts.
- These are designed to adequately protect ecosystems, habitats and populations of target and non-target species.

SCORE 75

While the fishery deserves credit for applying regulations requiring mitigation measures to reduce seabird bycatch, the lack of any monitoring of the seabird bycatch being taken precludes evaluation of the effectiveness of this within the specific case of the halibut fishery. There seems also to be little compliance monitoring, so it is unclear how fully the fishery is implementing the regulations for use of tori lines.

CONDITION

Same as for 2.1.2.1

In addition, the fishery must provide evidence that it takes any data gathered into consideration in analyzing the effects of the fishery on the ecosystem and takes steps, where necessary, to mitigate risks to any organisms in the bycatch of the halibut fishery that are deemed to need it.

2.3 (MSC Criterion 3)

Where exploited populations (of non-target species) are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

2.3.1

There are management measures in place that allow for the rebuilding of affected populations.

2.3.1.1

There is sufficient information to allow determination of necessary changes in fishery management to allow recovery of depleted populations.

60 Scoring Guidepost

There is some information on functional relationships, sufficient to allow alterations to be made to fishing in a way that may reasonably be expected to recover and rebuild depleted species.

80 Scoring Guidepost

There is adequate information, combined with a precautionary approach wherever necessary, to allow alterations to be made to fishing in a way that may reasonably be expected to recover and rebuild depleted species.

100 Scoring Guidepost

- There is a clear understanding of functional relationships between the impacted population and the fishery.
- Intervention measures based on this understanding have been tested, and shown to be effective in promoting recovery and rebuilding of depleted species.

SCORE 90

The only species that is clearly identified as 'depleted' in the context of adverse interactions with the halibut fishery is the short-tailed albatross. This species, although listed as 'endangered', has a strongly positive population trajectory; its numbers have been increasing steadily for several decades, albeit from extremely low levels. But the fact that the numbers are increasing indicates that this population should recover even without any reduction of interaction with the halibut fishery. It should also be emphasized that the halibut fishery has not been in any way responsible for contributing to the endangered status of the short-tailed albatross. The species was reduced to the verge of extinction by direct human persecution, at a time when there was no longline fishery for halibut. There is clear understanding that the population will recover if demographics remain as they are now, and that protection from human persecution has been the one change required to achieve the trend to recovery (Clark 2000). It is possible that some of the rockfish stocks that are taken as bycatch in the halibut fishery may be considered depleted, depending on the definition of that word. But if so, then the changes in management necessary to achieve rebuilding of their stocks are evident; reduction in mortality rate.

2.3.1.2

Management measures are in place to modify fishery practices in light of the identification of unacceptable impacts.

60 Scoring Guidepost

A mechanism exists for the modification of fishing practices in light of the identification of unacceptable impacts.

80 Scoring Guidepost

Effective management measures are in place to modify fishery practices in light of the identification of unacceptable impacts, such as reducing fishing effort, establishing marine reserves, setting area and gear closures, setting spatial or temporal restrictions to fishing.

100 Scoring Guidepost

- Monitoring programs are in place within the management system to allow modification of fishery practices in light of the identification of unacceptable impacts.
- Objectives and limits for environmental change are used to guide operational practices.
- It is demonstrated that these are effective.

SCORE 80

The implementation of seabird bycatch mitigation measures represents a management measure in light of the uncertain risk of bycatch of short-tailed albatrosses. There is no monitoring set up to demonstrate that these measures effectively constrain bycatch, although experimental studies in another fishery suggest that they should be highly effective.

- 2.3.1.3 Management measures allow for recovery of affected populations.

60 Scoring Guidepost

Rebuilding measures exist and are fully implemented. Measures have not been tested.

80 Scoring Guidepost

- Appropriate rebuilding measures are being implemented.
- Measures have been tested and can be shown to contribute significantly to rebuilding the affected populations.

100 Scoring Guidepost

- Appropriate rebuilding measures are being implemented to promote recovery as quickly as is possible.
- Additional measures are being implemented to prevent problems in the future.

SCORE (Since the fishery has not contributed to the decline of any of the species listed as threatened or endangered we chose not to score this Indicator.)

MSC PRINCIPLE 3**MSC Principle 3**

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

For over 80 years, the US and Canada have delegated responsibilities for research and management of their Pacific halibut fisheries to an international commission, the International Pacific Halibut Commission (IPHC, formerly the International Fisheries Commission). The 1923 signing of the Convention establishing the Commission (U.S.-Canada 1923) was sparked by concern on the part of the fishing industries of both countries over possible overfishing of the halibut stocks on a coast wide basis. Catches had peaked in 1915 with 69 million pounds of halibut being landed but declined thereafter to slightly more than 40 million in the early 1930s (IPHC 1998). Throughout its eight decades, the history of the Commission has been characterized by close cooperation between the industry, the Commission and Governments, a much closer relationship than has existed in either country in the national management of most fisheries for other species.

The original Convention provided for a 3-month closed season during the winter and limitation of incidental catches of halibut in other fisheries during that period (any halibut caught in excess of those used to feed the fishing crews would be landed and sold to the highest bidder with the proceeds accruing to the governments). The Convention established the International Fisheries Commission to *make a thorough investigation into the life history of the Pacific Halibut and to make recommendations as to the regulation of the halibut fishery...* The Commission was also empowered to make recommendations, if appropriate, for the modification of the dates of the winter closure.

Over the years, the terms of the Convention have been renegotiated periodically to meet new requirements for conservation and for other management objectives of the parties. Thus, in 1928, when the Commission reported that the closed season alone could not protect the resource, a new Convention was signed in 1930 and ratified on May 9, 1931 empowering the Commission to establish regulatory areas, to recommend regulations to limit the halibut catch from each area, to regulate the licensing and departure of vessels for halibut fishing, to collect statistics, to regulate the type of gear, and to prohibit fishing on nursery grounds where young fish are concentrated. The new Convention established a Conference Board of fishermen and vessel owners to provide a forum for discussion of regulatory proposals (IPHC 1998).

A further renegotiation in 1937 increased the Commission's regulatory powers to improve control of vessels catching halibut incidentally while fishing for other species during the halibut closed season.

Increased fishing pressure on the stocks following World War II led to development of a new Convention signed and ratified in 1953 (U.S.-Canada 1953) that permitted the Commission to establish multiple seasons within a fishing area to distribute fishing effort in accordance with seasonal availability of different stocks. The new Convention established a specific objective

for management of the fishery requiring the Commission's management to develop and maintain halibut stocks at a level that would permit achievement of the maximum sustainable yield.

To this point the fleets of both countries had fished side by side off the coasts of Alaska, British Columbia and Washington, mainly in areas outside the 3-mile territorial limits of both countries. Beginning in the 1960s both countries embarked on extensions of the outer limits of their fisheries jurisdictions, mainly as measures to prevent the development of third-party fisheries off their shores by overseas nations. This culminated in the establishment of 200-mile offshore limits of both countries in 1977. Initially the two coastal states permitted continuance of fisheries by fishermen of the other country in their expanded zones, but this soon came to an end. The US Magnuson Stevens Fisheries Conservation and Management Act (MSA) of 1976 required renegotiation of all international fisheries treaties. The ensuing negotiations led, in March 1979, to conclusion of a Protocol to the Convention that called for a two-year phase-out of reciprocal fishing privileges between the two countries.

IPHC set quotas for 3 separate regulatory areas. Management Area 2 of the Convention spanned the boundaries of the two countries. As a consequence of the phasing out agreement, the Parties were faced with the question of how the quota for Area 2 should be shared. Consequently, based generally on the "average long-term productivity" of the stocks in the Canadian and Alaskan subareas within Area 2, the Protocol provided that until 1981, 60 percent of the catch in Area 2 be taken in Canadian waters (Area 2B) and 40 percent in U.S. waters.

Following 1981, the Protocol provided that the Commission could review and recommend changes in the sharing arrangements. Following negotiation of the Protocol in 1979, the distribution of the stocks diverged from the long-term average; Southeast Alaska stocks became proportionately more abundant than those in British Columbia. As a consequence, in 1985, the Commission recommended a departure from the 60/40 requirement, proposing adoption of a strategy wherein a constant proportion of the exploitable biomass in each region would be harvested and that such a strategy would be followed until the stock returned to its long term average 60/40 distribution.

In addition to its phasing-out provisions, the 1979 Protocol:

- Altered the Commission's mandate from managing on the basis of maximum sustained yield to that of optimum yield.
- Allowed either party to establish additional regulations which are more restrictive than those adopted by the Commission.
- Eliminated the Commission's authority to regulate the departure of vessels.

As elaborated in the technical report, increasing efficiency of the halibut fleets and increase in effort (particularly in Alaska where exclusion of Canadian fishermen under the phase-out provisions of the Protocol provided an increase in availability of halibut to the US fleet) resulted in substantial increases in the exploitative capacity of the fleets. With essentially open access to the fishery this led to a "race for fish" or "derby fishery" situation and with

allowable fishing time being sharply reduced resulting in desperate and sometimes dangerous competition within the enlarged fleets and undesirable flooding of markets when large portions of allowable catches were landed during short fishing times. By 1979, it became apparent that limitation of entry was necessary for effective conservation and orderly conduct of the halibut fisheries in both countries.

In this regard, the “optimum yield” provision of the Protocol was of little help. As outlined in a 1992 IPHC Technical report (McCaughran and Hoag 1992) noted that: *The change in the Commission’s mandate to optimum yield has made the Halibut Convention consistent with the pronounced national goals of Canada and the U.S., and according to the U.S. definition of optimum yield, allows the Commission to consider social and economic factors. However, optimum yield has never been well defined, and interpretations of both governments have not allowed the Commission to limit entry or explicitly allocate among user groups.*

US Administration

As will be discussed in more detail later, although biological conservation measures for halibut in Alaskan fisheries were left in the hands of IPHC, implementation measures (e.g. allocation issues) and measure to mitigate ecological impacts of the halibut fisheries fell to the US federal government particularly the National Marine Fisheries Service (NMFS) and associated consultative arrangements established under the authority of the MSA. The MSA established eight Fisheries Management Councils throughout the United States to propose management measures for all US fisheries beyond the limits of state jurisdiction. The North Pacific Fisheries Management Council (NPFMC) was charged with responsibility for management of federal fisheries off the coast of Alaska, the only one of the eight commissions to be given such responsibilities for management off the coast of a single state.

The functions and administrative operations of the NPFMC were discussed in detail in a companion MSC Assessment Report dealing with Alaskan black cod (MSC 2005). This discussion will not be repeated here. Briefly, however, management of federal fisheries by the NPMFC is developed through the elaboration of Fisheries Management Plans (FMPs) for individual fisheries or complexes of fisheries. Since appointed in 1976, the Council has prepared and implemented five such plans, two of which dealt with groundfish, the Bering Sea/Aleutian Islands (BSAI) Groundfish FMP including pollock, cod, flatfish, black cod, rockfish, etc., but, as discussed above, omitting biological management considerations of the halibut fishery which were the preserve of IPHC and the Gulf of Alaska (GOA) Groundfish FMP, mirroring the BSAI Groundfish FMP for Alaskan waters south and east of the Aleutian chain, again excluding biological management considerations of the halibut fishery.

These management plans were developed with intensive consultation with the US fisheries community and took into account the requirements of US legislation other than the main piece of legislation dealing with fisheries, the MSA. In the present MSC assessment, the most prominent of these is the National Environmental Policy Act (NEPA)¹ that requires federal

¹ 42 U.S.C. § 4321-4347; Pub. L. 91-190, as amended.

agencies to prepare a detailed environmental evaluation for any federal action significantly affecting the quality of the human environment. Federal fisheries management actions subject to NEPA requirements include approval of FMPs, FMP amendments and FMP implementing regulations. Such approval requires preparation of either an environmental impact statement (EIS) for major fishery management actions that significantly affect the quality of the human environment or an environmental assessment (EA) for fishery management actions that will not significantly affect the human environment.

Council decisions regarding any fisheries management plan (or amendment) are subject to review by NMFS (a function delegated by the Secretary of Commerce) to determine if they are consistent with national standards, other provisions of the MSA and any other applicable law (such as NEPA). Following the review, the plan is approved, disapproved or partially disapproved. If disapproved in whole or in part, NMFS must specify to the Council the nature of the inconsistencies and recommend how the plan or amendment should be changed to conform with applicable law. Thus, NMFS has the final word on whether a transmitted plan is consistent with applicable law, not the Council.

NMFS also reviews proposed regulations transmitted by the Council to ensure these are consistent with the plan or amendment, the provisions of the MSA and other applicable law. Not being included in the FMP, halibut management measures recommended by the Halibut Commission are not directly subject to the requirements of NEPA and other non-fishery legislation requiring an EIS nor EA, although the measures are subject to the approval of the Secretary of Commerce and complementary measures adopted by NMFS (e.g., domestic sharing arrangements of allowable catches – see below) are developed through the NPFMC and are subject to the same procedures as non-halibut species covered by FMPs.

When approved final regulations are recorded in the US Federal Register, supervision of the conduct of the fishery in federal waters is the responsibility of NMFS. Enforcement of the regulations is carried out by NMFS and Coast Guard vessels and officers. State fishery officers also assist with this enforcement. The MSA provides for civil and criminal penalties for violations of fisheries laws and regulations.

NPFMC Consideration of Halibut Issues

When the MSA came into force in 1976, in the face of the requirement to renegotiate all fisheries treaties, there was a chance that negotiations regarding the halibut fishery would be concluded quickly. The Council therefore began to develop an independent FMP for the Alaska halibut fishery (Pautske and Oliver loc.cit.). As discussed above, however, agreement between the US and Canada was reached relatively speedily with agreement on the 1979 Protocol which defined the roles of IPHC and the national governments in management of the halibut fisheries.

By leaving the development of conservation measures in the hands of IPHC, the conclusion of the Protocol negated the need for a separate FMP for halibut, but left open the need for a legal structure for implementation of the domestic aspects of the Protocol (allocation etc.) To meet this need, Congress passed the Northern Pacific Halibut Act of 1982. *Inter alia*, the Act:

- Established that of the three US Commissioners on IPHC, one should be a member of the NPFMC, the other two should be knowledgeable concerning the halibut fishery and, of these, one should be a resident of Alaska and one a non-resident of Alaska.
- Provided that the NPFMC have authority, subject to the US Secretary of Commerce, to develop regulations which are not in conflict with IPHC regulations.
- Provided general responsibility for the Secretary of Commerce to carry out the IPHC Convention and the 1982 Halibut Act.
- Allowed opportunity for coastal villages of Alaska to establish a commercial fishery.
- Defined penalties for violations, funding, enforcement and legal responsibilities.

With agreement that the US could enact legislation complementary to IPHC conservation regulations, the Council accelerated efforts to overcome the growing problems of overcapitalization in the halibut fishery.²

In the US, enactment of the 1982 Northern Halibut Act set in train a series of policy studies and consultations with industry (See McCaughran and Hoag loc. cit. and Pautske and Oliver, 1997) aimed at controlling entry. As described by Pautske and Oliver, divided responsibilities and lack of consensus among participants in the fishery slowed the development of an effective program to limit entry.

At the beginning there was some ambiguity regarding the authorities of the IPHC and the Council regarding allocation of fishing opportunities within the US. In 1987, pursuant to the 1979 Protocol and the 1982 Halibut Act, clarification was provided when NOAA informed the IPHC that recommendations for management of the halibut fishery involving domestic allocation of the halibut resource should be made by the *appropriate Regional Fisheries Management Commission* (i.e. the NPFMC) and not IPHC. The NOAA instruction continued: *This provides for extensive public involvement both during the Council process and in the subsequent rulemaking. Decisions involving the conservation and management of halibut stocks, or the international allocation of the halibut harvest will continue to be made by IPHC.*³

In Alaskan waters, the highly contentious subject of who should be allowed to fish under any entry limited scheme was complicated by the fact that the traditional halibut fishing fleet was focused in Washington State, whereas the development of extended US jurisdiction off the Alaskan coast led to increasing ambitions of local Alaskan fishermen to harvest the resources off their shores.

Aside from difficulties in balancing the interests of different sectors of the fleet, in the late 1970s and throughout the 1980s, difficult discussions were held between the Council and the federal government regarding approaches to limitation of entry into the halibut fishery.

² Faced with similar problems, following conclusion of the 1979 Protocol, Canada introduced a limited entry system in 1979 that halted expansion of the Canadian fishery. This led, in 1991, to the introduction of a Canadian individual vessel quota system.

³ May 211987 letter from William E. Evans, NOAA Assistant Administrator for Fisheries to Dr. Donald A. McCaughran, Director of IPHC.

Within the Council, the first proposals called for a moratorium on the issuance of new halibut licenses. As described by Pautske and Oliver, the federal government considered that this approach was inadequate and was not consistent with Executive Order 12291⁴ which held that the impacts and burdens of regulations had to be minimized, and regulations could be imposed only when benefits could be shown to outweigh costs. Federal regulators felt the Council proposals did not meet these tests.

It is beyond the purview of the present assessment to follow the details of the debates and discussions, but in short, as described by Pautske and Oliver, decisive action was delayed until late 1988 when the focus of discussions within the Council focused on longline fishery for black cod. Consideration of overcapitalization issues for black cod led the Council to propose a series of options for management, one of which was the establishment of individual fishing quotas (IFQs) and licenses. Discussions ensued and two years later the Council chose IFQs as the preferred management option and extended this approach to include halibut as well. The debate culminated, in 1994, with the NPFMC developing regulations for an individual fishing quota (IFQ) system that were first implemented in 1995. Similar arrangements have not been made for the US halibut fishery off the Washington coast where the commercial fishery continues on the “derby” model.

The arrangements included reservations of portions of the US halibut quotas for Community Development Programs to assist disadvantaged Western Alaskan communities (mainly native) to improve their economic and social well being.

The IPHC

As outlined above, the focus of US management activity has been primarily directed toward developing systems for allocating fishing opportunities. Following the eight-decade tradition, responsibility for recommending biological management measures to the Parties remains delegated to the IPHC.

The Pacific Halibut Convention, as amended by the 1979 Protocol, prohibits any fishery for halibut by either country except as permitted by IPHC Commission regulations:

Nationals and fishing vessels of, and fishing vessels licensed by, Canada or the United States may fish for halibut in Convention waters only in accordance with this Convention, including its Annex, and as provided by the International Pacific Halibut Commission in regulations promulgated pursuant to Article III of the Convention and designed to develop the stocks of halibut in the Convention waters to those levels which will permit the optimum yield from the fishery and to maintain the stocks at those levels.

The Commission established to implement the Convention is headed by six Commissioners, three appointed by each country. The Commission is served by a scientific and technical staff

⁴ 46 FR 13193

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headed by a Director selected by the Commissioners. The Convention (Article III para. 2) mandates that:

The Commission shall make such investigations as are necessary into the life history of the halibut and may conduct or authorize fishing operations to carry out such investigations.

As discussed in more detail in the sections in this report dealing with MSC Indicators under Principle 1 and, following this introduction, in discussion of Indicators under Principle 3, the Commission staff conducts an extensive research and monitoring program including the annual conduct of an at-sea standardized stock assessment survey covering over 1,000 stations, collection and analysis of commercial catch statistics, sampling of catches in port to provide data on size and age of halibut harvested, and tagging experiments to determine migratory movements. The information is used as the basis for sophisticated stock assessment analyses to guide the Commission in making decisions on the magnitude and distribution of allowable harvests.

The Convention (Article III para.3) provides the Commission with broad powers to develop, with approval of the parties, regulatory measures for management of the halibut fisheries:

For the purpose of developing the stocks of halibut of the Northern Pacific Ocean and Bering Sea to levels which will permit the optimum yield from that fishery, and of maintaining the stocks at those levels, the Commission, with the approval of the Parties and consistent with the Annex to this Convention, may, after investigation has indicated such action to be necessary, with respect to the nationals and fishing vessels of, and fishing vessels licensed by, Canada or the United States, and with respect to halibut:

- (a) divide the Convention waters into areas;
- (b) establish one or more open or closed seasons as to each area;
- (c) limit the size of the fish and the quantity of the catch to be taken from each area within any season during which fishing is allowed;
- (d) during both open and closed seasons, permit, limit, regulate or prohibit the incidental catch of halibut that may be taken, retained, possessed, or landed from each area or portion of an area, by vessels fishing for other species of fish;
- (e) fix the size and character of halibut fishing appliances to be used in any area;
- (f) make such regulations for the licensing of vessels and for the collection of statistics on the catch of halibut as it shall find necessary

to determine the condition and trend of the halibut fishery and to carry out the other provisions of this Convention;

(g) close to all taking of halibut any area or portion of an area that the Commission finds to be populated by small, immature [sic] halibut and designates as nursery grounds.

The Commission meets at least once a year. To assist in its deliberations, the Commission seeks advice from a number of sources.⁵

To assist in the Commission's scientific program, each country appoints one scientific advisor. These appointees generally work for the governmental fishery science and management agency in their respective country.

The Commission also obtains advice from the collective fishing community of the two countries. Beginning in 1931, the Commission has been assisted by a Conference Board representing Canadian and United States commercial and sport halibut fishing interests. The Board was established to obtain recommendations from the fishing fleet on conservation measures. Its members are designated by union and vessel owner organizations of both countries. Following staff presentations and proposals at the IPHC Annual Meeting, the Board meets simultaneously with the Commission to discuss the proposals. Their recommendations are then presented to the Commission for consideration. In addition, three representatives of the Board from each country are invited to attend Commission interim meetings.

The Processor Advisory Group (PAG), formed in 1996, is an advisory panel consisting exclusively of processors from both the United States and Canada. The Commission hears the PAG recommendations as well as the Conference Board recommendations at the Annual Meeting before setting regulations for the coming year.

The product of the Commission's annual cycle of research, assessment, consultation and deliberation is a set of recommendations to the parties regarding regulations for the next fishing season.⁶ These recommendations encompass the designation of regulatory areas, allowable fishing periods, closed fishing periods, closed areas, catch limits (quotas by areas and allowances for incidental catches), fishing period limits, size limits, careful release of undersized halibut, maintenance of vessel logs of halibut fishing operations, limitations on offloading and onshore buying of halibut catches, limitation to hook and line gear and the nature of its use, supervision of unloading and weighing of landings, arrangements for fishing by US Treaty Indian Tribes and by customary and traditional fishing in Alaska and regulations for recreational fishing.

The US Regulatory Framework

In the US, as specified in the Halibut Act (Halibut Act, 16 U.S.C. 773–773k), annual management measures recommended by IPHC and approved by the Secretary of State with

⁵ The following information is well summarized in IPHC Technical Report 40. The Pacific Halibut: Biology, Fishery and Management. 64 pp.

⁶ For example; IPHC. 2004. Pacific Halibut Regulations. 22 pp.

the concurrence of the Secretary of Commerce are published in the US Federal Register *to provide notice of their effectiveness, and to inform persons subject to the regulations of the restrictions and requirements* (50 CFR 300.62). The measures may be added to or amended through adoption by IPHC or as adjusted by the Commission in-season. The regulation specifies that the regulatory *measures may include, inter alia, provisions governing: Licensing of vessels, in season actions, regulatory areas, fishing periods, closed periods, closed areas, catch limits (quotas), fishing period limits, size limits, careful release of halibut, vessel clearances, logs, receipt and possession of halibut, fishing gear, retention of tagged halibut, supervision of unloading and weighing, and sport fishing for halibut.*

Supplementary, but “not conflicting” measures developed under the umbrella of the halibut regulations include provisions for development of catch sharing plans for Area 2A off the Washington coast and southward (50 CF 300.63) and off Alaska (300.65), fishing for halibut by U.S. Indian Treaty Tribes (300.64) and a list of prohibitions for retention of halibut at times and places other than those prescribed in halibut regulations. Regulations regarding the deployment of gear (including adoption of seabird avoidance measures) are covered in 50 CF 679.20 through 28, the Western Alaska Community Development Program (which deals with halibut quotas for western Communities) under 50 CF 630.30 through 32 and the IFQ Program under 50 CF 679.40 through 45.

3.1 The strategic framework for management is adequate for planning, conduct and evaluation of a management program consistent with MSC Principles and Criteria

3.1.1 The management system has a clearly defined scope capable of achieving MSC Principles and Criteria and includes short and long-term objectives, including objectives for managing ecological impacts of fishing, consistent with a well-managed fishery.

3.1.1.1 All elements in the fisheries management system, both national and international, and governmental and private, have clear-cut lines of responsibility. Their functions, particularly those involving interactions between elements, are clearly defined.
[Relates to MSC Criterion 3.2]

Elements considered in the scoring include

- Clear-cut indications of interactions between elements
- Explicit statements of fisheries management responsibilities for individual elements, especially regarding interactions between elements
- Demonstration of effectiveness of interactions

60 Scoring Guidepost

- Organizations interacting in the management process have been identified.

- Functions and responsibilities for interactions with other management entities need refinement.
- Interactions between elements exhibit occasional specific problems.

80 Scoring Guidepost

- Organizations with management responsibilities have been identified.
- For the most part, functions and responsibilities requiring interactions with other management elements are explicitly defined.
- In general, interactions between elements are effective and operate without serious difficulties.

100 Scoring Guidepost

- Organizations with management responsibilities and their functions, particularly respecting interactions with other management elements, are clearly defined.
- Interactions between elements are effective and run smoothly.

SCORE 95

IPHC

As discussed in the introduction to this section, the US and Canada have delegated to IPHC, subject to approval of the parties, responsibility for research and development of management measures for their fisheries for Pacific halibut. As discussed in more detail below, US and Canadian fisheries authorities retain the responsibility for allocation of shares of IPHC quotas among their nationals, supplementary measures regarding the conduct of fishing and for enforcement. Under these circumstances, conduct of the halibut fishery is subject to the dual control of IPHC and the national governments.

The functioning of the Commission has, in the main been smooth and generally devoid of substantive disputes and conflicts between the Parties. Underlining the cooperative nature of the relationship, over the years, the terms of the Convention have been renegotiated periodically to meet new requirements for conservation and for other management objectives of the parties.

The biggest change occurred in the late 1970s when both countries extended the outer limits of their fisheries jurisdictions to 200 miles and when technological developments and increasing numbers of vessels participating in the fisheries demanded more sophisticated approaches to management involving control of entry to the fishery and, within each country, the allocation of shares of quotas among different elements of their fleets.

In 1979, responding to the changed circumstances, a Protocol to the Convention was concluded that would permit either party to establish additional regulations which are more restrictive than those adopted by the Commission. This permitted the countries to develop

programs to control entry to the fishery and to allocate fishing opportunities among their own nationals; the Individual Fishing Quota (IFQ) and Community Development Quota (CDQ) programs in Alaska and the Individual Vessel Quota (IVQ) program in Canada.

The new regime of dual responsibilities between IPHC and national governments created some initial problems. The North Pacific Fisheries Management Council developed the US measures for allocation, but asked IPHC to include these regulations as part of the total regulations for the halibut fishery. As reported by McCaughran and Hoag (1992), many of the Commission's responsibilities were allocative, creating a potential for conflict between the Councils and IPHC. Discussions between the Team and IPHC staff did not indicate that the potential overlap in responsibilities was currently a problem.

Overall, the Team considers that, with over 80 years of operation, a tradition of cooperation and lack of indications of any apparent controversies, the division of responsibilities between IPHC and US and Canadian fisheries authorities are clear and that interactions between the three are effective and run smoothly.

US Domestic Issues

In Alaska, fisheries for halibut are conducted both in inshore Alaska State waters and offshore in the US Exclusive Economic Zone (EEZ). NMFS and the Alaska Department of Fish and Game cooperate to ensure that the fisheries in both areas are conducted in accordance with IPHC regulations and relevant national US law. In discussions with NMFS officials, difficulties in ensuring effective cooperation was not apparent.

In the implementation of IFQ and CDQ quota programs and many other aspects of the halibut management system, the cooperation of industry organizations is important. Although the historical development of some of the programs was fraught with controversy (e.g. see Pautzke and Oliver 1997), the Team was not informed of any notable difficulties in industry/government cooperation in management implementation at the present time.

Summary

Although, as will be discussed under other Indicators, there would appear to be some systemic problems with the overall US halibut management system, the Team concludes that these do not stem from lack of definition of the roles of national and international agencies responsible for development and implementation of the halibut management measures. The interactions between all agencies involved would appear to be very effective and run smoothly, warranting a score of 95.

3.1.1.2

**The management system incorporates and applies an adaptive and precautionary exploited stock strategy.
[Relates to MSC Criteria 3.2, 3.7, 3.9, 3.10]**

Elements considered in scoring include

- Clear long-term objectives

- Application of precautionary approach
- Use of best scientific information
- Explicit catch control rule (e.g., ABC, TAC)
- Annual assessment of stocks

60 Scoring Guidepost

- There are general management objectives that seek to maintain stocks at high levels of productivity.
- The harvest control strategy is consistent with objectives, but lacks specificity.
- The harvest control strategy is conservative but not sufficiently precautionary, not taking into account of uncertainties regarding the status of the stocks.
- The management system provides for making estimates of all catches, landings and bycatch and for making annual assessments of the status of all stocks.

80 Scoring Guidepost

- There are long-term management objectives that seek to maintain stocks at high levels of productivity.
- The harvest strategy, including catch control rule, is explicitly precautionary.
- The management system provides for making estimates of all catches, landings and bycatch and for making annual assessments of the status of all stocks.

100 Scoring Guidepost

- The management plan includes long-term stock management objectives that are explicit and consistent with MSC Principles and Criteria.
- The harvest strategy, including catch control rule, is explicitly precautionary, accounting for variances in survey estimates, uncertainties in stock assessment advice, and other risk factors.
- The management system provides for making estimates of all catches, landings and bycatch and for making annual assessments of the status of all stocks.

SCORE 95

As discussed above, IPHC is responsible for developing the recommendation for conservation of the Pacific halibut fisheries of both Canada and the US. This assignment is mandated through the 1953 Halibut Convention, as modified by the 1979 Protocol. The Convention and its Protocol provide only the most general guidance regarding strategies for managing the halibut fisheries, requiring only that management measures be recommended *[f]or the purpose of developing the stocks of halibut of the Northern Pacific Ocean and Bering Sea which will permit the optimum yield from that fishery...*

In general, however, as discussed in the introduction, the Convention has been modified several times to increase the Commissions ability to recommend increasingly comprehensive conservation measures

From the practical point of view, management policies have not been mandated from on high, but are developed by the Commission itself, which includes representatives of the governments of Canada and the US. The government representatives participate in the Commission's deliberations with backgrounds of their own national fisheries policies and with awareness of how measures proposed by IPHC would fit in with the overall management approaches within their own countries. For the US, the FMPs for Alaska groundfish are most relevant in this respect. Many halibut vessels fishing in Alaska fish black cod, a species managed under the Gulf of Alaska (GOA) and Bering Sea and Aleutian Islands (BSAI) FMPs. It would be expected that the input of US commissioners to IPHC proceedings would carefully consider the relation of IPHC regulations and the objectives and implementation arrangements of the Alaskan groundfish FMPs.

In the recent restatement of objectives of the Alaskan FMPs, (see introduction to this section above), there is considerable emphasis on the need for the plans to reflect adaptive and precautionary approaches. Thus, regarding measures to prevent overfishing, the FMP objectives include:

- *Adopt conservative harvest levels for multi-species and single species fisheries and specify optimum yield.*
- *Continue to use the existing optimum yield cap for the BSAI (as stated in current law) groundfish fisheries.*
- *Provide for adaptive management by continuing to specify optimum yield as a range.*
- *Initiate a scientific review of the adequacy of F_{40} and adopt improvements, as appropriate.*
- *Continue to improve the management of species through species categories.*

Reflecting the need for a precautionary and adaptive approach, with the guidance of government commissioners, supported by industry, IPHC has taken a parallel course and has adopted conservative approaches in recommending management measures for the halibut fishery. Examples illustrated by the analyses conducted in the present review in relation to Principle 1 (see above) include:

- An extensive standardized longline survey is conducted annually to provide estimates on the abundance and density of the stocks. The assessment of results is precautionary since it takes into account the consequences of uncertainties in making abundance estimates by choosing the more conservative estimates generated in the analyses (Indicator 1.1.1.6).
- The harvest policy now in use at the IPHC for establishing annual quotas is a modified constant harvest rate policy wherein a range of constant harvest rates are examined to determine the impact on yield, exploitable biomass, and spawning biomass. In all analyses, two biomass reference points, termed the “threshold” and

the “limit” are employed. Both terms refer to female spawning biomass. The limit point is the minimum observed historical spawning biomass in each regulatory area. The threshold is 150% of the limit. The full constant (or target) harvest rate applies as long as spawning biomass is above the threshold. The harvest rate is scaled down linearly from the full rate at the threshold to a rate of zero when spawning biomass reaches the limit. The conservative harvest rate that keeps the stock away from the low level of the limit reference point is precautionary. In addition to this formal procedure, the Commission’s advisory bodies have traditionally been conservative about yield changes and the Commission itself has also adopted a conservative approach to stock management (Indicator 1.1.3.1). Current spawning biomass is far above the threshold level (Indicator 1.1.5.4).

