In-Depth Analyses of Seabird Bycatch in Individual Marine Stewardship Council Fisheries

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INTRODUCTION

Seabirds are among the most threatened groups of birds on Earth. Because most seabirds live for decades and reproduce slowly, any adult mortality translates readily to population-level effects. At present, the leading cause of mortality for healthy adult seabirds is accidental death in interactions with fisheries.

Although seabirds have always followed boats, fishing gear innovations in the past decades have made the behavior particularly dangerous. Concern over seabird interactions with fisheries swelled in the 1990s with the recognition that large numbers of seabirds were being killed as bycatch during seafood harvest. Partially in response to frustration with poor progress in international fishing regulations, consumer-based approaches were developed in the late 1990s, with the Marine Stewardship Council (MSC) leading the way in market-based approaches. Market incentive methods can be an effective way of motivating fishermen. In fisheries both at home and abroad, seafood certification plays a key role in offering a carrot approach instead of a stick. Domestic US fisheries are already under tremendous pressure from foreign competition and declining stocks. The fishermen feel beleaguered by regulations, and end up resenting the regulatory structures, which make slow progress without industry support. Market-based incentives, on the other hand, change the dynamic and offer an avenue for progress.

The current document is an accompaniment to the analysis of the MSC certification process, presented in the report *Analysis of the Effects of Marine Stewardship Council Fishery Certification on the Conservation of Seabirds* (American Bird Conservancy 2012). In the current document, all fisheries certified by the MSC or those at Stage 5 in the assessment process on 10 February 2012 were reviewed individually and the risk each poses to seabirds was assessed. Fisheries that were deemed to have the potential for high risk to seabirds were evaluated in depth and short reports produced, usually of 2-3 pages. These reports make up the bulk of the current document. Fisheries not deemed to be potentially high risk were not reviewed in depth, but are listed in the final section.

The selection of fisheries to be reviewed in-depth was made using the risk assessment tool described in the *Methodology to Assess Fisheries for Risk to Seabirds* (American Bird Conservancy 2011). That document describes in detail the methodology. In brief, each fishery is reviewed following these steps:

- Initial Risk
    - Gear Risk
    - Presence of ETP[1] species or significant concentrations of seabirds

If the fishery was judged to have low risk to seabirds based on these two criteria, it was not further evaluated, but is listed in final section of the current document. If it was judged to be

[1] Following MSC usage, this refers to Endangered, Threatened, or Protected species, and in this document refers to seabird species.

potentially high risk based on these two criteria, it was passed on to the in-depth analysis. The in-depth analysis evaluated the fishery on the following criteria:

- In-depth Analysis
    - Regulations and enforcement
    - Use of effective mitigation or seabird bycatch-avoidance methods
    - Actual levels of seabird bycatch
    - Levels of observer and monitoring coverage
    - Levels of uncertainty about the actual risk to seabirds

Note that these issues were only evaluated with regard to *seabird bycatch and mortality* issues. The fisheries were not evaluated for any factor relating to sea turtles or sea mammals, nor fishery stock levels. In addition, the evaluation focused on seabird bycatch and not on factors of seabirds as part of the ecosystem, for example, as predators of the fishery's target species.

Following the in-depth analysis, each fishery was assigned an overall ranking, indicating their potential for risk to seabirds through bycatch, as potentially high, medium or low, and indicated by the colored seabird symbol:


Potentially High Risk to Seabirds


Potentially Medium Risk to Seabirds


Potentially Low Risk to Seabirds

These categories are considered "potentially" high, medium, or low risk, because on-the-water reality may still be different from that determined by the MSC assessment or the current in-depth analysis. Fisheries determined to be potentially high risk to seabirds may, in fact, not have significant seabird bycatch or mortality, given further information. Conversely, fisheries judged potentially low risk may, upon obtaining improved information, prove to be problematic. However, this method does serve to flag fisheries which should be of greater concern with regard to their effects on seabirds.

The reports on the individual fisheries that were reviewed in-depth summarize the various components of the risk to seabirds. These are shown in the table at the top of each account. The factors are divided into three groups: Initial Risk (the two factors described above), Risk Reduction (the first four of the five factors listed above as part of the in-depth analysis) and Uncertainty (the last of the five factors). Each of these is given a score (Low, Medium, or High for Initial Risk and Uncertainty, or a numeric score for the Risk Reduction factors). The cells are color-coded according to low (green), medium (yellow), or high (red). For Initial Risk and Uncertainty each is also given a description as Low, Medium, or High, whereas Risk Reduction levels are described as Good, Fair, or Poor. Note that for the Risk Reduction factors, a higher score is better, and the factors are not equally weighted. See the *Methodology to Assess Fisheries for Risk to Seabirds* for details on scoring and weighting. The bottom row of each table gives the overall score for that set of factors (Initial Risk, Risk Reduction, or Uncertainty).

The example below shows the different possible levels.

Initial Risk		Risk Reduction				Uncertainty
Gear	**Birds Present**	**Regulations**	**Mitigation**	**Bycatch**	**Observation**	**Uncertainty**
Low	High	Fair	Good	Good	Poor	High
1	3	14	21	32	7	3
4/6		74/100				3/3

Each fishery account also provides a list of recommendations for ways in which the fishery could reduce its effect on seabirds, along with a general description of the fishery and discussion of its implications.

The fisheries are in alphabetical order grouped by risk level. At the end of the Potentially Low Risk group is a list of low-risk fisheries that were not subjected to in-depth analysis because they were deemed to pose sufficiently low risk to seabirds that an in-depth analysis was not needed.

The in-depth reviews of potentially high risk fisheries did not always conclude that the fishery was actually high-risk. In fact, only nine fisheries of 59 reviewed in-depth were judged to be potentially high-risk to seabirds. A group of 32 were judged to be potentially medium-risk to seabirds, and 18 to be potentially low risk to seabirds.

It is important to note that a very high proportion of both the fisheries judged as Potentially High Risk and potentially Medium Risk were judged so due to lack of information. Information on seabird interactions and bycatch is often missing, either not available or not reported, or is available only from similar fisheries but not from the assessed fishery itself. It is likely that a significant number of these fisheries could be judged Potentially Low Risk to Seabirds if improved information were obtained.

ACKNOWLEDGMENTS

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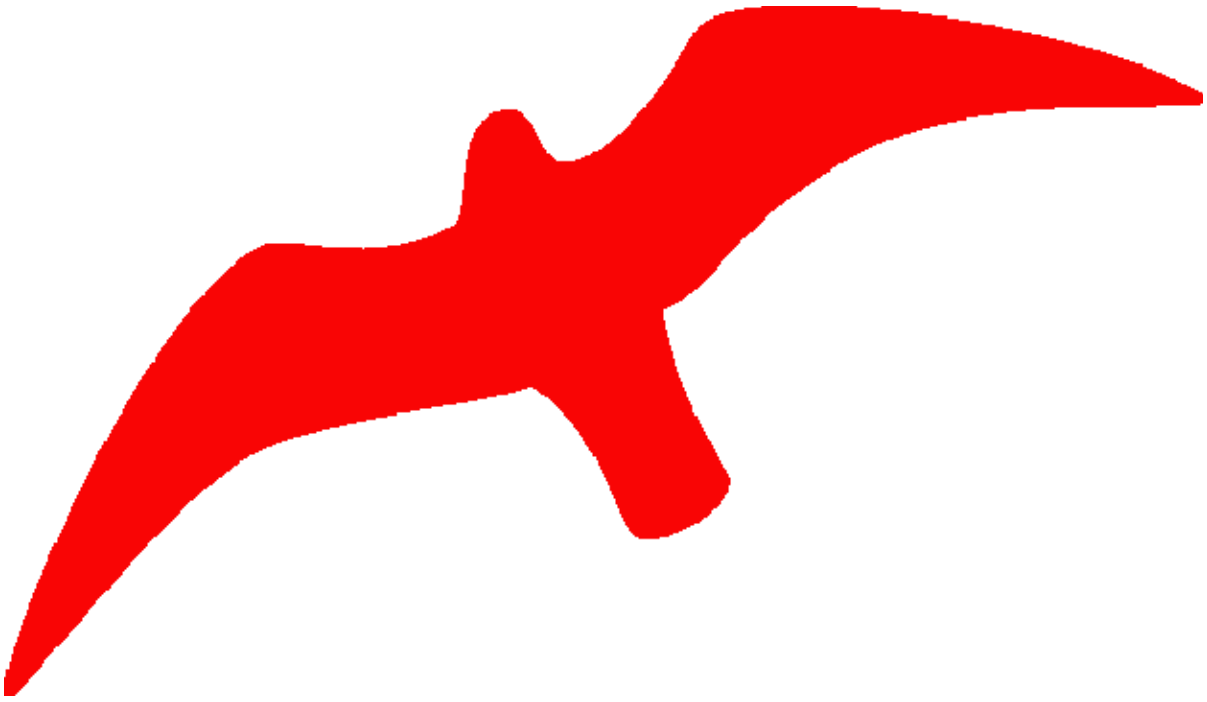
POTENTIALLY HIGH RISK FISHERIES



Potentially High Risk to Seabirds

BRITISH COLUMBIA PINK SALMON (*ONCORHYNCHUS GORBUSCHA*) SEINE, TROLL AND GILLNET FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Poor	Fair	Poor	High
3	3	15	1	18	3	3
6/6		37/100				3/3

The BC pink salmon fishery uses three gear types. Two of these are relatively low risk to seabirds, seine and troll, but gillnets are also used for a significant part of the catch. Gillnets are high risk. There are important numbers of alcids that occur in the area of the fishery, most importantly the Threatened Marbled Murrelet. Although Canadian regulations are generally good, and bycatch, from anecdotes, is generally low, this fishery operates in an almost complete vacuum of information about what mitigation methods might be used or what actual seabird bycatch numbers are. There is almost no independent observation of bycatch by on-board observers. Therefore, Uncertainty is high, and this fishery is Potentially High Risk to Seabirds. With improved information, this fishery might prove to be much lower risk.

Recommendations

- Immediately obtain information on seabird bycatch, through the use of an independent on-board observer program.
- If the data obtained on bycatch warrant it, immediately implement mitigation methods to address the bycatch issues.

Overview

This fishery uses seine, gillnet, and troll gears to target pink salmon *Oncorhynchus gorbuscha*. Fishing is carried out in the Canadian Pacific EEZ and in British Columbia coastal waters. The market for the fish is worldwide. No tonnage of fish landed is given.

The fishery was certified as sustainable on 28 July 2010. The assessment was managed BY Moody Marine Ltd. for the Canadian Pacific Sustainability Fisheries Society. The assessment team was Steve Devitt (Moody Marine Ltd. / TAVEL Certification Inc.), Ray Hilborn (University of Washington), Dana Schmidt (private consultant), and Karl English (LGL Limited).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

The pink salmon fishery uses three gear types, seine, gillnet, and troll. Trolling catches about 25% of the harvest; it is not clear how the remaining 75% is split between seines and gillnets. Seines are a medium-risk gear type and trolling is low-risk. Gillnets, however, are high-risk, especially for diving seabirds such as alcids.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species

The only bird mentioned in the report is Marbled Murrelet (EN; US ESA Threatened—California, Oregon, and Washington populations, and Canadian SARA Threatened). "Pink salmon fisheries are highly focused in space/time and do not have a reputation for impacting marine mammals or seabird bycatch."

Information

The only information on seabird bycatch comes from anecdotes. Mandatory logbooks are required for all boats.

Observer coverage is very low, and focuses almost entirely on fish bycatch issues.

Conditions

Two conditions were placed on the fishery, which could potentially effect seabird bycatch issues, although it is not clear that either of these was directed towards seabirds or even any other non-fish bycatch. Both, however, could collaterally address seabird bycatch issues.

Condition 2.1.1 requires that the fishery improve information on bycatch. How this is to be done is not specified, or even whether it actually applies to seabird bycatch.

Condition 3.7.1 requires the fishery to use gear and practices that minimize bycatch. Again, it is not clear if this refers to birds, although it probably refers only to other fish species, whether retained or non-retained.

Conclusions

This fishery operates in an almost complete vacuum of information about seabird bycatch. There is almost no independent observation on-board of bycatch, and almost no information from any other source or research. Although the fishery does not have a reputation for having significant seabird bycatch, this information is mostly from anecdotal sources. Because the fishery uses gillnets, which are high risk to diving seabirds such as alcids, direct and qualitative information is necessary to assure that the fishery is actually low risk to seabirds.

Reviewed: D. A. Wiedenfeld, 30 January 2012

Potentially High Risk to Seabirds

BRITISH COLUMBIA SOCKEYE SALMON FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Poor	Fair	Poor	High
3	3	18	1	20	1	3
6/6		40/100				3/3

Although this fishery uses many low-risk gears, it also uses high-risk gillnets and medium-risk seines. The fishery operates in areas with potential ETP species, and also possible concentrations of birds. Canadian regulation and enforcement is generally good. No mitigation methods are mentioned as used for any of the gear types. Bycatch is described as low, but the information comes primarily from fishermen's anecdotes and voluntary logbooks. There is almost no independent observer data. No conditions were placed on the fishery with regards to seabirds, not even requiring observers, additional data collection, or research. Therefore, although this fishery may actually not be killing many seabirds, its potential to kill seabirds is high, and Uncertainty is very high. This suggests that this fishery remains Potentially High Risk to Seabirds.

Recommendations

- Obtain more information on seabird bycatch, by species of bird, especially for the gillnet component of the fishery, by developing and improving an observer program.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch. This should be incorporated in any reassessment.

Overview

This fishery uses seven gear types: seine, gillnet, troll, beach seine, fish wheels, weirs, and dip nets, and targets sockeye salmon, *Onchorhynchus nerka* in the waters of British Columbia and the Canadian EEZ, all eastern FAO Region 67. The markets for the fish are in the US, Europe, Japan, Australia, and New Zealand. The information on tonnage brought in by this fishery is not given.

The fishery was certified as sustainable July 2010. The first surveillance audit has been begun but is not yet completed. The assessment was managed by Moody Marine Ltd. for Canadian Pacific Sustainability Fisheries Society (CPSFS). The CPSFS represents a client group of 28 companies. The assessment team was Steve Devitt (Moody Marine Ltd.), Karl English (LGL Ltd., British Columbia), Dana Schmidt (Golder and Associates, Canada), Jim Joseph (independent), and Chet Chaffee (Scientific Certification Systems, Inc., California). The certification process extended over a nine year period, and began with TAVEL

Certification, which was later acquired by Moody Marine Ltd., and with a different client group, the BC Salmon Marketing Council.

All text in quotation marks is from the certification report.

Gear and Set

Of the seven gear types used in this fishery (seine, gillnet, troll, beach seine, fish wheels, weirs, and dip nets), several are of very low risk to seabirds, probably rarely if ever capturing or killing birds. These are beach seines, fish wheels, weirs, and dip nets. Seines and trolls are also low to moderate risk, perhaps rarely catching seabirds. Gillnets, however, can be very high risk to diving seabirds, especially when deployed in shallow waters as in the salmon fishery.

No mitigation methods are mentioned as being used in the fishery.

Species

"Smith and Morgan 2005 evaluated seabird bycatch in Canadian fisheries…and estimate that on average over 12,000 seabirds could be caught (with low release survival), 285 of which could be marbled murrelets." This evaluation, however, includes all fisheries, not just the British Columbia sockeye salmon fishery.

Information

"Smith and Morgan 2005 evaluated seabird bycatch in Canadian fisheries and demonstrate that salmon fishery observer coverage is very low and logbook reporting of seabird bycatch is voluntary (resulting in very low reporting)."

In Volume 3, the assessment panel states that "[t]he reviewers contend that the bycatch of seabirds in Fraser sockeye fisheries could be very high and significant for some species. Prior to receiving this review, the issue of bycatch of seabirds in salmon fisheries was never raised as a serious concern." This seems to be a weakness in the review

Conditions

No conditions or recommendations regarding seabirds were placed on the fishery.

Conclusions

The certification process for this fishery required more than nine years, the longest MSC certification process so far. During this time the certification body changed when TAVEL was acquired by Moody Marine Ltd., and the client group representative also changed, as a result of financial difficulties in the original client group representative. The certification process was also prolonged because of official challenges to the assessment of salmon stocks, challenges which were adjudicated.