- In the assessment model used by IPHC, significant uncertainties are addressed (such as those relating to changes in survey catchability) and taken into account (Indicator 1.1.5.2).
- Forward simulations have been carried out for a number of years. These studies show the precautionary nature of current harvest rates and *provide a high degree of confidence in the harvest evaluation* (Indicator 1.1.1.5).

The Team concludes that, although IPHC itself does not have specific treaty mandated requirements to adopt a precautionary and adaptive approach, the workings of the Commission, involving the participation of managers of the national fisheries of Canada and the United States, have resulted in the adoption of very conservative approaches. The management philosophy is consistent with approaches taken in both Canada and the US for management of their purely domestic fisheries, warranting a high score of 95 for this Indicator.

3.1.1.3

**The management system incorporates and applies an effective strategy to manage ecological impacts of fishing.
[Relates to MSC Criteria 3.2, 3.7, 3.9, 3.10]**

Elements considered in scoring include:

- Clear long-term objectives
- Application of precautionary approach
- Consideration of impacts on non-target species and habitats over time and space

60 Scoring Guidepost

- Assessments of ecological impacts have been made.
- Where impacts have been identified, steps have been taken to develop some precautionary control measures.
- There is a need for further assessments.

80 Scoring Guidepost

- Assessments (empirical or other) of likely significant ecological impacts of fishing are undertaken on a regular basis.
- Where assessments demonstrate possible ecological impacts, the management plan explicitly takes such impacts into account.
- The regulation of the fishery to manage ecological impacts of fishing is precautionary.
- Where appropriate, the plan includes control mechanisms to minimize impacts.

100 Scoring Guidepost

- The management system includes a plan with clear long-term objectives for managing ecological impacts of fishing that are explicit and consistent with MSC Principles and Criteria.
- The plan requires regular assessments of the status of ecosystem components, taking into account all significant (identified or estimated) ecological impacts of the fishery, including but not limited to food competition, disruption of prey fields, disruption of foraging behavior, disruption to animals, and alterations in food webs and habitats.
- The plan includes all ecosystem components and is explicitly precautionary, accounting for uncertainty.
- Where appropriate, the plan includes mechanisms (such as representative areas set aside as no-take zones) to minimize identified impacts from fishing.

SCORE 79

IPHC Management Measures

As outlined in the introduction to Principle 3, development of management measures for the Alaska halibut fishery are divided between the IPHC which provides recommendations regarding conservation measures and NMFS which develops supplementary measures such as regulations regarding the allocation of portions of allowable catches among US nationals.

As outlined in the discussion of the previous Indicator regarding IPHC's role, the Convention which established the Commission provides only general guidance as to the policies to be followed. Practical policies for the halibut fisheries are therefore developed by the Commission itself, with recommendations for action being subject to approval by the two governments.

The mandate of IPHC is clearly focused on the target species, halibut. None of the regulations recommended by the Commission deal with incidental catches of species other than halibut or with avoidance of habitat degradation. Although IPHC, in cooperation with national agencies, does some research on non-halibut issues, for example testing the use of digital video for monitoring the compliance of seabird avoidance devices and seabird mortality in halibut longline fisheries and shoreside interviews and studies of logbooks regarding bycatches of non-halibut species, its regulatory responsibility ends with the submission of its recommendations to the two member governments.

Once accepted by the United States, the halibut management measures are promulgated through the Northern Pacific Halibut Act of 1982. Pursuant to the Act, annual recommendations for regulatory measures by IHPC, approved by the US Secretary of State with the concurrence of the Secretary of Commerce, are published directly in the US Federal Register without NPFMC and NMFS oversight. Because of this regulatory arrangement, halibut is the only commercially important Alaskan groundfish species that is not covered by the NPFMC Groundfish FMPs. For fisheries covered by the plans, NMFS is required to certify that regulatory actions are in conformity with all relevant US legislation, particularly the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA)⁷. By not being included in the plans, the IPHC-recommended regulatory program for halibut is not subject to tests of conformity with US laws.

By drawing attention to this difference, the team is not suggesting that IPHC-recommended management measures are inconsistent with US law or with adequate protection of the ecology and habitat. However, it does mean that the halibut fisheries performance is not subject to intensive review for conformity with NEPA and ESA. As discussed later, it was the mandatory reviews of FMP amendments in relation to NEPA that resulted in the development of the comprehensive analysis of biological and socio-economic impacts of the fisheries as part of the preparation of the Final Alaska Groundfish Programmatic Supplemental Environmental Impact Statement (PSEIS)⁸, the key document that led to the 2004 major broadening of the objectives of the Alaskan Groundfish FMPs to include more focused consideration of environmental issues. Inclusion of halibut in such a review might have been useful in clarifying questions regarding the impact of the halibut fishery on the ecology and habitat.

From the foregoing, it is concluded that the IPHC-recommended management measures adopted by the US do not incorporate and apply an effective strategy to manage ecological impacts of fishing relative to the halibut fishery. We note that there are many efforts to understand general ecological conditions in the area and to monitor large scale changes in ecosystem function. However, the direct impacts associated with halibut fishing are difficult to tease out of the general trends to make sure that the fishery-specific impacts are in line with the general observations.

US Supplementary Measures

As outlined in the introduction to Principle 3, the 1979 Protocol to the Halibut Convention and the 1982 Northern Pacific Halibut Act permits US authorities to establish regulations supplementary to those contained in the agreed IPHC regulations as long as they are not in conflict with the IPHC regulations.

⁷ But also a series of at least ten other more subsidiary pieces of legislation such as the Administrative Procedure Act (APA – requiring that notice be given on rule making and opportunity to comment thereon), Executive Order 12866 (requiring the preparation of regulatory impact reviews among other things) and Executive Order 12898 (Environmental Justice – requiring *inter alia* identifying and addressing disproportionately high and adverse environmental effects on minority population).

⁸ <http://www.fakr.noaa.gov/sustainablefisheries/seis/intro.htm>

As explained by a NMFS official:

The IPHC is not a federal agency subject to NEPA and other U.S. environmental laws that apply to federal agencies. However, NMFS also directly manages the halibut longline fishery pursuant to section 5(c) of the Northern Pacific Halibut Act of 1982 (Halibut Act, 16 U.S.C. 773-773k). Section 5(c) of the Halibut Act authorizes the North Pacific Fishery Management Council to develop halibut fishery regulations that are “in addition to, but not in conflict with,” IPHC regulations. The Alaska IFQ Program is one example of additional regulations developed by the Council. The Council’s regulations are made effective only upon approval by NMFS. NEPA and other U.S. environmental laws, such as the Endangered Species Act and the Marine Mammal Protection Act, apply to NMFS’ approval of the Council’s regulations.⁹

It was as supplementary measures that NPFMC/NMFS developed the Alaskan IFQ¹⁰ and CDQ¹¹ programs to allocate IPHC-permitted quotas among US fishermen and also to introduce mitigation measures to reducing the taking of seabirds as bycatch¹². These measures, which also involve the black cod fishery, a fishery included within the Alaskan Groundfish FMPs were developed within the FMP umbrella and, therefore were subject to reviews to set their consistency with NEPA and other relevant legislation.

These measures and others adopted for fisheries other than the longline fisheries have been beneficial for halibut conservation. They include (see Indicator 2.1.4.1):

- Prohibiting trawling for halibut.
- Implementing an IFQ system replacing the former “derby style” fishery which had suffered from wastage, loss of gear and lack of incentive to avoid undesirable bycatch.
- Prohibiting most discards of rockfish in IFQ and CDQ fisheries.
- Introduction of requirements for mitigation measures to minimize bycatch of seabirds.

Beneficial as these actions have been, it cannot be said that they form a comprehensive strategy to manage ecological impacts of halibut fishing.

On the negative side of the ledger, the Principle 2 analyses were critical of the fact that, unlike most other fisheries in the Alaskan EEZ (including the closely related longline fishery for black cod), there was no observer program for the halibut fishery (Indicator 2.1.2.1). This lack means that reliable data on bycatch and discards are simply not available. Thus the

⁹ Attachment to April 22 E-mail, S. Salveson to C. Chaffee).

¹⁰ Under 50 CFR §679, Fisheries of the Exclusive Economic Zone off Alaska, § 40-45.

¹¹ 50 CFR § 30-32.

¹² 50 CFR § 679.24 and 42.

impact of the halibut fishery on rockfish and other demersal stocks¹³ and on corals and the efficacy of seabird avoidance measures is difficult to determine.¹⁴

Overall the assessment of the adequacy of the present halibut management program from the ecological perspective is not as strong as in other aspects. However, it should be noted that the recent amendments to the Alaskan Groundfish FMPs do contain very specific objectives which, if followed could lead to effective guidelines for the consideration of NMFS measures for implementation of IPHC regulations that were sensitive to ecological concerns. These objectives, contained in Amendments 74/81 to the Alaskan Groundfish FMPs, include:

Manage Incidental Catch and Reduce Bycatch and Waste:

- 14. Continue and improve current incidental catch and bycatch management program.
- 15. Develop incentive programs for bycatch reduction including the development of mechanisms to facilitate the formation of bycatch pools, vessel bycatch allowances, or other bycatch incentive systems.
- 16. Encourage research programs to evaluate current population estimates for non-target species with a view to setting appropriate bycatch limits, as information becomes available.
- 17. Continue program to reduce discards by developing management measures that encourage the use of gear and fishing techniques that reduce bycatch which includes economic discards.
- 18. Continue to manage incidental catch and bycatch through seasonal distribution of TAC and geographical gear restrictions.
- 19. Continue to account for bycatch mortality in TAC accounting and improve the accuracy of mortality assessments for target, PSC bycatch, and non-commercial species.
- 20. Control the bycatch of prohibited species through PSC limits or other appropriate measures.
- 21. Reduce waste to biologically and socially acceptable levels.

Avoid Impacts to Seabirds and Marine Mammals:

- 22. Continue to cooperate with USFWS to protect ESA-listed seabird species, and if appropriate and practicable, other seabird species.
- 23. Maintain or adjust current protection measures as appropriate to avoid jeopardy of extinction or adverse modification to critical habitat for ESA-listed Steller sea lions.
- 24. Encourage programs to review status of endangered or threatened marine mammal stocks and fishing interactions and develop fishery management measures as appropriate.
- 25. Continue to cooperate with NMFS and USFWS to protect ESA-listed marine mammal species, and if appropriate and practicable, other marine mammal species.

Reduce and Avoid Impacts to Habitat:

¹³ Under Indicator 2.1.5.3., the assessment notes that, in relation to TACs the take of rockfish in the halibut fishery is probably quite low, but that this estimation can only be based on very insecure application of rockfish bycatch and discard rates that are really not much better than guesses.

¹⁴ As outlined under Indicator 2.1.2.1, although there is a requirement for self-reporting of any bycatch of short-tailed albatrosses by halibut longline vessels, the incentive not to report any such incidents is extremely strong, and it would be extremely naïve to imagine that a lack of reports of short-tailed albatross bycatch could be taken to demonstrate that these birds are never caught.

26. *Review and evaluate efficacy of existing habitat protection measures for managed species.*
27. *Identify and designate EFH and HAPC pursuant to Magnuson-Stevens Act rules, and mitigate fishery impacts as necessary and practicable to continue the sustainability of managed species.*
28. *Develop a Marine Protected Area policy in coordination with national and state policies.*
29. *Encourage development of a research program to identify regional baseline habitat information and mapping, subject to funding and staff availability.*
30. *Develop goals, objectives and criteria to evaluate the efficacy and suitable design of marine protected areas and no-take marine reserves as tools to maintain abundance, diversity, and productivity. Implement marine protected areas if and where appropriate*

The objectives listed above were developed very recently after completion of the comprehensive 2004 PSEIS document mentioned above. It is obviously too early to attempt to examine existing regulatory programs in light of this relatively new slate of sweeping and detailed goals.

From the foregoing, the Team concludes that, whereas a number of measures have been taken in the halibut fishery to avoid damage to the regional ecology, there is no overall strategy such as that implied in the expansive statement of objectives contained in the amendments to the GOA and BSAI FMPs. The statement of objectives would seem to provide ample guidance for developing such a strategy, but without a sound factual basis regarding the extent and nature of bycatch and discards, such strategies would be incomplete and subject to error. More urgent and important is the fact that, alone of all the substantial groundfish fisheries off the Alaskan coast, the halibut fishery lacks effective means of making assessments of the magnitude and composition of discards. For these reasons, in respect of this Indicator, the halibut program is given a low grade of 79. In the Team's view, a higher score can be achieved only by improvements in the monitoring and reporting of bycatch and discards as prescribed in the Condition listed at the end of the analysis under Indicator 2.1.2.1.

CONDITION

Strategies for managing the ecological impacts of the halibut fishery should be developed in a manner that is consistent with objectives 24, 25, 26, 27, and 29 of the amended Groundfish FMPs for GOA and BSAI.

In addition, the same condition that applies to 2.1.2.1 is appropriate – scientifically defensible monitoring and reporting of bycatch and discards must be established.

3.1.1.4

**The management system takes into account socioeconomic impacts in the development of management plans.
[Relates to MSC Criteria 3.2, 3.4, 3.6, 3.7]**

Elements considered in scoring include:

- Compatibility of economic incentives with exploited stock and ecosystem goals and objectives, including effects of subsidies
- Consideration of long-term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability
- Application of precautionary approach

60 Scoring Guidepost

- Although the fishery management system may not be free of economic incentives for over-harvest or unproductive use of harvested species, or ecosystem degradation, steps are being taken to reduce such incentives.
- Measures for allocating fishing opportunities or for controlling entry to the fishery take into account the need to reduce such incentives.
- The fishery management system gives consideration to the long-term socio-economic interests of Aboriginals and of people dependent on fishing for food and livelihood.

80 Scoring Guidepost

- The fishery is substantially free from subsidies that directly and substantially promote overfishing or ecosystem degradation.
- Measures for allocating fishing opportunities or for controlling entry to the fishery do not undermine fishery and ecosystem management goals.
- The management system takes into account the long-term socio-economic interests of Aboriginals and of people dependent on fishing for food and livelihood.
- The fishery management system provides for long-term predictability or other risk management and hedging tools needed for rational and prudent investment.
- The fishery management system seeks to understand social and economic consequences of decision-making.

100 Scoring Guidepost

- The fishery is free from subsidies that directly and substantially promote overfishing or ecosystem degradation.
- Participants in the fishery have access to short- and long-term economic incentives that, taken alone or in combination with other management measures, act to prevent overfishing and ecosystem degradation.
- The management system gives full consideration to the long-term socio-economic interests of Aboriginals and of people dependent on fishing for food and livelihood.
- Measures for allocating fishing opportunities or for controlling entry to the fishery promote fishery and ecosystem management goals.
- The fishery management system provides for long-term predictability or other risk management and hedging tools such that rational and prudent investments can be made that are consistent with ecological sustainability (i.e. no overfishing or ecosystem degradation).

- The fishery management system continually seeks to understand social and economic consequences of management decisions and seeks and accepts input from all stakeholders regarding management decisions.

SCORE 90

Social and Economic Impacts

As discussed above, although annual management measures for the Alaskan halibut fishery recommended by IPHC and approved by the Secretary of State with the concurrence of the Secretary of Commerce, are not reviewed by the NPFMC and NMFS for conformity with the MSA and other legislation such as NEPA and EO 12898, supplementary measures developed by NPFMC, such as the development and implementation of the IFQ and CDQ programs and seabird avoidance measures have been included in the review process. The legislative framework for reviews by NPFMC and NMFS require that full consideration be given to the social and economic consequences of management decisions. MSA, NEPA, and EO 12898 in particular provide clear guidance in this regard.

Under NEPA, ‘economic’ and ‘social’ effects are specific environmental consequences to be examined (40 CFR § 1508.8). National Standard 8 under the MSA states that: *Conservation and management measures shall, consistent with the conservation requirements of this [Magnuson-Stevens] Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities and (B) to the extent practicable, minimize adverse economic impacts on such communities (Sec. 301(a)(8)).*

As outlined in the introduction to Principle 3 above, through amendments, new objectives were introduced into the GOA (Amendment 74) and BSAI (Amendment 81) Groundfish FMPs. Regarding social and economic considerations, the objectives provided that the plans would:

31. Provide economic and community stability to harvesting and processing sectors through fair allocation of fishery resources.
32. *Maintain LLP program and modify as necessary, and further decrease excess fishing capacity and overcapitalization by eliminating latent licenses and extending programs such as community or rights-based management to some or all groundfish fisheries.*
33. *Provide for adaptive management by periodically evaluating the effectiveness of rationalization programs and the allocation of access rights based on performance.*
34. *Develop management measures that, when practicable, consider the efficient use of fishery resources taking into account the interest of harvesters, processors, and communities.”*

Beyond NEPA and MSA requirements, social and community analysis needs to take into account Executive Order 12898 (59 FR 7629 [1994]), which requires federal agencies to

address environmental justice concerns by identifying *disproportionately high and adverse human health and environmental effects...on minority populations and low-income populations.*

As will be discussed below in more detail, for Alaskan groundfish fisheries such as halibut and black cod, the NPFMC has adopted conservation regimes centered on the granting of individual fishing quotas involving the allocation of proportional annual shares of TACs among harvesters.

As described in the 2004 PSEIS document, under the MSA, limited access systems, such as the IFQ program (discussed below) are discretionary, but the law provides some guidance and standards in their development. National Standard 4 (Section 301(a)(4)) states: “*If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.*”

Although National Standard 5 (Section 301(a)(5)) which requires that fishery policymakers to “consider efficiency in the utilization of fishery resources”, appears to foster the development of limited access, it quickly tempers that direction by requiring that conservation and management measures not have economic allocation as their sole purpose. Instead, the MSA ties a limited access to optimum yield (50 CFR 600.330). At Section 303(b)(6), the Act provides for the establishment of “*...a limited access system in order to achieve optimum yield if, in developing such a system, NPFMC and the Secretary take into account:*

- (A) *present participation in the fishery,*
- (B) *historical fishing practices in, and dependence on, the fishery,*
- (C) *the economics of the fishery,*
- (D) *the capability of fishing vessels used in the fishery to engage in other fisheries,*
- (E) *the cultural and social framework relevant to the fishery and any affected fishing communities, and*
- (F) *any other relevant considerations.*

From the foregoing, it is evident that the legislative and regulatory framework for design and implementation of fisheries management programs under the MSA are very specific and powerful requiring that the management system take into account socioeconomic impacts in the development of its plans

Allocation Measures vis à vis Fishery Management Goals

Since United States extension of fisheries jurisdiction to 200 miles and enactment of the MSA in the late 1970s, the federal government has expended major efforts to control overcapitalization and consequent pressure for overfishing in the groundfish fisheries. In the 1980s, the United States phased out foreign fisheries in its waters. Reduction in foreign fishing was followed by a rapid increase in American fishing effort and in the effectiveness of fishing methods that began to pose serious management problems. In the black cod and

halibut fisheries, conservation of the stocks required increasingly severe restrictions in the allowed fishing times, creating a desperate “race for fish” with serious implications (Pautzke and Oliver 1997). As described in the 2004 PSEIS document,¹⁵ NOAA realized that the rapid Americanization of groundfish had created an overcapitalized, open access fishery that generated a profusion of fishery management issues (see below for more detail).

As described by Pautzke and Oliver, development of management measures to meet the overcapacity problem was a highly contentious process. The process began with attempts to impose a moratorium on entry to the fishery, followed by the development of the Individual Fishing Quota (IFQ) programs. Development of the program involved vigorous public debate focusing on who should be permitted to obtain permits and on the system that would be applied to allocate shares. For black cod the program was adopted by the NPFMC in December 1991, approved by NMFS in January 1993, with final implementing rules being published in November of that year (58 FR 59375).¹⁶ The first year of implementation was 1995. Throughout development of the program, there have been frequent environmental assessments (EAs), regulatory impact reviews (RIRs) and other reviews in which social and economic consequences have been assessed.¹⁷

As discussed by Hartley and Fina (2001), despite its objective of reducing fishing capacity, the IFQ system initially resulted in an increase in the number of participants. This increase was followed by a period of significant consolidation. Yet, even with the post-implementation consolidations, it can be said that the IFQ fleets are still severely over-capitalized. Despite these apparent contradictions, the IFQ system has generated significant benefits to participants and is widely regarded as a success.

Before introduction of the IFQ system, the fishery faced a number of serious problems including allocation conflicts, gear conflicts, dead loss due to ghost fishing by lost or abandoned gear, excessive bycatch and discards, excess harvesting capacity, reduced product quality as reflected in prices, poor safety, lack of economic stability for fishery participants and communities, and a lack of rural coastal community development (NPFMC 1991).

The IFQ program has clearly improved conditions. Fishers have the flexibility of fishing their IFQs at the times that they choose, allowing them to operate safely and time their fishing to obtain the best price for their harvests. Less efficient operations have sold their harvest-rights to more efficient operations, and vessel-owners are now fishing cooperatively-sharing “hot-spot” information and fishing IFQs from a single vessel rather than from two or more. The longer seasons, cooperation, and efficiency-gains from rights-transfers have reduced the cost of crew and gear. Since harvests are no longer restricted by short seasons, gear losses and dead loss have been reduced to minimum levels.

¹⁵ http://www.fakr.noaa.gov/sustainablefisheries/seis/final062004Chaps/chpt_3_9.pdf

¹⁶ BSAI Amendment 13 and GOA Amendment 20.

¹⁷ A listing of Alaska region environmental and socio-economic reviews from the beginning of the 1990s through to the present may be found in <http://209.112.168.2/index/analyses/analyses.asp>

Consumers also have benefited from the IFQ program. Fresh halibut is available for most of the year, and sablefish is becoming more widely known. Before the program, fresh halibut was available for only a short period each year. The slower pace of fishing has resulted in better fish-handling, and the overall quality of the catch has improved.

Although consumer prices may be slightly higher, the improvement in product quality and the availability of fresh fish have compensated for the price rise.

Comparing fishery data with fishery independent data, Sigler and Lunsford (2001) provided data that showed that introduction of the IFQ program for black cod in 1995 resulted in an increase in catching efficiency and a reduction in harvest of immature fish. In their view, the program eliminates the race for fish facilitating improved conservation and economic efficiency and safety at sea.

While providing substantial evidence of the programs benefits, Hartley and Fina (*loc. cit.*) noted, however, that the program is not without its critics. Fishers excluded from the system or those who received small initial allocations believed that the system widened socio-economic disparities in the industry. Crew members were particularly frustrated by the system because they were not awarded fishing-rights, and for many, the IFQs eliminated a short but lucrative employment opportunity. Shoreside processors who were operating in the pre-IFQ fishery were also dissatisfied with the new system. The exclusive allocation of harvest-rights to fishers weakened the processors' bargaining position and created opportunities for new small-scale competitors.

Despite these concerns, Hartley and Fina concluded that: By any objective measure, the program resulted in marked improvements in Alaska's halibut and sablefish fisheries. Safety, TAC-management, over-capitalization, gear loss, dead loss, and product price and quality all improved with IFQ management. The objectives of the program in large part were met, and therefore the system should be considered a success.

The Team concludes that, with the clear goals of limiting capacity and increasing efficiency, the system is free from economic incentives that would promote overfishing. Indeed the IFQ allocation system has substantially improved the basis for management aimed at better conserving the halibut stock.

Long-term Interests of Dependent People

The full Americanization of the BSAI fisheries in the 1980s occurred relatively quickly. However, the very high capital investment required to compete in these fisheries precluded small communities from participating in their development. Responding to this problem, in 1992, a Community Development Quota (CDQ) Program was developed to facilitate the participation of BSAI community residents in the fisheries off their shores, as a means to develop a local community infrastructure and increase general community and individual economic and social well-being. The CDQ program was granted in perpetuity through and authorized by the U.S. Congress in 1996. The State of Alaska is responsible for the administration and monitoring of the program. The state administers the program jointly through the Alaska Department of community and Economic Development (ADCED), the

lead agency and the ADF&G. Throughout its history, the program has been subjected to numerous EAs, RIRs, etc. which examined its socio-economic consequences.

The CDQ program is a federal program that allocates a portion of the TAC (or GHL, as appropriate) for federally managed BSAI species to eligible communities in western Alaska. Originally involving only the pollock fishery, the program has in recent years expanded to become multi-species in nature, including halibut and black cod. The majority of the people resident in then participating communities are Aboriginals. The CDQ program has contributed to infrastructure development projects within the region as well as loan programs and investment opportunities for local fishermen. In recent years the program has provided more than 1,000 jobs annually for region residents and yearly wages have exceeded \$8 million.

The Team received no negative comments regarding the conduct of the CDQ program and considers that the management system has given careful consideration to the long-term interests of people dependent on fishing for food and livelihood, in a manner consistent with sound conservation.

Social and Economic Information

NPFMC and NMFS have expended major efforts to provide a comprehensive database for management decisions regarding harvest allocations in the black cod fisheries. This work is best illustrated by the comprehensive sections of the 2004 Final PSEIS which include detailed social and economic profiles of the fishing fleets, communities associated with the fisheries, and analyses of the processing and marketing sectors of the groundfish fishing industry and sections of the annual SAFE document dealing with economic aspects of the fisheries.

Whereas there are still data gaps (e.g. see comments under Indicator 3.1.1.5), the Team believes the assembly of social and economic data for the Alaska groundfish fishery is developing extremely well.

Summary

On the basis of the foregoing, the Team concludes that the longline halibut fishery is free from subsidies that promote overfishing. They believe that the IFQ and CDQ systems greatly facilitate achievement of the management objectives of IPHC and are consistent and fit well with management objectives of the Alaskan groundfish fisheries management plans. The allocation systems have been well researched and developed following years of extensive and difficult public consultations. The management system provides stability and, subject to normal biological and market fluctuations, predictability of economic circumstances. The CDQ program provides substantial assistance to northern communities and their largely Aboriginal populations. A higher score would have been assigned except that, as discussed above, significant numbers of members of the fishing community have not been satisfied with the IFQ program mainly because of the criteria used to select those who received quotas and the size of quotas allocated.

3.1.1.5

There is an adequately funded research strategy to support the harvest strategy and to address information needed to support the identification and mitigation of ecosystem impacts.

[Relates to MSC Criterion 3.8]

Elements considered include:

- Role of science in setting research agenda
- Diversity and quality of input
- Level of funding
- Transparency of process
- Relationship between those who design research and those responsible for implementation
- Relationship to present and future management needs

60 Scoring Guidepost

- Research is generally of good quality, but lacks strategic planning that anticipate future management needs.
- Cooperation between research staff and fishery managers is frequent but there are disagreements regarding the significance of research findings for management.
- Funding is barely adequate or inadequate even to meet short-term information needs for stock assessment and ecological interaction research.

80 Scoring Guidepost

- The management system includes a stable, well-led, diverse and objective research planning organization.
- There is regular agreement between fishery managers and research scientists on near term research needs and priorities in the fishery.
- There are documented short-term research plans developed with advice from with stakeholders and external experts.
- Funding for research is adequate to address major short-term gaps in knowledge but inadequate for in-depth long-term research.
- Funding is adjusted to meet requirements of newly identified research priorities.
- Funding is predictable over long-enough time scale to allow continuity of all major stock assessment and ecological interactions research programs.

100 Scoring Guidepost

- The management system includes a stable, well-led, diverse and objective research planning organization.
- There is significant and regular agreement between fishery managers and research scientists on research needs and priorities in the fishery.
- There are well documented short- and long-term research strategies developed with advice from stakeholders and external experts.

- Funding for research is adequate to address all significant knowledge gaps.
- Funding is adjusted in a timely and appropriate manner to serve changing research priorities.
- Funding is predictable over a long-enough time scale to allow research planning appropriate to long-term research needs

SCORE 79

Harvest Strategy

IPHC has had a distinguished history as a fisheries research agency that has been in forefront of developing practical approaches to stock assessment as a basis for prudent regulatory management. As indicated in the Commission's long list of scientific and technical documents, Commission scientists carried out the pioneering work of describing the life history of the species.¹⁸ Current research focuses on an annual setline survey conducted with standardized methods, bait and gear to supplement data on the harvest in commercial, recreational and subsistence fisheries. Biological data collected on the surveys such as the size, age and sex composition of halibut are used to monitor changes in biomass, growth and mortality in the population. Studies of migrations through tagging programs and on the relation between oceanographic conditions and distribution and abundance are also conducted. The development of models to assist in assessing the implications of proposals for regulatory action are, as described in under the Principle 1 section of this report, "state of the art". Principle 1 assessments for other aspects of the scientific and technical program (see Indicators under sub-criterion 1.1.1 and 1.1.2 above) gave the IPHC research program high scores for all aspects of the collection of basic data on the halibut stocks required for effective management.

The research program is developed with input from national scientists of the two countries and also obtains advice from the collective fishing community of the two countries (See introduction to Principle 3 assessment above). The Commission has a long tradition of effective cooperation between its technical staff that provide the scientific background and options for regulatory action to the Commissioners who make the decisions on recommendations for regulatory measures that are transmitted to the parties.

The Team concludes that, with respect to the management of the target species, halibut, IPHC would warrant high marks for quality of leadership, planning and conduct of research and monitoring.

One area of concern to the team concerns funding. The team did not conduct a thorough study of the fiscal structure for the Commission's program, but it would appear that funding is adequate to support the present program. However, we were informed that government contributions to IPHC had been cut in recent years and that 40% of the operating budget now comes from cost recovery from the sale of fish taken in the annual setline survey. This would

¹⁸ <http://www.iphc.washington.edu/halcom/literatu.htm>
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seem to create a somewhat precarious situation, in that it could be envisioned that governments would not be particularly troubled by limiting or even cutting contributions on the belief that shortfalls could be made up from increasing the returns from the survey whether or not increased survey activity was warranted from the scientific point of view.

Identification and mitigations of ecological impacts

As discussed earlier, IPHC's mandate is limited mainly to the consideration of exploitation of the target species, halibut. Although the Commission does some work on bycatch of non-halibut species (e.g., evaluation of seabird mitigation measures under contract to NMFS), very little attention is paid to the effects of the fishery on non-halibut species and the general ecology.

Thus, it is left up to the national agencies of the two countries to deal with ecological issues created by the halibut fishery. Under Indicator 3.1.1.3 above, it was concluded that, although the NPFMC and NMFS have adopted a number of measures in the halibut fishery to avoid damage to the regional ecology, there is no overall strategy to provide a firm basis for measuring such impacts, particularly respecting bycatch and discards in the halibut fishery. The greatest deficiency was identified as lack of an observer program.

Summary

The Team concludes that the research to support the harvest management strategy is stable well-led, diverse and exhibits objective planning and that there is significant and regular agreement between fishery managers and research scientists on research needs and priorities in the fishery.

Currently it would appear that funding for research is adequate, but the fact that a large portion of the research budget is provided by cost recovery from survey operations. This tends to create the dubious incentive to increase survey operations to offset limitations in funding of IPHC by the two member governments.

Despite this shortcoming, which should be a concern to the governments, the IPHC research program is of exceptional quality and if it were the only factor in scoring this Indicator, a high mark would be obtained. However, the Indicator also addresses research to support the identification and mitigation of ecosystem impacts. Because IPHC's mandate is limited to consideration of the fishery for the target species, halibut, responsibility for study and control of ecological impacts falls to national governments. As discussed in a number of other Indicators the NPFMC and NMFS approach to measuring ecological impacts of the halibut fishery are inadequate, mainly because there is no observer program to provide independent measures of bycatch and discards, gear loss etc.

Considering this deficiency, the Team scores the Alaskan halibut management program, shared by IPHC and the US federal government at 79. Adjustments in the system as proposed in the Conditions listed under Indicators 3.1.1.3 and 2.1.2.1 would result in a substantial increase in score .

CONDITION

Same as for 3.1.1.3.and 2.1.2.1.

3.1.2

The management system recognizes applicable legislative and institutional responsibilities and coordinates implementation on a regular, integral, and explicit basis

3.1.2.1

The fishery is managed and conducted in a manner that respects international conventions and agreements and not under any controversial unilateral exemption to an international agreement.

[Relates to MSC Criterion 3.1]

60 Scoring Guidepost

- Management actions are generally in accord with the terms of international conventions and agreements.

80 Scoring Guidepost

- The management system is in full compliance with international fisheries and environmental law.
- The management system does not operate under any controversial exemption to an international fisheries or environment-related agreement.

100 Scoring Guidepost

- The fishery is managed and conducted in a manner that respects international conventions and agreements and not under any controversial unilateral exemption to an international agreement.

SCORE 100

The 1982 United Nations Conference on the Law of the Sea (UNCLOS) established some general conditions for the management of fisheries by the coastal State in its Exclusive Economic Zone (EEZ), including ensuring that resources in the zone are not overexploited, maintaining or restoring harvested species at levels which can produce the maximum sustainable yield, such measures giving consideration to the effects of fishing on associated or dependent on the harvested species (Article 61).¹⁹ Article 62 gives the coastal State the right to reserve allowable catches to itself if it has the capacity to do so. Consistent with these

¹⁹ The United States is not a signatory to the 1982 Convention, but accepts the provisions of the Convention relating to traditional uses of the oceans, which comprise all of the Convention's substantive provisions except for those relating to seabed mining (Lugar and Stevens 2004 and Reagan 1993). Canada signed the Convention on November 7, 2003.

provisions, the US has reserved the total allowable catch of halibut in its EEZ to its own nationals. As discussed below, management of the halibut fishery under IPHC, NPFMC and NMFS is entirely in accord with the general UNCLOS prescriptions regarding avoidance of overexploitation.

Article 63 of the 1982 Convention provides that where the same stock or stocks occur in the exclusive economic zones of two or more states that such states *shall seek ... to agree upon the measures necessary to co-ordinate and ensure the conservation and development of such stocks*

Halibut stocks clearly span the boundaries between Canada and the United States, triggering the terms of this Article. The establishment of IPHC in 1924 to conduct research and recommend management measures to Canada and the United States fully meets the Article's requirements.

Setting aside the question of cooperative management measures, in 1995, through the Food and Agriculture Organization of the United Nations (FAO), a broad international consensus was reached on a Code of Conduct for Responsible Fisheries that elaborated the conservation requirements contained in UNCLOS Article 61 (see above). The Code *sets out principles and international standards for behavior for responsible practices with a view to ensuring conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity* (United Nations 1995a). Adherence to the code is voluntary, with the Code calling on *all states and all those involved in fisheries [being] encouraged to apply the Code and give effect to it.*

Articles 6 and 7 of the global Code of Conduct call for long term measures based on the best available scientific evidence, prevention of overfishing, application of the precautionary approach, environmental impact assessment, protection of related species in the ecosystem, protection of biological diversity, consideration of artisanal and subsistence use, a transparent and accessible system and information, data collection, promotion of scientific research, and enforcement.

Similarly, Article 7.6.9 of the Code calls for appropriate measures to minimize waste, discards, catch by lost or abandoned gear, catch of non-target species, *both fish and non-fish species, and negative impacts on associated or dependent species, in particular endangered species.*

These prescriptions parallel many of the basic concepts of the Magnuson-Stevens Act, particularly its ten National Standards. They also parallel many of the principles and criteria contained in the present MSC assessment. As discussed under Indicator 3.1.1.2, IPHC operates with the approval of the Canadian and United States Governments and its proposals for regulatory measures are consistent with national policies of the two countries, including the US MSA.

Without going into detail in this section, the Team's review of the MSA, IPHC and their assessments of the conformity of the Alaskan fisheries with MSC's 3 Principles indicate that

the management system for Alaskan halibut operates in a manner that is consistent with the Global Code of Conduct.

There is no evidence that the management system operates under any controversial exemption to an international fisheries or environment-related agreement.

In general the Team concludes that the fishery is managed and conducted in a manner that completely respects international conventions and agreements.

3.1.2.2

The fishery is managed and conducted in a manner that respects domestic law.
[Relates to MSC Criterion 3.16]

Elements considered in scoring include:

- Consistency and quality of compliance with federal law (efforts to assure compliance, reasons for non-compliance, severity of consequences of non-compliance)
- Integration of compliance requirements among the multiple domestic legal regimes that apply to the fishery.

60 Scoring Guidepost

- The management system generally operates in accordance with all substantive and procedural aspects of applicable domestic law.
- Harvest management decisions made by fishery managers are only occasionally overturned or disallowed upon review by judicial authorities.

80 Scoring Guidepost

- The management system makes consistent, good faith efforts to be in compliance with all substantive and procedural aspects of applicable domestic law.
- The management system, including its component institutional entities, has not been found repeatedly by any domestic court of jurisdiction to be in violation of any significant aspect of any domestic law related to protection of the human or natural environment, individual species, ecosystems, or fishery dependent communities.

100 Scoring Guidepost

- The management system is in compliance with all substantive and procedural aspects of applicable domestic law.
- The management system, including its component institutional entities, has not been found at any time to be in violation of any order of any domestic court of jurisdiction on any matter related to performance of any statutory duty concerning the fishery.
- No officer or agent of the management system, including its component entities, has at any time been found to be in contempt of any domestic court of jurisdiction on any matter

related to performance of official duties on behalf of the management system concerning the fishery.

SCORE 100

As outlined above, in respect of conservation arrangements, the applicable US law applying to the halibut fishery is the Northern Pacific Halibut Act of 1982. Regulations recommended by IPHC, approved by the Secretary of State, with the concurrence of the Secretary of Commerce are published in the Federal Register annually and become the operative legal framework for applying conservation measures to the fishery. These regulations are not required to be reviewed by NMFS for consistency with the MSA and other relevant legislation (e.g. NEPA and ESA) and Executive Orders as are measures developed for other species by the NPFMC.

Whereas IPHC develops the conservation measures for the halibut fishery, the NPFMC and NMFS develops supplementary measures, particularly regarding allocation of allowable catches among US citizens. Consistent with the 1979 Protocol to the IPHC Convention (see discussion under Indicator 3.1.1.4 above), the North Pacific Halibut Act authorizes the NPFMC to *develop regulations which are in addition to, and not in conflict with regulations adopted by [IPHC]. Such regulations shall only be implemented with the approval of the Secretary, shall not discriminate between residents of different states, and shall be consistent with the limited entry criteria set forth in section 1853(b)(6) of this title. If it becomes necessary to allocate or assign halibut fishing privileges among various United States fishermen, such allocation shall be fair and equitable to all fishermen*

Under the foregoing provision after much debate and consultation within NPFMC, (Pautske and Oliver loc.cit.), in 1993, a Final Rule was developed for limited access management for the Alaska black cod and halibut fisheries (50 CFR Parts 204, 672, 675 and 676). The summary of the rule contains a long list of the Environmental Impact Statements (EIS), Supplementary EISs, Regulatory Impact Reviews (RIRs) and Initial Regulatory Flexibility Analyses (IRFAs). The background for the rule contains an exhaustive analysis of the conformity of the action with various provisions of the MSA, particularly the seven National Standards contained in the MSA at that time.

Supplemental measures were also developed for the introduction of seabird bycatch reduction programs dictated by ESA requirements to reduce the taking of short-tailed albatross (50 CFR 679.B24). Again, development of such measures was preceded by a series of EA/RIR/IRFA analyses and consultations under Section 7 of ESA.

It is beyond the purview of this report to explore procedures followed early in the NPFMC management process to develop such supplementary measures.²⁰ In recent years, however,

²⁰ Attempts to introduce a limited entry system in Alaska began just after statehood in 1959. These resulted in a number of court challenges. As described by Pautske and Oliver (loc.cit.): *Two legislated attempts to establish limited entry in Alaska fisheries after 1960 were overturned in court. In 1972, the state voted to amend the state constitution to allow for limited entry. Within the first three months of 1973, the legislature had crafted a limited entry law, which passed in April 1973, thus establishing the state's Commercial Fisheries Entry Commission. A license system for nineteen salmon fisheries was implemented in 1974. In 1976 an initiative drive to repeal the law failed. The legality of the program was not settled until years later. In 1983, the Alaska Supreme upheld the constitutionality of the limited entry law, a decision allowed to stand by the United States Supreme Court in 1984.*

the Team considers that NPFMC and NMFS have been meticulous in following the very specific and demanding requirements of US legislation attending development of such supplementary measures. In this regard, in assigning a score of 100, we consider that the management system is in compliance with all substantive and procedural aspects of applicable domestic law, has not been found at any time to be in violation of any order of any domestic court of jurisdiction regarding the halibut fishery and that no officer or agent of the management system has been found to be in contempt of any domestic court of jurisdiction on any matter related to performance of official duties on behalf of the management system concerning the fishery.

3.1.2.3

The fishery is managed or conducted in a manner that observes legal and customary rights.
[Relates to MSC Criterion 3.4]

Elements considered in scoring:

- Recognition of and respect for applicable private property rights
- Recognition of and respect for applicable subsistence or customary rights

60 Scoring Guidepost

- The fishery management system generally recognizes property, subsistence, and customary rights in the fisheries.

80 Scoring Guidepost

- The fishery management system recognizes property rights in the fishery.
- The fishery management system recognizes subsistence and customary rights in the fishery, including those of Aboriginal communities.
- The management system includes processes for regular consultations with such communities regarding exercise of their rights.
- The fishery management system provides a fair means to avoid and reconcile conflicts between legal and customary rights.

100 Scoring Guidepost

- The fishery management system specifically recognizes property rights in fisheries management programs.
- The fishery management system specifically recognizes subsistence and customary rights in the fishery including those of Aboriginal communities.
- The management system includes processes for regular consultations with such communities regarding exercise of their rights.
- The fishery management system provides a fair, efficient, predictable means to avoid and reconcile conflicts between legal and customary rights.

SCORE 80

Access to the Alaska halibut fishery is the preserve of the US government and not IPHC. The development of the IFQ and CDQ programs, providing enterprises with pro tem shares of allowable harvests has established a form of limited property rights for participation in the fishery. As discussed under Indicator 3.1.1.4, although there were many problems in bringing the programs into being before their implementation began in 1995, they are now performing well. This indicates that the system has reached a satisfactory resolution of disputes regarding rights to participate in the fishery.

Regarding Aboriginal peoples, as discussed under Indicator 3.1.1.4, the NPFMC, NMFS in cooperation with the State of Alaska have instigated the CDQ program, which established six regional non-profit Alaska Native corporations, representing 65 coastal area villages. Among other benefits, the program provides CDQ enterprises with an approximate one-third share of allowable catches of halibut in the Bering Sea and Aleutian Islands area.

Aside from the purely commercial and modern recreational fisheries, halibut have traditionally been harvested by some Aboriginal groups for food and ceremonial purposes. There is also some subsistence use by non-Aborigines.

The 2004 PSEIS analysis²¹ summarized national requirements for consideration of Aboriginal traditional interests noting that fishery management must comply with the NEPA. NEPA requires that potential effects of fishery management actions on the human environment including Alaska Natives be analyzed and, to the extent practicable, mitigated. This includes effects on subsistence, CDQ groups, non-CDQ Native fishermen, and fishing communities with Native populations. Executive Order (EO) 12898 (1994) on Environmental Justice requires that the potential for disproportionately high and adverse effects on minority populations (which include Alaska Natives) be analyzed. While not a part of NEPA, this analysis typically is undertaken during the NEPA process. In addition, EO 13175 (2000) on Consultation and Coordination with Indian and Tribal Governments requires that when there is a potential for federal action to significantly or uniquely affect Indian tribal governments, federal agencies must engage in timely and meaningful consultation with federally recognized tribal governments. This consultation requirement is addressed through the MSA and NEPA compliance process. The majority of the more than 200 federally recognized tribes in Alaska are located along the coast or river systems and can potentially be affected by fishery management decisions. Further, Alaska Native communities, like other communities, that are engaged in and dependent upon the fishery, are subject to the provisions of MSA National Standard 8, which guides fishery management toward fostering the sustained participation of traditional fishing communities.

Aboriginal interests in management of Alaskan fisheries are expressed through participation in the NPFMC process. As noted in Chapter 2 of the PSEIS document, NPFMC members from western Alaska have functionally, if unofficially, represented Alaska Aboriginal interests since approximately 1987. As Alaska Aboriginal participation in the fisheries has grown, the seat has represented a broader group of interests, such as CDQ corporations, and

²¹ NMFS 2004.

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has made the unofficial Alaska Aboriginal representation role more complex for the incumbents. Alaska Aboriginal interests represented on the AP have also become more diverse during this time period, and are addressed through regional, community, CDQ, and conservation group members appointed by the NPFMC to sit on its AP.

Beyond participation in the NPFMC, management tools used to address Alaska Aboriginal issues and satisfy federal requirements for public outreach, NEPA, and government-to-government consultation, typically take the form of informal and formal discussions. These discussions are enhanced by special meetings, newsletters, webpage bulletins, and e-mail. Public hearings and NPFMC meetings provide a frequent venue for public stakeholders to provide comments and any information that may improve the management of fisheries off Alaska as well as opportunities to learn more about the effects of management on subsistence fishing and minority populations. Opportunities for cooperative research may also serve as a management tool to increase Aboriginal involvement in the management of fisheries, as well as to foster transfer of Traditional Ecological Knowledge.

The Team was not presented with information indicating the existence of significant problems regarding the observance of customary and legal rights in the black cod fisheries. We were also not provided with documentation indicating the precise legal acknowledgement of rights listed under the 100 point guidepost. Lacking more precise information, a passing score of 80 was accorded.

3.2 The management program is implemented in an effective manner to meet MSC Principles and Criteria

3.2.1. The management system includes a rational and effective process for acquisition, analysis and incorporation of new scientific, social, cultural, economic, and institutional information.

The management system solicits and takes account relevant information.

[Relates to MSC Criterion 3.2]

Elements considered in scoring include:

- Solicitation and treatment of scientific information
- Solicitation and treatment of information from stakeholders
- Accommodation of dissent and respect for differing perspectives
- Training at all appropriate levels with respect to management principles and criteria

60 Scoring Guidepost

- The management system has mechanisms to receive information and advice from stakeholders and outside technical sources, but does not vigorously solicit such information and advice.
- Information and advice is evaluated but there are no well defined procedures for making assessments and responding to such information and advice.

80 Scoring Guidepost

- The management system has a stable, well-led, predictable, open and tolerant process to solicit relevant information.
- The management system accepts information that may be controversial or reveal weaknesses in the management system.
- The management system shows evidence of listening and responding to diverse points of view.

100 Scoring Guidepost

- The management system has a stable, well-led, predictable, open and tolerant process to solicit relevant information.
- The management system seeks affirmatively to acquire information that may be controversial or reveal weaknesses in the management system, including matters related to compliance with applicable international and domestic law.
- The management system evaluates information in an unbiased, objective manner and does not discriminate against information solely upon the basis of the identity of stakeholder category from which it was supplied.
- There is an active program of familiarizing stakeholder groups with the management system's principles and criteria for decision making.

SCORE 90

IPHC

IPHC has a long tradition of dialogue with the halibut fishing community. As outlined in the introduction to Principle 3 issues, the Commission obtains advice from the collective fishing community of the two countries. Beginning in 1931, the Commission has been assisted by a Conference Board representing Canadian and United States commercial and sport halibut fishing interests. The Board was established to obtain recommendations from the fishing fleet on conservation measures. Its members are designated by union and vessel owner organizations of both countries. Following staff presentations and proposals at the IPHC Annual Meeting, the Board meets simultaneously with the Commission to discuss the proposals. Their recommendations are then presented to the Commission for consideration. In addition, three representatives of the Board from each country are invited to attend Commission interim meetings.

The Processor Advisory Group (PAG), formed in 1996, is an advisory panel consisting exclusively of processors from both the United States and Canada. The Commission hears the PAG recommendations as well as the Conference Board recommendations at the Annual Meeting before setting regulations for the coming year.

Industry/IPHC working groups are frequently formed to address particular technical or procedural issues affecting fleet operations.

The Commission meetings are open to the public with advance notice being provided regarding the issues under discussion.

It will be recalled that the Commission's mandate is limited to management of the fishery for the target species, halibut. Consideration of bycatch problems of non-halibut species and impacts of the fishery on regional ecology has been left to national governments. For this reason, Commission staff informed us that there has been little interest shown in IPHC meetings by environmental stakeholders who, it would appear, reserve their contribution to debate to national meetings in their own countries.

From the single species management point of view, IPHC deserves full marks for its approach to soliciting and absorbing information regarding management of the target fishery. In this regard, the management system has a stable, well-led, predictable, open and tolerant process to solicit relevant information. Through its advisory system, the Commission seeks affirmatively to acquire information that may be controversial or reveal weaknesses in the management system. Through long tradition, advisors to the Commission are very familiar with the system's principles and criteria for decision making.

National Programs

As outlined above, regulations supplementary to those recommended by IPHC are developed by NPFMC and NMFS. In the examples cited above these deal with subjects such as allocation of IPHC-set quotas among domestic fishermen and bird by-catch mitigation programs. Development of such measures involves the full process of consultation and review through the NPFMC and NMFS and includes making analyses to demonstrate the conformity of proposed measures with the overarching MSA legislation as well as other pieces of national legislation such as NEMA and ESA.

In a companion MSC assessment study, an evaluation of the Alaska black cod fishery (MSC 2005), the Team concluded that, in developing regulatory measures under Alaska Fishery Management Plans, NPFMC and NMFS solicits and takes account relevant information in an open and tolerant way. A year earlier, another MSC assessment, of the pollock fisheries acknowledged the open nature of the Council process, but, in reviewing the decision-making practices of the management system, the Pollock Team discerned recurrent instances of resistance at all levels of the management system to information, advice, and opinions provided from outside the scientific and management community, especially if these embraced constraints on harvest levels. The Pollock team was troubled by evidence of instances where the management system did not resolve matters of scientific uncertainty in

favor of protected or endangered species, in contradiction to the purpose of the relevant legislation and a considerable body of directly relevant jurisprudence.

In assigning a low score (78) to the pollock fishery in respect of the relevance of information considered, the Pollock Team set as a condition for improvement *that the fishery must take affirmative steps to ensure that information and opinions submitted by stakeholders who do not represent the interests of the commercial fishing industry are given fair, professional, and transparent evaluation at all levels of the management system*. To this end, the team required that management authorities publish, and openly review an independent evaluation of the manner in which non-industry stakeholder information and opinions have been addressed in a representative set of circumstances identified by stakeholder interests

The Black Cod Team examined the pollock review and concluded that, to a major degree, the criticisms presented applied particularly to the conduct of the very large and very important pollock fishery. The Team was not presented with information that indicated that, in respect to the black cod fishery, similar concerns existed. It is noted that in the highly controversial development of the IFQ system for both black cod and halibut (Pautske and Oliver loc. Cit.), through maintaining an open dialogue and perseverance over several years, the Council system's actions brought about a fundamental change in the fishery that has greatly facilitated improved management. There are still ecological issues to be faced with the longline fisheries, but to date they have not yet become the focus of intensive debate. Overall, considering uncertainties regarding the treatment of ecological issues, the Team considers that the performance of both the black cod and halibut management systems regarding the solicitation of information warrant a high, but not perfect score of 90.

3.2.1.2

**The management system assesses relevant information pursuant to objective, fair, and equitable processes.
[Relates to MSC Criterion 3.2]**

Elements considered in scoring:

- Burden of proof/persuasion applied to types of proposal or category of stakeholder
- Efforts to quantify relative risks borne by different species, ecological systems, and stakeholders as a result of uncertainty

60 Scoring Guidepost

- The management system does not have specific procedures for assessing information from outside sources, but, generally, gives fair consideration to such information.
- The management system's approach to identifying and reducing sources of uncertainty affecting the quality of management decision-making is adequate but could be improved.

80 Scoring Guidepost

- The management system allots analytical and deliberative resources in a manner that does not show any distinct evidence of a pattern of discrimination against significant stakeholder interests.
- The management system attempts to characterize and reveal the risks of harm to different species, ecological systems, and stakeholders arising from management decision making.

100 Scoring Guidepost

- The management system allots analytical and deliberative resources in a manner that does not show any distinct evidence of a pattern of discrimination against significant stakeholder interests.
- The management system does not place an unfair burden of proof on proposals of a certain type or arising from a particular category of stakeholder.
- The management system attempts to quantify and document the degree of risk imposed on different species, ecological systems, and stakeholders by particular decisions or courses of action, particularly in light of scientific uncertainty.

SCORE 95

IPHC

It will be recalled again that the Commission's mandate is limited to management of the fishery for the target species, halibut. Consideration of bycatch problems of non-halibut species and impacts of the fishery on regional ecology has been left to national governments. As discussed under Indicator 3.2.2.1, limiting consideration to issues within IPHC's mandate, the Commission has a tradition of very open and cooperative development of its program with representatives of the two participating governments (who would reflect their own national policies) and stakeholders, the vast majority of whom are actively involved as fishermen or processors (reflecting the views of all sectors of the harvesting and processing sectors). Within this arena, the Commission's recommendations and decisions do not show any distinct evidence of a pattern of discrimination against significant stakeholder interests, do not place an unfair burden of proof on proposals made by any category of stakeholder. This being said, however, it will be recalled that Commission staff informed us that there has been little interest shown in IPHC meetings by environmental stakeholders who, it would appear, reserve their contribution to debate to national meetings in their own countries.

National Programs

IPHC recommendations are not reviewed within the same framework of review and approval required under the MSA as are other Alaskan groundfish fisheries. However, as discussed above, supplementary regulations, particularly relating to allocation of IPHC recommended quotas among US nationals are reviewed under the NPFMC/NMFS system.

In particular the NPFMC and NMFS developed an extensive regulatory framework for the IFQ system of allocating quotas among halibut fishermen. This initiative also included the

black cod fishery. A companion MSC assessment report on black cod, prepared concurrently with the present halibut report considered that the extensive NPFMC/NMFS many layered system of consultation provide an effective filter against bias, unfairness or imbalance. The report noted that NPFMC Fishery Management Plans are modified via amendment (Amendments 15 and 20 dealt with the development of the IFQ system). Each amendment requires a NEPA analysis with either an Environmental Assessment or Environmental Impact Statement for each proposed action. In addition, companion analyses for compliance with other Federal Acts accompany the EA and/or EIS are carried out. Analyses typically evaluate the biological and environmental consequences of the action, the social/economic impacts including impacts on communities and small business, and the regulatory impacts.

NPFMC solicits recommendations for Alaskan groundfish FMP amendments on an annual basis, encouraging stakeholder participation in the process. Those proposing plan amendments file a standard form, indicating that all responses are evaluated, at least in this respect, based on a common set of standards. All proposed actions are submitted to the Council's AP prior to consideration by the Council, and all measures involving scientific issues are presented to the Council's SSC as well as the AP. In addition, all stakeholders are provided equal opportunity to attend Plan Team, Council, AP and Scientific and Statistical Committee (SSC) sessions to ask questions, make comments or provide testimony prior to action on the item.

NEPA-mandated environmental reviews are routinely prepared in connection with management measures affecting the Alaskan groundfish fisheries. These documents, which with rare exceptions are published for public review and comment, evaluate the impacts which the proposed measures are expected to have on the marine environment, including fish stocks (target and non-target), birds, marine mammals and other components of the marine ecosystem(s) affected by the proposed measure. The documents also evaluate the impacts that the proposed measures will have on fishing communities, native groups, small entities and various other components of the fishing industry (vessel and gear types, industry sectors, etc.) as well as the product forms produced by the fishery, product mixes, consumers, and the local, regional and national economies. The analyses and assessments provide required information on relative risks borne by different species and stakeholders as a result of uncertainty.

The 2004 MSC Pollock Assessment came to similar conclusions regarding the comprehensive nature of information array and consideration within the Council and went further to take into account that the management system included the federal judicial and legislative branches. In this regard, the Pollock Team considered that the management system for these fisheries, defined in the broadest sense, has come to enfranchise the interests of all major stakeholders. All gear groups participate in the system, and there is no evidence that the system unduly favors one such group over others. By having included the federal judicial and legislative branches within the definition of the management system, the team concluded that all stakeholders ultimately have access to a mechanism to place relevant information before appropriately impartial decision-makers.

The 2005 black cod assessment report concluded that FMP system of intensive multilayered consultation had been effective and that decisions regarding the black cod fishery show no distinct evidence of a pattern of discrimination against significant stakeholder interests nor do they place an unfair burden of proof on proposals of a certain type or arising from a particular category of stakeholder. The Team considers that similar judgments can be made concerning the more limited consideration of the allocative portions of the halibut management plans. At the present time, ecological considerations do not feature largely in decision making regarding the halibut fishery. In this regard and lack of observer coverage leaves some important questions regarding the measurement of ecological impacts unanswered (see Indicator 3.1.1.5 above) but the Team was not presented with any information to suggest that anyone felt there was any bias in the development and presentation of advice. In this light, we do not think that weakness in the program regarding measurement of impacts reflects any bias, lack of objectivity or unfairness in the system. Overall the Team considers that, under this indicator, the program warrants a score of 95.

3.2.1.3

The management system presents managers with clear, useful, relevant information, including advice.

[Relates to MSC Criterion 3.2]

Elements considered in scoring include:

- Presentation of alternatives
- Characterization of risk, uncertainty, consequences
- Opportunity for deliberation

60 Scoring Guidepost

- The management system regularly presents decision makers with a reasonable number of carefully analyzed alternatives for action, but alternatives do necessarily reflect all substantial proposals made by stakeholders.
- Due to lack of resources or institutional problems, decision makers sometimes find information provided by technical sources to be inadequate, particularly in respect to assessing risks.

80 Scoring Guidepost

- The management system regularly presents decision makers with a reasonable number of carefully analyzed alternatives for action that fall in a range that includes all legally permissible options proposed by stakeholders.
- The management system's decision makers show evidence of relying consistently upon the information provided to them.

100 Scoring Guidepost

- The management system regularly presents decision makers with a reasonable number of carefully analyzed alternatives for action that fall in, and extend to the margins of a range that includes all legally permissible options.
- The management system provides decision makers with time and opportunity for deliberation in a manner suitable for the nature of the decisions under consideration.
- The management system shows evidence of a pattern of behavior by decision makers that reveals that they have found the information provided to them to be useful, adequate in scope and detail, and otherwise appropriate to the performance of their duties.

SCORE 80

Analyses under Principle 1 of the present report indicate that in proposing options for quota management of the halibut fishery, IPHC technical staff provide managers with carefully analyzed information permitting the examination of wide range of options for effective regulation of the fishery. When changes in management approaches are being considered, extra efforts are expended to explain and test the basis for such changes in consultations with scientific advisors and stakeholders (Clark 2003 and Leaman and Hare 2004²²). In the Team's view, in respect of halibut quota management, the management system regularly presents decision makers with a reasonable number of carefully analyzed alternatives for action. As discussed under Indicator 3.1.1.3, IPHC recommendations accepted by the Secretary of Commerce are not subject to formal review of NPFMC, and are established by listing in the Federal Register as law. The timetables for consideration of IPHC staff proposals and NMFS legal steps to implementing accepted IPHC recommendations are adequate to permit their thorough review within the IPHC system.

As discussed in the introduction to Principle 3, the mandate of IPHC has been interpreted by the governments as focusing on biological conservation measures for halibut in Alaskan fisheries leaving implementation measures (e.g. allocation issues) and measures associated with ecological impacts of the fishery to the national governments.

Under Indicator 3.1.1.3, the Team assumed that such supplemental measures would be guided by the recently set objectives set the GOA and BSAI FMPs²³ which included impressive measures to monitor, control and record bycatches of non-target species, and avoid impacts of fishing on seabirds and habitat.

In fact, regarding protection of ecology and habitat, for the halibut fishery there has been no comprehensive consideration of ecological and habitat protection measures. However, some effective actions have been taken such as those listed under Indicator 3.1.1.3 which included banning of trawling for halibut, prohibition of discard of most rockfish and development of mitigation measures to minimize bycatch of birds. These measures have been subject to intensive examination under FMP rules, but not as a unified program.

²² <http://www.iphc.washington.edu/halcom/pubs/rara/2004rara/2004rara.htm>

²³ As reflected in the 2004 Amendments 74/81 to the GOA and BSAI FMPs.

Under Indicator 3.1.1.3, the Team noted that, unlike most other Alaskan groundfish fisheries, there was no observer program for the halibut fishery (Indicator 2.1.2.1). This lack means that reliable data on bycatch and discards are simply not available. Thus the impact of the halibut fishery on rockfish and other demersal stocks²⁴ and on corals and the efficacy of seabird avoidance measures is difficult to determine. The Team concluded that the establishment of some system for independent measures of the impacts of halibut fishery were essential.

In light of the above, it is evident that full implementation of the FMP objectives regarding ecology and habitat will require time to reach the stage where a full array of options for ecological and habitat options can be developed and debated.

Considering the impressive performance of the IPHC program and its implementation regarding quota management in the Alaskan halibut fishery, offset to some extent by the early stage of development of measures for minimizing ecological and habitat impacts, a score of 80 is awarded for this Indicator.

3.2.1.4

The management system involves all categories of stakeholders appropriately on a regular, integral, explicit basis.

[Relates to MSC Criterion 3.2]

Elements considered in scoring:

- Composition of decision-making and advisory bodies and terms of service
- Process for appointment to standing or ad hoc bodies, criteria for selection and rejection
- Quality of advance notice of meetings, availability of information, and other elements of management process

60 Scoring Guidepost

- The management system provides for involvement of representative groups from all parts of the fishing community, but may omit involvement by one or more significant stakeholder interests.
- Procedures for considering information and advice from stakeholders are not specific and comprehensive.
- Articulation of management decisions does not necessarily address concerns of stakeholders.

80 Scoring Guidepost

- The management system provides for involvement by all significant public and private stakeholders and consideration of their interests.
- The management system does not show any distinct evidence of a pattern of discrimination against significant stakeholder interests.
- The management system operates pursuant to stable, predictable, objective procedures.

²⁴ Under Indicator 2.1.5.3., the assessment notes that, in relation to TACs the take of rockfish in the halibut fishery is probably quite low, but that *this estimation can only be based on very insecure application of rockfish bycatch and discard rates that are really not much better than guesses.*

100 Scoring Guidepost

- The management system provides for direct representation of all significant public and private stakeholder interests.
- The management system does not show any distinct evidence of a pattern of discrimination against significant stakeholder interests.
- The management system operates pursuant to stable, predictable, objective procedures.
- The management system produces decisions that take fully into account and, specifically and publicly address all significant stakeholder interests.

SCORE 90IPHC

As indicated in the introduction to Principle 3 issues, and in several indicators above, IPHC's mandate and operational mode has been largely limited to consideration of research and conservation measures for the target species, halibut. Consideration of ecological issues and allocation of fishing opportunities among nationals of the two countries has been left to national governments. Reflecting this limited scope, participants in the Commissions proceedings have tended to be limited, not by edict but by interest, to active participants in the fishery and in the processing industry. Among this group, IPHC has operated as a very open fashion. Its meetings are public and its functioning involves the participation of people from all parts of the industry.

As described in the introduction, to assist in the Commission's scientific program, each country appoints one scientific advisor. These appointees generally work for the governmental fishery science and management agency in their respective country.

The Commission also obtains advice from the collective fishing community of the two countries. Beginning in 1931, the Commission has been assisted by a Conference Board representing Canadian and United States commercial and sport halibut fishing interests. The Board was established to obtain recommendations from the fishing fleet on conservation measures. Its members are designated by union and vessel owner organizations of both countries. Following staff presentations and proposals at the IPHC Annual Meeting, the Board meets simultaneously with the Commission to discuss the proposals. Their recommendations are then presented to the Commission for consideration. In addition, three representatives of the Board from each country are invited to attend Commission interim meetings.

The Processor Advisory Group (PAG), formed in 1996, is an advisory panel consisting exclusively of processors from both the United States and Canada. The Commission hears the PAG recommendations as well as the Conference Board recommendations at the Annual Meeting before setting regulations for the coming year.

The Commission forms working groups to deal with particular issues. These often involve private sector participants with practical experience in the fishery.²⁵

Overall, if IPHC's mandate is considered to be limited to halibut exploitation issues and that as such, its "clientele" is limited to those involved with halibut exploitation, the Team considers that the Commission's program would score 100 for this indicator by providing for direct representation of all significant public and private stakeholder interests, not showing any distinct evidence of a pattern of discrimination against significant stakeholder interests, operating pursuant to stable, predictable, objective procedures and, producing decisions that take fully into account and, specifically and publicly address all significant stakeholder interests.