Seabirds either in aggregate or as individual species are scarcely mentioned in the certification report. An outside review of the draft report made by representatives of a group of NGOs in August 2009 stated: "[T]he assessment fails to consider bycatch impacts of other species, particularly seabirds. The assessment provides the following explanation, 'In general, sockeye salmon harvests in the marine environment have little evidence of significant impacts on birds and mammals as indicated by log book records.' This statement, which follows from the limited information provided in the client submission of information written by Fisheries and Oceans Canada in 2003/2004, is inaccurate and demonstrates that bycatch impacts and management were not adequately considered by the assessment team and certifier." As a result of this criticism, however, the assessment team did not adjust any Progress Indicator, require any conditions for certification, nor even make any recommendations.

The fishery probably does not have a large effect on seabird populations. Most of the gears used are of low or very low risk to seabirds. Because much of the fishing is inshore or even in rivers, the seabirds affected are likely mostly gulls, and the gull species in the area are not threatened, so some losses to the fishery might be sustainable.

However, the fishery does use some high-risk gear (gillnets) and does some fishing offshore where other, more threatened seabirds occur. It does so in an almost complete lack of information. There is no significant observer program that might record seabird data. Log books and other reporting is voluntary, and compliance has therefore been low. More worrying, the assessment team placed no condition nor even a recommendation on the fishery to improve its data collection.

This fishery therefore remains problematic with regard to seabird bycatch. Although seabird bycatch may be low, the very low amount of information and lack of any effort to obtain the needed information do not allow any level of confidence that the fishery is sustainable with regard to seabird conservation.

Reviewed: D. A. Wiedenfeld, 23 September 2011

Potentially High Risk to Seabirds

CANADIAN PACIFIC SABLEFISH (*ANOPLOPOMA FIMBRIA*) FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Fair	Fair	Poor	High
3	3	18	17	20	5	3
6/6		60/100				3/3

The Canadian Pacific sablefish fishery uses demersal longlines, a high risk gear type, as its main gear. The fishery operates in the area of two albatross species, including the Endangered Black-footed Albatross. Canada has appropriate regulation in place and enforcement is good. However, observation is presently only through video monitoring, and bycatch birds are not identified to species. Therefore, this fishery suffers from having a high level of Uncertainty: poor quality monitoring and lack of information. Although the fishery may actually not be killing too many seabirds to be sustainable, it is not clear whether or not this is true.

Recommendations

- Obtain better information on seabird bycatch. The information should include identification and numbers of bycatch birds to species, and should include not just albatrosses but all birds. Better quality will require placing independent observers on board a significant number of boats and trips. Video monitoring should be maintained on boats with observers and all other boats as well, to allow calibration of the results of video-only monitoring with live monitoring. Obtaining better information will also probably require training of the observers. Improved information should be obtained very soon.
- Once improved information on seabird bycatch is available, the appropriate mitigation methods should be selected and made compulsory, to reduce the seabird bycatch.

Overview

This fishery uses demersal longlines and Korean trap longlines to target sablefish *Anoplopoma fimbria*. Fishing is carried out in the Canadian Pacific EEZ. The primary market (83%) for the sablefish is Japan, with most of the remainder sold in Canada or the US. For 2009-2010 the TAC was 2,450 mt.

The fishery was certified as sustainable on 29 July 2010. The assessment was managed by Moody International for Wild Canadian Sablefish Ltd. The assessment team was Paul Knapman and Ian Scott (Moody International), Robert Furness (University of Glasgow), and John Nichols (private consultant).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Demersal longlines have high risk to seabirds, but Korean trap longlines are low risk, with no recorded seabird bycatch.

The fishery is required to use bird scaring lines (plastic streamer lines) by the Canadian government. No other mitigation methods are mentioned.

Species
Short-tailed Albatross (VU) and Black-footed Albatross (EN) are recorded in the fishery area. Video observation data and logbooks do not identify bycatch to species, so it is unclear how many of either of these species is being caught.

"There were about 31 albatrosses reported as by-catch between January 2006 and December 2008, some reported in video and some in logbook data. It seems likely that these numbers are not an accurate assessment of the total number killed in the fishery, as there is no penalty for skippers who fail to record albatross (or other seabird) by-catch in their fishing log." This is about 10 albatross / year.

There is also mention that other species of seabirds are occasionally caught, but no species or numbers are given.

Information
Observation is through mandatory video monitoring only, on 100% of boats. However, the data are poor quality. Captains are also required to keep logbooks recording seabird interactions, but it is unclear how well this is done, and the results of the comparing logbooks and video data do not correspond. Because of this, there is very little reliable information on seabird bycatch for this fishery.

Conditions
Two conditions for certification were placed on this fishery, conditions 2.3.1 and 2.3.3. These conditions require improvement in collection of seabird bycatch data, and if warranted by those data, implementation of appropriate mitigation methods.

"By the first annual audit, there is documented evidence showing that discussion has taken place between relevant stakeholders on the potential mechanisms to improve data on the by-catch of seabirds."
"By the second annual audit, arrangements should be in place to monitor any bycatch of seabirds and to ensure accurate identification of the species and age classes of seabirds killed in the fishery."
"By the fourth annual audit, reliable data should be available on the by catch of seabirds."

The first Annual Surveillance Audit reported: “Concerning condition 4 [=2.3.3], the client was required to ensure that there is an improvement in the data collected on the by catch of seabirds. A number of activities have taken place to improve the information associated with the fisheries’ interactions with sea- birds [sic].”

Conclusions

This fishery suffers from lack of information, mainly because live, independent observers are not placed on board any boats. Video monitoring and logbook data do not adequately provide information to species and on bycatch numbers. Obtaining better quality bycatch data will require placing independent observers on board a significant number of boats and trips. Video monitoring should be maintained on boats with observers and all other boats as well, to allow calibration of the results of video-only monitoring with live monitoring. Obtaining better information will also probably require training of the observers. Once this information is available and analyzed, it should be acted on promptly to put the appropriate mitigation measures in place to reduce seabird bycatch to acceptable levels.

Although both of these factors were identified in the MSC certification process and conditions were placed on the fishery to rectify them, insufficient weight was placed on the issue. The weakness of the seabird bycatch data and the question of how many birds are being killed probably should have prevented certification. However, certification was approved. To resolve the issue now requires rapid action to obtain the missing information and determine how to solve the problems, if any, that will be revealed.

Reviewed: D. A. Wiedenfeld, 24 January 2012

DFPO DENMARK EASTERN BALTIC COD FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Fair	Good	Poor	High
3	2	20	13	30	1	3
5/6		64/100				3/3

The fishery uses longline, a high-risk gear, and trawls, a medium-risk gear type. No mitigation methods are mentioned as being used in the fishery, although seasonal closings to protect the fish stock may also reduce seabird bycatch. European regulations are good. Actual bycatch is apparently low, and consists of non-ETP species. On-board observers are placed on very few voyages, and therefore there is a significant lack of information and high information uncertainty.

Recommendations

- Obtain information on bycatch specific to seabirds from on-board observers.
- Improve on-board observer programs.
- Initiate seabird bycatch research programs for the longline and trawl components of this fishery in the Baltic Sea.

Overview

This fishery uses two gear types, demersal otter trawls and longlines. It targets Atlantic cod *Gadus morhua*. Fishing is carried out entirely within the Baltic Sea, in ICES subdivision 25-32. There are only two longline vessels in the fishery. The fish are primarily processed at plants in Poland and sold within Europe. No tonnage of fish landed is given.

The fishery was certified in April 2011. The assessment was managed by Food Certification International for the Danish Fishermen's Producer Organization (DFPO). The assessment team was Nick Pfeiffer, Paul Medley, Sten Sverdrup-Jensen (Institute for Fisheries Management, Denmark), Antonio Hervás and Martin Gill (both of Food Certification International), and Fiona Nimmo.

At the initiation of the certification process DFPO also included a set gillnet component of the fishery in the unit of certification. However, after the assessment was completed the certifying body determined that the set gillnet component did not meet MSC standards, due to issues with sea mammal and seabird bycatch. Only the trawl and longline components were certified.

The gear type is high risk, and presence of ETP species and bird concentrations presents a moderate risk, indicating an overall high risk to seabirds for this category. The risk-reduction

scores are: Regulation (20), Mitigation (13), Actual Bycatch (30), and Observation (1), for a total risk score of 64, a moderate level of reduction. Uncertainty is high. Combining these three factors indicates the fishery has an overall High Risk to Seabirds.

All text in quotation marks is from the certification report.

Gear and Set

A demersal longline is high risk gear type to seabirds, whereas otter trawl is a medium risk gear. No mitigation is mentioned as being used for either of these. Seasonal closings of some areas of the fishery are made to manage the fish stock. These closings may have some ancillary effect in reducing risk to seabirds, because they coincidentally take place during the birds' breeding season. However, because the closings are not specifically designed to protect seabirds, their effect may be quite small.

Species

"The following bird species are known to interact with gill net and longline fisheries in the North Sea and Baltic:

- Cormorants: Great Cormorant
- Diving ducks: Common Pochard, Greater Scaup, Tufted Duck, Goldeneye, Smew
- Sea ducks: Common Eider, Common Scoter, Velvet Scoter, Long-tailed Duck, Goosander, Red-breasted Mergansers
- Loons/divers: Red-throated Diver; Black-throated Diver
- Grebes: Great crested Grebe; Slovonian Grebe
- Auks: Common Guillemot; Black Guillemot; Brunnich's Guillemot; Razorbill

None of these species are listed under CITES."

When using the otter trawl gear, "…[i]nteractions with other species, such as seabird, are considered rare."

The longline vessels anecdotally report that most seabird interactions are with Herring Gulls, with up to 10 caught per year.

Information

There is no information now on seabird bycatch in the longline or trawl fishery. Studies were initiated in the mid-2000s for the Baltic Sea gillnet fisheries (not including that operated by the DFPO), which provided significant information. However, the studies did not include trawls and longlines.

"[T]here is no quantitative data to assess the amount [of seabirds] taken by the Danish longline fishery."

Observers have been placed on only two voyages per year. The observers on those voyages were tasked with monitoring non-target fish bycatch. It is not clear if they would have

recorded any seabird interactions had they seen any, or if they were only monitoring fish. There may be some other observer coverage of landed catch as well as some video monitoring, but it is not clear if these are covering the vessels in the UoC.

Conditions

"By 1st surveillance audit – implement code of conduct and verify its operation; and implement seabird impact evaluation.
By 2nd surveillance audit – preliminary results and analysis available." The first surveillance audit will be in 2012 and the second in 2013.

"Implement an appropriate Code of Conduct which explicitly refers to issues in relation to bycatch / discards that have been identified during the assessment (including seabirds) and should introduce on-going means to monitor, manage and reduce or eliminate bycatch of all species.
Initiate a quantitative evaluation of the nature and scale of interactions between long lines and seabirds, overseen by (or in cooperation with) an independent body or organisation, using scientific measuring methods, covering all seasons and areas. Bird bycatch data should allow accurate estimation of total bird bycatch to a species level."

As part of its compliance agreement, the DFPO stipulated that it will be recording all interactions with seabirds in logbooks. Each boat is also provided with a manual on how to handle any bycatch and how to record the data. These actions will be undertaken immediately. The DFPO also stated that after each year of recording the data will be analyzed and any necessary corrective actions derived from the analysis will be taken.

"Upon signature of the Code of Conduct a vessel will be sent:

- Recording sheets for relevant data on fishery interactions. This will contain details of exactly what interactions to record (bycatch species, relevant ETP species, habitat interactions) and in what format the data should be recorded (weight, time, location etc.).
- Reporting instructions / requirements.
- A 'Wheelhouse-guide to protected species' listing all relevant ETP species has been produced and distributed to all members…The guide contain images and species identification tricks for difficult-to-identify species such as skates and rays…"

Conclusions

This fishery was certified without much information on seabird, or indeed, non-fish bycatch. The lack of information in this fishery appears to be a result of a fairly weak observer program in the Baltic Sea, and from lack of research programs on seabird bycatch. This may be rectified in the next few years, as it appears that some research programs are being initiated.

The longline vessels may pose a significant risk to seabirds. Although the anecdotal data indicate that seabird bycatch may be low, the lack of solid information makes that

assumption very weak. The trawl gears in this fishery pose a medium risk to seabirds, but probably are killing few individuals.

Failure of the set gillnet component

At the outset of this assessment, a third gear type was included as a third Unit of Certification, set gillnet. During this certification process, however, the assessors determined that set gillnets did not meet the MSC criteria, especially Performance Indicators 2.3.1 and 2.3.2. Both of these Performance Indicators have to do with ETP species as bycatch.

The main reason for failing of PIs 2.3.1 and 2.3.2 was the number of harbor porpoises caught in set gillnets. However, a second and very important reason for the failure was the potential for seabird bycatch in the set gillnets. A study by Zydelis et al.[2] in 2009 indicated that as many as 100,000 to 200,000 diving seabirds (grebes, loons, ducks, alcids, and cormorants) were killed in the Baltic Sea and eastern North Sea by set gillnets. Although it is not clear that the DFPO fishermen using set gillnets were included in the fisheries studied by Zydelis et al., the information was sufficient that the assessment team was not able to score the seabird bycatch issue above 60 (below 60 is failing) for the DFPO set gillnet fishery. This appears to be a completely appropriate decision.

It is important to note that for the other two gear types in this fishery, demersal longline and otter trawl, no study similar to Zydelis et al.'s has been carried out. Therefore, the two certified gear types were certified in the absence of solid information, and the one gear type (set gillnet) for which solid information was available failed certification. The longline and trawl gear in this fishery may not be causing significant seabird mortality, but the information is only anecdotal.

Reviewed: D. A. Wiedenfeld, 30 September 2011

[2] Zydelis, R., Bellebaum, J., Österblom H., Vetemaa M., Schirmeister B., Stipniece A., Dagys, M., van Eerden, M. & Garthe, S. 2009. Bycatch in gillnet fisheries – An overlooked threat to water bird populations. Biological Conservation 142: 1269–1281.

Potentially High Risk to Seabirds

DFPO DENMARK NORTH SEA PLAICE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Fair	Fair	Poor	High
3	2	20	13	18	5	3
5/6		56/100				3/3

The fishery uses high risk set gillnets and trammel nets, although it also uses medium-risk Danish seine and trawls. European regulations are good. Set nets are set mostly at night, which serves as mitigation. Bycatch is apparently low, but the level of seabird bycatch is unknown, on-board observation is not sufficiently frequent, and uncertainty is high.

Recommendations

- Obtain more information on seabird bycatch.
- Initiate seabird bycatch research programs for the set net components of this fishery. Such information is highly necessary but presently lacking.

Overview

This fishery uses four gear types, trammel nets, set gillnets, Danish seine, and demersal otter trawls. It targets European plaice *Pleuronectes platessa*. with about 200 vessels. Fishing is carried out in the North Sea, in ICES sub-area IV, east and northeast of Great Britain. The fish are primarily marketed in Europe. No tonnage of fish landed is given.

The fishery was certified in March 2011. The assessment was managed by Food Certification International for the Danish Fishermen's Producer Organization (DFPO). The assessment team was Tristan Southall (independent consultant), Nick Pfeiffer, (independent consultant), Paul Medley (independent consultant), Sten Sverdrup-Jensen, (Institute for Fisheries Management, Denmark), Antonio Hervás and Martin Gill (both of Food Certification International).

The gear type is high risk, and presence of ETP species and bird concentrations presents a moderate risk, indicating an overall high risk to seabirds for this category. The risk-reduction scores are: Regulation (20), Mitigation (13), Actual Bycatch (18), and Observation (5), for a total risk score of 56, a moderate level of reduction. Uncertainty is high. Combining these three factors indicates the fishery has an overall High Risk to Seabirds.

All text in quotation marks is from the certification report.

Gear and Set

Two types of set net are used, set gillnets and trammel nets. These gears pose high risk to seabirds. They are usually set in less than 50 m of water, well within the diving range of several species of diving seabirds. Set nets are mostly set in late evening for night fishing. The majority of fish are landed using trammel nets.

Danish seine and demersal otter trawls are also used. These pose lower threat to seabirds.

Species

"Although widely acknowledged, bird bycatch has not been the focus of many directed studies that seek to investigate the bird bycatch profile of the different setnet types used in different areas of European waters. As a result, no quantitative estimates of seabird bycatch are available for this fishery. However a review of published studies on bird bycatch in setnet fisheries indicates that the species likely to be affected by this fishery include Common guillemot, Great Cormorant, Red-throated diver, Red-breasted Merganser, Black Guillemot, Great-crested Grebe, Razorbill, Common Scoter and Velvet Scoter. Dabbling duck and occasional gull bycatch is also likely.