National Programs

Those aspects of the halibut management program controlled by the US, the supplementary measures dealing with matters such as allocation and bycatch limitation, are developed within the NPFMC procedural framework.

The NPFMC has an extensive network of advisory groups and committees and, as described under other Indicators, Council deliberations are conducted publicly and throughout Alaska and periodically in the Northwest US.²⁶

The Council itself is composed of 15 members: 11 voting and 4 non-voting. Seven of the voting members are appointed by the Secretary of Commerce upon the recommendation of the governors of Alaska and Washington. The governors must submit three names for each vacancy occurring on the Council and may indicate a preferred choice. The Governor of Alaska nominates candidates for five seats, the Governor of Washington two seats. There are four mandatory voting members; they are the leading fisheries officials from the states of Alaska, Washington and Oregon and the Alaska Regional Director for the National Marine Fisheries Service. The four non-voting members are the Executive Director of the Pacific States Marine Fisheries Commission, the Area Director for the U.S. Fish and Wildlife Service, the Commander of the 17th Coast Guard District, and a representative from the U.S. State Department.

The Council is supported by an Advisory Panel (AP) members represent major segments of the fishing industry; catching and processing, subsistence and commercial fishermen, observers, consumers, environmental/conservation, and sport fishermen. The AP now consists of twenty-one members.

The Scientific and Statistical Committee (SSC) is composed of well-known scientists in biology, economics, statistics, and social science. The SSC advises the Council on scientific and other technical matters. The SSC has 15 members, the majority from universities both in Alaska and in the continental US. In addition to the SSC, the Council has appointed

²⁵ For example see: <http://www.iphc.washington.edu/halcom/newsrel/2004/nr20040126.htm>

²⁶ <http://www.fakr.noaa.gov/npfmc>

approximately 21 other committees with varied membership from government and from outside.

A Groundfish Plan Team prepares an annual Stock Assessment and Fishery Evaluation (SAFE) report for the groundfish fisheries. Its meetings are open to outsiders.

Availability of Information

The NPFMC website and newsletter list meeting dates through 2006 as well as a detailed three-meeting outlook.²⁷ The Council publishes in advance of meetings a detailed agenda for the meeting. Analyses prepared by NMFS and the Council relating to agenda items are available by mail, electronically and by hard copy at the Council meetings. All meetings are open to the public (except for executive sessions dealing with personnel matters, items involving national security and/or litigation) and public testimony is taken on any action item on the Council's agenda.

From the foregoing, the Team believes that there are ample opportunities for participation in NPFMC deliberations by all segments of the community. Echoing the views of the 2004 MSC Pollock Assessment, the Team considers that the administrative procedures followed by the NPFMC are commendable for their stability, clarity and accessibility. The system's progress toward making more robust use of NEPA (through implementation of the 2004 Final PSEIS holds the promise of even greater transparency and engagement. The immense volume of written and electronic information made available to the evaluation team is particularly compelling evidence of the openness and accountability of the management system.

Criticisms

However, in the 2004 MSC pollock evaluation (Chaffee et al. 2005), conservation stakeholders vigorously criticized the system for under-representation of non-consumptive marine resource interests in the management process. The assessment team did note that it was not provided with any specific documentation of bias, and the scoring reflected this lack of documentation.

Questions of balance of interests within US Fishery Management Councils and their subsidiary bodies and mechanisms for selecting Commissioners and supporting advisory groups is not just a concern raised by stakeholders in the Pollock fishery or in the North pacific in general. These issues have been a matter of general concern throughout the US, triggering criticism and proposals for change in Council appointment processes by several national reviews, the most recent of which was the US Commission on Ocean Policy's 2004 major study which provided findings and recommendations for a new, coordinated and comprehensive national ocean policy.²⁸ The study, *inter alia* recommended that Congress should amend the MSA to:

²⁷ <http://www.fakr.noaa.gov/npfmc/newsletters/NEWS605.pdf>

²⁸ http://www.oceancommission.gov/documents/full_color_rpt/welcome.html#final

- Require Regional Fishery Management Councils (RFMCs) and interstate fisheries commissions to rely on their Scientific and Statistical Committees (SSCs). In keeping with this stronger role, SSC members should meet more stringent scientific and conflict of interest requirements ... (Recommendation 19-1)
- Require governors to submit a broad slate of candidates for each vacancy of an appointed Regional Fishery Management Council seat. The slate should include at least two representatives each from the commercial fishing industry, the recreational fishing sector, and the general public. (Recommendation 19-12)
- Require that all newly appointed Regional Fishery Management Council (RFMC) members complete a training course within six months of their appointment. (Recommendation 19-14)

In addition the report proposed that Congress should give the Administrator of the National Oceanic and Atmospheric Administration responsibility for appointing Regional Fishery Management Council (RFMC) members, with the goal of creating RFMCs that are knowledgeable, fair, and reflect a broad range of interests. (Recommendation 19-13).

While the 2004 MSC Pollock Evaluation urged the NPFMC to give consideration to recommendations such as those presented in the 2004 Ocean Policy study in the interest of better accommodating the interests of conservation stakeholders, it should also be noted that all the reviews identified above point out that the NPFMC has a positive track with regard to the management of its fisheries.

At the level of overall functioning of the NPFMC, the assessment team supports the suggestion that additional measures to mitigate bias would be useful. However, considering only the question of management of the halibut fishery, the Team was not informed of concerns about imbalanced representation of different groups of stakeholders. For this reason, and considering the positive performance of IPHC as outlined at the beginning of this section, we give the combined IPHC/US halibut management program a score of 90.

3.2.1.5

The management system provides for timely and fair resolution of disagreements.

[Relates to MSC Criteria 3.2, 3.5]

Elements considered in scoring:

- Established, routine system available to all
- Objective decision maker
- Explanation of decision

60 Scoring Guidepost

- Dispute resolution mechanisms in place are theoretically adequate but are not used in a consistent manner.

- The management system fails to demonstrate meaningful progress toward resolution of outstanding disputes.

80 Scoring Guidepost

- The management system has established mechanisms for resolution of significant disputes arising within the system.
- The management system's dispute resolution procedures is clearly open to all significant participants and stakeholders.

100 Scoring Guidepost

- The management system has established mechanisms for resolution of disputes at the principal levels of, and for major issues arising within, the system.
- The management system provides for appropriate documentation of the nature and resolution of disputes.
- The management system's dispute resolution procedures is clearly open to all significant participants and stakeholders.
- The management system's dispute resolution procedures show no evidence of a pattern of discrimination against any participants or significant stakeholder interest.

SCORE 80

Halibut Commission Regulations and Decisions

Like almost with all Canada/US fisheries bilateral and multilateral agreements, the Pacific Halibut Convention does not contain any provisions for formal settlement of disputes either between the parties or between the Commission and members of the public, fishing organizations or lower levels of governments in each country.²⁹ Similarly, the US legislation implementing the Halibut Convention, the 1982 Northern Pacific Halibut Act (see introductory section above of details regarding the Act) does not contain dispute settlement provisions.

As an agreement between two sovereign governments, an international convention would not be expected to provide for settlement of disagreements between private citizens of either country and the Commission regarding Commission decisions or regulations. Rather, it would be expected that differences of opinion between the Commission and citizens of either country decisions would be settled through representations within the national section of each country, i.e. citizen groups would deal with the Commissioners of their own country.

²⁹ An exception is the 1985 Pacific Salmon Treaty which contains an article providing a dispute settlement procedure limited to technical matters such as the measurement of interceptions of salmon by fishermen of one country intercepted by fishermen of the other and questions of overfishing. Despite serious disputes between the parties regarding the interception issue, procedural wrangling has prevented use of the dispute settlement provision (Shepard and Argue 2005).

At the country-to-country level, disputes between the parties could be settled through formal dispute settlement mechanisms. However, Canada and the US have, for the most part avoided the inclusion of dispute settlement provisions in the approximately ten bilateral or multilateral fisheries agreements the parties have concluded in recent years. Instead, when conflicts have arisen within Canada/US commissions, they have usually been settled through negotiations at the parent. In these cases, negotiated government-to-government decisions are implemented through issuance of instructions to the particular commission or, in some cases, amendments to treaties. For example, in 1999, irresolvable disputes within the Pacific Salmon Commission (Shepard and Argue loc. Cit.) were settled by a government-to-government negotiations which led to dictation of treaty implementation terms for a ten-year period.³⁰

National Programs

Disputes within the US regarding halibut regulatory measures would be dealt with within the framework of the NPFMC system. In dealing with this issue in the companion MSC Black Cod Assessment, the Applicant's submission described that, within the NPFMC, management decisions and implementation follow a long path of sequential deliberations, conducted in an open public manner giving many opportunities for resolution of disputes. The submission noted that the NPFMC conducts its business through open public meetings. There is a tape recorded record of Council deliberations including all testimony presented to the Council. Copies of tapes are available to anyone. The Council is deliberate in providing comment for the public record explaining the course of action taken. Disagreements inevitably occur and are occasionally settled through the Federal courts. Following final action by the Council, NMFS must generate revised fishery regulations to conform with Council management plans. The regulation changes are accompanied by Federal Register notices of both pending and final action. Explanations for the actions are provided in the Federal Register notice. Public comment is solicited in this process and a response to public comment offered in the published final rule.

The Team notes that, although there is no formal dispute settlement process, most disputes are settled in the course of the sequential deliberations described above. Where major differences on substantive matters persist, disputes are referred to the Courts. In this case, the Courts may be viewed as the final focus for dispute settlement.

The MSC Halibut Team considers that the situation regarding the limited halibut regulations established by NMFS through the NPFMC is similar to the black cod case. The Team has not been informed that failure to resolve disputes has been an important concern in management of the halibut fishery in recent years. Thus, although there is no formal dispute settlement mechanism in place, the Team concludes that the NPFMC layered system of consultations with recourse to the courts when problems persist, permit resolution of significant disputes arising within the system and that the procedures for settling disputes are clearly open to all significant participants and stakeholders. On this basis, for this Indicator, the Alaska halibut fishery is accorded a score of 80.

³⁰ Pacific Salmon Commission. Annual Report for 1999-2000. Appendices A-D.
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3.2.2

The management system applies information through implementation of measures and strategies (by rule or by voluntary action of fishery) that demonstrably control the degree of exploitation of the resource in the light of the natural variation in ecosystems

3.2.2.1

**The management system sets catch levels to maintain high productivity of the target population and the ecosystem
[Relates to MSC Criterion 3.10]**

60 Scoring Guidepost

- Catch levels are varied in relation to target species population goals, but setting of goals and the degree of conformity with such goals is variable.
- Setting of catch levels takes into account ecological considerations, but only in a subordinate and variable manner.
- Evidence of the effects of the management program on productivity is equivocal.

80 Scoring Guidepost

- Catch levels and/or catch arrangements are regularly set in a precautionary manner directly tied to, and limited by, target species population goals, including goals for population subcomponents.
- Catch levels are set in a manner that considers ecological productivity goals, such as, but not limited to, protection of biodiversity, predator-prey dynamics, prey abundance and spatial distribution, food web requirements, and habitat needs.
- No clear-cut indications of substantial declines in productivity of the target species or the ecosystem as a consequence of harvest levels.

100 Scoring Guidepost

- Catch levels are set regularly in a precautionary manner directly tied to, and limited by, target species population goals, including goals for population subcomponents.
- Catch levels are set in a manner directly tied to, and limited by, specific ecological productivity goals, such as, but not limited to, protection of biodiversity, predator-prey dynamics, prey abundance and spatial distribution, food web requirements, and habitat needs.
- No evidence that the productivity of target populations, including population subcomponents, is declining as a consequence of harvest levels.
- No evidence that ecological productivity is declining as a consequence of harvest levels.

SCORE 80

As discussed under Indicator 3.1.1.2, the Team concluded that IPIHC's approach to management of the halibut fisheries was adaptive and precautionary and that the halibut

quotas were set on a conservative basis. The harvest policy now in use at the IPHC for establishing annual quotas is a modified constant harvest rate policy. Harvest rates are related to spawning biomass limits, with full constant (or target) harvest rate being applied as long as spawning biomass is above a conservatively set threshold. The harvest rate is scaled down as stocks move toward undesirable low levels.³¹ An annual standardized longline survey is conducted to keep track of stock and spawning biomass levels. Catch limits are set for ten sub-areas.

Overall, under the present regime, the fishery has been relatively stable. In recent years, catch levels have been relatively constant and close to historic highs.

The team concludes that, in respect of the management of the target species, Pacific halibut catch levels and/or catch arrangements are regularly set in a precautionary manner directly tied to, and limited by, target species population goals, including goals for population subcomponents. Were management limited to consideration of the target species, a near perfect score would have been awarded.

However, this Indicator requires the team to consider ecological impacts as well. As outlined in Indicator 3.1.1.3, although a number of measures have been taken in the groundfish fisheries to protect the ecology, there is not yet an overall strategy to avoid damage to the regional ecology. As discussed under Principle 2 (e.g., Indicator 2.15.4), there is a lack of information on the effects of halibut longlining on corals and, due to lack of direct observations, there are uncertainties regarding the extent of discarding of species such as rockfish and of seabirds (Indicator 2.1.5.3). These considerations would lead to assigning a much lower score to performance of the fishery under this indicator than would be warranted from the non-ecological perspective discussed in the preceding paragraph.

On the other side of the coin, under Indicator 2.1.5.2, it was concluded that harvesting of halibut is conservative in terms of stock size and fishing mortality, and there is no evidence to suggest that removal of halibut at the present fishing rate has an adverse impact on ecosystem structure or function and therefore no evidence that ecological productivity is declining as a consequence of harvest levels. In addition, ecological productivity is considered in that the fishery avoids catches of juveniles and sets limits to maintain high productivity in areas where fishing occurs so that halibut abundance is maintained. The IPHC staff regularly participates in discussions around other fisheries where impacts on ecological function are discussed. If any significant erosion to biodiversity or ecological function were seen, it would be known to IPHC. In addition, the lower thresholds set for this fishery were based on the lowest points seen from which the fishery amply recovered. This protects the ecosystem by not allowing the fishery to go so low as to impair the capacity of the target species to be productive and maintain its ecological importance in the area.

³¹ Recent studies (Clark and Hare 2002) conclude that, to a considerable extent, changes in Pacific halibut recruitment are due to environmental variation rather than spawning stock size.

Overall, with a strong performance of the management system regarding exploitation of the target species but with some doubts regarding the impact of the fishery on bycatch species, a score of 80 is assigned.

- 3.2.2.2** **The management system accounts for catch of non-target species.**
[Relates to MSC Criteria 3.10, 3.17]

60 Scoring Guidepost

- The management system requires monitoring and accounting of catch of non-target species, but the effectiveness of the measures is uncertain..
- Information available to managers from monitoring of catches of non-target species is barely adequate.

80 Scoring Guidepost

- The management system requires reliable, timely monitoring of and accounting for catch of non-target species and use or discard of that catch throughout all significant components of the fishery.
- Measures taken substantially reduce the capture of non-target species.

100 Scoring Guidepost

- There is real-time, reliable monitoring of and accounting for catch and use or discard of non-target species throughout the fishery.
- The management system has achieved continued improvement in the accuracy and precision of monitoring and accounting of catch and use or discard of non-target species.

SCORE 70

Under Principle 2, Indicators 2.1.2.1, 2.1.2.2, 2.1.5.3, 2.2.2.1 and 2.2.1.2 note the lack of observer or other forms of independent monitoring of the halibut longline fishery. Information on landed bycatch of non-halibut fish comes from state fish tickets and data on discards is supposed to be recorded in fishermen's log books, but information so gathered cannot be considered reliable without the capability of cross checking. Of greatest importance is information on the possible occurrence of short-tailed albatross, a species on ESA's endangered list. There are also questions on the impact of the halibut fishery on rockfish. The NPFMC has considered extending the North Pacific observer program to include the halibut fishery and, it is understood the possibility is again under active consideration.

Whereas the lack of monitoring is a serious deficiency, as outlined under Indicator 3.1.1.3 above, the management system has developed a number of protective measures which work to reduce undesirable bycatches and discards such as the banning of trawling for halibut, the adoption of IFQ and CDQ programs in the halibut fishery, prohibition of most discards of

rockfish and adoption of mitigation measures for the capture of seabirds. Nevertheless, without effective monitoring, the efficacy of these programs is difficult to assess. Until some sort of independent monitoring is in place, it is evident that there is not reliable, timely monitoring of and accounting for catch of non-target species and use or discard of that catch throughout all significant components of the fishery.

On the basis of the foregoing, the Team assigns a score of 70. A passing grade would require the development of an effective system for the monitoring and reporting of bycatch.

CONDITION

Same as for Indicators 2.1.2.1 and 3.1.1.3.

3.2.2.3

The management system applies gear restrictions and mandatory practices to avoid catch of non-target species, minimize mortality of this catch, and reduce unproductive use of non-target species that cannot be released alive.

[Relates to MSC Criterion 3.12]

60 Scoring Guidepost

- The fisheries management system has a system for minimizing catches of non-target species, including the setting of targets, but it is difficult to assess its effectiveness.
- Multi-year trends in catch levels of non-target species are equivocal.
- Progress in encouraging productive uses of previously discarded non-target species is slow.

80 Scoring Guidepost

- The management system applies an established, widely accepted program to minimize catch of non-target species, including specific goals, such that the take of these species does not exceed established thresholds where appropriate, or is precautionary.
- There is evidence of a fishery-wide, multi-year trend of reduced catch of non-target species.
- There is evidence of a fishery-wide, multi-year trend of reduced non-productive economic or social use of non-target species.

100 Scoring Guidepost

- The management system applies an established, widely accepted program to minimize catch of non-target species, including specific goals, such that the take of these species does not exceed established thresholds where appropriate, or is precautionary.
- The management system has achieved a fishery-wide, multi-year trend of reduced catch of non-target species through restrictions in gear and fishing practices.

- The management system has achieved a fishery-wide, multi-year trend of reduced discards through restrictions in gear and fishing practices.
- The management system provides for productive economic or social uses of non-target species that are not released alive.

SCORE 80

As discussed under Indicators 3.1.1.3 and 3.2.2.3, despite the lack of clear quantitative objectives, the Alaska black cod and halibut longline management programs are aimed at minimizing catches of non-target species. The Team acknowledges these efforts, but is critical of the lack of monitoring to assess their effectiveness. However there is no doubt that the non-halibut bycatch problem has been substantially reduced by the measures taken.

The Team was not provided with any data on trends in catches and discards of non-target species. Correcting this deficiency is discussed above and will not be reiterated or specifically taken into account here. In this light, the Team assigned a score of 80 for this Indicator.

3.2.2.4

**The management system minimizes adverse impacts on habitat.
[Relates to MSC Criteria 3.10, 3.13]**

60 Scoring Guidepost

- The management system prohibits destruction of habitat by fishing, but monitoring of effectiveness could be improved.

80 Scoring Guidepost

- The management system has information on the effects of the fishery on habitat.
- The management system has taken significant actions to restrict fishery gear and practices to reduce fishery impacts on habitat.

100 Scoring Guidepost

- The management system conducts continuing studies to identify, document, and assess the risks of fishery impacts on habitat.
- The management system has demonstrated a pattern of actions to restrict fishery gear and practices to reduce adverse impacts on habitat.
- The management system has achieved a demonstrated trend of reductions in adverse habitat impacts from fishery.

SCORE 85

It will be recalled that, as outlined in the introduction to the Principle 3 analysis above, the MSA requires that NMFS and NPFMC describe and identify Essential Fish Habitat (EFH) for

fisheries, minimize to the extent practicable the adverse effects of fishing on EFH, and identify other actions to encourage the conservation and enhancement of EFH.

Beginning in 2000, a new Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska (EIS) was developed to provide a policy basis for actions to protect marine habitats pursuant to MSA requirements. This EIS was finalized in August 2005 and evaluates alternatives for three actions: (1) describing EFH for fisheries managed by the North Pacific Fishery Management Council; (2) adopting an approach for the Council to identify Habitat Areas of Particular Concern (HAPCs) within EFH; and (3) minimizing to the extent practicable the adverse effects of Council-managed fishing on EFH.³²

In its background analysis, the EIS analysis concluded that, on the best available scientific information, despite persistent disturbance to certain habitats, the effects on EFH are minimal because the analysis finds no indication that continued fishing activities at the current rate and intensity would alter the capacity of EFH to support healthy populations of managed species over the long term. The EIS concludes that no Council-managed fishing activities have more than minimal and temporary adverse effects on EFH for any FMP species, which is the regulatory standard requiring action to minimize adverse effects under the MSA (50 CFR 600.815(a)(2)(ii)). Additionally, the analysis indicates that all fishing activities combined have minimal, but not necessarily temporary, effects on EFH. These findings suggest that no additional actions are required pursuant to the EFH regulations. However, it was noted that the analysis has many limitations, and the effects of fishing on EFH for some managed species are unknown. Even though the available information does not identify adverse effects of fishing that are more than minimal and temporary in nature, that finding does not necessarily mean that no such effects exist. Thus, the Council recommended appropriate precautionary measures.

Regarding specific actions proposed in the SEIS, NPFMC considered the development of measures to minimize adverse effects of Council-managed fisheries. With an amendment, NMFS approved the Council's proposal for a regulatory alternative involving prohibition of all bottom contact fishing in six coral garden sites in the Aleutian Islands (AI) area. Fishery monitoring measures would include existing levels of observer coverage, plus a requirement for a vessel monitoring system (VMS) on all fishing vessels in the AI. In the GOA, in addition to bottom trawl restrictions, the alternative would require fishery monitoring measures requiring maintenance of existing levels of observer coverage (which would mean zero for halibut vessels). NMFS proposed an addition which would add to the Council's preferred alternative a requirement for a vessel monitoring system (VMS) on all fishing vessels with bottom contact gear in the GOA to ensure adequate enforcement.

As outlined in the Record of Decision (ROD) cited above, NMFS received comments on the Final EIS from the Alaska Longline Fishermen's Association (representing approximately 65 members, most of whom fish from vessels less than 60 feet in length) strongly opposing a VMS requirement for fixed gear vessels due to the cost and the perceived lack of need for

³² <http://www.fakr.noaa.gov/habitat/seis/final/rod.pdf>

VMS to protect sensitive habitat features. Responding to this concern, in June 2005, NPFMC voted to request that NMFS not impose new VMS requirements for fixed gear vessels in the GOA. Responding to this request, following publication of the final EIS, NMFS determined that the implementing regulations should require VMS in the GOA only for vessels with mobile bottom tending fishing gear. Fixed gear vessels (including pot, jig, and hook-and-line gear) should be exempt from the VMS requirement. At the same time, however, as an apparent compromise, the Council voted unanimously to request that NMFS develop a separate comprehensive analysis of alternatives for applying VMS for all fishing vessels in the BSAI and GOA to address enforcement, management, and safety objectives.

Aside from the foregoing analysis and development of proposals, as noted in the discussion under Principle 2 (Indicator 2.1.3.1), the halibut fishery avoids major impacts on habitat since it is entirely a longline fishery. Monitoring of the bycatch in other groundfish longline fisheries through the observer program has shown that longlines do bring up a small bycatch of corals, but there are no equivalent data from the halibut fishery to demonstrate whether or not there is a similar impact in that fishery. Possibly the impact on corals may be less in the case of halibut longlines since these tend to be in shallower water than, for example, the black cod longlines. Based on the information existing for other longline fisheries and the fact that halibut fishing is likely to overlap less with coral distribution than the longline fishing for black cod, it would appear that the impact of the halibut longline fishery on habitats is small.

From the foregoing, it is apparent that NPFMC and NMFS have taken a measured approach to developing measures to minimize impacts of Council-managed fisheries on marine habitat. Although there continues to be a lack of monitoring that would permit adequate assessment of their effectiveness, the overall groundfish management program and the recent development of policies dealing with Essential Fish Habitat Identification and Conservation are encouraging developments. The Team concludes that the management system has conducted significant studies to identify, document, and assess the risks of fishery impacts on habitat and is taking some actions to restrict fishery gear and practices to reduce adverse impacts on habitat, warranting a score of 85.

3.2.2.5

**The fishery does not use destructive fishery practices.
[Relates to MSC Criterion 3.14]**

60 Scoring Guidepost

There is no evidence that destructive fishing practices take place within the fishery.

80 Scoring Guidepost

- Fishery management system prohibits use of destructive fisheries practices.
- There is no evidence that destructive fishery practice is occurring.

100 Scoring Guidepost

- The management system affirmatively prohibits fishery or operational practices that damage or destroy natural geologic, biologic, or chemical features or characteristics of the aquatic area in which the fishery occurs, except those impacts that are physically unavoidable consequences of authorized uses of fishing gear.
- There is no evidence that destructive fishery practice is occurring.

SCORE 95

In the North Pacific groundfish fishery, fishing methods that have less impact on the environment are routinely encouraged over more intrusive ones through direct prohibitions, gear allocations, and economic incentives. Driftnets, bottom tangle nets, and longlined-pots have all been banned in the GOA and BSAI groundfish fisheries. For additional information, see 50 CFR 600.725, which provides the list of authorized fishing gear permitted in U.S. fisheries. This citation in the Code of Federal Regulations³³ states that only trawl, hook and line, handline, longline, pot and trap gear are permitted in the North Pacific commercial groundfish fishery. These gear types are commonly used in commercial fisheries internationally and fishing with such gear is not considered to be a destructive fishing practice.

As discussed in the introduction to Principle 2 issues in the present assessment, longline fisheries avoid most of the problems that can be associated with other types of bottom-fishing gear such as trawls, such as damage to the benthos and benthic habitat.

Considering the foregoing, black cod and halibut longline gears are clearly among the least destructive types of gear used in commercial fisheries, warranting a score of 95 for this Indicator.

3.2.2.6

The management system provides for rebuilding and recovery, where applicable.

[Relates to MSC Criterion 3.10]

60 Scoring Guidepost

- Where it has been demonstrated that stocks are at levels below established reference points, the management system takes steps to rebuild over-fished stocks, but lacks approaches to reliably ascertain when stocks are over-fished, including those stocks not subject to targeted fisheries at the present time, but depressed due to earlier fishery activity.
- The management system does not respond in a timely manner to information regarding the need to rebuild and recover stocks.

80 Scoring Guidepost

³³ <http://www.gpoaccess.gov/cfr/index.html>
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- Where it has been demonstrated that stocks are at levels below established reference points, the management system sets goals and has demonstrated a trend toward achieving rebuilding and recovery goals for such stocks.

100 Scoring Guidepost

- Where it has been demonstrated that stocks are at levels below established reference points, the management system sets goals and has demonstrated a trend toward achieving rebuilding and recovery goals for such stocks.
- The management system does not allow fishing on any stock impacted by the fishery that has declined below limit reference points until the fishery can be demonstrated to be significantly above the limits imposed.

SCORE 95

As indicated in the discussion under Indicator 1.1.3.1, present IPHC policies specifically call for cessation of fishing to facilitate recovery when the stocks reach low levels. For each regulatory area a “limit” is set for the minimum female spawning biomass (the lowest biomass observed over the history of the fishery). A threshold is set at 150% of this limit. Above the threshold limit a constant harvest rate is applied. The allowable rate is scaled down linearly from the full rate to a rate of zero when the biomass reaches the limit.

Historically, IPHC has promptly recommended effective action to restrict the fishery when stock levels fall. In the 1960s, Japanese fishing vessels were allowed to fish halibut off the Alaskan coast taking substantial amounts of halibut beyond catches allowed for Canadian and US fleets. In addition, incidental catch of halibut in the groundfish fisheries increased. Both these factors along with a natural decline in halibut recruitment contributed to a decline in the population, and a consequent decline in longline catches (to about half of their former level). Catches remained low in the 1970s. During the 1980s, under these difficult circumstances *IPHC intentionally set catch limits below what would have been safely harvested in order to rebuild the population* (IPHC 1998).

Thus, both historically and under the present management regime, IPHC (with concurrence of Canadian and US national governments) applies conservation measures to prohibit directed harvest in the longline fisheries if stocks decline below reference levels and restricts harvests above such limits at levels that will permit rebuilding, warranting a high score of 95.

3.2.2.7

The management system applies closures or restrictions when catch limits are reached.

[Relates to MSC Criterion 3.10]

60 Scoring Guidepost

The management system applies closures or restrictions in a manner that generally prevent catch limits being exceeded, but from time to time over-runs occur.

80 Scoring Guidepost

- The management system has demonstrated a consistent ability and willingness to close or restrict the fishery to prevent over-runs of catch limits by all participants in the fishery.
- The management system has a record of identifying and eliminating factors that impair the effectiveness of catch limit-related closures or restrictions.

100 Scoring Guidepost

- The management system has demonstrated a consistent ability and willingness to close or restrict the fishery to prevent over-runs of catch limits by all participants in the fishery.
- The management system has a record of identifying and eliminating factors in season that impair the effectiveness of catch limit-related closures or restrictions.

SCORE 90

The IFQ and CDQ programs, involving assignment of portions of quotas to individual enterprises, facilitate monitoring and measuring progress toward achievement of ABCs by areas. This coupled with an increasingly automated system for on-time recording and collation of catch statistics (see discussion under Indicator 3.2.4.1 below) provide the basis for timely assessment of the progress of fisheries within areas toward achievement of pre-set quotas. As described by Sigler and Lunsford (2001), before the IFQ system for black cod and halibut was introduced, predicting when to close the open-access fishery was difficult because of the speed and brevity of the fishery. Often the initial open period was followed by a “mop-up” fishery if the quota had not been reached in the initial open period. The sablefish quota frequently was exceeded in the Gulf of Alaska.

The halibut quota also was exceeded frequently during the open-access fishery but not after the introduction of the IFQ fishery in 1995 (NRC 1999). For example, since the IFQ program began in 1995, the aggregate catch limit for the commercial fisheries in all areas in Alaska was not exceeded (in recent years, 2002-2005, annual catches averaged 94% of the aggregate limit).

IPHC sets catch limits for ten separate regulatory areas. With a few exceptions, catches in these subareas are very close to the limits assigned to them. For example, the total 2004 catch from the IFQ halibut fishery for the waters off of Alaska was 59.1 million pounds, 4% under the catch limit. For 4 of the ten areas, the quota shares were within 2% to 3% of the catch limits and in another area was within 5% of the limit. In the CDQ fishery to the north, the catch in one area was only 55% of the limit. In Areas 4D and E the fisheries in the combined area was managed as one stock with an enforcement waiver permitting quota in 4D to be taken in Area 4E; the combined catch in the two areas was 6% less than the combined limit.

The Team considers this to be an excellent record, demonstrating that the management system has a consistent ability and willingness to close or restrict the fishery to prevent over-runs of

catch limits by all participants in the fishery and a record of identifying and eliminating factors that impair the effectiveness of catch limit-related closures or restrictions.

There is one seemingly anomalous feature to the structure of the quota program. Stock assessment analyses make allowances for natural mortality, discards, subsistence catches etc, and also for catches made by IPHC survey vessels (which, for example, during 2001-2004 amounted to about 1.6% the aggregate catch by commercial and survey vessels combined³⁴) in developing estimates of total abundance. When developing catch limits, estimates of losses from the various sources of mortality other than the commercial fishery are deducted, but curiously not the survey catches. This is reflected in IPHC presentations of catch and limit information, such as Table 2 of Appendix 1 to the 2002 IPHC Annual report which compares the “commercial catch” (which includes the IPHC research catch) and the “commercial catch limits”. For the nine years shown, the “commercial catch” exceeded the limits three times and for the entire period the “commercial catch” averaged 98.5% of the annual limits, significantly higher than the 94% quoted for the commercial fleet alone above. It is not clear whether the catch limits apply just to the true commercial catch or whether they include an allowance for research catches as well. If they did, it would seem appropriate to establish true commercial catch limits by deducting an allowance for the research catch from the aggregate limit.

Admittedly, the foregoing anomaly is a minor consideration, and overall the Team considers the catch limit system has worked well, justifying a score of 90.

3.2.2.8

The management system incorporates no-take zones, and MPAs, or other mechanisms, where appropriate, to achieve harvest limits and ecosystem protection objectives.

[Relates to MSC Criterion 3.10]

60 Scoring Guidepost

- The management system has established some control mechanisms but their effectiveness is doubtful or has not been evaluated adequately.