Anecdotal information and some unpublished data in relation to Danish setnet fisheries suggests that the greater problem in relation to Danish setnet fisheries is likely to occur in Inner Danish waters of the Kattegat and Belt Seas. Within these areas, waters tend to be shallower and there are extensive and diverse populations of diving seabirds and in some areas diving waterfowl also. … However the problem of bird bycatch is by no means confined to areas outside of the North Sea and it is highly likely that bird bycatch is a significant bycatch feature of the North Sea gillnets fisheries also. …[Nets may be set] in close proximity to coastal bird roosts and nesting sites."

Information

"The actual magnitude and significance of the mortality caused by entangling nets remains largely unknown due to low levels of monitoring."

The Danish Technical University maintains an at-sea observer program, although it is not clear from the report if the observers record any data on seabird bycatch, nor is it clear on what percentage of fishing trips observers are placed on boats. In 2009, observers were on about 40 trips, but there are nearly 200 boats in the fleet, and each is likely making many trips.

Conditions

"By 1st surveillance audit – implement code of conduct [which explicitly refers to issues in relation to seabird bycatch] and seabird impact evaluation." "Bird bycatch data should allow accurate estimation of total bird bycatch by scaling based on fishing effort."

"By 2nd surveillance audit – preliminary results and analysis available."

The code of conduct includes a requirement to record all interactions with seabirds, and send the data to the DFPO. A guidebook is also to be placed in the wheelhouse of all boats to aid in identification of seabirds, and giving instructions how to handle them and record interactions. Data are to be analyzed annually in cooperation with the scientific institutions.

Conclusions

The fishery was certified with a general lack of information on seabird bycatch. The trammel and set gillnet gears have the potential to cause significant diving seabird bycatch mortality. This potential is mentioned, but then dismissed as being very low, based on anecdotal information. Observer coverage appears to be very low.

The conditions placed on the fishery, requiring collecting of information and placement of guides and code-of-conduct manuals on each boat, are good steps toward addressing the issue of lack of information. However, they are post-hoc actions. The fishery was already certified, based on incomplete information, even while admitting that there might be significant seabird bycatch.

Reviewed: D. A. Wiedenfeld, 11 October 2011

Potentially High Risk
to Seabirds

IGP ICELANDIC COD FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Fair	Fair	Poor	Fair	High
3	2	14	13	5	10	3
5/6		52/100				3/3

The Icelandic cod fishery uses five gear types, of which two, longlines and gillnets, are high risk to seabirds. Although Icelandic waters do not harbor many ETP seabird species, it does have very large numbers of many seabird species. The fisheries involved do not have very high bycatch of seabirds per set or per hook, but the number of birds killed is fairly large. Although mitigation methods are used, they are insufficient, and in too many cases enforcement and observation seems lax, relying in many cases on voluntary reporting. Therefore, this fishery could do much better in reducing its seabird bycatch.

Recommendations

- Reduce bycatch by half by using more effective or by regularly using appropriate mitigation methods for the different gear types in the fishery.
- Obtain improved information on seabird bycatch through a more extensive independent on-board observer program.
- Improve enforcement to assure that regulations are being followed and that bycatch is recorded.
- Develop and implement effective mitigation methods for use in the gillnet fishery.

Overview

This fishery uses five gear types (demersal otter trawl, Danish seine, longline, hand line, and gillnet) to target Atlantic cod (*Gadus morhua*). Fishing is carried out in the Icelandic Exclusive Economic Zone within ICES V / FAO area 27. The main export markets for Icelandic cod are the UK and Spain. Fish exported to southern Europe and Nigeria is dried and salted. In 2009 the fishery landed 181,151 mt.

The fishery is still in assessment. The assessment is being managed by Det Norske Veritas AS for Icelandic Group PLC. The assessment team is Sandhya Chaudhury (Det Norske Veritas), Stephen Lockwood (private consultant), and Benóný Jonsson (Institute of Freshwater Fisheries, Iceland).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

This fishery uses five gear types (demersal otter trawl, Danish seine, longline, hand line, and gillnet). Longlines and gillnets, which seem to be the principal gears used in this fishery, are both high-risk to seabirds. The remaining gear types (trawls, seines, and hand lines) are medium or low risk for seabirds.

"There are 296 registered longliners in the Icelandic fleet, overwhelmingly small, low-powered vessels…" with only 23 of 284 vessels greater than 20 m length.

"The longline season differs from the other gears' cod fisheries in that virtually all longliners cease fishing during the long-day, short-night period of summer (a practice that helps to reduce risk of seabird bycatch)."

"The Directorate of Fisheries require longliners to take all reasonable measures to avoid seabirds taking bait or catch. [It is an offence in Iceland to catch a seabird with hooks (Reg. 456, 1994).] Few, if any Icelandic vessels use water-spray bars or purpose-made streamers to deter birds from diving to take bait, as are used in some other longline fisheries, but the brightly colored flags on the spare dahn buoys on the after deck probably have some deterrent effect. The principle bird deterrents used on the larger longline vessels are automatic gas guns (such as are often used to deter birds on fish farms and from feeding on emerging arable crops). During the winter months, however, such measures are rarely necessary as the lines are shot and hauled in the dark when few, if any, diving birds are active."

"Longline vessels are also expected to employ bird scarers (gas cannons) or other similar methods to minimize bird bycatch when shooting their lines."

Automatic gas guns or gas cannons are not considered to be effective at reducing seabird bycatch in any fishery.

"The gillnet fleet is aware that some diving species, e.g. eider duck, are vulnerable to ensnarement in gill nets and the Fisheries Directorate and MRI [Marine Research Institute] encouraged the fleet to do all it can to minimize the risk. During the nesting season, there are some closed areas in which gillnetters cannot fish to safeguard nesting eider duck."

Species

"During 2009, MRI observers recorded 184 gullimots [guillemots], 35 fulmars, 5 red-throated divers (*Gavia stellata*), 3 Brünnich's guillemots, 2 black-backed gulls, 2 common shag, 2 razorbills and one eider duck. These observations were not raised to fleet values but if the same raising fact is applied as for porpoise … to total guillemot bycatch might be of the order 4500 birds per year, perhaps 0.5% the Icelandic breeding population."

"Absolute numbers caught may look high but they are very small percentages (probably <<1%) of Icelandic populations of seabirds and marine mammals."

"During its most recent reviews of seabird–fishery interactions, neither of the ICES working groups covering this topic highlighted Icelandic fisheries as raising specific concerns above the universal wish to see all seabird bycatch minimized wherever possible."

"…since 1994, in article 9 is written that birds that get stuck in fishing nets shall be released if alive. Dead birds in fishing nets may not be offered for sale, sell, buy, give nor receive as a gift."

Information

"While there is no statutory requirement for Icelandic-registered fishing vessels to record seabird bycatch, they are encouraged to do so in the e-logbook. Directorate of Fisheries observers do record bird and mammal bycatch and these data are reported to ICES."

Some independent observers are placed by the Marine Research Institute (Iceland) on board vessels, but it is unclear on what proportion of trips or which gear types are monitored.

Conditions

No conditions for certification regarding seabirds were placed on the fishery.

Conclusions

Although Iceland seems in general to have made efforts to reduce seabird bycatch, this fishery still kills probably many thousands of seabirds, especially in the longline fishery but possibly also in the gillnet fishery. The bird species caught are not threatened species, and some are in fact abundant species, but the number caught is still quite high.

Regulations seem to rely too much on voluntary compliance, for example, of recording bycatch, and there is little observer information to confirm whether or not mitigation methods are used and how many birds are bycaught.

This fishery needs to take more seriously the issues of seabird bycatch, make more serious efforts to reduce the bycatch, and to take seriously the need for information from independent observers to confirm the levels of bycatch.

Reviewed: D. A. Wiedenfeld, 3 February 2012

Potentially High Risk
to Seabirds

IGP ICELANDIC HADDOCK FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Fair	Fair	Poor	Fair	High
3	2	14	13	5	10	3
5/6		52/100				3/3

The Icelandic haddock fishery uses five gear types, of which two, longlines and gillnets, are high risk to seabirds. Although Icelandic waters do not harbor many ETP seabird species, it does have very large numbers of many seabird species. The fisheries involved do not have very high bycatch of seabirds per set or per hook, but because of the size of the fishery, the number of birds killed is fairly large. Although mitigation methods are used, they are insufficient, and in too many cases enforcement and observation seems lax, relying in many cases on voluntary reporting. Therefore, this fishery could do much better in reducing its seabird bycatch.

Recommendations

- Reduce bycatch by half by using more effective or by regularly using appropriate mitigation methods for the different gear types in the fishery.
- Obtain improved information on seabird bycatch through a more extensive independent on-board observer program.
- Improve enforcement to assure that regulations are being followed and that bycatch is recorded.
- Develop and implement effective mitigation methods for use in the gillnet fishery.

Overview

This fishery uses five gear types (demersal otter trawl, Danish seine, longline, hand line, and gillnet) to target haddock (*Melanogrammus aeglefinus*). Fishing is carried out in the Icelandic Exclusive Economic Zone within ICES V / FAO area 27. The main export markets for Icelandic haddock is the UK, which takes about 65% of production. The remainder are sold primarily in western Europe. In 2009 the fishery landed 82,045 mt.

The fishery is still in assessment. The assessment is being managed by Det Norske Veritas AS for Icelandic Group PLC. The assessment team is Sandhya Chaudhury (Det Norske Veritas), Stephen Lockwood (private consultant), and Benóný Jonsson (Institute of Freshwater Fisheries, Iceland).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

This fishery uses five gear types (demersal otter trawl, Danish seine, longline, hand line, and gillnet). Longlines and gillnets, which seem to be the principal gears used in this fishery, are both high-risk to seabirds. The remaining gear types (trawls, seines, and hand lines) are medium or low risk for seabirds.

"The longline season differs from the other gears' cod fisheries in that virtually all longliners cease fishing during the long-day, short-night period of summer (a practice that helps to reduce risk of seabird bycatch)."

"The [Icelandic] Directorate of Fisheries require longliners to take all reasonable measures to avoid seabirds taking bait or catch. [It is an offence in Iceland to catch a seabird with hooks (Reg. 456, 1994).] Few, if any Icelandic vessels use water-spray bars or purpose-made streamers to deter birds from diving to take bait, as are used in some other longline fisheries, but the brightly colored flags on the spare dahn buoys on the after deck probably have some deterrent effect. The principle bird deterrents used on the larger longline vessels are automatic gas guns (such as are often used to deter birds on fish farms and from feeding on emerging arable crops). During the winter months, however, such measures are rarely necessary as the lines are shot and hauled in the dark when few, if any, diving birds are active."

"Longline vessels are also expected to employ bird scarers (gas cannons) or other similar methods to minimize bird bycatch when shooting their lines."

Automatic gas guns or gas cannons are not considered to be effective at reducing seabird bycatch in any fishery.

"The gillnet fleet is aware that some diving species, e.g. eider duck, are vulnerable to ensnarement in gill nets and the [Icelandic] Fisheries Directorate and MRI [Marine Research Institute] encouraged the fleet to do all it can to minimize the risk. During the nesting season, there are some closed areas in which gillnetters cannot fish to safeguard nesting eider duck."

Species

"During 2009, MRI observers recorded 184 gullimots [guillemots], 35 fulmars, 5 red-throated divers (*Gavia stellata*), 3 Brünnich's guillemots, 2 black-backed gulls, 2 common shag, 2 razorbills and one eider duck. These observations were not raised to fleet values but if the same raising fact is applied as for porpoise … to total guillemot bycatch might be of the order 4500 birds per year, perhaps 0.5% the Icelandic breeding population."

"Absolute numbers caught may look high but they are very small percentages (probably <<1%) of Icelandic populations of seabirds and marine mammals."

"During its most recent reviews of seabird–fishery interactions, neither of the ICES working groups covering this topic highlighted Icelandic fisheries as raising specific concerns above the universal wish to see all seabird bycatch minimized wherever possible."

"Information is gathered and extrapolated from a observer programme undertaken by staff from MRI [Marine Research Institute] and reported to ICES/OSPAR/NAMMCO. Despite the lack of quantitative rigour, ICES/OSPAR assessments conclude that the number of birds and marine mammals taken as bycatch in the Icelandic haddock fishery each year is not sufficient to raise significant concern for their populations‟ survival or viability."

Information

"While there is no statutory requirement for Icelandic-registered fishing vessels to record seabird bycatch, they are encouraged to do so in the e-logbook. Directorate of Fisheries observers do record bird and mammal bycatch and these data are reported to ICES."

"When Directorate of Fisheries inspectors are aboard a vessel, inspectors keep a record of non-retained bycatch such as birds and mammals."

Some independent observers are placed by the Marine Research Institute (Iceland) on board vessels, but it is unclear on what proportion of trips or which gear types are monitored.

Conditions

No conditions for certification regarding seabirds were placed on the fishery.

One recommendation was given to the fishery: "Skippers of all vessels in the client fleet should be required to record all bycatch and ETP species (ie. turtles, birds, marine mammals,etc.) caught, irrespective of whether they are landed or not."

Conclusions

Although Iceland seems in general to have made efforts to reduce seabird bycatch, this fishery still kills probably many thousands of seabirds, especially in the longline fishery but possibly also in the gillnet fishery. The bird species caught are not threatened species, and some are in fact abundant species, but the number caught is still quite high.

Regulations seem to rely too much on voluntary compliance, for example, of recording bycatch, and there is little observer information to confirm whether or not mitigation methods are used and how many birds are bycaught.

This fishery needs to take more seriously the issues of seabird bycatch, make more serious efforts to reduce the bycatch, and to take seriously the need for information from independent observers to confirm the levels of bycatch.

Reviewed: D. A. Wiedenfeld, 6 February 2012

Potentially High Risk to Seabirds

NORWAY NORTH EAST ARCTIC SAITHE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Poor	Fair	Fair	High
3	2	18	1	18	10	3
5/6		47/100				3/3

This fishery suffers from lack of adequate information. Although it mostly uses (probably for about 80% of catch) medium-risk gears, the lack of on-board of observers and lack of quantitative information on seabird bycatch do not provide adequate confidence that seabird bycatch is low. No mitigation methods are mentioned as being used in the fishery. Although the seabird bycatch and mortality is likely low, the high level of Uncertainty does not allow this fishery to be considered less than Potentially High Risk for Seabirds.

Recommendations

- Obtain qualitative information on seabird interactions and bycatch. This may require placing trained independent observers on board fishing vessels.
- If the data obtained warrant it, implement mitigation methods to reduce seabird bycatch.

Overview

This fishery uses bottom trawl (47%), purse seine (25%), gillnet (16%), and 12% from other conventional gears (long line, Danish seine and hand line) to target North Sea saithe (*Pollachius virens*). Fishing is carried out in the North Sea in ICES subareas I and II. The fish are exported to the Caribbean and South America, with some also sold in Europe. No tonnage of fish landed is given.

The fishery was certified as sustainable on 16 June 2008. The assessment was managed by Moody Marine Ltd. for Norwegian Seafood Industry. The assessment team was Andrew Hough (Moody Marine Ltd.), David Agnew (MRAG Ltd.), Alf Håkon Hoel (University of Tromsø), and Graham Pilling (Center for Environment, Fisheries and Aquaculture Science, UK).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

This fishery uses bottom trawl (47%), purse seine (25%), both medium-risk gear types, for nearly 75% of the fish caught. It uses gillnets (16%) and longline, both high-risk gear types,

for something less than the remaining 25%. Danish seines (medium risk) and hand line (low risk) are used for another minority portion of the fishery.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species

"At certain times, and in certain areas, there can be relatively large bycatches of diving seabirds in gill nets, although whether this is within the saithe gill net fishery is unclear."

"Available information suggests that bird catches are very low in the gillnet fishery and do not include species of high PET [=ETP] concern."

"Interactions of seabirds are reported as being very rare in trawls, with occasional birds being caught in nets."

Information

"Independent observations of the by-catch of other species are limited to some irregular scientific observer studies, and so the extent and significance of non-commercial species by-catches are less well known."