80 Scoring Guidepost

- The management system has established no-take zones, MPAs, or other control mechanisms, where appropriate.

100 Scoring Guidepost

- The management system has demonstrated a consistent ability and willingness to establish no-take zones or MPAs or other mechanisms where appropriate in order to achieve harvest limit or ecosystem protection goals.

³⁴ <http://www.iphc.washington.edu/halcom/commerc/tables.htm>
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- The management system has identified criteria and standards for establishment of control mechanisms

SCORE 80

The principal means of achieving harvest limits in the halibut fishery is the IFQ/CDQ system and not no-take zones and MPAs. Discussion under this Indicator is therefore limited to habitat effects.

It will be recalled that, as outlined in the introduction to the Principle 3 analysis above, the MSA requires that NMFS and NPFMC describe and identify Essential Fish Habitat (EFH) for fisheries, minimize to the extent practicable the adverse effects of fishing on EFH, and identify other actions to encourage the conservation and enhancement of EFH.

Beginning in 2000, a new *Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska* (EIS) was developed to provide a policy basis for actions to protect marine habitats pursuant to MSA requirements. This EIS was finalized in August 2005 and evaluates alternatives for three actions: (1) describing EFH for fisheries managed by the North Pacific Fishery Management Council; (2) adopting an approach for the Council to identify Habitat Areas of Particular Concern (HAPCs) within EFH; and (3) minimizing to the extent practicable the adverse effects of Council-managed fishing on EFH.³⁵

In its background analysis, the EIS concluded that, based on the best available scientific information, despite persistent disturbance to certain habitats, the effects on EFH are minimal because the analysis finds no indication that continued fishing activities at the current rate and intensity would alter the capacity of EFH to support healthy populations of managed species over the long term. The EIS further concludes that no Council-managed fishing activities have more than minimal and temporary adverse effects on EFH for any FMP species, which is the regulatory standard requiring action to minimize adverse effects under the MSA (50 CFR 600.815(a)(2)(ii)). Additionally, the analysis indicates that all fishing activities combined have minimal, but not necessarily temporary, effects on EFH. These findings suggest that no additional actions are required pursuant to the EFH regulations. However, as noted above, the analysis has many limitations, and the effects of fishing on EFH for some managed species are unknown. Even though the available information does not identify adverse effects of fishing that are more than minimal and temporary in nature, that finding does not necessarily mean that no such effects exist. Thus, the Council recommended appropriate precautionary measures.

Regarding specific actions proposed in the SEIS, under Action 3, dealing with measures to minimize adverse effects of Council-managed fisheries, the NMFS approved, with an amendment, an alternative involving provisions for prohibition of all bottom contact fishing in six coral garden sites in the Aleutian Islands (AI) area. Fishery monitoring measures would include existing levels of observer coverage, plus a requirement for a vessel monitoring

³⁵ <http://www.fakr.noaa.gov/habitat/seis/final/rod.pdf>

system on all fishing vessels in the AI. In the GOA, in addition to bottom trawl restrictions, the alternative would require fishery monitoring measures requiring maintenance of existing levels of observer coverage. NMFS would add to the Council's preferred alternative a requirement for a vessel monitoring system on all fishing vessels with bottom contact gear in the GOA to ensure adequate enforcement.

As outlined in the ROD cited above, NMFS received comments on the Final EIS from the Alaska Longline Fishermen's Association (representing approximately 65 members, most of whom fish from vessels less than 60 feet in length) strongly opposing a VMS requirement for fixed gear vessels due to the cost and the perceived lack of need for VMS to protect sensitive habitat features. Responding to this concern, in June 2005 NPFMC voted to request that NMFS not impose new VMS requirements for fixed gear vessels in the GOA. Consequently, following publication of the final EIS, NMFS determined that the implementing regulations should require VMS in the GOA only for vessels with mobile bottom tending fishing gear, and fixed gear vessels (including pot, jig, and hook-and-line gear) should be exempt from the VMS requirement. As a compromise, the Council voted unanimously to request that NMFS develop a separate comprehensive analysis of alternatives for applying VMS for all fishing vessels in the BSAI and GOA to address enforcement, management, and safety objectives.

Regarding halibut specifically, the IPHC halibut regulations include seasonal closures and closed areas to discourage capture of juvenile halibut. However, lack of any independent means (e.g. observers or video equipment) for monitoring the activities of halibut fishing vessels will continue to be a challenge for implementing measures to exclude fishing activity from sensitive ecological areas.

From the foregoing, it is apparent that NPFMC and NMFS have taken a measured approach to developing approaches to minimize impacts of Council-managed fisheries on marine habitat. Consideration is being given to the establishment of zones in which bottom contact fishing (including longlines) will be prohibited. Overall, the Team concluded that the management system has established or is planning to establish no-take zones, MPAs, or other control mechanisms, where appropriate, warranting a score of 80.

3.2.2.9

The management system minimizes operational waste.
[Relates to MSC Criterion 3.15]

60 Scoring Guidepost

- Many participants in the fishery lack internal programs or controls to minimize operational waste.

80 Scoring Guidepost

- The management system has established rules to minimize operational waste, including monitoring and enforcement.

100 Scoring Guidepost

- The management system has established rules to minimize operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.
- The management system has established a monitoring and enforcement program for operational waste and has achieved a significant trend in reduction of such waste.

SCORE 85

Replacement of the “race for fish” system by the IFQ system for black cod and halibut in 1995 has undoubtedly decreased wastage in the fisheries by decreasing the capture of immature fish (Sigler and Lunsford (loc. cit.), probable reduction in amount of gear lost (by eliminating the temptation to abandon lost gear when it was imperative to keep fishing with fully set gear during limited time openings) and the ability of vessels to make more careful choices of fishing sites to avoid undesirable bycatches. In this regard, the IFQ system provides that persons holding quota shares for sablefish and halibut or fishing in the associated Community Development Program must keep all sablefish and legal-sized halibut caught eliminating the discarding of incidentally caught fish during trips directed to one species or the other.

The Team did not take the time to search out non-fisheries legislation and regulations regarding the prevention of pollution by vessels at sea and maintenance of onboard measures to avoid spoilage, but are aware that the same measures applied in other NMFS managed fisheries apply to halibut as well. These measures cover waste minimization and avoidance by restricting dumping potential pollutants at sea. In addition, as part of seabird avoidance requirements 50 CFR 679.24B(2)(v) includes provisions directing methods for disposal of offal and for removal of hooks from offal.

The Team concludes that existing measures for minimizing wastes warrant a passing grade of 85.

3.2.3

A comprehensive research program is conducted

3.2.3.1

There is a comprehensive research program that provides for short- and long-term needs for technical guidance and information required for management of target species and protection of the ecosystem.

[Relates to MSC Criterion 3.8]

60 Scoring Guidepost

- The research program contributes substantially to the information base required for management of the fishery but more comprehensive approaches are needed.
- There is some longer-term research contributing to improvements in basic understandings of fluctuations in target and impacted non-target species.

80 Scoring Guidepost

- The research program, in conjunction with monitoring activities provide the management system with reliable, on-time information on the status of the stocks and of the ecosystem required for management.
- There is peer review of the content and scope of the research program
- Longer term research periodically provides improvements in basic scientific understandings of:
 - Fluctuations in target and impacted non-target species
 - Effectiveness of harvest strategies
 - Effects of fishing on the ecosystem
 - Ecosystem management strategies
 - Economic considerations related to the fishery.

100 Scoring Guidepost

- The research program, in conjunction with monitoring activities provide the management system with reliable, on-time information on the status of the stocks and of the ecosystem required for management.
- There are regular reviews of the content and scope of the research program by peer groups and stakeholders.
- Research provides continuing, significant progress in scientific understanding of:
 - Fluctuations in target and impacted non-target species
 - Effectiveness of harvest strategies
 - Effects of fishing on the ecosystem
 - Ecosystem management strategies
 - Economic considerations related to the fishery.

SCORE 80

IPHC

IPHC conducts a comprehensive research program to provide basic data for stock assessments and to investigate the life history of halibut to create understandings of factors affecting the abundance of the stocks. The extensive lists of publications presented in the Commission's website, including Annual Reports, Information Bulletins, Scientific Reports and Technical Reports³⁶ attest to the productivity of the organization during its almost 80 years of existence. The Commission's technical staff is world class and highly respected as leaders in the development of science-based fisheries management measures.

For example, the Commission has an extensive program of port sampling to monitor landings and to determine size and age composition etc. and a log book program, including fishermen

³⁶ <http://www.iphc.washington.edu/halcom/literatu.htm>
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interviews, to assess gear loss, at sea discards of halibut. The Commission also works with NMFS and ADF&G to develop improved means of reporting of fisheries information. Additionally, the backbone of the field program is the Standardized Stock Assessment (SSA), an annual research vessel survey conducted with standardized methods, bait and gear to provide a comparison with information obtained from the commercial catches.

Annual Reports of the Commission provide a full account of all the other research activities including results of tagging programs to study seasonal migrations, development of methods for aging halibut, study of oceanographic conditions as they may affect halibut productivity.

In the analyses conducted under Principle 1 in the present report, the Team examined the adequacy of the collection, collation and assessment of information on the halibut stocks required for management. Of the 10 Indicators dealing with basic information, eight were accorded high score of 90 or more. Only the Indicators dealing with information on geographic ranges and selectivity were graded lower, but still at the passing grade of 80 or 85. The generally high scores reflect the high regard of the Team for the Commission's research program

As outlined in the Introduction to Principle 3 issues, the operation of the Commission is very collegial, with extensive arrangement for consultation with stakeholders and technical representatives of the two member governments. Thus, each country appoints one scientific advisor to work with the staff in development of its program. These appointees generally work for the governmental fishery science and management agency in their respective country.

The Commission also obtains advice from the collective fishing community of the two countries. Beginning in 1931, the Commission has been assisted by a Conference Board representing Canadian and United States commercial and sport halibut fishing interests. The Board was established to obtain recommendations from the fishing fleet on conservation measures. Its members are designated by union and vessel owner organizations of both countries. Following staff presentations and proposals at the IPHC Annual Meeting, the Board meets simultaneously with the Commission to discuss the proposals. Their recommendations are then presented to the Commission for consideration. In addition, three representatives of the Board from each country are invited to attend Commission interim meetings.

The Processor Advisory Group (PAG), formed in 1996, is an advisory panel consisting exclusively of processors from both the United States and Canada. The Commission hears the PAG recommendations as well as the Conference Board recommendations at the Annual Meeting before setting regulations for the coming year.

The Commission forms working groups to deal with particular issues. These often involve private sector participants with practical experience in the fishery.³⁷ In 1997, IPHC commissioned a peer review of its stock assessment methods, involving senior stock assessment scientists from the US, UK and Canada (Horwood et al 1997).

³⁷ For example see: <http://www.iphc.washington.edu/halcom/newsrel/2004/nr20040126.htm>

The Team concludes that the IPHC research program is of very high quality and is making continuous progress in developing scientific understandings of fluctuations in target species and in the effectiveness of harvest strategies for the target species, halibut. Through the extensive consultative mechanisms within IPHC, the content and scope of the research program is reviewed annually by experts of the national governments and by stakeholders.

Ecological Considerations

As discussed in the introduction to Principle 3 issues, IPHC's mandate is limited mainly to consideration of exploitation of the target species, halibut. With some exceptions, ecological research has been conducted by research agencies in the US and Canada.

The annual groundfish SAFE report³⁸, the 2005 PSEIS and EH describes the many research projects by a variety of government agencies and universities studying the habitats and ecology of the waters off the Alaskan coast. Some work is being done following the distribution and intensity of longline fishing throughout the area, but most of the information deals with fisheries other than that for halibut.

Nevertheless, as outlined under Principle 2 in this report, there is a substantial body of data from past studies shedding light on possible impacts of the halibut fishery on the regional habitat and ecology. The Principle 2 enquiry involved 11 Indicators associated with the collection and assembly of information regarding ecological and habitat issues. In contrast with the high scores awarded under Indicator 1 for research on the target species (see above), scores for similar research under Indicator 2 were much lower. Of 11 information oriented Indicators, only 2 scored 90 or above and three scored less than 80, indicating unsatisfactory performance. The low scoring of the last-mentioned three was due to the fact that the halibut fishery lacked independent monitoring of fishing activity, creating uncertainty regarding the extent and magnitude of bycatch and discards and impacts of the fishery on habitat.

As noted under other Indicators, as the result of the 2004 PSEIS process, new objectives have been developed which will encourage greater efforts to develop appropriate measures for measuring bycatches and assessing impacts on the ecology and habitats.

As in the assessment under Indicator 3.1.1.5, dealing with research strategy, despite the excellent research program providing data for the optimization of production from the target species, complementary research on ecological and habitat impacts of the fishery is notably constrained by deficiency of information on bycatch and discards. Overcoming this deficiency by developing a reliable system for monitoring and reporting of discards would result in a much more favorable assessment. In the meantime, as for Indicator 3.1.1.5, the Team assigns a score of 80 to this Indicator.

3.2.3.2

The fisheries management system is strongly responsive to findings of research and monitoring programs providing

³⁸ e.g. http://www.afsc.noaa.gov/refm/docs/2004/BSAIGOA_2004.pdf

information on the status of targeted stocks and of the ecosystem.
[Relates to MSC Criterion 3.8]

60 Scoring Guidepost

- The management system responds to findings of research programs regarding the status of targeted stocks and of the ecosystem in the design and conduct of management actions.
- Management actions generally are consistent with the results of research, but there are inadequate procedures to ensure that research results are given careful consideration. in the design and implementation of management measures.

80 Scoring Guidepost

- The management system carefully considers and responds to findings of research programs regarding the status of targeted stocks and of the ecosystem in the design and conduct of management actions.
- Management actions almost always are consistent with the results of research when such results clearly indicate that such actions would have negative impacts on the stocks or the ecosystem.

100 Scoring Guidepost

- The management system systematically and fully considers and responds to findings of research programs regarding the status of targeted stocks and of the ecosystem in the design and conduct of management actions.
- Management actions routinely respond to the results of research and procedures are in place to ensure that management actions taken are not inconsistent with the results of research when such results clearly indicate that such actions would have negative impacts on the stocks or the ecosystem.

SCORE 90

Analyses carried out under Principle 1 in this document indicate the sound nature of research and assessments on which management decisions regarding harvest of the target stock, halibut, are based. To the Team's knowledge, in recent years, recommendations regarding harvest levels stemming from the stock assessments developed by technical IPHC staff have been accepted by the Commissioners, including representatives of the governments of both parties and in turn, by the responsible management authorities in the two countries. This reflects the fact that the management system systematically and fully considers and responds to findings of research programs regarding the status of targeted stocks.

Regarding ecological considerations, as discussed under several indicators above, specific actions responding to needs to protect the regional ecology and habitats are in a relatively early stage of development. Nevertheless, there have been a number of positive

developments. As indicated under Indicator 3.1.1.3, seabird avoidance measures have recently been adopted and the newly completed EIS for Essential Fish Habitat Identification and Conservation in Alaska has proposed prohibition of all bottom contact fishing in six coral garden sites in the Aleutian Islands (AI) installation of VMS for all bottom tending gear in the Aleutian Islands area and the GOA and maintenance of on-board observer programs. As outlined under Indicator 3.2.2.8, the latter proposal was opposed by the Alaska Longline Fishermen's Association and as a result action is being focused on a feasibility study of alternatives for applying VMS for all fishing vessels in North Pacific FMP fisheries. As discussed under Indicator 3.1.1.3 giving detailed and systematic attention to ecological concerns is in a relatively early stage of development

The Team considers that the responsiveness of the management system to research results regarding the target fishery is excellent but that work to address ecological concerns is in an early stage of development and gaining responsiveness to ecological initiatives that involve cutting back on harvesting opportunities has been slow. As a result a medium level score of 90 has been accorded.

3.2.4

The management system effectively monitors all relevant aspects the fishery

3.2.4.1

The management system has procedures to measure and record and independently evaluates all aspects of the fishery to provide a basis for assessments of stocks and program performance.
[Relates to MSC Criterion 3.10, 3.11, 3.17]

Elements considered in scoring include:

- Fishery includes a monitoring program
- Monitoring procedures are followed
- Monitoring results are useful and used

60 Scoring Guidepost

- The management system has a monitoring program but lacks means for evaluating its completeness and accuracy.
- The monitoring programs have not been subjected to adequate independent outside review and comment.
- To the extent available, the results of monitoring efforts are compiled, analyzed, and disseminated to fishery managers such that management and research efforts can be informed as to needed improvements.

80 Scoring Guidepost

- The management system has a comprehensive monitoring program.

- The monitoring programs established in the fishery have been subject to outside review and comment.
- The results of monitoring efforts are compiled, analyzed, and disseminated to fishery managers such that management and research efforts can be informed as to needed improvements in a timely manner.

100 Scoring Guidepost

- The management system has a comprehensive monitoring program.
- The management system has demonstrated a consistent ability to monitor all relevant aspects of the fishery and employs an independently verified system for validation of reported results.
- The fishery operates with no significant “blind spots”.
- The results of monitoring efforts are compiled, analyzed, and disseminated to fishery managers such that management and research efforts can be informed as to needed improvements in a timely manner.

SCORE 79

Harvest Statistics

The collection of standard statistics on harvest of halibut in the Alaskan longline fishery has been developed by NMFS with cooperation from IPHC. NMFS uses a blend system which combines data from catcher and industry production reports to make the best, comprehensive accounting of groundfish harvests (Appendix F-11 in NMFS 2004). Fishing vessels over 60 feet are required to fill in Daily Fishing Logbooks (DFL) which includes information on gear type, federal reporting area code where gear retrieval was completed, number of observers aboard, crew size, target species, time, position, and estimated total catch weight of groundfish for each haul or set, discard/disposition information, and delivery information. Shoreside processors are required to submit Weekly Cumulative Production Logbooks (WCPL) summarizing information from Daily Cumulative Production Logbooks (DCPL) which provide information on deliveries from vessels noting the gear type, Federal reporting area code where groundfish were harvested, estimated total catch weight of groundfish for each delivery, landings information, discard/disposition information, and product information (total weight of product – by species codes, product codes, and product designation – that was produced each day). Comparing reports from vessels with shoreside records provide a basis for checking the accuracy of the vessel reports in cases where compliance was in doubt.

All shoreside processors, stationary floating processors, motherships, and all harvest in connection with a CDQ program fishery are required to complete ADF&G Groundfish Fish Tickets. Data reported on the tickets include date fishing began, date landed, gear type, ADF&G groundfish statistical area where groundfish were harvested, landed weight (in pounds) and condition of the catch by species, weight (in pounds) of discards at sea and at the dock, number and type of prohibited species discarded at sea, price paid/received per pound

for the recorded weight, and monetary amount paid/received, providing a further check on the volumes of halibut landed.

The IFQ and CDQ programs, wherein individual enterprises are assigned specific annual quotas, facilitate keeping accurate accounts of the progress of fisheries toward their annual aggregate quota limits. The extensive record-keeping system, measuring production from each quota holder separately and with substantial penalties for non-compliance, make it difficult to exceed the individual allowable catches. With participation in the fishery being limited, there is considerable peer pressure for those that have been accorded shares to conform. As outlined in the discussion under Indicator 3.2.2.7, since inception of the IFQ and CDQ programs in 1995, catches by the halibut fleet have conformed closely to the quota limits.

The Team considers that the existing NMFS/NPFMC/ADF&G statistical system monitors the commercial landings of halibut in Alaska well. As stated in the 2004 NMFS PSEIS document ((Appendix F-11): *The current industry record keeping and reporting requirements in the Alaska groundfish fisheries, together with the [North Pacific Groundfish Observer Program] and fishery-independent surveys conducted by NOAA Fisheries, create what is widely regarded as one of the most comprehensive fishery data collection systems in the world. NOAA fisheries believes that, while improvements are possible in some areas, the existing system provides sufficient data to assess the current stock condition of target species and accurately estimate the biomass levels used to set acceptable biological catch (ABC) and TACs. The result is that the threat of overfishing in target fisheries is low.*

Bycatch, Discards and Habitat Impacts

Whereas the system for commercial landings is considered to be of high quality, information on bycatches and of discards in the halibut fishery is less dependable. Fishing vessel operators are required to include record of discards in logbooks. However, it is evident that, with time and effort being at a premium, keeping accurate records of fish of different species discarded at sea would be assigned a low priority during the vessels daily operations. This would be particularly true if such discards comprised fish on lists of endangered species, fish taken that were in excess of quota limits or unduly large catches of immature fish of target species. In a similar way, possible effects of halibut longlining on habitat, such as destruction of corals, are quite likely to go unobserved and unrecorded. For these reasons, voluntary logbook recording must be viewed as lacking dependability.

This fact was recognized early in the development of groundfish management programs in the North Pacific in the 1970s, when most groundfish fishing was carried out by foreign vessels (NMFS 2004 Appendix F-10). The response to the problem was the placement of independent observers aboard the vessels. With the US take-over of all fishing activity within its 200-mile EEZ in the 1980s, the program was extended to US vessels. In 1989 (finalized in 1990) the NPFMC adopted Amendments 13/18 to the BSAI and GOA FMPs establishing a domestic North Pacific Groundfish Observer Program (NPGOP). The program now covers almost all US groundfish fisheries. In the IFQ black cod groundfish longline fishery, vessels greater or equal to 125 feet (ft) in length overall (LOA) are required to carry an observer for

all of their fishing days. Vessels greater or equal to 60 ft LOA but less than 125 ft LOA that participate in a directed fishery for more than three fishing days in a calendar quarter are required to carry an observer for at least 30 percent of their fishing days in that quarter. Additionally, at least one fishing trip in each calendar quarter for each fishery these vessels participate in must be covered. Vessels less than 60 ft LOA are not required to carry an observer.

There have been persistent difficulties in implementing the program. As outlined in a 2002 report of a NPFMC Observer Advisory Committee (NMFS 2004, Appendix 10):

The North Pacific Groundfish Observer Program is widely recognized as a successful and essential program for management of the North Pacific groundfish fisheries. However, the NPGOP faces a number of longstanding problems that result primarily from its current structure. The existing program design is driven by coverage levels based on vessel size that, for the most part, have been established in regulation since 1990. The quality and utility of observer data suffer because coverage levels and deployment patterns cannot be effectively tailored to respond to current and future management needs and circumstances of individual fisheries. In addition, the existing program does not allow fishery managers to control when and where observers are deployed. This results in potential sources of bias that could jeopardize the statistical reliability of catch and bycatch data. The current program is also one in which many smaller vessels face observer costs that are disproportionately high relative to their gross earnings. Furthermore, the complicated and rigid coverage rules have lead to observer availability and coverage compliance problem. The current funding mechanism and program structure do not provide the flexibility to solve many of these problems, nor do they allow the program to effectively respond to evolving and dynamic fisheries management objectives.

Symptomatic of these problems, the observer program does not cover the directed halibut longline fishery, despite several attempts to develop plans for its coverage.³⁹

As discussed under Indicator 2.1.2.1, it is understood that the NPFMC is again considering adding the halibut fishery to those requiring observers but has not yet done so. The Principle 2 analysis concluded that the lack of observer coverage was a major shortcoming essentially meaning that there are no objective data on discards from the fishery. It has been suggested that data from IPHC halibut longline surveys could be used to provide estimates of discards in the commercial fishery. However, the Team's analysis (Indicator 2.1.2.1) led to the conclusion that inferences made from the survey data are of dubious scientific validity because of differences in fishing strategies, gear and geographic distribution of the survey and the commercial fisheries. The analysis noted that IPHC itself counsels against using the

³⁹ As discussed under Indicator 3.2.2.8, a reflection of the problem of providing independent monitoring of halibut fishing activities was the strong opposition of the Alaska Longline Fishermen's Association (representing approximately 65 members, most of whom fish from vessels less than 60 feet in length) to the NMFS proposal for the placement of VMS on fixed gear vessels. The objections were based on the cost and the perceived lack of need for VMS to protect sensitive habitat features. Responding to this concern, in June 2005 NPFMC voted to request that NMFS not impose new VMS requirements for fixed gear vessels in the GOA

survey catch data to assess bycatch in the commercial fishery; for example it specifically does not report seabird bycatch on the survey on the basis that these data cannot be applied to estimate seabird bycatch in the commercial fishery. Although there is a requirement for self-reporting of any bycatch of short-tailed albatrosses by halibut longline vessels, the incentive not to report any such incidents is extremely strong, and, as stated under Indicator 2.1.2.1, it would be extremely naive to imagine that a lack of reports of short-tailed albatross bycatch could be taken to demonstrate that these birds are never caught.

The Team understands that the decision not to require observer coverage in the halibut fishery was made on the basis of perceived low need (and balancing high cost and operational difficulties where there are large numbers of relatively small vessels and often a lack of space for an observer).⁴⁰ Nevertheless, given that the main issues of ecological impact of longline fisheries relate to problems of bycatch, this is a significant deficiency.

The activities of the halibut fleet do not go entirely without external monitoring. As noted under Indicator 3.2.5.1, halibut longline vessels are inspected at sea and on landing by US Coast Guard and NMFS enforcement personnel.

Conclusion

From the foregoing, the Team concludes that the basic system for collecting and assessing the validity of information on the harvest of the target species, halibut, is good. Information on quantities of discards of different species and possible impacts on habitat is not as good due to the lack of observer coverage. This deficiency has been noted under a number of other Indicators (2.1.2.1, 2.1.5.3, 2.2.1.2, 2.2.1.3, 3.1.1.3, 3.1.1.5 and 3.2.2.2). The team therefore assigns a score of 79 for this indicator and calls for the same remedies as under Indicator 2.1.2.1.

CONDITION

Same as for Indicator 2.1.2.1.

3.2.5

The management system ensures that there is a high degree of compliance in the fisheries with management measures and directives regarding fishing practices required by the system

⁴⁰ The 2004 PSEIS document (Appendix 11) expressed the view that: *While additional observer coverage would benefit the fishery with improved catch estimates, additional observer coverage would impose additional costs on the industry. Currently, NOAA Fisheries believes that the improved catch estimates would not sufficiently offset the costs of additional observers under the current management regulations.*

3.2.5.1

Fishing operations are fully compliant with regulations and directives regarding fishing practices developed by the management system.

[Relates to MSC Criteria 3.11, 3.16]

Elements considered in scoring include:

- Contains procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that management system controls are not violated and appropriate corrective actions are taken
- Actual adherence to procedures

60 Scoring Guidepost

- The management system has a comprehensive enforcement system but means of assessing the degree of compliance require improvement.
- Information on the actual extent of compliance is incomplete.
- Prosecutions, convictions and penalties for violations act as deterrents to illegal fishing to a degree but improvements are needed.

80 Scoring Guidepost

- The management system has a comprehensive compliance and enforcement system.
- There no indications of consistent violations in the fishery.
- There is a record of consistent enforcement and prosecution of violations in the fishery.
- Convictions and penalties for prosecuted violations are generally adequate to deter illegal fishing.

100 Scoring Guidepost

- The management system has a comprehensive compliance and enforcement system.
- The management system has demonstrated a consistent ability to enforce applicable rules, including a independently verified system for validation of reported results.
- The fishery operates with no significant patterns of evasion or non-compliance.
- Prosecutions, convictions and penalties for violations are sufficient to act as strong deterrents to illegal fishing.

SCORE 85

As outlined under Indicator 3.1.2.2, regulations recommended by IPHC and accepted by the Secretary Commerce are published in the Federal Register and become the law of the land regarding conduct of the halibut fishery. Supporting regulations such as those regarding the implementation of the IFQ and CDQ programs and development of seabird mitigation measures complete the set of rules implementing fisheries developed by the NPFMC and NMFS.

Under the 1982 Pacific Halibut Act, enforcement is carried out cooperatively by NMFS and the US Coast Guard. The Team did not have an opportunity to examine enforcement activities related to the halibut fishery in detail. In general, we understand that the US Coast Guard conducts surveillance and enforcement, using aircraft and vessels to monitor activities on the fishing grounds. NMFS also has an effective enforcement division, and NMFS enforcement agents often accompany the Coast Guard on its fisheries enforcement mission. At-sea enforcement includes boarding of vessels to review logbooks, vessel inspections and cargo inspections. The MSA, the nation's principal fisheries law, provides for civil and criminal penalties for violations of fisheries laws and regulations.

Compliance and monitoring in all larger scale Alaskan fisheries other than halibut is enhanced through a comprehensive federal fishery observer program.⁴¹

The North Pacific Council receives a report on enforcement actions at each meeting. In addition, a Coast Guard representative serves as a non-voting member of the Council and advises the Council on enforcement issues related to proposed fishery management actions.

When NMFS or the Coast Guard detect a possible fishery violation a Notice of Violation is issued and the matter is referred to NOAA's Office of General Counsel, which works with NMFS enforcement to determine whether or not sufficient evidence exists to warrant prosecution. There are substantial penalties available under the Magnuson-Stevens Act, including a \$100,000 fine for each violation as well as forfeiture of the catch.

The Team was informed that in 2004, 6% of the offloads of black cod, halibut and associated bycatch species were subject to dockside inspection and verification by enforcement authorities in Alaska. This includes 305 boardings/inspections by NOAA personnel, 75 boardings/inspections by USGC personnel and 125 boardings/inspections by JEA partners for 8,636 IFQ offloads. This reflects a creditable amount of inspection.

The Team did not receive any information indicating that, with present levels of surveillance, there were any significant problems with ensuring compliance with quota and other regulations concerned with the directed fishery for halibut. As outlined under other Indicators, lack of independent means to monitor fishing activity, including extent of total harvests, bycatch and discards remains a deficiency in the fishery that weakens the ability of enforcement agencies to ensure compliance with ecologically-based regulatory measures, including control of bycatch. A score of 85 was awarded.

⁴¹ All catcher vessels over 125 feet in length carry one observer and vessels greater than 60 feet in length and not longer than 125 feet carry an observer 30 percent of the time. Observers file reports electronically. Following a trip, observers are debriefed by NMFS officials and are routinely questioned about issues relating to fishing industry compliance with fishery management regulations. In the case of shoreside processing for the GOA fishery, a shoreside processor that processes 1,000 MT or more in round-weight equivalent of groundfish during a calendar month is required to have an observer present at the facility each day it receives or processes groundfish during that month.

3.3 The performance of the management system is regularly and candidly evaluated and adapted as needed to improve

3.3.1 Evaluations are conducted in a systematic fashion and the system responds positively to appropriate recommendations for change

**3.3.1.1 The management system provides for internal program evaluation and review.
*[Relates to MSC Criterion 3.3]***

Elements considered in scoring:

- Frequency
- Candor (accuracy and precision)
- Transparency
- Participation

60 Scoring Guidepost

- The management system may conduct internal expert program reviews, but does not do so in a systematic manner.

80 Scoring Guidepost

- The management system has a provision for an objective system for evaluation of management performance that is conducted periodically as need arises.
- The criteria for and results of the on-going evaluation of management performance are made public.

100 Scoring Guidepost

- The management system has an internal, continuing, objective system for evaluation of management performance.
- The criteria for and results of the on-going evaluation of management performance are made public and reflect input from all interested participants and stakeholders.
- The management system shows a consistent pattern of seeking and using the results of the on-going evaluation of management performance.

SCORE 90

IPHC is a small organization and, in the course of its scientific program, program designs and results are subject to constant peer review within the organization.

IPHC is the servant of the Governments of the US and Canada. Its staff serves at the pleasure of the Commissioners who are appointed by the national Governments. Regarding performance, the Commission's program is subject to the continuous overview of the Commissioners who are advised by specialists from their own countries. Such an overview serves as an ongoing evaluation of performance. As discussed above, the Commission's procedures are very open, with active involvement of technical specialists and stakeholders throughout the management process. Thus the results of the staff's work are clearly arrayed, transparent and molded with extensive consultation at both the technical and stakeholder level.

Over the years, the performance of the staff in terms of quality of work, efficiency and economy has been considered very satisfactory by the parties. The development of a regular internal evaluation system supplementary to the oversight of the Commissioners would seem redundant.

In this light, the Team considers that the present IPHC system provides an objective system for evaluation of management performance.