Conditions

"Sampling programmes should be initiated to provide statistically robust estimates of the by-catch of all species, including estimates of discards and slippage. Information should be sufficient to allow an assessment of the impacts of by-catches in relation to the distribution, ecology and abundance of the species and populations affected (commercial and non-commercial fish, mammals and birds)."

Conclusions

This fishery suffers from lack of adequate information, and therefore high uncertainty. This could be alleviated by developing an on-board observer program and possibly also with research into what mitigation methods would be needed and effective.

Reviewed: D. A. Wiedenfeld, 16 February 2012

Potentially High Risk
to Seabirds

SOUTH AFRICA HAKE TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Fair	Good	Fair	Fair	High
2	3	14	18	18	14	3
5/6		64/100				3/3

The South Africa hake trawl uses medium-risk gear, but the South African waters have high numbers of ETP seabirds such as albatross, and large numbers of non-threatened seabirds. The fishery has improved greatly with regard to seabird issues due to the MSC certification process. During the first certification period the fishery implemented mitigation methods that reduce its impact on seabirds (use of bird-scaring lines and offal management, development of observer program). However, it is still not clear if the mitigation methods are as effective as they were originally supposed to be. The fishery was re-certified despite concern that the observer program is not meeting its targets for coverage and quality of information, and that the mitigation methods might be less effective than supposed. The problem the fishery has, therefore, is a lack of information on seabirds.

This lack of information is important. The fishery is evaluated as Potentially High Risk to Seabirds because of the lack of clarity in whether or not the fishery is still causing seabird mortality. Improved information upon which improved mitigation techniques are based, and the assurance of enforcement of use of those techniques, would likely show this fishery to be less risky to seabirds than it is now considered. This would require improving the observer program and assuring that it meets its targets in a reasonable time.

Recommendations

- Assure that the observer program is meeting its goals for coverage and that the observers are appropriately trained in collecting the information needed, down to correct identification of species and recording of interactions.
- Through research studies and information from the observer program, clarify whether the mitigation methods being used are adequate to prevent seabird bycatch.
- If the information indicates that the mitigation methods being used are not adequate, develop appropriate methods and require and enforce their use.

Overview

This fishery uses demersal trawls to target two species of hake, *Merluccius paradoxus* and *Merluccius capensis*. Fishing is carried out in the south Atlantic Ocean in the South African EEZ. The market for the fish is Europe. The fishery totals 134,000 mt.

The fishery was certified as sustainable in April 2004 and re-certified in March 2010. The reassessment was managed by Moody Marine Ltd. for the South African Deep Sea Trawling Industry Association. The reassessment team was Andy Hough and Jason Combes (Moody Marine Ltd.), Joseph E. Powers (Louisiana State University), and Geoff Tingley and Dave Japp (private consultants).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Demersal trawl is a medium-risk gear type.

Boats use bird-scaring lines (tori lines), and compliance is monitored by observers.

Most of boats retain offal, reducing attractiveness to seabirds.

Species
Seabirds in the fishing area include Black-browed Albatross (EN), Indian Yellow-nosed Albatross (EN), Atlantic Yellow-nosed Albatross (EN); in all 11 of the 22 albatross threatened with extinction forage in South Africa coastal waters, but many are there in low numbers or marginally. Other species include White-chinned Petrel (VU), Cape Gannet (VU), and Cape Petrel (LC).

Although seabird mortality has declined in this fishery as a result of the implementation of bird-scaring lines and offal management, it remains at a significant level and could be further reduced.

Information
A Scientific Observer Program monitors 15-20% of all trips, although the observers are not well-trained.

In the second certification period, the fishery still lacks quantitative information on seabird mortality. The fishery has not been meeting its observer coverage goals (although those goals are higher than would be expected of most fisheries), and the resulting lack of information gives rise to considerable uncertainty. The information is required to assure that the mitigation methods are adequate (that the bird-scaring lines are effective, that the appropriate offal mitigation method is effective) and that use of those methods is enforced. This will likely require increased observer coverage and especially improved observer training.

Conditions
One condition, Condition 7, regarding seabirds was placed on the fishery in the original assessment: “[A]ppropriate and quantifiable studies should be carried out within the trawl

industry (representing the various geographical areas in which fishing takes place) to determine the extent of significant interactions. The results of these studies should be considered in relation to the status of affected populations. Appropriate mitigation measures should be implemented where trawl fishing constitutes an important component of total mortality on protected or threatened populations." This condition was met during the first certification period, but it is not clear that those methods are as effective as they were supposed to be.

No conditions were placed during the reassessment.

Conclusions

The South Africa hake trawl has been both a success and a test of MSC certification with regard to seabird issues. It has been a success in making improvements in the fishery, in that during the first certification period the fishery implemented mitigation methods that reduce its impact on seabirds (use of bird-scaring lines and offal management, development of observer program). It has been a test as well, in that it is still not clear if the mitigation methods are as effective as they were originally supposed to be. The fishery was re-certified despite concern that the observer program is not meeting its targets for coverage and quality of information, and that the mitigation methods might be less effective than supposed. The problem the fishery has, therefore, is one that many other MSC-certified fisheries have, a lack of information on seabirds.

This lack of information is important. Although it is clear that the fishery has improved with regard to seabirds since the beginning of its first assessment, the fishery is evaluated as Potentially High Risk to Seabirds because of the lack of clarity in whether or not the fishery is still causing seabird mortality. Improved information upon which improved mitigation techniques are based, and the assurance of enforcement of use of those techniques, would likely show this fishery to be less risky to seabirds than it is now considered. This would require improving the observer program and assuring that it meets its targets in a reasonable time.

Reviewed: D. A. Wiedenfeld, 22 February 2012

POTENTIALLY MEDIUM RISK FISHERIES

Potentially Medium
Risk to Seabirds

ALASKA SALMON FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Poor	Fair	Fair	Medium
3	2	18	1	23	8	2
5/6		50/100				2/3

The Alaska salmon fishers use five gear types, and the main two of these, gillnets, are high risk to seabirds. No mitigation methods are described in the certification reports. Actual bycatch is described as being low, including by an Alaska Dept. of Fish and Game study in 2005. However, little of the information comes directly from the fishery, and much of it comes from test fisheries, which may not be representative. Observer coverage has been fair to low, although has improved. As with other fisheries, this fishery may not be causing significant seabird mortality, but Uncertainty is too high and should be addressed with research programs and improved (in quality and quantity) observer data.

Recommendations

- Review information on seabird bycatch obtained since 2005 report.
- Obtain additional and more detailed information on seabird bycatch especially in gillnets used by the fishery.
- Using that information, reassess the fishery and make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses five gear types: drift gillnet, set gillnet, purse seine, troll, and fish wheels. It targets five species of salmon: sockeye salmon *Onchorhynchus nerka*, chum salmon *O. keta*, chinook salmon *O. tshawytscha*, coho salmon *O. kisutch*, and pink salmon *O. gorbuscha*. Fishing is carried out in the US territorial waters adjacent to Alaska (eastern FAO Region 67). The primary market for the fresh or frozen fish is Japan, whereas canned fish, fresh and smoked may be marketed in Europe and the US. The fishery lands about 287,000 mt per year.

The fishery was one of the first certified, and the first US fishery certified, as sustainable in September 2000, and recertified in November 2007. The original assessment was managed by Scientific Certification Systems for the Alaska Department of Fish and Game (ADFG). The assessment team was Chet Chaffee (Scientific Certification Systems, California), Dayton Lee Alverson (Natural Resources Consultants, Inc., Seattle, Washington), Lou Botsford (University of California, Davis), and Paul Krasnowski (retired from Alaska Dept. of Fish and Game, independent consultant).

The reassessment was also managed by Scientific Certification Systems for the Alaska Department of Fish and Game. The assessment team included two members from the original assessment, Chet Chaffee and Lou Botsford, but had two new members, Greg Ruggerone (Natural Resources Consultants, Inc., Seattle, Washington) and Ray Beamesderfer (Cramer Fish Sciences, Gresham, Oregon).

Beginning with the 2009 surveillance audit, the auditor was changed to Moody Marine Ltd. from Scientific Certification Systems.

All text in quotation marks is from the certification reports or surveillance audits.

Gear and Set

Gillnets, either drift or set, can pose a high risk to diving seabirds. Purse seines pose lower risk, and trolling and fish wheels present very low risk to any seabirds.

No mitigation methods are described for any of the gear types in the original assessment or the reassessment reports.

Species

In the original assessment: "…information of an anecdotal character supplied to the certification committee suggests that, bycatch of birds in some drift net fisheries in Alaska may be substantial. However, we have no scientific evidence to suggest that such takes are detrimental to the populations they impact." The report however gave no details on any of this anecdotal information.

Some data were collected a report submitted for the third surveillance audit in 2004. Most of the data were from logbooks and from the test fishery. In the test fishery, no bird mortalities were reported.

The reassessment report states several times that bycatch of birds is "relatively low" and cites ADFG data. ADFG is the client for the certification. Some data also come from observers placed on boats by the NMFS.

Information

During the first certification period (2000 – 2006) very little information was available on seabird bycatch, and the majority of what there was came from logbooks and test fisheries. Beginning in 2005, observers were placed on in some areas.

Conditions

In the original assessment, a condition was placed on the fishery requiring a sampling program to identify and quantify bycatch, including birds. The system was to be in place by 2004, and a report on the results were to be presented in a report by 2006. A recommendation

was also made that funding be increased for data gathering, to allow compliance with the conditions.

Conclusions

As with many of the early MSC certification reports, the primary focus of the original assessment report was on sustainability of the target fish. Bycatch in general, and seabird bycatch specifically, was little considered. There is very little discussion or even mention of seabirds as bycatch in the original certification report. Nonetheless, the certification team did identify a need for improved bycatch monitoring in the original certification report in 2000. This requirement was deemed to have been met with the publication of a report by ADFG in 2005. That report indicated that bird mortality was "relatively low." This was the only requirement that was placed by the MSC certification process on the fishery. Additional data have been obtained as a result of observers placed on boats by the NMFS, which did not come about as a result of the MSC process.

Although it may be true that bird mortality in this fishery is low, the issue of bird mortality has largely been dismissed without a thorough review, or at least without providing evidence of a thorough review.

This fishery utilizes some high-risk gear types, gillnets, which are known to cause significant diving seabird mortalities in other fisheries. Because this gear type is known to have the potential for bycatch of birds, the assessors in the initial assessment and in the reassessment should have made a serious effort to determine if bird bycatch was important, and to indicate that they had made a full review of bird bycatch.

Reviewed: D. A. Wiedenfeld, 26 September 2011

Potentially Medium Risk to Seabirds

ANNETTE ISLANDS RESERVE SALMON FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Poor	Good	Poor	Medium
3	2	20	1	32	1	2
5/6		54/100				2/3

The AIR Salmon Fishery principally uses gear (purse seine) that is medium risk, although a portion of the fishery uses high-risk gillnets. Anecdotal information seems to indicate that actual seabird bycatch is low, but the Public Certification Report does not mention any use of mitigation methods, and there are no observers. The fishery uses small boats, and it is unlikely that there is significant seabird bycatch, even in the absence of observer information. However, until the uncertainty can be cleared up, this fishery should remain Potentially Medium Risk to Seabirds.

Recommendations

- Assure that the monitoring plan to be established by 2013 includes collection of more information specifically on seabird bycatch.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses three gear types: purse seine (>85%), drift and set gillnet (14%), and troll (0.5%), with about 60 boats and 100 to 130 fishermen. It targets four species of salmon: chum salmon *Onchorhynchus keta*, coho salmon *O. kisutch*, chinook salmon *O. tshawytscha*, and pink salmon *O. gorbuscha*. Fishing is carried out in the Annette Islands Reserve of southeast Alaska, within 3000 ft of shoreline. The primary market for the fresh or frozen fish is Europe. The fishery lands about 3,000 mt per year.

The fishery was certified on 21 June 2011. The assessment was managed by Scientific Certification Systems for the Metlakatla Indian Community in conjunction with the Bureau of Indian Affairs. The assessment team was Sabine Daume (Scientific Certification Systems, California) and Ray Beamesderfer (Cramer Fish Sciences, Gresham, Oregon).

All text in quotation marks is from the certification report.

Gear and Set
Set and drift gillnets can pose a high risk to diving seabirds. Purse seines pose lower risk, and trolling presents very low risk to any seabirds.

No mitigation methods are described for any of the gear types.

Species
Only "several birds (usually sea gulls)" were recorded caught in 2009, and most were apparently released alive.

Information
There is no observer coverage of the fishery.

Conditions
"Condition 14: By the 2nd annual surveillance, establish a scientifically defensible monitoring and reporting system for bycatch. Information on the nature and amount of bycatch shall be provided. The frequency of bycatch monitoring shall be identified following the analysis of the initial results and consistent with the extent and nature of the findings." The second annual surveillance audit will be in 2013.

Conclusions
This is a small fishery, fished by a Native American community. The gear which catches the large majority (85%) of the fish is not of a high risk to seabirds, although the gear used to catch most of the remaining fish, drift and set gillnets, does pose a high risk to diving seabirds. Although there is a claim that there is almost no mortality of any birds, the only information appears to be anecdotal. There are no observers.

A condition placed on the fishery is that a monitoring plan be designed and in place by 2013. However, this condition appears to be primarily aimed at fish bycatch, and does not specifically mention that birds are to be included in the data collection, although neither are they specifically excluded.

The AIR fishery probably does not cause significant mortality to seabirds. If the monitoring program established by 2013 does include information on seabird bycatch, and the data do show low seabird bycatch, the MSC certification process will have made needed improvements to the fishery.

Reviewed: D. A. Wiedenfeld, 26 September 2011

Potentially Medium Risk to Seabirds

ARGENTINEAN BONAERENSE ANCHOVY (*ENGRAULIS ANCHOITA*) INDUSTRIAL SEMI-PELAGIC MID-WATER TRAWL NET FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Fair	Poor	Good	Fair	High
2	2	13	1	25	10	3
4/6		49/100				3/3

The Argentine anchovy fishery fishes with trawls, which are medium risk. It operates in an area that has some presence of ETP seabirds, but generally in relatively low densities. Argentinian law has been improving, but enforcement is not always high. Bycatch appears to be low. New requirements to have on-board video monitoring equipment is a step forward, but it is unclear how useful this will be or if the videos will be sufficient to obtain useable data. The primary issue that the fishery faces is that there is little information at present, although conditions placed on the fishery by the certification should rectify this over the period of certification.

An additional concern is that the certified boats only comprise 5 of as many as 135 vessels fishing for anchovy. Although these five vessels may use best practices, there could still be significant mortality by non-certified boats.

Recommendations

- Obtain more information on seabird bycatch, including results of interactions with gear.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This is a small fishery, using only semi-pelagic mid-water trawling to catch Argentina anchovy, *Engraulis anchoita* off the coasts of Argentina and Uruguay, FAO Region 41. The certified fishery consists of five vessels. The total tonnage caught in 2010 was 1,871 mt.

The fishery was certified as sustainable in August 2011. The assessment was managed by Organización Internacional Agropecuaria for Centauro S.A. and Delicias S.A. The specialist assessment team was L. B. Prenski and Marcelo L. Morales Yokobori (both of Organización Internacional Agropecuaria), and Raúl J. Bridi (Argentina), María de los Angeles Gasalla (Universidade de São Paulo, Brazil), and Carolina V. Minte Vera (Universidade de Maringá, Brazil).

All text in quotation marks is from the certification report.

Gear and Set
The gear is a standard mid-water trawl. No use of any mitigation methods is mentioned in the certification report.

Species
"Great Shearwater (*Puffinus gravis* [LC]), Sooty Shearwater (*Puffinus griseus* [NT]), and White-chinned Petrel (*Procellaria aequinoctialis* [VU]) are [the] seabirds mentioned by the NGO Aves Argentinas as the main species impacted by the Anchovy Bonaerense Fishery."

"Contact rates observed in the ice-chilling fleet (25.47 contacts by hour) are closed to half of the reported for the ice trawlers that operate on neighbor areas (55.8 by hour). Mortality rates for ice-chilling vessels (0.017 by hour), however, were five times lesser than the informed for the Patagonic region (0.082 mortality by hour). These differences may respond to the different sizes of the vessels, the volumes of the catches, fishing zones or other characteristics of the icy fleet, thus the different composition of the icy fleet, like the different composition of the marine birds."

"Considering three throws a day, 130 operative days a year by vessel, and a fleet composed by 135 ice-chilling vessels as an approximation to the fishing effort, annual mortality in this Fishery might be in the order of several hundreds or even more than a thousand albatross." Note that the unit of certification, vessels operated by Centauro S.A. and Delicias S.A., comprises only five of the 135 vessels fishing for Argentine anchovy.

However, analysis of seabird bycatch and mortality from strikes in the very similar Argentinean hake fishery found no mortality in Sooty Shearwater or White-chinned Petrel.

Information
"Recently, on May 1, 2011, an obligatory on board video cameras system has been implemented, which includes the Bonaerense anchovy fishery vessels."

Conditions
Following the assessment, several conditions that relate to seabirds were applied to the fishery.

- "Condition 2.2.3: Gather information on bycatch, including monitoring mortality vs. injury to seabirds."
- "By the second annual audit, to provide documented evidence that:
    - a strategy for managing the fishery's impact on ETP species has been defined, which includes measures to minimise mortality and is designed to be highly likely to achieve national and international requirements (including ACAP requirements established for *Procellaria aequinoctialis*) for the protection of ETP species.

- "By the third annual audit, to provide documented evidence that:
    - a strategy for managing the fishery's impact on ETP species has been implemented, which includes measures to minimise mortality and is designed to be highly likely to achieve national and international requirements (including ACAP requirements established for *Procellaria aequinoctialis*) for the protection of ETP species.
- "By the fourth annual audit, to provide documented evidence that:
    - there is an objective basis for confidence that the strategy is working, and will work, based on information directly about the fishery and/or the species involved.
    - the strategy is being implemented successfully for managing the fishery's impact on ETP species, achieving national and international requirements (including ACAP requirements established for *Procellaria aequinoctialis*) for protection of ETP species."

The assessors also made one recommendation regarding seabirds: "In view of … the general concern existing on birds, the Assessment Team recommends to perform impact assessments on these species."

Conclusions

The Argentinean anchovy fishery uses a medium-risk gear type. The fishing is carried out in an area with a few threatened species, none highly threatened. Some albatross may occur in the area, although probably at low densities.

The primary issue with the fishery appears to be lack of information on bycatch, injury, and mortality of seabirds; the exact levels of seabird interactions is not known, but only inferred from other similar fisheries. The certified boats probably do not have significant bycatch of seabirds and are not causing significant mortality of birds. The assessors have required the certified boats to resolve this problem (i.e., obtain information on seabird interactions) within three years (2014).

Reviewed: D. A. Wiedenfeld, 23 September 2011

Potentially Medium Risk to Seabirds

ASTRID FISKE NORTH SEA HERRING FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Fair	Good	Poor	High
2	2	20	13	30	1	3
4/6		64/100				3/3

This fishery uses a medium risk gear in an area without large numbers of threatened bird species. No mitigation methods are used or none are known to be used. European regulations are good. Actual bycatch of seabirds is apparently very low. However, direct information on bycatch from on-board observers is not available, indicating that risks may not be adequately assessed. With better information this fishery would have lower Uncertainty and might be evaluated as overall Potentially Low Risk to Seabirds.

Recommendations

- Obtain information on bycatch specific to seabirds from independent on-board observers.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch and upgrade it to green.

Overview

This fishery uses purse seine to target North Sea autumn spawning ("maatjes") herring *Clupea harengus*. Fishing is carried out in the North Sea in ICES areas IVa and IVb. The primary market for the fresh or frozen fish is apparently Europe. No tonnage of fish landed is given.

The fishery was certified as sustainable on 9 June 2008. The assessment was managed by Food Certification International Ltd. for Astrid Fiske AB. The assessment team was Crick Carleton and Martin Gill (both of Food Certification International), Paul Medley (independent consultant, York, UK), and Friederike Ziegler (Swedish Institute for Food and Biotechnology).

The gear type and presence of ETP species and bird concentrations both indicate moderate risk to seabirds. The risk-reduction scores total to 64, a moderate level of reduction. However, because of the low numbers of observers, Uncertainty is high. Combining these three factors indicates the fishery has an overall Medium Risk to Seabirds.

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Purse seine is a medium-risk gear type. No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
"In general, interactions between North Sea herring fisheries and ETP species are considered very limited on the basis of evidence from skippers and from various observer programmes."

"Fishers report low bycatch…" This may refer only to fish bycatch, not to seabirds or mammals.

"Astrid Fiske reports no interactions with endangered, threatened or protected (ETP) species in recent years, though this is not independently corroborated."

"No known significant interactions based on observer coverage and anecdotal evidence. It can therefore be concluded that known direct and indirect effects of fishing on threatened and endangered species are within clearly defined and acceptable limits."

In the second and third annual surveillance audits, logbooks from the fishery vessels recorded no interactions with ETP species in 2009 or 2010.

Information
"…there is no independent observer information from the purse seine vessels."

Report does not have any information specifically on seabird bycatch.

Conditions
No conditions for certification regarding seabirds were placed on the fishery, but two recommendations regarding seabirds were made:

- "Astrid Fiske vessels should record all vessel interactions with any seabirds and marine mammals. Contact should be made with SMRU [Sea Mammal Research Unit, UK] to find out how such information may be recorded and what other help might be provided."
- "Astrid Fiske should formally place on record current vessel operating guidelines in the form of a Vessel Operating Manual to incorporate, amongst others, procedures to be applied in respect of … the recording of any interaction with Protected, Endangered or Threatened species."

As recommendations, these do not have to be complied with, and there is no time limit on their implementation.

By the third annual surveillance audit, the fishery was deemed to comply with these two recommendations, and had presented logbooks on interactions with ETP species for 2009 and 2010.

Conclusions

This fishery is not high risk to seabirds, but operates with an almost complete lack of information. Although there is observer and research information on seabird bycatch from the North Sea by other fisheries, including using the same gear type, for this fishery only the briefest of analysis or comparison is made before the issue of seabird bycatch is summarily dismissed.

The fishery may not pose a high risk to seabirds and may in fact not be killing or injuring many seabirds, but to assure sustainability for MSC certification, direct and independent information should be obtained. This should not be optional, in the form of recommendations, but should be required as a condition of certification. The fishery has nonetheless complied with the recommendations.

Reviewed: D. A. Wiedenfeld, 27 September 2011

Potentially Medium Risk to Seabirds

ATLANTIC COD AND HADDOCK LONGLINE, HANDLINE, AND DANISH SEINE FISHERIES

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Good	Good	Poor	High
3	2	20	20	30	10	3
5/6		80/100				3/3

The fishery uses longline, a high-risk gear type, but half the boats use either handline (low risk) or Danish seine (medium risk). Usually the longliners use night-setting to reduce bycatch, which is an effective mitigation method. There is apparently very little actual bycatch of seabirds, and on-board observers are required, although it is not clear on what proportion of voyages. Therefore, information uncertainty is high, and this fishery therefore warrants increased scrutiny as to seabird bycatch.

Recommendations

- Obtain information on bycatch specific to seabirds from independent on-board observers.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses three gear types: demersal longline, handline, and Danish seine. It targets cod *Gadus morhua* (6,000 mt) and haddock *Melanogrammus aeglefinus* (3,000 mt). Fishing is carried out by 8 handliner vessels, 11 longliners and 3 Danish seiners, and fishing is in the Iceland EEZ, ICES Area Va. The primary markets are the US, UK, and Europe for fresh and frozen fish, and Spain, Italy, and Greece for salted fish.

The fishery was certified in June 2011. The assessment was managed by Vottunarstofan Tún ehf. for Sæmark Seafood Ltd. The assessment team was Sigmar Steingrímsson (Icelandic National Planning Agency), Ásgeir Daníelsson (Economics department of the Central Bank of Iceland), and Guðrún Marteinsdóttir and Gunnar Stefánsson (both of University of Iceland).

At the initiation of the certification process Sæmark Seafood Ltd. also included wolffish *Anarhichas lupus* to be certified along with cod and haddock. The assessors however failed wolffish (for reasons of stock condition and not related to seabirds) and only allowed the other two species to be certified.

All text in quotation marks is from the certification report.

Gear and Set

A longline is high risk gear type to seabirds. The longline fishery uses night setting to reduce seabird bycatch. When the line is shot by day, vessels use a gas alarm (a very low-effectiveness mitigation method) and a "special bird scaring device." It is not clear what this device is, whether it is a bird-scaring line such as a tori line, or if it is some other type of device.

Danish seines are moderate risk to seabirds, and handlines are of very low risk to seabirds. There is no information that any mitigation method is used with either of these gears.

Species

"No seabird or marine mammals around Iceland are listed as Endangered, Threatened or Protected species."

"Bycatch of marine mammals and seabirds are considered to be low in bottom longline and Danish seine fisheries and to have low impact on such populations."

Information

"No records on seabirds or marine mammals bycatch is available in Iceland." Despite this, the Icelandic Fisheries Management Act requires strict surveillance of fishing vessels, including on-board observers. It is not clear, however, if these observers record any information on interactions with seabirds, or if they are only recording data on fish or invertebrates caught.

Conditions

The certification placed no conditions or recommendations regarding seabirds on the fishery.

Conclusions

The fishery uses as its principal gear type the high-risk (to seabirds) longline. However, it operates in an apparent vacuum of information on seabird bycatch. The issues of bycatch of seabirds are completely dismissed at the outset, by claiming there is no bycatch and that there are no ETP species in the fishery area. No conditions or recommendations were placed on the fishery to require it to rectify the lack of information.

Although it may be true that the fishery is not catching seabirds, it merits further information-gathering to determine whether this is true or not. And of course, if true means to rectify the problem would be necessary.

Reviewed: D. A. Wiedenfeld, 27 September 2011

Potentially Medium Risk to Seabirds

BERING SEA AND ALEUTIAN ISLANDS PACIFIC COD FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Good	Good	Fair	High
2	3	20	18	27	14	3
5/6		79/100				3/3

This fishery has been significantly improved with regards to seabird bycatch since the 1990s. The fishery uses one high-risk gear type (longline), although that is not apparently the gear on which most fish are taken. More fish are apparently taken using trawls, which are a medium-risk gear type. There are ETP albatross species present as well as many other non-ETP species. Regulation and enforcement is good through NMFS. Mitigation methods are required, although not adequately described in the report. Bycatch is apparently low, although observers do not record interactions with gulls and alcids to species. Observer coverage is reasonably good, with the caveat that seabird data are not always recorded to species. The issue with the fishery is a high level of Uncertainty, arising from the incomplete observation data.

Recommendations

- Obtain more information on seabird bycatch, by improving the on-board observer program. The program should require identification of by-caught birds to species level. This may require training of observers.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch to acceptable levels.

Overview

This fishery uses four gear types: trawl, longline, pot, and jig, targeting Pacific cod, *Gadus macrocephalus*. in the Bering Sea and Aleutian Islands, FAO Region 67. The certified fishery consists of 39 vessels, from 60 to 200 feet in length, some with onboard processing, although a few of the vessels fishing using jigs are smaller, less than 60 feet. The markets for the fish are in the US, Asia, and Europe. The fishery was certified as sustainable on 22 January 2010.

The assessment was managed by Moody Marine Ltd. for Alaska Fisheries Development Foundation, Inc. (AFDF). The specialist assessment team was Bob Mohn and Don Bowen both of the Canadian Department of Fisheries and Oceans, and Susan Hanna of Oregon State University.

It is not clear what is the tonnage of fish brought in by each of the four gears. The TAC for Bering Sea and Aleutian Islands Pacific cod over all gear types in 2010 was 168,780 mt.

All text in quotation marks is from the certification report.

Gear and Set

Of the four gear types, the demersal longline and the trawl gears pose the greatest risk to seabirds; the pot and jig gears pose significantly less risk.

It is not clear from the report exactly mitigation methods are used with the longline gear, although the report does state that mitigation methods are used. At one point in the report it states "[i]mplementation of streamer lines has resulted in ~69% reduction in seabird bycatch in demersal groundfish fisheries…," although this does not appear to refer to data specifically from this fishery. The FMP [Fishery Management Plan] and federal and state regulations (a portion of the fishery lies within state waters, primarily fished using jigs) require the use of mitigation techniques to reduce seabird bycatch.

Species

There are "[o]ver 70 species of seabirds occur over waters off Alaska and could potentially be affected by direct and indirect interactions with the BSAI and GOA groundfish fisheries. Thirty eight of these species regularly breed in Alaska and waters of the EEZ. More than 1,600 seabird colonies have been documented, ranging in size from a few pairs to 3.5 million birds."

"Six species are considered of special concern because of their low abundance or declining populations: Short-tailed Albatross, Red-legged Kittiwakes, Steller's and Spectacled eiders, and Marbled and Kittlitz's murrelets."

The certification report does not include numbers of seabirds caught or estimated take, but instead cites the Alaska Fisheries Science Center's Seabird Bycatch Monitoring and Reporting (http://www.afsc.noaa.gov/refm/reem/Seabirds/Default.php) reports. These are data compiled and analyzed from the observer program. The estimated take for 2010 in the Alaskan federal groundfish fisheries (Preliminary Seabird bycatch Estimates for Alaskan Groundfish Fisheries, 2007-2010. August 2011; report PDF) was 4,596 (2,357 [51%] Northern Fulmars, 1,141 [25%] "gulls," 647 [14%] "shearwaters." Three species of albatross were taken, with estimated numbers of 267 Laysan, 44 Black-footed, and 15 Short-tailed albatross. The estimate for Short-tailed Albatross was based on two individuals recorded captured. Importantly, the trend for bycatch of all seabirds has been downward, with half as many caught in 2010 as in 2007. This trend holds for all of the species and species groups except for Laysan Albatross, which has shown a highly variable bycatch over the years, and for murres, which was very low but suddenly spiked in 2010 to 102 birds.

"The current ESA Biological Opinion allows for four Short-tailed Albatross mortalities over a two-year period in the groundfish longline fleet. Limits have not been determined for other impacted birds such as the Northern Fulmar, but the bycatch of this species represents a small source of mortality relative to the size of the population."

The allowed take of Short-tailed Albatross is probably conservative. An analysis by Zador et al. (2008) [Population impacts of endangered Short-tailed Albatross bycatch in the Alaskan trawl fishery, Biol. Conserv. 141:872-882] modeled the impact of trawl mortality on the Torishima Short-tailed Albatross population. That analysis suggests that exceeding the current expected incidental take of trawl-related bycatch - two takes in any 5-year period - by as much as a factor of 10 would have little impact on the projected time for achieving the species' proposed recovery goals."

Information

Observers are instructed to record vessel strikes and report all bird strikes involving Spectacled and Steller's eiders as well as all seabirds taken in gear."

The score by the assessment team on Performance Indicator 2.2 was 75. They stated that it "would have been higher if the observer program recorded bird bycatch to the species level."

"U.S. fishing vessels that catch, receive or process NPFMC [North Pacific Fisheries Management Council] managed groundfish caught in the EEZ, are required to accommodate NMFS-certified observers as specified in regulations, in order to verify catch composition and quantity, including at-sea discards, and collect biological information on marine resources. The current domestic observer program was authorized under Amendment 13 to the BSAI groundfish FMP. Under this program, NMFS provides operational oversight, certification training, definition of observer sampling duties and methods, debriefing of observers, and management of the data. Vessel and processing plant owners contract directly with observer companies and pay for the cost of the observers. The costs associated with managing the program are paid for by the Federal government."

Vessels < 60 feet LOA are not required to have observers. Vessels 60-125 feet LOA have observers 30% of the time, whereas vessels > 125 feet LOA and all processing plants have observers 100% of the time.

"ADFG personnel are also opportunistically placed on commercial vessels as observers to collect biological data and bycatch information."

"There has and continues to be significant research into the GOA ecosystem and the implementation of policies with respect to monitoring and minimizing the effect of the fishery on habitats and protected, endangered and threatened species. However, further research and information gathering is required with respect to the effect of fishery on the accidental take of seabirds, the conservation status of bait species and the amount and potential impact of lost gear."

Management System

The management system items that relate to seabirds are:

"5. Avoid Impacts to Seabirds and Marine Mammals:

- Continue to cooperate with U.S. Fish and Wildlife Service (USFWS) to protect ESA-listed species, and if appropriate and practicable, other seabird species."

"9. Improve Data Quality, Monitoring and Enforcement:

- Increase the utility of groundfish fishery observer data for the conservation and management of living marine resources.
- Develop funding mechanisms that achieve equitable costs to the industry for implementation of the North Pacific Groundfish Observer Program.
- Improve community and regional economic impact costs and benefits through increased data reporting requirements.
- Increase the quality of monitoring and enforcement data through improved technology."