As discussed under other Indicators, associated with the IPHC program, in Alaska, NMFS and NPFMC carry out implementation activities, including the IFQ and CDQ allocation programs and seabird mitigation measures. For the black cod fishery and the large-scale pollock fishery (MSC reviews MSC 20005 and MSC 2004) concluded that because of past difficulties, wherein NPFMC and NMFS decisions had been vigorously disputed and, in some instances taken to court, there was a need for development of a periodic, candid and authoritative internal review of management procedures and outcome. These are programs closely allied to parallel programs for the longline fishery for black cod. If such reviews are established, they would be expected to encompass the associated halibut programs (e.g., the seabird mitigation measures apply to all longline fisheries, both halibut and black cod). There has been no suggestion that the regulatory system for halibut needs further reviews than it already gets, since the IFQ system is highly scrutinized and reviewed. The Team concludes therefore, there is no need to address the need for review of the NMFS/NPFMC supplementary halibut regulatory program under this Indicator.

The score of 90, instead, of 100, reflects the fact that IPHC appears to have a reasonably good track record of review and action but additional external review could be sought. In addition, while the system under NMFS and NPFMC is well understood, it is not apparent that the system employed by NMFS takes action on issues reviewed on an on-going basis. As with the evaluation on the pollock fisheries and the Pacific cod fishery, there is ample evidence that there are a number of places where external review and action do take place on the basis of individual programs. However, as indicated under the pollock review, there is less evidence that the overall system regularly takes in reviewer comments on issues beyond specific programmatic concerns and actually acts to make improvements. This suggested a score of 90 is proper, rather than the 100 that requires, "..... consistent pattern of seeking and using the results of the on-going evaluation of management performance".

3.3.1.2 **The management system provides for external program evaluation and review.**
[Relates to MSC Criterion 3.2, 3.3]

Elements considered in scoring:

- Frequency
- Candor (accuracy and precision)
- Transparency
- Participation

60 Scoring Guidepost

- The management system may conduct external expert program reviews, but does not do so in a systematic manner.

80 Scoring Guidepost

- The management system conducts independent, expert reviews of all significant aspects of management performance on an as required basis.
- The criteria for evaluation of management performance are set outside the management system.
- The results of any independent review are made public.

100 Scoring Guidepost

- The management system conducts an independent, open, expert review of all significant aspects of management performance on a regular and continuing basis.
- The criteria for evaluation of management performance are set outside the management system.
- The results of the independent review are made public.
- The management system shows a consistent pattern of seeking and using the results of the independent evaluation of management performance.

SCORE 80

Under the foregoing Indicator, the development of a formal independent internal performance review process for IPHC was felt to be unnecessary.

Regarding outside reviews, in 1997, IPHC carried out a peer review of its new stock assessment methods. The review was conducted by three prestigious senior assessment scientists from the UK, Canada and the US (Horwood et al. 1997). Interacting with IPHC staff, the review was considered to be most useful in validating approaches and in suggesting modifications. The Team considers that for a small organization such as IPHC, a formal routine outside review process is not needed. However, the convening of occasional reviews such as that conducted in 1997 would seem useful for IPHC staff to reaffirm their or modify

their existing approaches on the basis of experience in other fisheries. The IPHC consultative system does provide opportunities for review by outside experts.

As for the previous Indicator, the Team considers that review of NMFS/NPFMC associated halibut programs would be covered by measures proposed for the related Alaskan black cod fishery as outlined in MSC's 2004 assessment of that fishery.

Also, it is worth noting that annual reviews of how well the IPHC is functioning are conducted by both the US and Canadian governments. Funds are allocated based on perceived needs, which are in large part identified through a thorough review process outside the functioning of the management system.

In general the Team considers IPHC's review processes as being adequate, but could be enhanced with occasional outside expert reviews. On this basis, a score of 80 is awarded for this Indicator.

Again, the score of 80, instead, of 100, reflects the fact that IPHC appears to have a reasonably good track record of review and action but additional external review could be sought. In addition, while the system under NMFS and NPFMC is well understood, it is not apparent that the system employed by NMFS takes action on issues reviewed on an on-going basis. As with the evaluation on the pollock fisheries and the Pacific cod fishery, there is ample evidence that there are a number of places where external review and action do take place on the basis of individual programs. However, as indicated under the pollock review, there is less evidence that the overall system regularly takes in reviewer comments on issues beyond specific programmatic concerns and actually acts to make improvements. This suggested a score of 80 is proper, rather than the 100 that requires, "..... consistent pattern of seeking and using the results of the on-going evaluation of management performance".

3.3.1.3

The management system requires a response to outcomes of internal or external reviews
[Relates to MSC Criteria 3.3, 3.7]

Elements considered in scoring:

- Nature of the guidelines
- Timing, scope of response to assessment outcomes (actual relevance of process)

60 Scoring Guidepost

- The management system is responsive to reviews of management performance, but has no structured approach for considering and responding to such reviews or for making decisions on relevant actions to bring about consequent improvements.

80 Scoring Guidepost

- The management system has established objective guidelines for responding to internal and external reviews of management performance.
- The management system shows evidence of improved performance based on the results of internal and external reviews of management performance.

100 Scoring Guidepost

- The management system has established comprehensive, objective standards or triggers for responding to internal and external reviews of management performance.
- The management system has demonstrated a consistent pattern of responding to the results of internal and external reviews of management performance.
- The management system has not demonstrated a consistent pattern of disregarding significant recommendations for improvement developed through internal or external reviews of management performance.

NOT SCORED. The reason this Performance Indicator was not scored is that the assessment team felt this was duplicative of other indicators (3.3.1.1 and 3.3.1.2) scored above. Both of the above indicators include this same measure of performance, and the assessment team did not want to bias the outcomes of the scoring by providing a good score on this given the duplication.

See explanations under 3.3.1.1 and 3.3.1.2 for further descriptions on this issue.

9 TRACKING, TRACING FISH AND FISH PRODUCTS

MSC Chain of Custody requirements were only checked as far as the landing of fish on board legally licensed fishing vessels and found to be compliant with MSC requirements. Further chain of custody assessments were not conducted for any of the fish moving from boat deck into the processing segment of the fishery either onboard or at shoreside processors. It is highly recommended that any Chain of Custody certificates issued for product originating from this fishery also examine and verify the captain's logbook data, the required reporting data on catch from the fishery, and observer reports as part of ensuring that the fish products carrying the MSC logo are properly verified.

10 PEER REVIEW, PUBLIC COMMENT, AND OBJECTIONS

A peer review was conducted by two peer reviewers as required. The scientists chosen were among those nominated and met all requirements of the MSC.

SCS applied to the MSC for approval to release this report for public comment simultaneously with the peer review. The rationale for the request was that no stakeholder input had been received thus far, and none is anticipated during the posting of the report. As a result, SCS feels that the MSC process was not undermined in any way by a simultaneous release.

All comments received by peer reviewers and stakeholders are amended to this report and responded to where deemed necessary. No stakeholder comments were made to SCS about the public report.

No objections were filed during the 21 day required posting of the final report.

11 ACTION PLAN FOR MEETING CONDITIONS

The Client for this fishery assessment and certification submitted an Action Plan for meeting all conditions and requirements under the MSC program. This action plan is appended to this document and has been approved by SCS.

12 CERTIFICATION RECOMMENDATION AND PERFORMANCE SCORES

It is the assessment team's consensus judgment that the management of the US North Pacific Halibut Fishery complies overall with the MSC Principles and Criteria. Therefore, SCS as the certification body of record recommends that the fishery be issued a joint fishery/chain of custody certificate.

The fishery achieved a normalized score of 80 or above on each of the three MSC Principles independently (Principle 1 – 94.29, Principle 2 – 81.09, and Principle 3 – 86.15). Although the evaluation team found the fishery in overall compliance (a normalized score of 80 on each MSC Principle), it also found the fishery's performance on a number of specific indicators to be below the established compliance mark (an unweighted score of 80 for a single indicator). In these specific cases, the MSC requires that the Certification Body set 'Conditions for Continued Certification' that when met bring the level of compliance for the select indicator up to the 80-level score. Table 3 below shows the overall results of the evaluation in terms of Principle 1, 2, and 3.

Table 3. Scoring assigned to fishery using AHP.

Principles, Criteria, Subcriteria, and Indicators	AHP Assigned Weight	AHP Assigned Score
MSC		
Principle 1		94.29
MSC		
Criterion 1	.600	
SC 1.1.1	.167	
Indicator		
1.1.1.1	.176	100
Indicator		
1.1.1.2	.176	90
Indicator		
1.1.1.3	118	80
Indicator		
1.1.1.4		
Indicator	176	90
Indicator	.176	95
Indicator	.176	100
SC 1.1.2	.167	
Indicator		
1.1.2.1	.231	90
Indicator		
1.1.2.2	.154	80
Indicator		
1.1.2.3	.231	90
Indicator		
1.1.2.4	.154	85
Indicator		
1.1.2.5	.231	90
SC 1.1.3	.167	
Indicator		
1.1.3.1	.500	90
Indicator		
1.1.3.2	.500	90
SC 1.1.4	.167	
Indicator		
1.1.4.1	.500	100
Indicator		
1.1.4.2	.500	100
SC 1.1.5	.167	
Indicator		
1.1.5.1	.200	95
Indicator		
1.1.5.2	.200	90

	Indicator		
	1.1.5.3	.200	90
	Indicator		
	1.1.5.4	.200	90
	Indicator		
	1.1.5.5	.200	95
SC 1.1.6		.167	
	Indicator		
	1.1.6.1	.500	100
	Indicator		
	1.1.6.2	.500	100
MSC Criterion 2		N/A	
	Indicator		
	1.2.1	N/A	N/A
MSC Criterion 3		N/A	N/A
	Indicator		
	1.2.2	N/A	N/A
	Indicator		
	1.3.1	.400	90
	Indicator		
	1.3.2	.500	100
MSC Principle 2		.333	81.09
MSC Criterion 1		.333	
SC 2.1.1		.214	
	Indicator		
	2.1.1.1	.305	90
	Indicator		
	2.1.1.2	.245	80
	Indicator		
	2.1.1.3	.245	95
	Indicator		
	2.1.1.4	.205	80
SC 2.1.2		.214	
	Indicator		
	2.1.2.1	.333	70
	Indicator		
	2.1.2.2	.333	70
	Indicator		
	2.1.2.3	.333	80
SC 2.1.3		.143	
	Indicator		
	2.1.3.1	.500	80
	Indicator		
	2.1.3.2	.500	80
SC 2.1.4		.214	

	Indicator		
	2.1.4.1	.500	85
	Indicator		
	2.1.4.2	.500	80
SC 2.1.5		.214	
	Indicator		
	2.1.5.1	.200	80
	Indicator		
	2.1.5.2	.200	90
	Indicator		
	2.1.5.3	.200	75
	Indicator		
	2.1.5.4	.200	80
	Indicator		
	2.1.5.5	.200	80
MSC			
Criterion 2		.333	
	SC 2.2.1		
		.500	
	Indicator		
	2.2.1.1	.333	90
	Indicator		
	2.2.1.2	.333	75
	Indicator		
	2.2.1.3	.333	75
SC 2.2.2		.500	
	Indicator		
	2.2.2.1	1.00	75
MSC			
Criterion 3		.333	
	SC2.3.1		
		1.00	
	Indicator		
	2.3.1.1	.500	90
	Indicator		
	2.3.1.2	.500	80
MSC			
Principle 3		.333	86.15
SCS			
Criterion 1		.375	
	SC 3.1.1		
		.600	
	Indicator		
	3.1.1.1	.143	95
	Indicator		
	3.1.1.2	.214	95
	Indicator		
	3.1.1.3	.214	79
	Indicator		
	3.1.1.4	.214	90

	Indicator		
	3.1.1.5	.214	79
SCS			
Criterion 2		.400	
	Indicator		
	3.1.2.1	.333	100
	Indicator		
	3.1.2.2	.333	100
	Indicator		
	3.1.2.3	.333	80
SCS			
Criterion 2		.375	
	SC 3.2.1		
		.200	
	Indicator		
	3.2.1.1	.200	90
	Indicator		
	3.2.1.2	.200	95
	Indicator		
	3.2.1.3	.200	80
	Indicator		
	3.2.1.4	.200	90
	Indicator		
	3.2.1.5	.200	80
SC 3.2.2		.200	
	Indicator		
	3.2.2.1	.211	80
	Indicator		
	3.2.2.2	.105	70
	Indicator		
	3.2.2.3	.105	80
	Indicator		
	3.2.2.4	.105	85
	Indicator		
	3.2.2.5	.105	95
	Indicator		
	3.2.2.6	.105	95
	Indicator		
	3.2.2.7	.105	90
	Indicator		
	3.2.2.8	.105	80
	Indicator		
	3.2.2.9	.053	85
SC 3.2.3		.200	
	Indicator		
	3.2.3.1	.600	80
	Indicator		
	3.2.3.2	.400	90
SC 3.2.4		.200	

	Indicator 3.2.4.1	1.00	79
	SC 3.2.5	.200	
	Indicator 3.2.5.1	1.00	85
SCS Criterion 3		.250	
	SC 3.3.1	1.00	
	Indicator 3.3.1.1	.455	90
	Indicator 3.3.1.2	.545	80

13 MEETING CONDITIONS FOR CONTINUED CERTIFICATION

To be awarded an MSC certificate for the fishery, the applicants has agreed in written contract to an action plan for meeting the required 'Conditions'; a plan that provides specific information on what actions will be taken, who will take the actions, and when the actions will be completed. The Action Plan is approved by SCS as the certification body of record. The applicant has also agreed in a written contract to be financially and technically responsible for surveillance visits by an MSC accredited certification body, which would occur at a minimum of once a year, or more often at the discretion of the certification body (based on the applicant's action plan or by previous findings by the certification body from annual surveillance audits or other sources of information). Surveillance audits will be comprised in general of (1) checking on compliance with the agreed action plan for meeting pre-specified 'Conditions', and (2) sets of selected questions that allow the certifier to determine whether the fishery is being maintained at a level of performance similar to or better than the performance recognized during the initial assessment.

We are mindful that even though the applicant (FVOA) takes the necessary steps to meet conditions, it's capacity to affect the management system may be limited. In the case where the managers or other sectors of the fishery are not able to cooperate, it will be the applicant's responsibility to find other ways to effectively meet the conditions. The certification body will be mindful of the difficulties that may accrue as a result of different interests in the fishery when measuring performance against the required conditions.

13.1 General Conditions for Continued Certification

The general 'Conditions' set for the Halibut fishery are:

- FVOA must recognize that MSC standards require regular monitoring inspections at least once a year, focusing on compliance with the 'Conditions' set forth in this report (as outlined below) and continued conformity with the standards of certification.

- FVOA must agree by contract to be responsible financially and technically for compliance with required surveillance audits by an accredited MSC certification body, and a contract must be signed and verified by SCS prior to certification being awarded.
- FVOA must recognize that MSC standards require a full re-evaluation for certification (as opposed to yearly monitoring for update purposes) every five years.
- Prior to receiving final certification, FVOA shall develop an 'Action Plan for Meeting the Condition for Continued Certification' and have it approved by SCS.

13.2 Specific Conditions for Continued Certification

In addition to the general requirements outlined above, FVOA must also agree in a written contract with an accredited MSC certification body to meet the specific conditions as described in Section 9 and summarized below (within the agreed timelines that will be agreed in the ' Action Plan for Meeting the Condition for Continued Certification' to be approved by SCS).

- 2.1.2.1** Information is available on the nature and extent of the by-catch (capture of non-target species).

SCORE 70
CONDITION

Establish a scientifically defensible and comprehensive monitoring and reporting system for bycatch and discards taken directly from the halibut fishery. For example, this could be accomplished by extension of the existing observer program to cover a proportion of halibut vessels, or by development of electronic monitoring such as video to record catch and identify bycatch animals, if that can be shown to be suitably effective (McElderry et al. 2003).

- 2.1.2.2** Information is available on the extent of discards (the proportion of the catch not landed).

SCORE 70
CONDITION

Same as for 2.1.2.1.

- 2.1.5.3** The impacts on ecosystem structure and function from removal of non-target stocks are held below unacceptable levels.

SCORE 75
CONDITION

Same as for 2.1.2.1.

- 2.2.1.2** The interactions of the fishery with listed and protected species are known.

SCORE 75
CONDITION

Sam as for 2.1.2.1.

2.2.1.3

The level of interaction known to pose an unacceptable risk to such species is known, and impacts are held below unacceptable levels.

SCORE 75
CONDITION

Same as for 2.1.2.1.

2.2.2.1

In the case of threatened or endangered species, management objectives are set in terms of impact identification and avoidance/reduction.

SCORE 75
CONDITION

Same as for 2.1.2.1

In addition, the fishery must provide evidence that it takes any data gathered into consideration in analyzing the effects of the fishery on the ecosystem and takes steps, where necessary, to mitigate risks to any organisms in the bycatch of the halibut fishery that are deemed to need it

3.1.1.3

The management system incorporates and applies an effective strategy to manage ecological impacts of fishing.
[Relates to MSC Criteria 3.2, 3.7, 3.9, 3.10]

SCORE 79
CONDITION

Strategies for managing the ecological impacts of the halibut fishery should be developed in a manner that is consistent with objectives 24, 25, 26, 27, and 29 of the amended Groundfish FMPs for GOA and BSAI.

In addition, the same condition that applies to 2.1.2.1 is appropriate – scientifically defensible monitoring and reporting of bycatch and discards must be established.

3.1.1.5

There is an adequately funded research strategy to support the harvest strategy and to address information needed to support the identification and mitigation of ecosystem impacts.
[Relates to MSC Criterion 3.8]

SCORE 79
CONDITION

Same as for 3.1.1.3.and 2.1.2.1.

- 3.2.2.2 The management system accounts for catch of non-target species.
[Relates to MSC Criteria 3.10, 3.17]

SCORE 70
CONDITION

Same as for Indicators 2.1.2.1 and 3.1.1.3.

- 3.2.4.1 The management system has procedures to measure and record and independently evaluates all aspects of the fishery to provide a basis for assessments of stocks and program performance.
[Relates to MSC Criterion 3.10, 3.11, 3.17]

SCORE 79
CONDITION

Same as for Indicator 2.1.2.1.

14 MSC LOGO LICENSING RESPONSIBILITIES

As the “applicant” for certification of the Halibut fishery, FVOA is the only entity that has the right to apply for a license to use the MSC logo. It is also the case that FVOA has the right to approve the use of the logo for other quota holders in the fishery at its discretion and by a means that is considered fair and equitable (based on MSC requirements). SCS is aware that FVOA has worked out an arrangement for sharing access to the fishery certificate and has conveyed this information to the MSC. The MSC as the logo license owner, has the sole right and responsibility to review and enforce its requirements with regard to the fair and equitable sharing of access to the fishery certificate. SCS as the certification body does not have any obligations to review, approve, or enforce the MSC requirements in this regard.

15 CONCLUSION

The SCS Assessment team concluded after all aspects of the MSC procedures were followed, that the Halibut fishery meets the standards of the MSC. The lead assessor for the assessment team presented all evidence to the SCS Certification Panel, which agreed with the assessment team's decision and authorized the determination in this report.

16 REFERENCES

a) Frequently used web sites

Fisheries & Oceans Canada DFO Halibut information

<http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/Groundfish/halibut/default.htm>

NOAA Fisheries Alaska Fisheries Science Center

<http://www.afsc.noaa.gov>

Seabird bycatch issues

<http://fakr.noaa.gov/protectedresources/seabirds.html>

NPFMC. 2003. **Halibut Issues.** North Pacific Fishery Management Council.

http://www.fakr.noaa.gov/npfmc/current_issues/halibut_issues/halibut.htm.

NPFMC. 2003. **Bycatch Reduction IR/IU.** North Pacific Fishery Management Council.

http://www.fakr.noaa.gov/npfmc/current_issues/bycatch/bycatch.htm.

NPFMC. 2003. **Community Development Quota Program.** Pacific Fishery Management

Council. http://www.fakr.noaa.gov/npfmc/current_issues/CDQ/CDQ.htm.

NPFMC. 2003. **Protected Resources information page.** Pacific Fishery Management.

http://www.fakr.noaa.gov/npfmc/current_issues/ssl/ssl.htm.

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International Pacific Halibut Commission

<http://www.iphc.washington.edu/halcom>

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<http://www.iphc.washington.edu/halcom/pubs/annmeet/IPHCAm.htm>

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17 APPENDIX1 PEER REVIEWER COMMENTS

Peer Reviewer 1

Assessment of the North Pacific Halibut Fishery of the United States

Peer review for:

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I have reviewed the document extensively, and I think it is a well integrated and laid out text.

Overall comments

The process followed by the evaluation team to arrive to conclusions is well documented with all the available information and gives clear explanations and argumentation. I agree with scoring and with the overall conclusion and recommendations. Principle 1 scoring of 94.29 averages, demonstrates that it is one of the best managed fisheries in the world in terms of stock assessment.

Principle 2, has 6 indicators below the approval scoring, however, general averages score of 81.09, puts the fishery in a condition situation. Conditions posted for these indicators are clear and very important, in particular the establishment of an observer program. General scoring of Principle 3 of 86.15 is above the pass limit of 80, however, 4 indicators were below this limit, also puts the fishery in a condition situation. Conditions and recommendations are very important and clear.

Introduction chapter (1)

Areas of concern of the evaluation team

I would like to remark in this chapter the importance of two subjects appointed by the evaluation team: First, due to the fact that the United States North Pacific Halibut Fishery (USNPHF) subject to certification is part of an international management system and several agencies from both countries Canada and the United States interact with the International Pacific Halibut Commission (IPHC). The overall objective of this interaction is to maintain a good managing system through time. It is important also the way the evaluation team let the reader understand the role of each agency and the interaction within the complete organization, which some times seems complex.

Secondly, it was also important in this chapter to remark the role of the assessment of ecological impacts from the fishery to provide verification of by-catch and reduction of non

target species. This subject played an important role to score several indicators in Principles 2 and 3.

The Fishery (2)

This is an important chapter, introduces to the fishery from the description of the target species, its life history, distribution and migration and food and feeding. An overview of the Pacific Halibut Fishery (PHF) including geographical areas of the fishery and fishery background well covered in section 2.2 of this chapter.

Fisheries Management (3)

This is a good summary of the fishery. It describes the role of the IPHC for managing purposes from its inception in 1923. Also includes a good discussion of the role of the IPHC based on the protocol of 1979, the main task been to continue developing investigations of the life history of the target species and set conditions or recommendations to maintain stocks to the Optimum Yield (OY), however, as is mentioned in the text it has never reached bases for regulations to the OY because the difference in interpretation of the concept by the two countries involved; US and Canada. This situation let the IHPC with the priority goal to the maximum long-term physical yield. However, the IPHC has communication with commissioners and industry to explore the possibility in the near future to define a new task named “long-term optimum yield including social and economic yields.

This chapter also describes the Quota systems applied to the halibut fishery and the managing procedures to put the quotas in place. Also a good description of the internal system of the US halibut fishery is included in this section, includes public debate and discussion of recommendations of the staff of the IPHC.

Processing and transshipment (4) are well described.

The assessment process (5)

As I understand from this section of this report, the SCS followed all procedures required by the MSC program. After the pres-assessment they continued with the formal full assessment. The SCS provided enough time to allow possible participation of stakeholders and industry. SCS intended to assess at the same time both the US and Canada halibut fisheries, however, it was not possible due to the client decision.

In this section of this report, the SCS clearly explained general steps of the assessment: Team selection, setting performance indicators (posted to the public for 30 days for comments for stakeholders and industry from US and Canada) and obtained all the required available information for the fishery evaluation. Additionally it is mentioned that during the process the client provided all the necessary information on an ongoing basis.

It is clear that this procedure included meetings conducted with the industry, managers and stakeholders. SCS-evaluation team followed the MSC methodology for scoring the fishery,

developed an assessment report and provided with a summary of other fisheries in an on going process of certification.

MSC Evaluation process (6)

Procedure of setting of principles and criterion is clearly described in this section; the evaluation team did an excellent job. The US Halibut fishery was evaluated following the MSC principles and standards issued in 1998, this do not including aquaculture and harvest of other species. It is relevant that the evaluation team took special care in Principle 3, criterion and performance indicators to assure that the USHF has an institutional and operational frame work for implementing principles 1 and 2.

Interpretation (6.2)

The evaluation team followed the MSC methodology to determine if the fishery is being managed consistently with emerging international standards of sustainability.

The Evaluation team did also an excellent job in developing performance indicators and guidance for scoring, according with size and scale of the fishery. The evaluation team followed its own interpretation of principles applied to the USHF. Indicators were considered similar to those used for the evaluation of the Sable fish fishery which is managed under a quota system. In this section of this report the evaluation team included a brief discussion of the management plans of the halibut fishery related to national legislation, which I consider was appropriate.

Submission of Data on the fishery (6.3) and assessment meetings and interviews (7)

This section is very important and is understood that the applicant provided to the evaluation team all necessary information to perform the fishery evaluation, and arrange interviews with scientists, managers, enforcement officials, the IPHC in Alaska and Washington.

Assessment team performance and evaluation (8)

To my point of view the report briefly and clearly shows procedures and actions followed after reviews and interviews. Also includes procedures followed for scoring the fishery performance.

In general I agree with the scoring and supporting explanations and documentation. In particular as I mentioned before Principle 1 is easy to understand and follow, however, Principle 2 and 3 are more complex, but I also agree with the way they were scored and the supporting explanation and documentation of reference. Throughout the text of the report, I have made minor editing changes which I included in the electronic copy.

Following you will see my comments in specific indicators under each principle.

Principle 1

1.1.1.1 100

1.1.1.2 90 The only limitation is information about spawning behavior, I agree with the score.

1.1.1.3 80 Information of seasonal patterns of movements are not available. I agree with the score.

1.1.1.4 90 I agree with the score and explanation.

1.1.1.5 95 I agree with the score and explanation.

1.1.1.6 100 I agree with the score and explanation.

1.1.2

1.1.2.1 90 I agree with the score and explanation.

1.1.2.2 80 I agree with the score and explanation.

1.1.2.3 90 I agree with the score and explanation.

1.1.2.4 85 I agree with the score and explanation.

1.1.2.5 90 I agree with the score and explanation.

1.1.3

1.1.3.1 90 I agree with the score and explanation.

1.1.3.2 90 I agree with the score and explanation.

1.1.4

1.1.4.1 100 I agree with the score and explanation.

1.1.4.2 100 I agree with the score and explanation.

1.1.5

1.1.5.1 95 I suggest to provide a couple of references one on the long-term performance of the IPHC and second of the IFQ system performance. These may be scientific reports or management publications.

1.1.5.2 90 I agree with the score and explanation.

1.1.5.3 90 I agree with the score and explanation.

1.1.5.4 90 I agree with the score and explanation.

1.1.5.5 95 I agree with the score and explanation.

1.1.6

- 1.1.6.1 100 I agree with the score and explanation.
- 1.1.6.2 100 I agree with the score and explanation.

Criterion 2

- 1.2
- 1.2.1
- 1.2.2

Criterion 3

- 1.3.1 90 I agree with the score and explanation.
- 1.3.2 100 I agree with the score and explanation.

Principle 2

The Evaluation team provides an excellent introduction in this chapter. This helps to understand the basis for the evaluation of this Principle and the major concerns in the interaction of the fishery with the ecosystem, in particular with reference to the incidental catch of scavenging seabirds and rockfish.

Criterion 1

- 2.1
- 2.1.1 sub criterion
- 2.1.1.1 90
- 2.1.1.2 80
- 2.1.1.3 95
- 2.1.1.4 80

2.1.2 Sub criterion

- 2.1.2.1 70 I think the score is adequate. The halibut fishery does not have objective information. IPHFC provides information for survey, but, this is not adequate because surveys do not cover the same area as that of the commercial fishery. The main point here is the lack of information of by-catch of non target species. Condition is clear, since it will require establishing an observer program as it has been done for other fisheries under the NPFMC.

- 2.1.2.2 70 similar situation with the above indicator, I agree.

- 2.1.2.3 80 This is an appropriate score, to get 100, the managing system needs to have a research program to make quantitative estimates of observed fishing mortality. Change the numeral in scoring Table 3 page 145.

2.1.3 Subcriterion

2.1.3.1 80 Score seems appropriate, however, it is based in information obtained for other longline fisheries, not for the US Halibut fishery. The condition will be to establish an observer program. I think it will be convenient to suggest to include this subject in the observer program or to develop a specific study on physical impacts due to the use of the gear.

2.1.3.2 80 Score appropriate, the difficulty of using self evaluation, however, since the fishery is under IFQ system, it assures low levels of gear lost during fishing operations.

2.1.4

2.1.4.1 85 Good supporting and explanation, this indicator is related to the 2.2.1.3 indicator but excludes threatened and endangered species. However, due to the fact that this depends on the assumption based from information of other fishery as the groundfish fishery, a score of 80 may be appropriate, as it is for indicator 2.1.5.1.

2.1.4.2 80 Good supporting and explanation, however, there is uncertainty on the real impact of the fishery to rockfish, the management system needs to develop a measures system, it may be convenient to make the suggestion to the managers of this fishery.

2.1.5

2.1.5.1 80 I agree with this score, however, the lack of this fishery direct information makes it a deficiency of the fishery management system and cannot be scored above 80.

2.1.5.2 90 I suggest to include in the supporting explanation, references of the application of models Ecosim and Ecopath to this fishery.

2.1.5.3 75 Adequate score and good explanation and support. Condition is also appropriate.

2.1.5.4 80 Adequate score, the information support is base on groundfish longline fishery, however, there is no specific information for the halibut fishery.

2.1.5.5 80 Same comment as the above indicator.

2.2 Criterion

2.2.1 Sub criterion

2.2.1.1 90 Score appropriate, there is sufficient information on short-tailed albatross, however, more data on at-sea distribution is required to identify hot spots for this bird. I have a question to the evaluation team, At this stage or actually, the stocks of rockfish are considered in no risk and are not really affected for the by-catch of the halibut fishery?

2.2.1.2 75 Adequate score, good explanation and supporting information. Condition is also appropriate.

2.2.1.3 75 Same as the above indicator.

2.2.2 Sub criterion

2.2.2.1 75 Adequate score. It is a deficiency of the fishery since implementing regulations for seabird bycatch reduction is unclear. Condition is also appropriate.

2.3 Criterion

2.3.1 Subcriterion

2.3.1.1 90 Good explanation on seabird situation as species in danger no caused by the fishery buy for human persecution. In case rockfish be considered depleted the management system is prepared to do the appropriate conservation measures to rebuild stocks.

2.3.1.2 80 Adequate score. I suggest to include the name of the fishery referred were this measure has been applied.

Principle 3

Introduction

This chapter is very important as it contains a detailed description of the development of the fishery, the international convention and the national administration for both countries the US and Canada. This helps to understand how the management system was changing throughout time and how the international organization, the IPHC defined its objectives and how its role by recommendations help both countries the US and Canada to managed the fishery.

The evaluation team pointed out that the protocol of 1979 set the objectives for the IPHC to reach the “Optimum yield” (OY) including social and economic factors, however, due to different interpretations of the concept of OY by the two countries, this has never been well defined and measures have not been applied.

US Administration and the US regulatory framework

This is also an excellent introduction of the national (US) management system, its framework and its relationship with the international organization.

How the North Pacific Fisheries Management Commission (NPMFC) was created, its role together with the NMFS in terms of regulations and the allocation of quotas and national management system. The NPMFC role in the management of the US Pacific Halibut fishery; in accordance with the international management of stocks defined by the IPHC. This chapter also includes a clear description of the IPHC from its inception up to date, which I consider is appropriated.

3.1 Criterion

3.1.1 Subcriterion

- 3.1.1.1 95 Score is appropriate. Support for this score is well documented and explained. The IPHC role and the national management structures are functioning according with a well defined set of responsibilities.
- 3.1.1.2 95 Score is appropriate and supported and well documented. Clearly related with principle 1, high standards.
- 3.1.1.3 79 Score is adequate. It is a deficiency of the fishery since recommended management measures by the IPHC are primarily focus on the target species and are not implemented as an overall effective strategy for ecological impacts of fishing. Discussion and argumentation are well supported. The first condition suggest to develop strategies for managing ecological impacts for the Halibut fishery consistent with the 24 to 31 objectives of the amended Groundfish FMPs for GOA and BSAI, I am not sure that objectives 24 and 25 apply to other species rather than marine mammals. Objective 31 is not listed, so I don't know if it is just question of numbers?. The second condition and suggestion are also appropriate. Due to the fact that two strung conditions are set, a 75 score could be appropriate.
- 3.1.1.4 90 Score is adequate. The explanation is extensive and clearly demonstrates that the management system takes into account socioeconomic impacts by mean of the allocation system by quotas IFQ and CFQ programs, and considering the Aboriginal communities and people depending on fishing for food and livelihood.
- 3.1.1.5 79 Score is adequate. Two major deficiencies are pointed out. Economic assurance of the continuity of research and the lack of an observer program. The actual state of the managing system does not provide enough bases for measuring impacts for by-catch and discard in the fishery. Conditions are also appropriate.