Conditions

Following the assessment, two conditions that relate to seabirds were applied to the fishery. These were:

Provide quantitative information on the accidental bycatch of seabirds to the species level.

Provide adequate quantitative estimates of the effects of the fishery on seabirds (Trawl gear only). The quantitative information is required to be presented by the first Annual Surveillance Audit.

The fishers' response to these two conditions is:

"AFDF's Plan for Condition 2 – General Risk Factors

Based on information from the NPFMC website and discussions with Ed Melvin of Washington Sea Grant, a leading researcher on both longline and trawl fisheries seabird impact, AFDF and the working group sector members believe that the current Pacific cod longline fishery already meets this condition. Data on seabird bycatch has been collected to the species level or species group level in the Alaska longline fisheries since 1993. Gulls, alcids and some other species are lumped, because in the case of gulls, particularly juveniles, specific species ID's are difficult even for experts. It is our understanding that shearwaters are collected by species, but are not broken out by species in the SAFE reports - this is also true of alcids - few are caught so they are lumped. The "unidentified" category results largely from sampling at night when a dark bird comes over the roller in less than prime condition - difficult to tell a fulmar from a shearwater but should always be able to tell an albatross from either of these. It is important is to get the albatross ID's correct, since they are the species most vulnerable in these fisheries. AFDF and the working group will provide the review of current information within the first 12 months of the certification, and if the certifier decides that there are gaps or insufficient information on impacts to specific species, AFDF will work with the National Marine Fisheries Service (NMFS) to see if additional information can be gathered."

Conclusions

The MSC certification process for the BSAI Pacific cod fishery does not seem to have had any effect on the fishery with regard to seabirds. It appears that all of the mitigation methods and the observer system that are now in use, which have greatly reduced seabird bycatch, were imposed by regulatory actions made by state and federal agencies. Once these mitigation methods were in place, they allowed the fishery to meet the certification requirements in the opinion of the assessment team.

Although the assessment team passed the fishery on seabird bycatch, it is nonetheless clear that there are serious issues with knowing how much bycatch is occurring. It is clear that the observer system is not recording bycatch data to the level of detail that is required to fully assess the impact on seabirds. The conditions placed on the fishery require that the observer data inadequacy be addressed. The fishers seem to be willing to make and support the necessary changes. If the changes are indeed made, and promptly, a re-analysis of seabird bycatch in two or three years could show whether the fishery is indeed sustainable, whether changes need to be made, and whether the fishery should be allowed to enter the re-certification process at the end of its present certification.

Lack of information and poor quality information seem to be the greatest weaknesses of the sustainability analysis with regard to seabirds for this fishery. Although the fishery has greatly reduced seabird bycatch since the 1990s, whether voluntarily or under duress, a significant number of seabirds are still being killed each year. It is probably not possible to achieve zero bycatch, but further information is needed to assess the actual levels of bycatch are sustainable, and whether they can be reduced further.

Because of this weakness, this fishery should be carefully evaluated and watched by outside parties to assure that the fishery maintains its level of compliance, continues to reduce its levels of bycatch, and that those levels of bycatch are actually sustainable.

Reviewed: D. A. Wiedenfeld, 29 August 2011

Potentially Medium Risk to Seabirds

BRISTOL CHANNEL BASS TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Good	Fair	Medium
2	2	18	1	25	8	2
4/6		52/100				2/3

This fishery uses a medium-risk gear type, demersal otter trawl, and in an area with few ETP seabirds or concentrations. However, the certification report presents no information to indicate that seabird bycatch is actually low. The Public Certification Report for this fishery is very poorly done with regard to non-fish bycatch. It scarcely mentions seabirds, and gives no specifics on species, number of seabird interactions or amount of bycatch, mitigation methods, or other issues. (It also does not mention or address sea mammals.) Although information from other fisheries in the area indicates that seabird bycatch is probably very low, the issue should be addressed directly in the report. This fishery should not be allowed to be certified by MSC if it does not address these important issues.

Recommendations

- Clarify what issues there might be regarding seabird bycatch. This will require addressing seabird bycatch in the Bristol Channel trawl fishery from the literature. Determine what species are present, what levels of bycatch or potentially fatal interaction occur.
- Obtain current information from independent on-board observers.
- Determine what mitigation methods may be required to reduce any seabird bycatch that is discovered.

Overview

This fishery uses demersal otter trawls to target sea bass *Dicentrarchus labrax*. Fishing is carried out in the North Sea in ICES areas VIIf east of 5.5° West. The primary market for fish is local, although some is sold elsewhere in Europe. No tonnage of fish landed is given.

The fishery is still in assessment. The assessment has been managed by Moody Marine Ltd. for the North Devon Fishermen's Association. The assessment team is Jim Andrews (AWJ Ltd.) and Mike Pawson (private consultant).

Gear and Set

Demersal otter trawl is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Information

Report does not have any information specifically on seabird bycatch. In fact, the report almost does not mention birds.

Conditions

No conditions for certification regarding seabirds were placed on the fishery.

Conclusions

The Public Certification Report for this fishery is very poorly done with regard to non-fish bycatch. It scarcely mentions seabirds, and gives no specifics on species, number of seabird interactions or amount of bycatch, mitigation methods, or anything else. (It also does not mention or address sea mammals.) Although information from other fisheries in the area indicates that seabird bycatch is probably very low, the issue should be addressed directly in the report. This fishery should not be allowed to be certified by MSC if it does not address these important issues.

Reviewed: D. A. Wiedenfeld, 17 February 2012

Potentially Medium Risk to Seabirds

CANADIAN NORTHERN PRAWN TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	7	3
4/6		44/100				3/3

This fishery exclusively uses bottom trawls, which are not high risk to seabirds. It is a Canadian-regulated fishery, with good regulation and enforcement. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to high Uncertainty. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. Observers are placed on a high percentage of the boats in the offshore fleet and probably an adequate number of boats in the inshore fleet, but apparently those observers do not record any information on non-fish bycatch.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by having the observers already in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses otter trawls to target northern prawn *Pandalus borealis*. Fishing is carried out in inshore Canadian Atlantic waters (western FAO Region 21). The fishery consists of a large number (more than 300) of medium-sized boats, 50-65 feet in LOA. The primary markets are for cooked and peeled prawns sold in US and Europe, especially the UK. The fishery lands about 68,000 mt per year.

The fishery was certified on 5 August 2008. The assessment was managed by Moody Marine, Ltd. for the Association of Seafood Producers (St. Johns, NL). The assessment team was Andrew Hough and Paul Knapman (both of Moody Marine Ltd.), Michaela Aschan (University of Tromsø, Norway), Howard Powles (independent consultant, Canada), and Colin Bannister (independent consultant, UK).

All text in quotation marks is from the certification reports or surveillance audits.

Gear and Set
The fishery exclusively uses demersal otter or beam trawl gear. This is a medium risk gear type for seabirds.

No mitigation methods for seabirds are mentioned as being used in this fishery.

Species
The word "bird" does not appear in the certification report.

There is apparently very low rate of seabird interactions with the gear.

Information
There is no information in the report on non-fish bycatch.

Observer coverage in 2003-2006 was about 75% for the offshore fishery, but inshore fishery had only 3 to 5% observer coverage.

Conditions
"Management objectives are set to detect and reduce impacts on protected, endangered and threatened (PET) species. Accompanying strategies are designed to adequately protect endangered and threatened species within main fishing areas." These conditions are to be met by the second surveillance audit.

Given that the word "bird" does not appear in the reports, it is not clear whether these conditions specifically target non-fish bycatch.

The condition was considered to be met and closed out in the second surveillance audit in 2010.

Conclusions
This certification operates in an almost complete lack of information of bycatch on seabirds (or apparently, sea mammals). Seabird bycatch for this fishery is not mentioned in the reports nor in the literature cited.

Seabird bycatch may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 30 September 2011

Potentially Medium Risk to Seabirds

CANADIAN OFFSHORE NORTHERN SHRIMP AND STRIPED SHRIMP TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	7	3
4/6		44/100				3/3

This fishery exclusively uses otter trawls, which are not high risk to seabirds. It is a Canadian-regulated fishery, with good regulation and enforcement. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to high Uncertainty. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. Observers are placed on-board for all fishing trips fleet and observe about 70% of all tows, but apparently those observers do not record any information on non-fish bycatch.

Recommendations

- Obtain more information on seabird bycatch. This may be achieved by having the observers already in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses otter trawls to target northern shrimp *Pandalus borealis*. and striped shrimp *P. montagui*. Fishing is carried out in Canadian North Atlantic waters from Newfoundland as far as Baffin Island (western FAO Region 21). The fishery consists of 13 vessels. The primary markets are for frozen, raw, and cooked and peeled shrimp sold in Russia, Ukraine, China, Japan, and western Europe. The fishery lands about 60,000 mt per year.

The fishery was certified in June 2011. The assessment was managed by Moody Marine, Ltd. for the Canadian Association of Prawn Producers (Manotick, ON) and the Northern Coalition. The assessment team was Paul Knapman (Moody Marine Ltd.), Don Aldous (independent consultant, Canada), Michaela Aschan (University of Tromsø, Norway), Howard Powles (independent consultant, Canada), and John Angel (independent consultant, Canada).

All text in quotation marks is from the certification reports or surveillance audits.

Gear and Set
The fishery exclusively uses demersal otter trawl gear. This is a medium risk gear type for seabirds.

No mitigation methods for seabirds are mentioned as being used in this fishery.

Species
The word "bird" does not appear in the certification reports.

There is apparently very low rate of seabird interactions with the gear.

Information
There is no information in the report on non-fish bycatch.

Observer coverage is 100% of trips and about 70% for tows.

Conditions
No conditions for certification relating to seabirds were placed on the fishery.

Conclusions
This certification operates in an almost complete lack of information of bycatch on seabirds (or apparently, sea mammals). Seabird bycatch for this fishery is not mentioned in the reports nor in the literature cited.

Seabird bycatch may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 30 September 2011

Potentially Medium Risk to Seabirds

DUTCH FISHERIES ORGANIZATION (DFO) GILL NET SOLE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Poor	Good	Fair	Low
3	2	18	1	33	14	1
5/6		66/100				1/3

This fishery uses a high-risk gear type, although in this case the specific design of the gear may significantly reduce its risk to seabirds. The sole gillnets are low and close to the ocean floor, often probably only 10 -30 cm above the floor. They use a small mesh size, and are set mostly overnight, a time when fewer diving birds are active. Results from monitoring indicate that there is a low level of bycatch. Although the bycatch is low, information could be improved.

Recommendations

- Obtain improved information on bycatch through improved monitoring, with more-frequent deployment of on-board observers.
- If the improved information indicates that it is warranted, implement appropriate and effective mitigation measures.

Overview

This fishery uses sole gillnets target common sole *Solea solea*. Fishing is carried out in the North Sea in ICES areas IVb and IVc. The commercial market for the fish is within the European Union. The fishery landed 168 mt in 2008.

The fishery was certified as sustainable on 24 November 2009. The assessment was managed by Food Certification International Ltd. for the Dutch Fisheries Organization. The assessment team was Tristan Southall and Martin Gill (both of Food Certification International), and Paul Medley and Bert Keus (both independent consultants).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Gillnets are in general a high-risk gear type. Sole gillnets, however, may be lower risk than other gillnets, because the nets are low, usually only about 1 m high, and placed with the bottom edge on the sea floor in water from 10 to 60 m depth. The nets are also a relatively small mesh. The nets are usually soaked overnight, from late afternoon to morning, a time when diving seabirds are usually less active. These three factors (low nets, small mesh, and night setting) may make the nets less risky for seabirds.

"…concluded that these [sole] gillnets are relatively low (less than 1m above the seafloor) and the current pushes them down to a height of only 10-30 cm with the result that the bycatch of birds is unlikely. Also the fact that these nets are generally set in deeper water means that only deep diving birds could, in theory, be caught."

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
Species occurring in the fishing area include Greater Scaup, Common Eider, and Common Scoter.

"…they reported zero incidences of bycatch in 22 observer trips carried out in the sole fishery."

Information
There is a mandatory logbook, and "[u]nwanted by-catches of … sea birds and marine mammals must be noted in the logbook."

There is deployment of on-board observers at least occasionally, but it is unclear how frequently.

Conditions
Condition 3 requires the fishers to gather information on bycatch by the third Annual Surveillance Audit (2012). By the second audit (December 2011) ten observer trips had recorded no seabirds or mammals.

Conclusions
The specific conformation of the sole gillnets (close to the sea floor and with small mesh size) and overnight deployment apparently reduces the risk posed by these nets. Bycatch is therefore very low. However, as in many other fisheries, improved information on seabird bycatch is necessary, and would best be obtained through greater monitoring, mainly by on-board observers.

Reviewed: D. A. Wiedenfeld, 30 January 2012

Potentially Medium Risk to Seabirds

FISKBRANSCHENS SWEDEN EASTERN BALTIC COD FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Good	Poor	Medium
2	2	18	1	28	7	2
4/6		54/100				2/3

This fishery primarily uses medium and low risk gears, but also has one component using high-risk longlines. Although the fishery operates in an area without many ETP bird species, and bycatch is apparently low, the information on seabird interactions and bycatch is also very low, leading to high levels of uncertainty. This fishery's certification would be greatly improved by having quantitative information on bycatch directly from the fishery. The requirement to obtain such information was part of the conditions for certification placed on the fishery.

Recommendations

- Obtain information on seabird bycatch directly from the fishery. This will require placing independent observers on board fishing vessels, especially the longliners. The observers will have to be trained in identification and recording seabirds and interactions.
- If the information obtained indicates that it is warranted, implement appropriate and effective mitigation methods.
- Comply with all conditions of certification placed on the fishery.

Overview

This fishery uses demersal and midwater trawls (55 vessels), longlines (5-6 vessels), and traps (3 vessels) to target Atlantic cod *Gadus morhua*. Fishing is carried out in the North Sea in ICES areas 25 – 31. The fish are mostly exported. In 2009 the fishery landed 8,901 mt.

The fishery was certified as sustainable in June 2011. The assessment was managed by Food Certification International Ltd. for Fiskbranchens Riksförbunds Service AB. The assessment team was Antonio Hervás (Food Certification International Ltd.), Fiona Nimmo, Sten Sverdrup-Jensen, and Paul Macintyre.

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

The large majority of boats in this fishery use trawls, a medium-risk gear type. A much smaller number of vessels uses high-risk longlines, and only a few vessels use low-risk traps.

No mitigation methods or use of mitigation methods are mentioned in the certification report, except "banging on the side of the boat" to frighten away seabirds.

Species

"Diving seabirds are abundant in coastal waters and shallow offshore banks of the Baltic and are the most common species caught in long lines – this may include incidental bird captures by the Swedish Eastern Baltic cod long line fishery."

"[C]onsultation indicates that interactions are normally limited to herring gull species with reported catches of up to 10 birds per year. Skippers try to avoid any interaction (since it prevents then catching their target species) and often bang on the side of the boat to deter any birds present."

Information

"The actual magnitude and significance of the mortality caused by incidental capture remains largely unknown due to low levels of monitoring."

Conditions

Condition 3: "Provide evidence of observer coverage and associated data which records discarding of all species in these fisheries on a routinely [sic] basis."

Condition 4: "Implement an appropriate Code of Conduct which explicitly refers to issues in relation to bycatch / discards that have been identified during the assessment (including seabirds) and should introduce on-going means to monitor, manage and reduce or eliminate bycatch of all species.

Also part of Condition 4: "Initiate a quantitative evaluation of the nature and scale of interactions between long lines and seabirds, overseen by (or in cooperation with) an independent body or organisation, using scientific measuring methods, covering all seasons and areas. Bird bycatch data should allow accurate estimation of total bird bycatch to a species level."

Recommendation 3: "It is recommended that all potential ETP species encountered in the Eastern Baltic sea (including Twaite shad and European eel) are included in a wheelhouse guide to identifying and record interaction with ETP species for all gear types." Seabirds are not specified, but would presumably be included in the wheelhouse guide.

Conclusions

This fishery, as with many others, suffers from a lack of information on seabird bycatch. It requires observer information from the fleet itself, not just from similar fleets. Although the

fishery is presently classified as Potentially Medium Risk to Seabirds, with better information on seabird bycatch, this could possibly be raised to Low Risk.