3.1.2 Subcriterion

- 3.1.2.1 100 Good. This fishery handles the international conventions and agreements, is

well supported and explained.

- 3.1.2.2 100 Good. This fishery is managed according with all the requirements of national law.
- 3.1.2.3 80 Adequate score. The management system for this fishery accomplish all the requirements for the 80 score, lack of information does not allowed a higher score.

3.2 Criterion

3.2.1 Subcriterion

- 3.2.1.1 90 Score is adequate. Relevant information solicited at the international level by the IPHC accomplished the high standards, and has been sustained for long time. Acquisition of information and relevant advice has been provided to the IPHC since the early 1930s. By-catch problems of non-target species were left to both governments the US and Canada. National programs are discussed and well analyzed in this indicator.
- 3.2.1.2 95 Score is adequate. The role of the IPHC assessing relevant information for the target species is clear. National programs are well discussed and analyzed, the MSC pollock fishery assessment and the black cod are also discussed and analyzed.
- 3.2.1.3 80 Adequate score. The evaluation team, describe the important role played by the IPHC in terms of providing with relevant information and proposals to managers of the fishery. This is primarily focus on the conservation of target species; however, measures associated with ecological impacts of the halibut fishery are left to the national governments.
- 3.2.1.4 90 Score is appropriate. At the international level the evaluation team describes participation in the IPHC annual meetings of the Conference board (representing the commercial and sport fishing interest for halibut of the US and Canada) and the Processors advisory group (representing processors for both countries). At the national level, the evaluation team presents the structure and functioning of the NPFMC (North Pacific Fisheries Management Council), the role of the advisory panel and the Scientific Statistical Committee. The evaluation team describes how the information of formal meeting and data is available making it an open system for the public. Due to criticism of the actual structure of the managing system in recent reports, several modifications of the MSA have been recommended. These include the creation of regional fisheries management councils, structure and functioning.

3.2.1.5 80 Score is appropriate.

3.2.2 Subcriterion

3.2.2.1 80 I agree with the score, however, as it is pointed out by the evaluation team, there is lack of information in terms of the maintenance of bycatch species of the ecosystem.

3.2.2.2 70 Score is appropriate. Argumentation is clear.

3.2.2.3 80 Score is appropriate. Argumentation is clear.

3.2.2.4 85 Score is appropriate. Good explanation

3.2.2.5 95 Score is appropriate. Good explanation

3.2.2.6 95 Why not a 100, it accomplish all the requirements of the scoring guide.

3.2.2.7 90 Score is appropriate. Good explanation and examples.

3.2.2.8 80 Score is appropriate. All aspects of mechanisms are well explained by the evaluation team.

3.2.2.9 85 Score is appropriate. Good explanation.

3.2.3 Subcriterion

3.2.3.1 80 Score is appropriate. Good explanation, IPHC research program and ecological considerations.

3.2.3.2 90 Score is appropriate. Maybe 85 would be more appropriate.

3.2.4 Subcriterion

3.2.4.1 79 I agree with the score, good discussion and argumentation.

3.3 Criterion

3.3.1 Subcriterion

3.3.1.1 90 Score is appropriate. Is there any information of enforcement applied due to violation of rules and fine?

3.3.1.2 80 Score is appropriate. Good explanation.

3.3.1.3 No score, no applicable.

Tracking, tracing fish and fish products (9)

It is clear, as it is indicated by the Evaluation Team, reports of landings of fish on board for legal fishing vessels were found compliant with the MSC requirements. No further assessments were conducted from deck into processing segments of the fishery, either on board or at shore side processors.

The Evaluation Team recommendation is appropriate to examine and verify Capitan's log book data, reports of catch data from the fishery and observers reports the fish products to be able to achieve and carry a chain of custody certification by MSC logo.

Certification recommendation and performance scores (11)

I agree with the Assessment team recommendation. The US North Pacific Halibut Fishery (applicant), in order to be able to achieve a joint fishery/chain of custody certificate must accomplish 3 conditions recommended. The applicant will have to develop an Action Plan (1) to be approved by the certification body (2) and sign an agreement to assure it will comply with the specific conditions (3).

Performance scores

The process followed by the evaluation team to arrive to conclusions is well documented with all the available information and gives clear explanations and argumentation. I agree with scoring and with the overall conclusion and recommendations. Principle 1 scoring of 94.29 averages, demonstrates that it is one of the best managed fisheries in the world in terms of stock assessment. Principle 2, has 6 indicators below the approval scoring, however, general averages score of 81.09, puts the fishery in a condition situation. Conditions posted for these indicators are clear and very important, in particular the establishment of an observer program. General scoring of Principle 3 of 86.15 is above the pass limit of 80, however, 4 indicators were below this limit, also puts the fishery in a condition situation. Conditions and recommendations are very important and clear.

Table 3

I made a few editing on the list of indicators of this table, please see the electronic file.

As I mentioned in section 6, the Evaluation team made an excellent job on the definition and guide of Principles, Criterion, Subcriterion and indicators. This is a

very useful tool for the reader. The AHP weighted values and the AHP scores are clear in this table.

Meeting conditions for continued certification (12)

Obligations are clear. To assure the conditions (set by the SCS body), are going to be accomplished by the applicant (financially and technically responsible), it is necessary to have an action plan approved and agreed by the certification body. This includes surveillance of the MSC accredited body. This makes the process transparent. Descriptions of the applicant responsibilities are well set.

12.1 General conditions for continued certification.

I agree with the four conditions specified in this section they are clear.

12.2 Specific conditions for continued certification.

Six conditions in principle 2 and 4 conditions in principle 3. It is clear to me and I agree with the setting. These conditions are focused primarily on the major concerns of the evaluation team. These are well described at the introductory chapter (1) and at the introduction of principles 2 and 3 in section 9.

MSC Logo licensing responsibilities (13)

Responsibilities are clearly specified to the applicant (the US North Pacific Halibut Fishery) Conditions for continued certification, to use the MSC logo licensing for itself and for other quota holders.

Overall conclusion (14)

I agree with the general conclusion, the US North Pacific Halibut Fishery meets the MSC standards the evaluation team had the evidences presented to the SCS certification panel.

Peer Reviewer 2**a. Reviewer's Comments on the overall clarity of the report:**

1. At the beginning of this report, it is unclear to what extent the Pacific halibut longline fishery that occurs off the coast of Washington State is to be considered. Section 1.1 lists Bering Sea, Alaska, and Washington as the fishery area, and includes the Pacific Fisheries Management Council as one of the management entities. I suggested adding the State of Washington because the state has a role in managing halibut fishers landing in Washington and in allocation of the catch within state waters between users. As the report proceeds, there is little or no discussion of the issues in IPHC Management Area 2A. I recommend that the fishery and habitat issues in 2A, which are managed by the PFMC and Washington, either be included, or that Washington be omitted from the fishery's designated area, and the PFMC not be mentioned as one of the management entities.

Done

2. The most significant observation is the difference in setting up the Scoring Guideposts (SGs) between the three [Principles \(and their associated criteria\)](#). The SGs for Principle 1 generally had a more clear progression from the 60 SG to the 100 SG (acceptable to perfect). This contrasted with Principle 3, where sometimes the adjectives or adverbs used to separate the degrees of action in the SGs were quite vague or there was not a consistent pattern in the logic among the various PIs in that section. Perhaps the team needed to remind each other that the SGs are additive and items in the 60 SG don't need to be restated in the 80 and 100 SGs. I recognize, however, that the topics covered under Principle 3 are quite complex and overlap with the criteria of other two principles.
3. [Very little specific discussion was given to the level, effectiveness, and results, or other measures of actual enforcement of the regulations.](#) What are the enforcement budgets and are they considered adequate? How many officers cover what geographic area? How many citations were issued? What percent of violators are caught (not easy to answer but it can be estimated.)? Criterion 15 of Principle 3 is crucial because regulations are only as effective as their level of enforcement.

The team did look into this and asked NMFS a number of questions about enforcement. There was some concern about putting forth information on budgets. As for violations, an enumeration was not thought to be necessary.

4. The Team is to be commended for their expertise and, for the most part, thorough examination and analysis of this fishery so far, as it relates to MSC principles and criteria for certification.
- b. Adequacy of background information on the fishery, MSC process and the Team's conclusions and recommendations:

It is my opinion the report adequately provided information on the fishery (except as noted) and the MSC process. The Teams conclusions appeared generally well reasoned based on the defined PIs and SGs, except as noted in the text of the draft report. Its recommendations for conditions were sound.

c. My technical comments are inserted in the text of the draft report:

I have made three types of comments: minor correction edits in the text, inserted comments in the Performance Indicators (PI) for clarity, and my comments on the scoring as added text at the end of each PI scoring discussion.

d. Comments on technical inaccuracies or inadequacies :

See a. and c. above.

1.1.2.1 **Fishery related mortality is recorded/ estimated (including landings, discards and incidental mortality).**

60 Scoring Guidepost

- Sufficient information is available to allow accurate estimates to be made of landings broken down as required for a rudimentary evaluation of the fishery.
- Estimates of discards and incidental mortality are available for the target fishery.

80 Scoring Guidepost

Landings, discards, and incidental mortality are well estimated for each gear type harvesting halibut to support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

Landings, discards, and incidental mortality are accurately estimated and monitored for each gear type to support a very high degree of confidence in the evaluation of the fishery.

SCORE 90

There is no required observer program on board halibut longliners as discussed in detail elsewhere (Criterion 2.1.2.1) to accurately measure discards of under-sized halibut though estimates of under-sized discards can be made from the standardized longline surveys.

Discards and incidental mortality is estimated in the observer program for groundfish.

Landings are well estimated in the required fish buyer forms, which is evolving toward an electronic fishery reporting system to IPHC (Gilroy, Kong, and Geernaert 2004). This criterion satisfies the 80 guidepost but lack of longline observers prevents complete satisfaction of the 100 guidepost, therefore it was scored intermediate of those two.

REVIEWER: This doesn't satisfy the 80 guidepost because there is no observer program on board halibut longliners, and wouldn't satisfy the 60 guidepost if amended as I propose.

SCS: The assessment team understands the point, but disagrees. The indicator is about the target species, and the data collected on the target species is sufficient to assign the score indicated.

- 2.1.1.3** **Information is available on the position and importance of the target species within the food web.**

60 Scoring Guidepost

Key prey, predators and competitors are known. (We assume key prey represent >20% of diet, key predators are likely to be responsible for >20% of the mortality, key competitors are likely to be 1-3 species of high abundance and similar ecology).

80 Scoring Guidepost

Information is available on the position and general importance of target species in the ecosystem.

Comment: Add 'Qualitative'

Comment: Add "for some life stages"

100 Scoring Guidepost

Quantitative information is available on the position and importance of the target species within the food web at all life stages.

SCORE 95

The position of the halibut as a top predator in the marine ecosystem is very well established. There has been a great deal of research into the ecology of the halibut, at all life stages (listings of IHPC Reports at <http://www.iphc.washington.edu/halcom>, Leaman 2004, 2005). There remain some areas that are less well understood in the species' ecology, but the fundamentals are mostly very well known. Where there are gaps in knowledge, the IHPC has an ongoing and highly successful program of research that is well focused on those aspects of uncertainty that are important in the context of fish stock evaluation and management (as listed at <http://www.iphc.washington.edu/halcom>).

REVIEWER: I believe 85-90 would be a better score because while halibut ecology is very well known, the ecology and life history of predator/prey species at the halibut egg and larval stages may not as thoroughly understood.

SCS: The assessment team understands the point. The position in the food web is very well known. We agree that some data on predators and prey at early life stages could be better studied, but among fish species this is one of the best understood anywhere in the world.

- 2.1.1.4** **There is information on the potential for the ecosystem to recover from fishery related impacts.**

60 Scoring Guidepost

Key elements of the functioning of the ecosystem, relevant to the fishery, are identified, and suggest how the ecosystem may recover from fishery related impacts

Comment: Suggest replacing "relevant to" with "affected by"

80 Scoring Guidepost

The main elements of the functioning of the ecosystem, relevant to the fishery, have been documented and are understood, and this provides a convincing picture of how the ecosystem would recover from fishery related impacts.

Comment: see comment above.

100 Scoring Guidepost

Detailed information is available on the potential for affected elements of the ecosystem to recover from fishery related impacts.

SCORE 80

The main elements in this ecosystem that could be adversely affected by the longline fishery for halibut include some scavenging seabirds and some rockfish species. There is rather little knowledge of the way in which, and the extent to which, the halibut fishery impacts scavenging seabirds and rockfish. This uncertainty stems from a lack of monitoring of the halibut fishery bycatch. Thus the numbers of seabirds killed and the quantities of fish taken as bycatch are not known. On the other hand, the requirements to permit recovery of populations of scavenging seabirds such as albatrosses are very well known. Albatross populations will only recover if adult and subadult mortality rates can be held below critical levels. This is a consequence of the very low natural fecundity and delayed maturity of these birds. But in the situation where adult and subadult mortality rates can be reduced to natural levels, population recovery can be expected (Rappoport 2003a,b), as it is unusual for albatrosses to have reduced breeding success given their huge potential foraging range and low reproductive effort (as their single chick grows slowly but has no natural predators in most populations so tends to have an excellent chance of survival to fledging). Rockfish show life history characteristics that for fish are similar to those of albatrosses with respect to other birds; rockfish tend to be long-lived, slow-growing and have low fecundity. Their stocks are thus also vulnerable to elevated mortality rates resulting from fishing (whether directed or as a bycatch species). Similarly, the key to recovery of these stocks is a reduced mortality rate. Thus overall we score this Indicator as close to the 80 guidepost, although it scores higher on the question of how population recovery would occur and lower on the aspect of the functioning of the ecosystem relevant to the fishery (for example there is great uncertainty as to which, and how many, seabirds are caught by the halibut fishery, and which, and how many rockfish are caught, and in which regions).

Comment: Not compared to sharks, salmonids or substrate spawners

REVIEWER: While I agree there is a balance between recovery actions and uncertainty, I believe the score should range from 60-70, especially since the aspects of lost fishing gear, fishery related pollution, or any other affects don't appear to have been considered.

SCS: Again, the indicator is about fishery related impacts, not all impacts. Lost fishing gear was considered, and a number of questions asked about what is known. We feel the score is correct.

2.1.2.2 Information is available on the extent of discards (the proportion of the catch not landed).

60 Scoring Guidepost

Information is available on the extent of discarding, including a species list and assessment of the main species represented.

80 Scoring Guidepost

Information is available to allow reliable estimates of discard to be calculated and interpreted.

100 Scoring Guidepost

Accurate information is available on the extent of all discards, and consequences of these, or the entire catch is landed.

SCORE 70

The text under 2.1.2.1 applies here. Essentially, this fishery lack reliable data on what is discarded because there is no adequate monitoring of bycatch or of discarding behaviour of the fishermen.

REVIEWER: I disagree. The situation fails to meet the 60 PI. Either there information on the extent of discards and data sufficient for assessment or not. With no observer program, there is not.

SCS: We disagree. There is basic knowledge about discards. The lack of a monitoring system means no annual, systematic information. It passes the basic knowledge test at 60, but does not meet the rest.

2.1.3.1 There is adequate knowledge of the physical impacts on the habitat due to use of gear, and impacts are kept below unacceptable levels.

60 Scoring Guidepost

- Main impacts of gear use on the habitat are identified including extent and location of use.
- Effects of habitat perturbations estimated and appear stable and at acceptable levels.

80 Scoring Guidepost

- Impacts of gear use on the habitat are identified including extent and location of use.
- Habitats appear sustainable, despite perturbations, and management acts on the basis of knowledge of physical impacts to keep these below unacceptable levels.

Comment: Suggest adding the word "All"

100 Scoring Guidepost

The physical impacts on the habitat due to use of gear have been studied and quantified, and this information has been used to reduce impacts to trivial levels.

SCORE 80

The halibut fishery avoids major impacts on habitat since it is entirely a longline fishery. Monitoring of the bycatch in the groundfish longline fishery through the observer program has shown that longlines do bring up a small bycatch of corals (Livingston 2001, 2003), but there are no equivalent data from the halibut fishery to demonstrate whether or not there is a similar impact in that fishery. Possibly the impact on corals may be less in the case of halibut longlines since these tend to be in shallower water than, for example, the black cod longlines. Based on the information existing for other longline fisheries and the fact that halibut fishing is likely to overlap less with coral distribution than the longline fishing for black cod, it would appear that the impact of the halibut longline fishery on habitats is very small, but given the deficiency in data on this we felt unable to give a score of any more than 80.

REVIEWER: I disagree. Without observer coverage there is no definitive information to meet the 80 SG and it can be debated that it even meets the 60 SG. This PI should be conditioned as for 2.1.2.1.

SCS: SCS understands the point, however observer coverage would not in our opinion add to the understanding of the issue. Bottom effects from longline gear are not likely to be seen by what is brought aboard. There are a number of studies that indicate the effects of longline gear, and the assessment team felt these were sufficient to barely meet the 80 guidepost. However, we recognize that the information available could be interpreted in a number of different ways. As a result, we have added a recommendation to the final report to encourage the fishery to participate in any and all efforts in the North Pacific to better understand the effects of longline gear on habitat, and to get a better understanding of habitats throughout the fishery.

2.1.5.1

All the significant effects of the fishery on the ecosystem have been identified.

Comment: Suggest adding: "and quantified"

60 Scoring Guidepost

Main impacts of the fishery on the ecosystem are known from existing information, but have not been investigated in detail.

80 Scoring Guidepost

There is a comprehensive evaluation of the effects of the fishery on the ecosystem based on existing information.

100 Scoring Guidepost

The effects of the fishery on the ecosystem have been identified by appropriate comparative and/or experimental studies.

Comment: Same comment as above

SCORE 80

The effects of longline fisheries are considered in the annual ‘Ecosystems Chapter’ component of the groundfish SAFE Report (e.g. Livingston 1999, 2000, 2001, 2003, Boldt 2004) and in the groundfish PSEIS and EFH review (NMFS 2001a, NOAA 2003, 2004). However, these reviews consider effects of longline fisheries other than the halibut fishery, and the assumption being made seems to be that the halibut fishery has at least no more impact than the other groundfish longline fisheries and perhaps less. While this assumption may be correct, it cannot be substantiated by data since there are no monitoring data from the commercial halibut fishery regarding bycatch or discards. For this reason, although we consider that the generic effects of each demersal longline fishery in the region are likely to be closely similar, we cannot score above 80 due to a lack of data from the halibut fishery itself. It is true to say that there is a comprehensive evaluation of the effects of the fishery on the ecosystem based on existing information, but it can also be stated that the existing information is deficient.

Reviewer: Then this qualifier for non-deficiency should be added to the 80 SG. If so then the fishery won't meet it.

SCS: Again, we understand the point being made and disagree. There is a lot known about longline fisheries, and a lot known about the Bering Sea ecosystem. What is not done, is to compile this for the halibut fishery itself, which is anticipated to be very similar. As we noted above, we have made a strong recommendation to encourage more specific knowledge to be accumulated.

2.1.5.4

Fishery impacts on habitat structure are held below unacceptable levels.

60 Scoring Guidepost

Impacts of the fishery on habitat structure within major fishing areas are estimated, although the issue has not been directly studied.

80 Scoring Guidepost

Impacts of the fishery on habitat structure within major fishing areas have been studied and are within estimated limits.

100 Scoring Guidepost

Effects on habitat structure are documented and are within acceptable tested/justified limits.

SCORE 80

We have been unable to find clear evidence relating to the question of whether longline fishing for halibut has any impact on coral habitats, but this seems likely not to be a problem given the relatively low incidence of corals as bycatch in the black cod longline fishery which is generally in deeper water where interactions with coral habitat seem more likely to arise. Explicit considerations of impacts of groundfish longline fisheries (in general and in fact excluding consideration specifically of the halibut fishery) on habitat have concluded that there are no adverse impacts of concern (NMFS 2001a).

Reviewer disagrees. The issue has not been directly studied, therefore the 60 SG is appropriate. Needs conditioning as for 2.1.2.1.

SCS: We disagree. The evidence of habitat types in the areas fished for halibut allows one to conclude a low risk to coral populations. Unless further evidence is accumulated to suggest otherwise, we believe the fishery meets the 80 guidepost. We have modified the text of the report to better indicate this point.

2.1.5.5

The effects of the fishery on associated biological diversity and productivity are held below unacceptable levels.

60 Scoring Guidepost

Impacts of the fishery on biological diversity and productivity are estimated, although the issues have not been directly studied. Impacts are thought on the basis of best scientific opinion to be acceptable and sustainable.

80 Scoring Guidepost

Impacts of the fishery on biological diversity and productivity have been studied and are not unacceptable.

100 Scoring Guidepost

The effects of the fishery on biological diversity and productivity have been quantified and are within acceptable limits.

SCORE 80

Explicit considerations of impacts of groundfish longline fisheries (in general and in fact excluding consideration specifically of the halibut fishery) on biological diversity and productivity have concluded that there are no adverse impacts of concern (NMFS 2001a).

Reviewer disagrees. The issue has not been directly studied, therefore the 60 SG is appropriate, unless a more convincing argument is presented that direct study is not needed. Or, the SGs need to be changed to allow inference from one fishery to another to qualify as meeting the PI. May need conditioning as for 2.1.2.1.

SCS: We disagree. Studies on the ecosystem are extensive in the area of the fishery. Full models have been developed by NMFS on ecosystem functioning, and these models are not showing significant changes in biodiversity. While these models are not specific to halibut, they are for the ecosystem in the same area as the fishery. It would be expected that changes in biodiversity in the area would be seen if they were occurring. Also, given the number of other fisheries in the same areas, it would be likely to see a major shift if one were occurring as significant fishing for many species occurs throughout the area.

2.3.1.1

There is sufficient information to allow determination of necessary changes in fishery management to allow recovery of depleted populations.

60 Scoring Guidepost

There is some information on functional relationships, sufficient to allow alterations to be made to fishing in a way that may reasonably be expected to recover and rebuild depleted species.

80 Scoring Guidepost

There is adequate information, combined with a precautionary approach wherever necessary, to allow alterations to be made to fishing in a way that may reasonably be expected to recover and rebuild depleted species.

100 Scoring Guidepost

- There is a clear understanding of functional relationships between the impacted population and the fishery.
- Intervention measures based on this understanding have been tested, and shown to be effective in promoting recovery and rebuilding of depleted species.

SCORE 90

The only species that is clearly identified as ‘depleted’ in the context of adverse interactions with the halibut fishery is the short-tailed albatross. This species, although listed as ‘endangered’, has a strongly positive population trajectory; its numbers have been increasing steadily for several decades, albeit from extremely low levels. But the fact that the numbers are increasing indicates that this population should recover even without any reduction of interaction with the halibut fishery. It should also be emphasised that the halibut fishery has not been in any way responsible for contributing to the endangered status of the short-tailed

albatross. The species was reduced to the verge of extinction by direct human persecution, at a time when there was no longline fishery for halibut. There is clear understanding that the population will recover if demographics remain as they are now, and that protection from human persecution has been the one change required to achieve the trend to recovery (Clark 2000). It is possible that some of the rockfish stocks that are taken as bycatch in the halibut fishery may be considered depleted, depending on the definition of that word. But if so, then the changes in management necessary to achieve rebuilding of their stocks are evident; reduction in mortality rate.

Reviewer somewhat disagrees. An 85 SG is more appropriate because of the rockfish issue and how to effectively implement the reduction in mortality rate.

SCS: We understand, but scoring remains as it is our judgment that it is accurate.

2.3.1.3 **Management measures allow for recovery of affected populations.**

60 Scoring Guidepost

Rebuilding measures exist and are fully implemented. Measures have not been tested.

80 Scoring Guidepost

- Appropriate rebuilding measures are being implemented.
- Measures have been tested and can be shown to contribute significantly to rebuilding the affected populations.

100 Scoring Guidepost

- Appropriate rebuilding measures are being implemented to promote recovery as quickly as is possible.
- Additional measures are being implemented to prevent problems in the future.

SCORE (Since the fishery has not contributed to the decline of any of the species listed as threatened or endangered we chose not to score this Indicator.)

Reviewer: while the fishery may not have contributed to the decline of the short-tailed albatross, it has potential to affect the speed of recovery, which is what this PI is about. If this one were scored, it would probably not make the 80 SG.

The score was not seen to be needed since, as the reviewer pointed out, the fishery has caused no significant depletions. Indeed, if the fishery were scored against this indicator based on Albatross populations, it may well have scored above 80. Measures have been implemented. In addition, the populations of some species seem to be improving. What is now lacking is better coverage and monitoring of bycatch to ensure better protection for seabirds potentially affected by the fishery. We have already covered this in other places within this assessment.

3.1.1.5

There is an adequately funded research strategy to support the harvest strategy and to address information needed to support the identification and mitigation of ecosystem impacts.

[Relates to MSC Criterion 3.8]

Elements considered include:

- Role of science in setting research agenda
- Diversity and quality of input
- Level of funding
- Transparency of process
- Relationship between those who design research and those responsible for implementation
- Relationship to present and future management needs

60 Scoring Guidepost

- Research is generally of good quality, but lacks strategic planning that anticipate future management needs.
- Cooperation between research staff and fishery managers is frequent but there are disagreements regarding the significance of research findings for management.
- Funding is barely adequate or inadequate even to meet short-term information needs for stock assessment and ecological interaction research.

80 Scoring Guidepost

- The management system includes a stable, well-led, diverse and objective research planning organization.
- There is regular agreement between fishery managers and research scientists on near term research needs and priorities in the fishery.
- There are documented short-term research plans developed with advice from with stakeholders and external experts.
- Funding for research is adequate to address major short-term gaps in knowledge but inadequate for in-depth long-term research.
- Funding is adjusted to meet requirements of newly identified research priorities.
- Funding is predictable over long-enough time scale to allow continuity of all major stock assessment and ecological interactions research programs.

100 Scoring Guidepost

- The management system includes a stable, well-led, diverse and objective research planning organization.
- There is significant and regular agreement between fishery managers and research scientists on research needs and priorities in the fishery.

- There are well documented short- and long-term research strategies developed with advice from stakeholders and external experts.
- Funding for research is adequate to address all significant knowledge gaps.
- Funding is adjusted in a timely and appropriate manner to serve changing research priorities.
- Funding is predictable over a long-enough time scale to allow research planning appropriate to long-term research needs

SCORE 79

Harvest Strategy

IPHC has had a distinguished history as a fisheries research agency that has been in forefront of developing practical approaches to stock assessment as a basis for prudent regulatory management. As indicated in the Commission's long list of scientific and technical documents, Commission scientists carried out the pioneering work of describing the life history of the species.⁴² Current research focuses on an annual setline survey conducted with standardized methods, bait and gear to supplement data on the harvest in commercial, recreational and subsistence fisheries. Biological data collected on the surveys such as the size, age and sex composition of halibut are used to monitor changes in biomass, growth and mortality in the population. Studies of migrations through tagging programs and on the relation between oceanographic conditions and distribution and abundance are also conducted. The development of models to assist in assessing the implications of proposals for regulatory action are, as described in under the Principle 1 section of this report, "state of the art". Principle 1 assessments for other aspects of the scientific and technical program (see Indicators under sub-criterion 1.1.1 and 1.1.2 above) gave the IPHC research program high scores for all aspects of the collection of basic data on the halibut stocks required for effective management.

The research program is developed with input from national scientists of the two countries and also obtains advice from the collective fishing community of the two countries (See introduction to Principle 3 assessment above). The Commission has a long tradition of effective cooperation between its technical staff who provide the scientific background and options for regulatory action to the Commissioners who make the decisions on recommendations for regulatory measures that are transmitted to the parties.

The Team concludes that, with respect to the management of the target species, halibut, IPHC would warrant high marks for quality of leadership, planning and conduct of research and monitoring.

One area of concern to the team concerns funding. The team did not conduct a thorough study of the fiscal structure for the Commission's program, but it would appear that funding is adequate to support the present program. However, we were informed that government

⁴² <http://www.iphc.washington.edu/halcom/literatu.htm>
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contributions to IPHC had been cut in recent years and that 40% of the operating budget now comes from cost recovery from the sale of fish taken in the annual setline survey. This would seem to create a somewhat precarious situation, in that it could be envisioned that governments would not be particularly troubled by limiting or even cutting contributions on the belief that shortfalls could be made up from increasing the returns from the survey whether or not increased survey activity was warranted from the scientific point of view.

Identification and mitigations of ecological impacts

As discussed earlier, IPHC's mandate is limited mainly to the consideration of exploitation of the target species, halibut. Although the Commission does some work on bycatch of non-halibut species (e.g., evaluation of seabird mitigation measures under contract to NMFS), very little attention is paid to the effects of the fishery on non-halibut species and the general ecology.

Thus, it is left up to the national agencies of the two countries to deal with ecological issues created by the halibut fishery. Under Indicator 3.1.1.3 above, it was concluded that, although the NPFMC and NMFS have adopted a number of measures in the halibut fishery to avoid damage to the regional ecology, there is no overall strategy to provide a firm basis for measuring such impacts, particularly respecting bycatch and discards in the halibut fishery. The greatest deficiency was identified as lack of an observer program.

Summary

The Team concludes that the research to support the harvest management strategy is stable well-led, diverse and exhibits objective planning and that there is significant and regular agreement between fishery managers and research scientists on research needs and priorities in the fishery.

Currently it would appear that funding for research is adequate, but the fact that a large portion of the research budget is provided by cost recovery from survey operations. This tends to create the dubious incentive to increase survey operations to offset limitations in funding of IPHC by the two member governments.

Despite this shortcoming, which should be a concern to the governments, the IPHC research program is of exceptional quality and if it were the only factor in scoring this Indicator, a high mark would be obtained. However, the Indicator also addresses research to support the identification and mitigation of ecosystem impacts. Because IPHC's mandate is limited to consideration of the fishery for the target species, halibut, responsibility for study and control of ecological impacts falls to national governments. As discussed in a number of other Indicators the NPFMC and NMFS approach to measuring ecological impacts of the halibut fishery are inadequate, mainly because there is no observer program to provide independent measures of bycatch and discards, gear loss etc.

Considering this deficiency, the Team scores the Alaskan halibut management program, shared by IPHC and the US federal government at 79. Adjustments in the system as proposed

in the Conditions listed under Indicators 3.1.1.3 and 2.1.2.1 would result in a substantial increase in score .

Reviewer: I don't think the Team should be shy about this SG by giving it a 79. 61 would also be a reasonable, given the constant erosion of IPHC funding.

SCS: We believe the management system to be strong as noted elsewhere. We are just suggesting that some improvements, especially on funding ecosystem work are needed.

3.2.1.5

The management system provides for timely and fair resolution of disagreements.

[Relates to MSC Criteria 3.2, 3.5]

Elements considered in scoring:

- Established, routine system available to all
- Objective decision maker
- Explanation of decision

60 Scoring Guidepost

- Dispute resolution mechanisms in place are theoretically adequate but are not used in a consistent manner.
- The management system fails to demonstrate meaningful progress toward resolution of outstanding disputes.

Comment: Add: "some". This would recognize that not all are left outstanding. If left as stated, the minimum SG of 60 wouldn't satisfy the PI as stated.

80 Scoring Guidepost

- The management system has established mechanisms for resolution of significant disputes arising within the system.
- The management system's dispute resolution procedures are clearly open to all significant participants and stakeholders.

100 Scoring Guidepost

- The management system has established mechanisms for resolution of disputes at the principal levels of, and for major issues arising within, the system.
- The management system provides for appropriate documentation of the nature and resolution of disputes.
- The management system's dispute resolution procedures is clearly open to all significant participants and stakeholders.
- The management system's dispute resolution procedures show no evidence of a pattern of discrimination against any participants or significant stakeholder interest.

SCORE 80

Halibut Commission Regulations and Decisions

Like almost with all Canada/US fisheries bilateral and multilateral agreements, the Pacific Halibut Convention does not contain any provisions for formal settlement of disputes either between the parties or between the Commission and members of the public, fishing organizations or lower levels of governments in each country.⁴³ Similarly, the US legislation implementing the Halibut Convention, the 1982 Northern Pacific Halibut Act (see introductory section above of details regarding the Act) does not contain dispute settlement provisions.