Reviewed: D. A. Wiedenfeld, 21 February 2012

Potentially Medium Risk to Seabirds

FOGO ISLAND COLD WATER SHRIMP (*PANDALUS BOREALIS*) FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Good	Fair	Medium
2	2	17	1	29	14	2
4/6		61/100				2/3

This fishery uses a medium-risk gear type, demersal otter trawl, and in an area with few ETP seabirds or concentrations. However, the certification report presents no information to indicate that seabird bycatch is actually low. The Public Certification Report for this fishery is very poorly done with regard to non-fish bycatch. It scarcely mentions seabirds, and gives no specifics on species, number of seabird interactions or amount of bycatch, mitigation methods, or other issues. (It also does not mention or address sea mammals.) Although information from other fisheries in the area indicates that seabird bycatch is probably very low, the issue should be addressed directly in the report. This fishery should not be allowed to be certified by MSC if it does not address these important issues.

Recommendations

- Clarify what issues there might be regarding seabird bycatch. This will require addressing seabird bycatch in the Bristol Channel trawl fishery from the literature. Determine what species are present, what levels of bycatch or potentially fatal interaction occur.
- Present the information from independent on-board observers.
- Determine what mitigation methods may be required to reduce any seabird bycatch that is discovered.

Overview

This fishery uses demersal otter trawls to target cold water shrimp *Pandalus borealis*. Fishing is carried out in the Canadian EEZ, FAO Statistical Area 21. The primary market for the shrimp is to Europe (90%) and the US (10%). The catch peaked in 2007 with 143,000 mt and has since declined to 87,000 mt in 2010.

The fishery was certified as sustainable in October 2011. The assessment was managed by Global Trust Certification Ltd. for the Fogo Island Cooperative Society Ltd. The assessment team was Dave Garforth (Global Trust Certification Ltd), Jean-Jacques Maguire, Peter Koeller, and Eric Dunne.

All text in quotation marks is from the certification report.

Gear and Set
Demersal otter trawl is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
The only information on seabirds mentioned in the report is reference to Canada's participation in the International Plan of Action (IPOA) on seabirds.

Information
The Public Certification Report does not have any information specifically on seabird bycatch.

"Due to resource constraints and priority considerations coverage of the inshore fleet is variable (3-5%), and usually does not attain the targeted 10%. However, the large vessel (offshore) fleet coverage, which achieves coverage close (~80%) its 100% target." The inshore fleet is small vessels.

Conditions
No conditions for certification regarding seabirds were placed on the fishery.

Conclusions
The Public Certification Report for this fishery is very poorly done with regard to non-fish bycatch. It scarcely mentions seabirds, and gives no specifics on species, number of seabird interactions or amount of bycatch, mitigation methods, or anything else. (It also does not mention or address sea mammals.) Although information from other fisheries in the area indicates that seabird bycatch is probably very low, the issue should be addressed directly in the report. This fishery should not be allowed to be certified by MSC if it does not address these important issues.

Reviewed: D. A. Wiedenfeld, 17 February 2012

Potentially Medium Risk to Seabirds

GULF OF ST. LAWRENCE NORTHERN SHRIMP TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	7	3
4/6		44/100				3/3

This fishery exclusively uses demersal trawls, which are not high risk to seabirds. It is a Canadian-regulated fishery, with good regulation and enforcement. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to high Uncertainty. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. Observers are placed on only about 5% of boats. However, it is not clear if they record any information on seabird bycatch. Based on other, similar fisheries, the bycatch is probably actually very low; however, this is unclear. This fishery could be improved greatly by obtaining and presenting more information on seabird bycatch.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses demersal trawls to target northern shrimp *Pandalus borealis*. Fishing is carried out in the Gulf of St. Lawrence in the Canadian EEZ. The primary market is Europe (60%) and North America (40%). About 29,000 mt are landed annually.

The fishery was certified as sustainable on 23 September 2008. The assessment was managed by Tavel Certification Inc. for the Association Québécoise de l'Industrie de la Pêche, Produits Belle-Baie Ltée., and L'Association Cooperative des Pecheurs de l'Ile Ltée. The assessment team was Steven Devitt (Tavel Certification Inc.), Don Parsons (private consultant), Jean-Claude Brêthes (Institut des sciences de la mer de Rimouski, Quebec), and Jean-Jacques Maguire (private consultant).

Gear and Set

Demersal trawl is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
The word “bird” does not appear in the certification report.

There is apparently very low rate of seabird interactions with the gear.

Information
Observer coverage is about 5%.

Report does not have any information specifically on seabird bycatch.

Conditions
No conditions for certification regarding seabirds were placed on the fishery.

Conclusions
This certification operates in an almost complete lack of information of bycatch on seabirds (or apparently, sea mammals). Seabird bycatch for this fishery is not mentioned in the reports nor in the literature cited.

Seabird bycatch may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 21 February 2012

GULF OF ST. LAWRENCE NORTHERN SHRIMP TRAWL FISHERY ESQUIMAN CHANNEL

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	7	3
4/6		44/100				3/3

This fishery exclusively uses demersal trawls, which are not high risk to seabirds. It is a Canadian-regulated fishery, with good regulation and enforcement. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to high Uncertainty. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. Observers are placed on only about 5% of boats. However, it is not clear if they record any information on seabird bycatch. Based on other, similar fisheries, the bycatch is probably actually very low; however, this is unclear. This fishery could be improved greatly by obtaining and presenting more information on seabird bycatch. In addition, the fishery has not yet complied with the condition for certification placed on it, to improve observer coverage to > 5%. By the third Annual Surveillance Audit in December 2011, coverage had in fact been lower. Although there is still no evidence of seabird bycatch, the lack of compliance and continued lack of information is cause for concern in this fishery.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by having the observers already in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses otter (demersal) trawls to target northern shrimp *Pandalus borealis*. Fishing is carried out in the Esquiman Channel, Shrimp Fishing Area 8 (Gulf of St. Lawrence in the Canadian EEZ). The primary market is the US and Europe. In 2007 the landings were 8,867 mt.

The fishery was certified as sustainable on 30 March 2009. The assessment was managed by Tavel Certification Inc. for the Association Québécoise de l'Industrie de la Pêche, Association of Seafood Producers, NL, L'Association Cooperative des Pecheurs de l'Ile Ltée., and Produits Belle-Baie Ltée. The assessment team was Steven Devitt (Tavel Certification Inc.), Don Parsons (private consultant), Jean-Claude Brêthes (Institut des sciences de la mer de Rimouski, Quebec), and Jean-Jacques Maguire (private consultant).

Gear and Set
Demersal trawl is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
The word "bird" does not appear in the certification report.

There is apparently very low rate of seabird interactions with the gear.

Information
Observer coverage is about 5%.

Report does not have any information specifically on seabird bycatch.

Conditions
Condition 2.2.1 requires increased observer coverage.

The second Annual Surveillance Audit (March 2011) reported observer coverage had remained at or below 5%, and this was confirmed was confirmed in the third Annual Surveillance Audit (December 2011).

Conclusions
This certification operates in an almost complete lack of information of bycatch on seabirds (or apparently, sea mammals). Seabird bycatch for this fishery is not mentioned in the reports nor in the literature cited.

Seabird bycatch may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

However, by the third Annual Surveillance Audit in December 2011, the fishery had not complied with the condition to increase observer coverage to > 5%, and coverage had in fact been lower. Although there is still no evidence of seabird bycatch, the lack of compliance and continued lack of information is cause for concern in this fishery.

Reviewed: D. A. Wiedenfeld, 21 February 2012

Potentially Medium Risk to Seabirds

HASTINGS FLEET DOVER SOLE TRAMMEL NET FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Low	Good	Fair	Good	Poor	Medium
3	1	18	12	25	7	2
4/6		62/100				2/3

The Hastings fleet fishery is a very small-scale one, with few boats and all of those small. It uses trammel nets, which are a high-risk gear type, but bycatch is very low. The lack of quantitative information on bycatch and use of risky gear indicated at the time of certification that this fishery may be Potentially Medium Risk to Seabirds, but the actual bycatch is very low, as indicated by the Annual Surveillance Audits.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses trammel nets to target Dover sole *Solea solea*. Fishing is carried out by boats under 10 m launched from the beach at Hastings and fishes the Eastern English Channel, specifically between Beachy Head and Dungeness and offshore to the 6 nm limit. The annual landing is about 72 mt.

The fishery was originally certified as sustainable in October 2005 and is currently in early stages of reassessment. The original assessment was managed by Moody Marine Ltd. for the Hastings Borough Council and the Hastings Fishermen's Protection Society. The assessment team in the original assessment was Andrew Hough (Moody Marine Ltd.), John Nichols (private consultant), and Tim Huntington (Poseidon Aquatic Resources Management Ltd.).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Trammel nets are a high-risk gear type.

"Trammel headlines must be set at least 1.5 m below the water surface at any state of the tide in order to reduce by-catch of surface-running migratory fish (e.g. sea trout) and to reduce bird by-catch."

Species

"The occasional incidental catch of seabirds has been found in the Hastings trammel net fishery, mainly diving birds such as guillemots. There are no figures available on the numbers involved, but it is thought to be very low."

"The level of sea mammal and seabird by-catch is considered so low as to not represent a threat to any protected or endangered species."

Information

"Fishing practices are regularly observed by the enforcement agencies including both inshore and offshore fleets."

"Hastings fishermen are very co-operative and willing to take observers from DEFRA [Department for Environment, Food and Rural Affairs, UK] at any time. Some vessels voluntarily complete and submit catch log books for UK scientists to use. These log books have been made freely available to the assessment team for inspection."

Conditions

Condition 2: "Records of incidental catches (of sea birds, sea mammals etc) should be maintained and made available through an appropriate body such as the Sea Fisheries Committee." This apparently refers specifically to ETP species, but also does not exclude all seabirds caught.

Referring to the same condition: "Records of … any other incidental catch (such as seabirds etc) should include numbers caught. Records should be kept on a regular basis e.g. monthly/quarterly. These records should be made available to relevant agencies on request."

In the fourth Annual Surveillance Audit in June 2011: "This condition has been largely met and is on target."

Conclusions

This fishery is a small-scale one with very low seabird bycatch. At the time of certification, however, quantitative information on bycatch was lacking. Annual Surveillance Audits subsequently have indicated low seabird bycatch. However, this should have been confirmed prior to certification.

Reviewed: D. A. Wiedenfeld, 29 February 2012

Potentially Medium Risk to Seabirds

HASTINGS FLEET PELAGIC HERRING AND MACKEREL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Low	Good	Poor	Good	Fair	Medium
3	1	18	1	30	14	2
4/6		63/100				2/3

The Hastings fleet fishery is a very small-scale one, with few boats and all of those small. It uses drift gillnets, which are a high-risk gear type, but bycatch is very low, possibly because the vessels always accompany the nets, which keeps away seabirds. The lack of quantitative information on bycatch and use of risky gear indicated at the time of certification that this fishery may be Potentially Medium Risk to Seabirds, but the actual bycatch is very low, as indicated by the annual Surveillance Audits.

Recommendations

- Obtain quantitative information on seabird bycatch, and if the information indicates that it is warranted, implement mitigation methods.

Overview

This is a small-scale fishery using drift gillnets to catch herring *Clupea harengus* and mackerel *Scomber scombrus*. The boats are small, < 10 m with some as small as 6 m, and there are only 21 active vessels in the group. Fishing is carried out in the English Channel between Beachy Head and Dungeness out to the 6 nm limit. The primary market for the fish is local. About 10 mt of fish are harvested annually.

The fishery was certified as sustainable in September 2005 and is currently at Stage 4 in reassessment. The original assessment was managed by Moody Marine Ltd. for the Hastings Borough Council and the Hastings Fishermen's Protection Society. The assessment team was Andrew Hough (Moody Marine Ltd.), John Nichols (private consultant), and Tim Huntington (Poseidon Aquatic Resources Management Ltd.).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

The Hastings fleet uses drift gillnets, a high-risk gear type.

Although not specifically designed as mitigation, the drift gillnets are accompanied by the fishing boats, which helps to reduce seabird bycatch by keeping birds away from the nets.

Species
"Some by-catch of seabirds has been reported …but only when fishing near rocks and mortality rates low."

No bycatch of any seabirds was recorded in the annual Surveillance Audits in 2009, 2010, and 2011.

Information
Information on bycatch in this fishery is all anecdotal. There are no observers placed on board the fishing vessels, which are all small.

Conditions
Only one condition was placed on the fishery, requiring recording of all bycatch, including specifically seabirds. This condition was required to be implemented immediately.

The first Annual Surveillance Audit in November 2006 showed that bycatch information was not being recorded, and the fishery received notice of noncompliance. Therefore an extra Expedited Audit was conducted in September 2007, which found that the fishery was complying with the condition, and that the appropriate information was now being recorded.

Conclusions
This fishery is a small-scale one with very low seabird bycatch. At the time of certification, however, quantitative information on bycatch was lacking. Annual Surveillance Audits subsequently have indicated low seabird bycatch. However, this should have been confirmed prior to certification.

Reviewed: D. A. Wiedenfeld, 16 February 2012

Potentially Medium Risk to Seabirds

IRISH PELAGIC SUSTAINABILITY ASSOCIATION (IPSA) WESTERN MACKEREL PELAGIC TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	1	3
4/6		38/100				3/3

This fishery exclusively uses pair trawls, which are not high risk to seabirds. It is a well-regulated fishery, with good regulation and enforcement. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to high Uncertainty. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. There is almost no observer information, although as a result of a condition placed on certification, by the first Annual Surveillance Audit, observer information was being obtained. Based on other, similar fisheries, the bycatch is probably actually very low; however, this is unclear. This fishery could be improved greatly by obtaining and presenting more information on seabird bycatch.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses mid-water pelagic pair trawl to target mackerel *Scomber scombrus*. Fishing is carried out west of Ireland and Scotland in ICES Divisions VI, VII and ICES sub areas IVa, Vb, VIIIa, b, d and e. The primary market for frozen fish is to significant markets in Japan, Eastern Europe and sub-Saharan Africa, although the fish may be sold elsewhere. The fishery landed 5,500 mt in 2009.

The fishery was certified as sustainable in July 2010. The assessment was managed by Food Certification International Ltd. for the Irish Pelagic Sustainability Association. The assessment team was Martin Gill (Food Certification International Ltd.), Tristan Southall, Paul Medley, and Nick Pfeiffer.

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Pelagic and demersal pair trawls are medium-risk gear types.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
There is apparently very low rate of seabird interactions with the gear.

Information
Report does not have any information specifically on seabird bycatch.

The word "bird" does not appear in the certification report or surveillance report.

From the first Annual Surveillance Audit: "This condition [Condition 5] is evidenced to be on target through the participation in two separate observer programs aboard IPSA vessels during the first year of certification. The first program was undertaken by the Irish marine institute and a second by the dedicated ETP observer programme has now been implemented aligned with EC regulation (No. 812/2004). As a result evidence of observer coverage has improved since time of original assessment. There has been strong support with regards to implementing this condition. To-date, on board observers have spent 111 days at sea covering 50 fishing-days, and 91 hauls. Observer trips were aboard 22 Irish pelagic vessels including 6 vessels from IPSA fleets on 35 fishing trips."

Conditions
Condition 4: "Ensure status of ETP species interactions are known and are highly likely to be within limits of national and international requirements – supported by a strategy and sufficient quantitative data." That is, improve observation. It is not clear that this is aimed at seabirds specifically, but may be oriented more to cetaceans. This is to be completed by the first Annual Surveillance Audit.

Condition 5: "Ensure sufficient quantitative data to estimate fishing mortality on ETP species." See comments under "Information," above.

Conclusions
This certification operates in an almost complete lack of information of bycatch on seabirds. Seabird bycatch for this fishery is not mentioned in the reports nor in the literature cited. However, because of a condition placed on certification and by EC regulation, the fishery is now obtaining observer information.