As an agreement between two sovereign governments, an international convention would not be expected to provide for settlement of disagreements between private citizens of either country and the Commission regarding Commission decisions or regulations. Rather, it would be expected that differences of opinion between the Commission and citizens of either country decisions would be settled through representations within the national section of each country, i.e. citizen groups would deal with the Commissioners of their own country.

At the country-to-country level, disputes between the parties could be settled through formal dispute settlement mechanisms. However, Canada and the US have, for the most part avoided the inclusion of dispute settlement provisions in the approximately ten bilateral or multilateral fisheries agreements the parties have concluded in recent years. Instead, when conflicts have arisen within Canada/US commissions, they have usually been settled through negotiations at the parent. In these cases, negotiated government-to-government decisions are implemented through issuance of instructions to the particular commission or, in some cases, amendments to treaties. For example, in 1999, irresolvable disputes within the Pacific Salmon Commission (Shepard and Argue loc. Cit.) were settled by a government-to-government negotiations which led to dictation of treaty implementation terms for a ten-year period.⁴⁴

National Programs

Disputes within the US regarding halibut regulatory measures would be dealt with within the framework of the NPFMC system. In dealing with this issue in the companion MSC Black Cod Assessment, the Applicant's submission described that, within the NPFMC, management decisions and implementation follow a long path of sequential deliberations, conducted in an open public manner giving many opportunities for resolution of disputes. The submission noted that the NPFMC conducts its business through open public meetings. There is a tape recorded record of Council deliberations including all testimony presented to the Council. Copies of tapes are available to anyone. The Council is deliberate in providing comment for the public record explaining the course of action taken. Disagreements inevitably occur and are occasionally settled through the Federal courts. Following final action by the Council, NMFS must generate revised fishery regulations to conform with

⁴³ An exception is the 1985 Pacific Salmon Treaty which contains an article providing a dispute settlement procedure limited to technical matters such as the measurement of interceptions of salmon by fishermen of one country intercepted by fishermen of the other and questions of overfishing. Despite serious disputes between the parties regarding the interception issue, procedural wrangling has prevented use of the dispute settlement provision (Shepard and Argue 2005).

⁴⁴ Pacific Salmon Commission. Annual Report for 1999-2000. Appendices A-D.

Council management plans. The regulation changes are accompanied by Federal Register notices of both pending and final action. Explanations for the actions are provided in the Federal Register notice. Public comment is solicited in this process and a response to public comment offered in the published final rule.

The Team notes that, although there is no formal dispute settlement process, most disputes are settled in the course of the sequential deliberations described above. Where major differences on substantive matters persist, disputes are referred to the Courts. In this case, the Courts may be viewed as the final focus for dispute settlement.

The MSC Halibut Team considers that the situation regarding the limited halibut regulations established by NMFS through the NPFMC is similar to the black cod case. The Team has not been informed that failure to resolve disputes has been an important concern in management of the halibut fishery in recent years. Thus, although there is no formal dispute settlement mechanism in place, the Team concludes that the NPFMC layered system of consultations with recourse to the courts when problems persist permit resolution of significant disputes arising within the system and that the procedures for settling disputes are clearly open to all significant participants and stakeholders. On this basis, for this Indicator, the Alaska halibut fishery is accorded a score of 80.

Reviewer: How can a score of 80 be accorded when the first item of the 80 SG states: “The management system has established mechanisms for resolution of significant disputes arising within the system”, but then in the discussion it is stated that “the 1982 Northern Pacific Halibut Act does not contain dispute settlement provisions”, “The Team notes that, …there is no formal dispute settlement process”, and “disagreements inevitably occur and are occasionally settled through the Federal courts”. The courts are not part of the management system, they are resorted to when the management system is lacking.

SCS: There is some debate about the use of federal courts as part of the management system. Given the decision in the pollock fishery, the team chose to be consistent with the interpretation that in federally managed fisheries, the court is the adjudicating body for disputes.

3.2.2.2

The management system accounts for catch of non-target species.
[Relates to MSC Criteria 3.10, 3.17]

60 Scoring Guidepost

- The management system requires monitoring and accounting of catch of non-target species, but the effectiveness of the measures is uncertain.
- Information available to managers from monitoring of catches of non-target species is barely adequate.

80 Scoring Guidepost

- The management system requires reliable, timely monitoring of and accounting for catch of non-target species and use or discard of that catch throughout all significant components of the fishery.
- Measures taken substantially reduce the capture of non-target species.

100 Scoring Guidepost

- There is real-time, reliable monitoring of and accounting for catch and use or discard of non-target species throughout the fishery.
- The management system has achieved continued improvement in the accuracy and precision of monitoring and accounting of catch and use or discard of non-target species.

SCORE 70

Under Principle 2, Indicators 2.1.2.1, 2.1.2.2, 2.1.5.3, 2.2.2.1 and 2.2.1.2 note the lack of observer or other forms of independent monitoring of the halibut longline fishery. Information on landed bycatch of non-halibut fish comes from state fish tickets and data on discards is supposed to be recorded in fishermen's log books, but information so gathered cannot be considered reliable without the capability of cross checking. Of greatest importance is information on the possible occurrence of short-tailed albatross, a species on ESA's endangered list. There are also questions on the impact of the halibut fishery on rockfish. The NPFMC has considered extending the North Pacific observer program to include the halibut fishery and, it is understood the possibility is again under active consideration.

Whereas the lack of monitoring is a serious deficiency, as outlined under Indicator 3.1.1.3 above, the management system has developed a number of protective measures which work to reduce undesirable bycatches and discards such as the banning of trawling for halibut, the adoption of IFQ and CDQ programs in the halibut fishery, prohibition of most discards of rockfish and adoption of mitigation measures for the capture of seabirds. Nevertheless, without effective monitoring, the efficacy of these programs is difficult to assess. Until some sort of independent monitoring is in place, it is evident that there is not reliable, timely monitoring of and accounting for catch of non-target species and use or discard of that catch throughout all significant components of the fishery.

On the basis of the foregoing, the Team assigns a score of 70. A passing grade would require the development of an effective system for the monitoring and reporting of bycatch.

Reviewer: this simply does not meet the 60 SG. The management system does not require monitoring and accounting of catch of non-target species.

SCS: The system does require monitoring and accounting in the sense that it occurs during the survey work. Tehre is alos voluntary reporting. What is missing is a better system, and we have indicated this with conditions in other areas of the report as well as here.

3.2.2.5

The fishery does not use destructive fishery practices.

[Relates to MSC Criterion 3.14]

60 Scoring Guidepost

There is no evidence that destructive fishing practices take place within the fishery.

80 Scoring Guidepost Clarification was provided through government-to government This was settled, among other issues, by negotiation

- Fishery management system prohibits use of destructive fisheries practices.
- There is no evidence that destructive fishery practice is occurring.

Comment: This item is the same as the 60 SG, therefore it isn't needed.

100 Scoring Guidepost

- The management system affirmatively prohibits fishery or operational practices that damage or destroy natural geologic, biologic, or chemical features or characteristics of the aquatic area in which the fishery occurs, except those impacts that are physically unavoidable consequences of authorized uses of fishing gear.
- There is no evidence that destructive fishery practice is occurring.

Comment: Same comment as above.

SCORE 95

In the North Pacific groundfish fishery, fishing methods that have less impact on the environment are routinely encouraged over more intrusive ones through direct prohibitions, gear allocations, and economic incentives. Driftnets, bottom tangle nets, and longlined-pots have all been banned in the GOA and BSAI groundfish fisheries. For additional information, see 50 CFR 600.725, which provides the list of authorized fishing gear permitted in U.S. fisheries. This citation in the Code of Federal Regulations⁴⁵ states that only trawl, hook and line, handline, longline, pot and trap gear are permitted in the North Pacific commercial groundfish fishery. These gear types are commonly used in commercial fisheries internationally and fishing with such gear is not considered to be a destructive fishing practice.

As discussed in the introduction to Principle 2 issues in the present assessment, longline fisheries avoid most of the problems that can be associated with other types of bottom-fishing gear such as trawls, such as damage to the benthos and benthic habitat.

Considering the foregoing, black cod and halibut longline gears are clearly among the least destructive types of gear used in commercial fisheries, warranting a score of 95 for this Indicator.

Reviewer agrees to a score above 80, but there is still the issue of no independent, direct monitoring of the effectiveness of the management measures for the halibut longline fishery

⁴⁵ <http://www.SGoaccess.gov/cfr/index.html>

SCS: We understand the reviewer comment, but the score remains.

- 3.2.2.8** The management system incorporates no-take zones, and MPAs, or other mechanisms, where appropriate, to achieve harvest limits and ecosystem protection objectives.
[Relates to MSC Criterion 3.10]

60 Scoring Guidepost

- The management system has established some control mechanisms, but their effectiveness is doubtful or has not been evaluated adequately.

80 Scoring Guidepost

- The management system has established no-take zones, MPAs, or other control mechanisms, where appropriate.

100 Scoring Guidepost

- The management system has demonstrated a consistent ability and willingness to establish no-take zones or MPAs or other mechanisms where appropriate in order to achieve harvest limit or ecosystem protection goals.
- The management system has identified criteria and standards for establishment of control mechanisms

SCORE 80

The principal means of achieving harvest limits in the halibut fishery is the IFQ/CDQ system and not no-take zones and MPAs. Discussion under this Indicator is therefore limited to habitat effects.

It will be recalled that, as outlined in the introduction to the Principle 3 analysis above, the MSA requires that NMFS and NPFMC describe and identify Essential Fish Habitat (EFH) for fisheries, minimize to the extent practicable the adverse effects of fishing on EFH, and identify other actions to encourage the conservation and enhancement of EFH.

Beginning in 2000, a new *Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska* (EIS) was developed to provide a policy basis for actions to protect marine habitats pursuant to MSA requirements. This EIS was finalized in August 2005 and evaluates alternatives for three actions: (1) describing EFH for fisheries managed by the North Pacific Fishery Management Council; (2) adopting an approach for the Council to identify Habitat Areas of Particular Concern (HAPCs) within EFH; and (3)

minimizing to the extent practicable the adverse effects of Council-managed fishing on EFH.⁴⁶

In its background analysis, the EIS concluded that, based on the best available scientific information, despite persistent disturbance to certain habitats, the effects on EFH are minimal because the analysis finds no indication that continued fishing activities at the current rate and intensity would alter the capacity of EFH to support healthy populations of managed species over the long term. The EIS further concludes that no Council-managed fishing activities have more than minimal and temporary adverse effects on EFH for any FMP species, which is the regulatory standard requiring action to minimize adverse effects under the MSA (50 CFR 600.815(a)(2)(ii)). Additionally, the analysis indicates that all fishing activities combined have minimal, but not necessarily temporary, effects on EFH. These findings suggest that no additional actions are required pursuant to the EFH regulations. However, as noted above, the analysis has many limitations, and the effects of fishing on EFH for some managed species are unknown. Even though the available information does not identify adverse effects of fishing that are more than minimal and temporary in nature, that finding does not necessarily mean that no such effects exist. Thus, the Council recommended appropriate precautionary measures.

Regarding specific actions proposed in the SEIS, under Action 3, dealing with measures to minimize adverse effects of Council-managed fisheries, the NMFS approved, with an amendment, an alternative involving provisions for prohibition of all bottom contact fishing in six coral garden sites in the Aleutian Islands (AI) area. Fishery monitoring measures would include existing levels of observer coverage, plus a requirement for a vessel monitoring system on all fishing vessels in the AI. In the GOA, in addition to bottom trawl restrictions, the alternative would require fishery monitoring measures requiring maintenance of existing levels of observer coverage. NMFS would add to the Council's preferred alternative a requirement for a vessel monitoring system on all fishing vessels with bottom contact gear in the GOA to ensure adequate enforcement.

As outlined in the ROD cited above, NMFS received comments on the Final EIS from the Alaska Longline Fishermen's Association (representing approximately 65 members, most of whom fish from vessels less than 60 feet in length) strongly opposing a VMS requirement for fixed gear vessels due to the cost and the perceived lack of need for VMS to protect sensitive habitat features. Responding to this concern, in June 2005 NPFMC voted to request that NMFS not impose new VMS requirements for fixed gear vessels in the GOA. Consequently, following publication of the final EIS, NMFS determined that the implementing regulations should require VMS in the GOA only for vessels with mobile bottom tending fishing gear, and fixed gear vessels (including pot, jig, and hook-and-line gear) should be exempt from the VMS requirement. As a compromise, the Council voted unanimously to request that NMFS develop a separate comprehensive analysis of alternatives for applying VMS for all fishing vessels in the BSAI and GOA to address enforcement, management, and safety objectives.

⁴⁶ <http://www.fakr.noaa.gov/habitat/seis/final/rod.pdf>

Regarding halibut specifically, the IPHC halibut regulations include seasonal closures and closed areas to discourage capture of juvenile halibut. Lack of any independent means (e.g. observers or video equipment) for monitoring the activities of halibut fishing vessels will be a challenge for implementing measures to exclude fishing activity from sensitive ecological areas remain a problem.

From the foregoing, it is apparent that NPFMC and NMFS have taken a measured approach to developing approaches to minimize impacts of Council-managed fisheries on marine habitat. Consideration is being given to the establishment of zones in which bottom contact fishing (including longlines) will be prohibited. Overall, the Team concluded that the management system has established or is planning to establish no-take zones, MPAs, or other control mechanisms, where appropriate, warranting a score of 80.

Reviewer: The score should be slightly less than 80 until the management system has taken these measures. The system is only considering measures now. The PI states the management system *incorporates* these measures, implying present tense.

SCS: Disagree. Ther are already areas closed to fishing, so some implementation is already occurring as it regards groundfish fisheries.

3.2.2.9

The management system minimizes operational waste.
[Relates to MSC Criterion 3.15]

60 Scoring Guidepost

- Many participants in the fishery lack internal programs or controls to minimize operational waste.

80 Scoring Guidepost

- The management system has established rules to minimize operational waste, including monitoring and enforcement.

100 Scoring Guidepost

- The management system has established rules to minimize operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.
- The management system has established a monitoring and enforcement program for operational waste and has achieved a significant trend in reduction of such waste.

SCORE 85

Replacement of the “race for fish” system by the IFQ system for black cod and halibut in 1995 has undoubtedly decreased wastage in the black cod fishery by decreasing the capture of discarded immature black cod (Sigler and Lunsford (loc. cit.), probable reduction in amount

of gear lost (by eliminating the temptation to abandon lost gear when it was imperative to keep fishing with fully set gear during limited time openings) and the ability of vessels to make more careful choices of fishing sites to avoid undesirable bycatches. The IFQ system applied to both the black cod and halibut provide that persons holding quota shares for sablefish and halibut or fishing in the associated Community Development Program must keep all sablefish and legal-sized halibut caught eliminating the discarding of incidentally caught fish during trips directed to one species or the other.

The Team did not take the time to search out non-fisheries legislation and regulations regarding the prevention of pollution by vessels at sea and maintenance of onboard measures to avoid spoilage, but are aware that adequate preventative measures exist in these fields and for any dumping of materials or chemicals at sea. As part of seabird avoidance requirements, 50 CFR 679.24B(2)(v) includes provisions directing methods for disposal of offal and for removal of hooks from offal.

The Team concludes that existing measures for minimizing wastes warrant a passing grade of 85.

Reviewer: It is my opinion the halibut IFQ system warrents close to 100. It has resulted in tremendous progress to all elements of waste reduction, most important being saving of human life.

SCS: We understand the comment, but the score remains the same in our opinion.

3.2.3.1

There is a comprehensive research program that provides for short- and long-term needs for technical guidance and information required for management of target species and protection of the ecosystem.
[Relates to MSC Criterion 3.8]

60 Scoring Guidepost

- The research program contributes substantially to the information base required for management of the fishery but more comprehensive approaches are needed.
- There is some longer-term research contributing to improvements in basic understandings of fluctuations in target and impacted non-target species.

80 Scoring Guidepost

- The research program, in conjunction with monitoring activities provide the management system with reliable, on-time information on the status of the stocks and of the ecosystem required for management.
- There is peer review of the content and scope of the research program
- Longer term research periodically provides improvements in basic scientific understandings of:

- Fluctuations in target and impacted non-target species
- Effectiveness of harvest strategies
- Effects of fishing on the ecosystem
- Ecosystem management strategies
- Economic considerations related to the fishery.

100 Scoring Guidepost

- The research program, in conjunction with monitoring activities provide the management system with reliable, on-time information on the status of the stocks and of the ecosystem required for management.
- There are regular reviews of the content and scope of the research program by peer groups and stakeholders.
- Research provides continuing, significant progress in scientific understanding of:
 - Fluctuations in target and impacted non-target species
 - Effectiveness of harvest strategies
 - Effects of fishing on the ecosystem
 - Ecosystem management strategies
 - Economic considerations related to the fishery.

SCORE 80

IPHC

IPHC conducts a comprehensive research program to provide basic data for stock assessments and to investigate the life history of halibut to create understandings of factors affecting the abundance of the stocks. The extensive lists of publications presented in the Commission's website, including Annual Reports, Information Bulletins, Scientific Reports and Technical Reports⁴⁷ attest to the productivity of the organization during its almost 80 years of existence. The Commission's technical staff is world class and highly respected as leaders in the development of science-based fisheries management measures.

The Commission has an extensive program of port sampling to monitor landings and to determine size and age composition etc. and a log book program , including fishermen interviews, to assess gear loss, at sea discards of halibut. The Commission works with NMFS and ADF&G to develop improved means of reporting of fisheries information. The backbone of the field program is the Standardized Stock Assessment (SSA), an annual research vessel survey conducted with standardized methods, bait and gear to provide a comparison with information obtained from the commercial catches. Annual Reports of the Commission provide a full account of other research activities including results of tagging programs to study seasonal migrations, development of methods for aging halibut, study of oceanographic conditions as they may affect halibut productivity. The Commission carries out contract

⁴⁷ <http://www.iphc.washington.edu/halcom/literatu.htm>
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studies with other organizations, such as the conduct of a pilot study of electronic monitoring systems for seabird avoidance devices.

In the analyses conducted under Principle 1 in the present report, the Team examined the adequacy of the collection, collation and assessment of information on the halibut stocks required for management. Of the 10 Indicators dealing with basic information, eight were accorded high score of 90 or more. Only the Indicators dealing with information on geographic ranges and selectivity were graded lower, but still at the passing grade of 80 or 85. The generally high scores reflect the high regard of the Team for the Commission's research program

As outlined in the Introduction to Principle 3 issues, the operation of the Commission is very collegial, with extensive arrangement for consultation with stakeholders and technical representatives of the two member governments. Thus, each country appoints one scientific advisor to work with the staff in development of its program. These appointees generally work for the governmental fishery science and management agency in their respective country.

The Commission also obtains advice from the collective fishing community of the two countries. Beginning in 1931, the Commission has been assisted by a Conference Board representing Canadian and United States commercial and sport halibut fishing interests. The Board was established to obtain recommendations from the fishing fleet on conservation measures. Its members are designated by union and vessel owner organizations of both countries. Following staff presentations and proposals at the IPHC Annual Meeting, the Board meets simultaneously with the Commission to discuss the proposals. Their recommendations are then presented to the Commission for consideration. In addition, three representatives of the Board from each country are invited to attend Commission interim meetings.

The Processor Advisory Group (PAG), formed in 1996, is an advisory panel consisting exclusively of processors from both the United States and Canada. The Commission hears the PAG recommendations as well as the Conference Board recommendations at the Annual Meeting before setting regulations for the coming year.

The Commission forms working groups to deal with particular issues. These often involve private sector participants with practical experience in the fishery.⁴⁸ In 1997, IPHC commissioned a peer review of its stock assessment methods, involving senior stock assessment scientists from the US, UK and Canada (Horwood et al 1997).

The Team concludes that the IPHC research program is of very high quality and is making continuous progress in developing scientific understandings of fluctuations in target species and in the effectiveness of harvest strategies for the target species, halibut. Through the extensive consultative mechanisms within IPHC, the content and scope of the research program is reviewed annually by experts of the national governments and by stakeholders.

⁴⁸ For example see: <http://www.iphc.washington.edu/halcom/newsrel/2004/nr20040126.htm>

Ecological Considerations

As discussed in the introduction to Principle 3 issues, IPHC's mandate is limited mainly to consideration of exploitation of the target species, halibut. With some exceptions, ecological research has been conducted by research agencies in the US and Canada.

The annual groundfish SAFE report⁴⁹, the 2005 PSEIS and EH describes the many research projects by a variety of government agencies and universities studying the habitats and ecology of the waters off the Alaskan coast. Some work is being done following the distribution and intensity of longline fishing throughout the area, but most of the information deals with fisheries other than that for halibut.

Nevertheless, as outlined under Principle 2 in this report, there is a substantial body of data from past studies shedding light on possible impacts of the halibut fishery on the regional habitat and ecology. The Principle 2 enquiry involved 11 Indicators associated with the collection and assembly of information regarding ecological and habitat issues. In contrast with the high scores awarded under Indicator 1 for research on the target species (see above), scores for similar research under Indicator 2 were much lower. Of 11 information oriented Indicators, only 2 scored 90 or above and three scored less than 80, indicating unsatisfactory performance. The low scoring of the last-mentioned three was due to the fact that the halibut fishery lacked independent monitoring of fishing activity, creating uncertainty regarding the extent and magnitude of bycatch and discards and impacts of the fishery on habitat.

As noted under other Indicators, as the result of the 2004 PSEIS process, new objectives have been developed which will encourage greater efforts to develop appropriate measures for measuring bycatches and assessing impacts on the ecology and habitats.

As in the assessment under Indicator 3.1.1.5, dealing with research strategy, despite the excellent research program providing data for the optimization of production from the target species, complementary research on ecological and habitat impacts of the fishery is severely constrained by deficiency of information on bycatch and discards. Overcoming this deficiency by developing a reliable system for monitoring and reporting of discards would result in a much more favorable assessment. In the meantime, as for Indicator 3.1.1.5, the Team assigns a score of 80 to this Indicator.

Reviewer: the Team gave a SG of 79 for PI 3.1.1.5. Lower would also be a reasonable, given the constant erosion of IPHC funding.

SCS: We believe this was covered under other indicators, as well as in our recommendations. We still believe the score of 80 was warranted for this indicator.

3.2.3.2

The fisheries management system is strongly responsive to findings of research and monitoring programs providing

⁴⁹ e.g. http://www.afsc.noaa.gov/refm/docs/2004/BSAIGOA_2004.pdf

information on the status of targeted stocks and of the ecosystem.
[Relates to MSC Criterion 3.8]

60 Scoring Guidepost

- The management system responds to findings of research programs regarding the status of targeted stocks and of the ecosystem in the design and conduct of management actions.
- Management actions generally are consistent with the results of research, but there are inadequate procedures to ensure that research results are given careful consideration. in the design and implementation of management measures.

80 Scoring Guidepost

- The management system carefully considers and responds to findings of research programs regarding the status of targeted stocks and of the ecosystem in the design and conduct of management actions.
- Management actions almost always are consistent with the results of research when such results clearly indicate that such actions would have negative impacts on the stocks or the ecosystem.

100 Scoring Guidepost

- The management system systematically and fully considers and responds to findings of research programs regarding the status of targeted stocks and of the ecosystem in the design and conduct of management actions.
- Management actions routinely respond to the results of research and procedures are in place to ensure that management actions taken are not inconsistent with the results of research when such results clearly indicate that such actions would have negative impacts on the stocks or the ecosystem.

SCORE 90

Analyses carried out under Principle 1 in this document indicate the sound nature of research and assessments on which management decisions regarding harvest of the target stock, halibut, are based. To the Team's knowledge, in recent years, recommendations regarding harvest levels stemming from the stock assessments developed by technical IPHC staff have been accepted by the Commissioners, including representatives of the governments of both parties and in turn, by the responsible management authorities in the two countries. This reflects the fact that the management system systematically and fully considers and responds to findings of research programs regarding the status of targeted stocks.

Regarding ecological considerations, as discussed under several indicators above, specific actions responding to needs to protect the regional ecology and habitats are in a relatively early stage of development. Nevertheless, there have been a number of positive

developments. As indicated under Indicator 3.1.1.3, seabird avoidance measures have recently been adopted and the newly completed EIS for Essential Fish Habitat Identification and Conservation in Alaska has proposed prohibition of all bottom contact fishing in six coral garden sites in the Aleutian Islands (AI) installation of VMSs for all bottom tending gear in the Aleutian Islands area and the GOA and maintenance of on-board observer programs. As outlined under Indicator 3.2.2.8, the latter proposal was opposed by the Alaska Longline Fishermen's Association and as a result action is being focused on a feasibility study of alternatives for applying VMS for all fishing vessels in North Pacific FMP fisheries. As discussed under Indicator 3.1.1.3 giving detailed and systematic attention to ecological concerns is in a relatively early stage of development

The Team considers that the responsiveness of the management system to research results regarding the target fishery is excellent but that work to address ecological concerns is in an early stage of development and gaining responsiveness to ecological initiatives that involve cutting back on harvesting opportunities has been slow. As a result a medium level score of 90 has been accorded.

Reviewer: I would give it slightly less, but the difference is trivial.

SCS: No comment.

18 APPENDIX 2 – FVOA ACTION PLAN FOR MEETING REQUIRED CONDITIONS

March 19, 2006

Dr. Chet Chaffee
Scientific Certification Systems, Inc.
2000 Powell Street, Suite 1350
Emeryville, CA 94608

Dear Dr. Chaffee:

The following represents an action plan for the conditions recommended in the MSC assessment report for USA Halibut.

The following assessment criteria all scored less than 80. The lack of a directed halibut fishery observer program was the fundamental deficiency.

- 2.1.2.1** Information is available on the nature and extent of the bycatch (capture of non-target species).
- 2.1.2.2** Information is available on the extent of discards (the proportion of the catch not landed).
- 2.1.5.3** The impacts on ecosystem structure and function from removal of non-target stocks are held below unacceptable levels.
- 2.2.1.2** The interactions of the fishery with listed and protected species are known.
- 2.2.1.3** The level of interaction known to pose an unacceptable risk to such species is known, and impacts are held below unacceptable levels.
- 2.2.2.1** In the case of threatened or endangered species, management objectives are set in terms of impact identification and avoidance/reduction.
- 3.1.1.3** The management system incorporates and applies an effective strategy to manage ecological impacts of fishing. *[Relates to MSC criteria 3.2, 3.7, 3.9, 3.10]*
- 3.1.1.5** There is an adequately funded research strategy to support the harvest strategy and to address information needed to support the identification and mitigation of ecosystem impacts. *[Relates to MSC Criterion 3.8]*
- 3.2.2.2** The management system accounts for catch of non-target species. *[Relates to MSC criteria 3.10, 3.17]*

- 3.2.4.1 The management system has procedures to measure and record and independently evaluates all aspects of the fishery to provide a basis for assessment of stocks and program performance. [Relates to MSC Criterion 3.10, 3.11, 3.17]**

As a consequence, SCS recommended three conditions:

1. Establish a comprehensive monitoring and reporting system for bycatch and discards taken directly from the halibut fishery. For example, this could be accomplished by extension of the existing observer program to cover a proportion of halibut vessels, or by development of electronic monitoring such as video to record catch and identify bycatch animals, if that can be shown to be suitably effective (McElderry et al. 2003).
2. The fishery must provide evidence that it considers the data gathered on bycatch to determine if any further management is required to mitigate risks to the animals identified in the bycatch of the halibut fishery.
3. Strategies for managing the ecological impacts of the halibut fishery should be developed in a manner that is consistent with objectives 24, 25, 26, 27, and 29 of the amended Groundfish FMPs for GOA and BSAI⁵⁰.

The following paragraphs provide a description of the actions F.V.O.A. will take to meet the 3 conditional requirements cited above.

1. Increasing Observer Coverage

It is clear that as the client for this assessment, F.V.O.A. has limited capacity to institute a fishery-wide program to monitor and record bycatch in the halibut fishery. This can only be accomplished through the auspices of the NMFS through regulation. However, F.V.O.A. as the client for this assessment is able to take steps in the direction of increasing monitoring and analysis of bycatch in the halibut fishery through data collection on its member vessels by promoting certain choices in fishing practice. In addition, F.V.O.A. will require that any other vessels that join the MSC program and contract to use the MSC certification will take the same steps as F.V.O.A. members. These activities taken together will improve the general understanding of bycatch taken during halibut fishing as well as the effectiveness of tori lines in mitigating seabird bycatch.

The client proposes the following actions in order to address the need for representative data on bycatch in the halibut fishery.

A. Currently, under the NPFMC observer program, there is some level of coverage of the directed halibut fleet. First, whenever a directed halibut

⁵⁰ See the BSAI and GOA FMPs as amended, Section 2.2.1: <http://www.fakr.noaa.gov/npfmc/fmp/bsai/BSAI.pdf> ; <http://www.fakr.noaa.gov/npfmc/fmp/goa/GOA.pdf>

fisher chooses to fish in more than one IPHC area during a single trip they are required to carry an observer; second, sablefish fishers who own halibut IFQ can retain all halibut caught while targeting sablefish; any such catch taken on a haul normally scheduled for sampling by an observer would be recorded; and third, sablefish fishers who own halibut IFQ, fishing with an observer on board, can make a "directed" halibut set during what might otherwise be considered a sablefish trip. In each of these circumstances there can be an observer record of the catch, complete with information on the attendant bycatch. Data from any such hauls are in the observer database and have and do contribute to ongoing analyses conducted by various researchers. However, no one has addressed the question, "What fraction of all sampled hauls show retained halibut catch?"; or, "What species were taken as bycatch on those hauls with retained halibut catch?" The Client will work with analysts at the NMFS and/or IPHC to initiate a study within six months after certification that provides a base line of existing directed halibut catch and attendant bycatch information currently contained in North Pacific observer program database. The study will be completed and made publicly available by April 30, 2007.

- B.** The client will encourage additional observer coverage of its member vessels involved in the directed halibut fishery by encouraging split trips of halibut and sablefish when an observer is available under the existing North Pacific observer program. This would enhance any existing database relative to the halibut fishery.
- C.** The International Pacific halibut Commission is requesting funding for 50 video cameras to be placed on the United States halibut fleet for observation purposes. This could be a pilot project to initiate a video observer program in this fishery. The client will assist the Halibut Commission in obtaining funding and with deployment of the hardware to vessels once funding has been provided.
- D.** The client has been involved in helping comment on the ongoing amendments to the North Pacific observer program. These amendments contain options that would incorporate observer coverage on the directed halibut fleet. The client has recently been appointed to the observer committee and will work towards a balanced observer program that includes coverage in the directed halibut fleet.
- E.** There are several areas where funding may be acquired that could be used to employ a video surveillance or partial on-board observer program

in the halibut fishery. Currently, the halibut fleet pays a fee that has become surplus within NMFS. We will seek the use of these funds to be used in the directed halibut fishery for observer purposes, either as a stand alone program or as matching funds to supplement any new programs in the North Pacific.

With respect to Condition 3 above and specifically to compliance with management objectives 24-27 and 29 of the amended Groundfish FMPs, we propose the following:

Avoid Impacts to Seabirds and Marine Mammals (FMP management objectives 24-25):

The clients will work with the NMFS and USFWS to improve bird avoidance tactics when possible. The current bird avoidance regulations were developed in part based on experiments conducted on vessels from the F.V.O.A. and manned by D.S.F.U. with the University of Washington. The results of the experiment were the adoption of bird avoidance devices called 'tori lines' that, according to the studies done by the University of Washington, can reduce bird interactions by 90%.

In addition, the improved coverage of bycatch and seabird interactions through observers will help indicate what strategies may be necessary to limit impacts to seabirds and marine mammals.

Reduce and Avoid Impacts to Habitat: (FMP management objectives 26-, 27, and 29)

As the client, F.V.O.A. has certain limits to its ability to identify and designate essential fish habitat. Again, the function of identifying and designating essential fish habitat is generally the prerogative of the government. The client has participated in the debates, regulatory process, and habitat impact analysis relative to essential fish habitat (EFH), habitat of particular concern (HAPC), and marine protected areas. The NPFMC will address most of these issues once every five (5) years through its EFH and HAPC process. The client will be supportive of research programs that identify baseline habitat information and mapping. The client will also be supportive of the designation of test areas to be examined as potential protected areas such as the NPFMC has already set up in the Aleutian Islands and Gulf of Alaska.

Sincerely,

Robert D. Alverson
Manager