Seabird bycatch may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 23 February 2012

IRISH PELAGIC SUSTAINABILITY GROUP (IPSG) WESTERN MACKEREL PELAGIC TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Fair	High
2	2	18	1	18	10	3
4/6		47/100				3/3

This fishery exclusively uses trawls, either single or pair trawls, which are not high risk to seabirds. It is a well-regulated fishery, with good regulation and enforcement. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to high Uncertainty. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. During the assessment period there was almost no observer information, although as a result of a condition placed on certification, by the second Annual Surveillance Audit, observer information was being obtained. Based on other, similar fisheries, the bycatch is probably actually very low; however, this is unclear. This fishery could be improved greatly by obtaining and presenting more information on seabird bycatch.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses mid-water pelagic trawls, single and pair trawls, to target mackerel *Scomber scombrus*. Fishing is carried out EU Waters in ICES sub-areas VI, VII and VIII and Division Vb, and International waters in sub-areas XII and XIV and Division IIa. The primary market for frozen fish is to significant markets in Japan, Eastern Europe and sub-Saharan Africa, although the fish may be sold elsewhere. The fishery landed 38,000 mt in 2008.

The fishery was certified as sustainable in 28 August 2009. The assessment was managed by Food Certification International Ltd. for the Irish Pelagic Sustainability Group. The assessment team was Martin Gill (Food Certification International Ltd.), Tristan Southall, Paul Medley, and Nick Pfeiffer.

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Pelagic and demersal single and pair trawls are medium-risk gear types.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
There is apparently very low rate of seabird interactions with the gear.

Information
Report does not have any information specifically on seabird bycatch.

The word "bird" does not appear in the certification report or surveillance report.

From the first Annual Surveillance Audit: "The implementation of the proposed BIM [Bord Iascaigh Mhara, the Irish marine board] Pilot Observer Programme during the 2010/2011 mackerel season is expected to generate useful data and could make an important contribution to fulfilling the condition [Condition 6]. It is noted that the purpose of the programme will be to record incidences of cetacean interaction and mackerel slippage, as well as instances of seabird, seabed encounters and shark bycatch." Pelagic fleet coverage was 15% of vessels over 15 m length.

Conditions
Condition 4: "By the time of the second surveillance visit, it must be demonstrated to the assessors that the fleet are fully engaged in the ETP interactions reporting, set out in the EMS, and the provisions under SI 274 of 2008 as they relate to pelagic pair trawling for North East Atlantic mackerel are implemented. All vessels should compile the ETP species interaction data from the onboard Seafood Environmental Management System and the IPSG should annually collate this data and make available to appropriate authorities."

Condition 6: "For a fishery of this size and sophistication, there is a surprisingly low level observer coverage. For a fishery seeking to operate in a sustainable manner, this lack of independent corroboration undermines confidence in the levels of compliance within the fleet. By actively encouraging more observer coverage – through liaisons with DAFF, BIM and MI – the IPSG fleet can take a lead in demonstrating the culture of compliance and sustainable fishing within the mackerel fishery. Observer coverage should focus on a number of areas including; overall vessel operations and data recording, slippage and interactions with ETP species, seabed (sub-sea habitats). Where requested scientific observer access to the vessel / trip must not be denied without justifiable reason."

Conclusions

This certification operates in an almost complete lack of information of bycatch on seabirds. Seabird bycatch for this fishery is not mentioned in the reports nor in the literature cited. However, because of a condition placed on certification and by EC regulation, the fishery is now obtaining observer information.

Seabird bycatch may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 23 February 2012

Potentially Medium Risk to Seabirds

ISLE OF MAN QUEEN SCALLOP TRAWL AND DREDGE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	1	3
4/6		37/100				3/3

This fishery exclusively uses bottom trawls, which are not high risk to seabirds. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to high Uncertainty. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. Observers are placed on a high percentage of the boats in the offshore fleet and probably an adequate number of boats in the inshore fleet, but apparently those observers do not record any information on non-fish bycatch

Recommendations

- Obtain information on seabird bycatch. This may be require having the observers placed on board to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses demersal otter trawl to target queen scallop *Aequipecten opercularis*. Fishing is carried out in the Irish Sea in ICES area VIIa. The primary market for the scallops is in Europe. The fishery lands about 9,979 mt per year.

The fishery was certified as sustainable in May 2011. The assessment was managed by Moody Marine Ltd. for the Isle of Man Government. The assessment team was Jim Andrews (AWJ Ltd.), Andy Brand (private consultant), Terry Holt (CMACS Ltd.).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Demersal trawls and dredges are medium-risk gear types.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
The word “bird” does not appear in the certification report.

“There are no ETP species that are known to interact significantly with queen scallop fishing.”

There is apparently very low rate of seabird interactions with the gear.

Information
The report does not have any information specifically on seabird bycatch.

There seem to be no observers or monitoring placed on board or even on landing. “There is no routinely recorded information from the fishery.”

Conditions
Condition 5: “Collection of data that would enable any increase in the risk to main bycatch species to be detected.” It is not clear if this was intended for seabirds or mammals, but most likely was for fish or invertebrate species.

Conclusions
This certification operates in an almost complete lack of information of bycatch on seabirds (or apparently, sea mammals). Seabird bycatch for this fishery is not mentioned in the reports nor in the literature cited.

Seabird bycatch may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 21 February 2012

Potentially Medium Risk to Seabirds

NEW ZEALAND COMMERCIAL HOKI FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Good	Good	Poor	Medium
2	3	18	25	25	7	2
5/6		75/100				2/3

In September 2011 this fishery entered its second reassessment; it was first certified in 2001 and re-certified in 2007. The fishery has improved significantly since it was first MSC certified. The fishery uses only trawls, but is in an area with concentrations of seabirds and numbers of ETP species. Effective mitigation methods have been developed and are required by regulation, and at present bycatch is apparently low. However, there remains questions of the amount of mortality caused by warp strikes. The fishery has had spotty observer coverage, an important issue for a fishery for which there has been previous concern about seabird mortality. Because of lack of observer data, uncertainty remains an important issue.

Recommendations

- Continue to monitor and evaluate information on seabird bycatch.
- If there is any indication of effects on seabirds, make any changes to the fishery that would be needed to reduce those effects.

Overview

This fishery was first certified by MSC in March 2001 and was recertified in November 2007.

On 25 April, 2001 "the Royal Forest and Bird Protection Society of New Zealand (RFBPS) filed an objection with MSC against this certification on the grounds that the SGS report leading to the certificate failed adequately to interpret and to comply with the MSC Principles and Criteria and the requirements of Certification. RFBPS asked that the Certificate be withdrawn."

MSC formed a four-person panel to adjudicate the objection. The panel released its report on 16 December 2002, stating that several aspects of the assessment regarding Principle 2 should have justified denial of the certification. The panel allowed the certification to stand, saying that in the interim important changes had been made to the fishery allowing it to meet certification standards, but nonetheless, the report required several significant new conditions (see section on Conditions, below).

During this period from March 2001 to October 2007 an unusual 11 surveillance audits were undertaken (surveillance audits are usually annual), probably as a result of efforts to clear the conditions related to the special review panel's report.

Beginning in 2006, at what would have been the end of the original certification period, until July 2007, the fishery's certification was extended five times, apparently to allow the reassessment to be completed. The reassessment overlapped with this period, beginning in March 2005, with the reassessment being completed on 31 October 2007 and certification being given for the period from 12 September 2008 to 31 October 2012.

New Zealand hoki (*Macruronus novaezelandiae*) are caught using bottom and midwater trawls. The main fishing grounds are around the South Island and in the Sub-Antarctic, the western portion of FAO Region 81. The markets for the fish are in the US, Europe, Japan, and Australia.

The original assessment was managed by SGS Nederland B.V. for Hoki Fishery Management Company Ltd. The assessment team was Edwin Aalders and Aldin Hilbrands, both of SGS, Jo Akroyd of Akroyd Walshe (New Zealand), and Trevor Ward of University of Western Australia. The reassessment was undertaken by Hoki Fishery Management Company Ltd. for Deepwater Group Ltd. (DWG), which was formed through a merger Hoki Fishery Management Company Ltd. and two other companies. The specialist reassessment team was Aldin Hilbrands and John Bryden, both of SGS, Andre Punt of University of Washington (USA), Trevor Ward of Greenward Consulting (Australia), and Jo Akroyd of Akroyd-Walshe Ltd. (New Zealand).

The fishery catches about 91,040 mt of fish each year.

This fishery received a score of 8 in the Fisheries Seabird Risk Evaluation System: 2 for Gear and Set Risk; 3 for Species Risk; and 3 for Information Risk.

All text in quotation marks is from the certification report.

Gear and Set

The fishery uses midwater and bottom trawls. It is not clear what mitigation methods are used, but bird-scaring lines, Brady bafflers, and offal management "are all under investigation." A Code of Practice has been developed by the Deepwater Stakeholder Group to mitigate seabird mortality. "The effectiveness of these measures in reducing seabird captures…is not yet known."

It is a year-round fishery, although different areas are fished at different times of the year, with fishing further north in midwinter and south during summer.

Species

There are species of at-risk seabirds present.

"The highest reported captures include Buller's Albatross [NT], White-capped Albatross [NT], Salvin's Albatross [VU], and Sooty Shearwater [NT]. Other species caught include Southern Royal Albatross [VU], Campbell Albatross [VU], Black-browed Albatross [EN], Northern Giant Petrel [LC], Grey Petrel [NT], White-chinned Petrel [VU], Short-tailed Shearwater [LC], Cape Pigeon [=Cape Petrel; LC], Fairy Prion [LC], Black-backed Gull [probably Kelp Gull; LC]." (Notes in brackets are added by DW.) The total number of the four main species caught as bycatch in 2002-2003 was estimated to be less than 100.

Information

Patchy observer coverage limits the estimation of seabird mortality. In several fishing areas, observer coverage was below 10%. In 2004-2005 observer coverage in the Cook Strait area of the fishery was only 5.8%.

In October 2004, the "NPOA Officials group…asked the hoki fishery to assess the extent of warp strikes…to improve knowledge of true seabird bycatch." This had not been addressed by the time of recertification.

Conditions

In the original assessment there were no conditions placed on the fishery with regard to seabirds, until the objection was filed by RSFBP. Nonetheless, the objection review panel placed no specific conditions with regard to seabirds on the fishery, and therefore, it is unclear what progress was to be made or what was actually made during the original certification period; the 11 surveillance audits are largely silent on the issue of seabirds.

In the reassessment, several conditions are placed on the fishery with regard to seabirds:

- Carry out a risk analysis to seabirds.
- Design and implement an offal discharge system.
- Develop a vessel auditing system to assure that appropriate offal management is being used.
- Develop a research plan to gain understanding of fluctuations in impacted non-target species, effects of fishing on the ecosystem, and ecosystem management strategies. The research plan should include peer review.

Conclusions

Fishery

The current status of the fishery with regard to seabirds bycatch and mortality is fairly good. The fishery uses trawls, a method that does not inherently carry a high risk, and boats are using mitigation methods, such as bird-scaring lines and bafflers. It is now required that all boats use offal management systems that reduce threats to seabirds, and compliance is monitored by governmental authorities.

The levels of seabird bycatch and mortality have declined in the fishery since the late 1990s and early 2000s, the time of the first assessment. While it is clear that a part of this, probably the majority, is because of use of mitigation methods, a part of the decline also results from a decline in fishing effort; fewer tows kill fewer birds.

Although the number of birds killed is not terribly high and perhaps is sustainable, this fishery is nonetheless an important one to continue to monitor and evaluate, because of the large number of threatened species of birds, especially albatross, that occur in the fishery area and can be caught as bycatch or killed through injuries such as warp strikes.

MSC Process

The original assessment and certification of this fishery were troubled. It is fairly clear that the original assessment should not have recommended certification, as there were many issues that were not clearly sustainable, some relating to seabirds but many others not. This was an early test of MSC certification process.

However, during the original certification period (that is, after the original certification and before the recertification), pressure from RFBPS, WWF New Zealand, Environment and Conservation Organizations of New Zealand, and many other organizations forced the fishery to improve in many ways, including in ways that reduced the effects of the fishery on seabirds. The present status of the fishery owes itself to the work of those organizations.

The reassessment, undertaken in 2005-2007, was much more thorough and considered the effects on seabirds more completely. Commenters from the stakeholder groups, especially WWF New Zealand, made extensive review and comment on the reassessment. Although some of the comments were reflected in the placement of conditions on the fishery, most were not incorporated or were deemed to have been addressed. For example, WWF New Zealand noted that there is no agreement between the DWG and NPOA Officials Group regarding the appropriate limits to seabird bycatch. DWG had stated that they were only willing to commit to a reduction in number of albatrosses returned to deck by 20% over five years. Mainly WWF New Zealand was concerned about the lack of information on interactions with seabirds.

Issues regarding seabirds have continued to be raised during the three surveillance audits completed so far in the recertification period, in January 2009, January 2010, and February 2011. These issues have primarily involved lack of information from research on the fishery, from research on the bird species' populations, and from observers. The lack of information has been a serious gap since the beginning. Although information has been gathered during the decade since the first assessment, lacunae still remain, often making it difficult to say with any assurance that the fishery is not affecting bird populations. There have been repeated calls during the decade to either withdraw certification or to place additional conditions on the fishery with regard to the lack of information. In many of the surveillance audits, no progress seemed to be made, although the most recent audit (February 2011) seems to recognize a significant shift towards obtaining the needed information and in the attitude of the fishers.

What progress that has been made toward resolving the seabird issues in the fishery seem to have come about less from pressure by the MSC through its certification process and more from governmental pressure from the Ministry of Fisheries (MFish) and nongovernmental pressure of organizations such as WWF New Zealand and RFBPS. Pressure from MSC certainly contributed, but without these organizations applying pressure, it appears that little would have changed.

Reviewed: D. A. Wiedenfeld, 19 September 2011

Potentially Medium Risk to Seabirds

NORTH ATLANTIC SWORDFISH CANADIAN PELAGIC LONGLINE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Fair	Good	Good	Medium
3	2	15	13	25	15	2
5/6		68/100				2/3

This fishery uses a high risk gear type, pelagic longline, but fishes in an area without a high number of ETP bird species. The fishery is regulated by Canadian and international agreement. Although pelagic longline and swordfish fisheries have a reputation for having significant seabird bycatch, because of night-setting in this fishery, it appears that the levels of seabird bycatch here are low, and most seabirds caught are non-threatened gulls. This is confirmed with observer data from the Canadian DFO observer program, which has covered on average about 7% of trips over the last ten years. Nevertheless, there remains some uncertainty as to whether the observers are properly trained and distributed. Because of this uncertainty, the fishery should be considered Potentially Medium Risk to Seabirds.

Recommendations

- Deploy increased and better-trained observers in the fishery, targeted specifically to recording seabird interactions and bycatch.
- Obtain better, more statistically reliable data from the observer program.
- If the information from the improved data warrants, develop and implement appropriate measures to avoid seabird bycatch and mortality.

Overview

This fishery uses pelagic longlines to target North Atlantic swordfish *Xiphias gladius*. Fishing is carried out within NAFO areas 3, 4, 5, and 6 as well as outside the NAFO Convention Area, in the ICCAT Northern Swordfish Boundary Area north of 35° North and west of 30° West. About 90% of the swordfish is exported to US. No tonnage of fish landed is given.

The fishery is in assessment. The assessment is being managed by Moody Marine Ltd. for the Nova Scotia Swordfishermen's Association. The assessment team was Steven Devitt and Amanda Park (Moody Marine Ltd.), Robert O'Boyle (Beta Scientific Consulting Inc.), and Jean-Jacques Maguire and Michael Sissenwine (private consultants).

The certification of this fishery was objected to by several conservation NGOs, on the basis of bycatch of other fish (especially sharks) and sea turtles, but not seabirds. It is in the adjudication process.

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Pelagic longline is a high-risk gear type.

The only mitigation methods or use of mitigation methods to avoid seabird captures mentioned in the certification report is night setting.

Species
"[Greater Black-backed] gulls, Greater Shearwaters, gannets, and Herring Gulls have also been reported as being caught in small quantities but neither of these bird species are identified as vulnerable. The Canadian National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries, page 26, on the Atlantic pelagic longline fishery states that 'the number of seabirds taken by this fishery appears to be very low, possibly because the gear is most often set and hauled in low light conditions and baits are heavy enough to sink quickly. Results obtained from questionnaires suggested that there is not a substantial seabird by-catch problem in this fishery'".

"While there are concerns surrounding the catches of seabirds in other longline fleets, the conclusion of a workshop hosted to discuss incidental catch of seabirds waters of Arctic countries was that seabird by-catch is not an issue in the Canadian Atlantic pelagic longline fisheries. This has been confirmed by incidental by-catch analyses of observer data in 2000 and subsequent years. The avoidance of seabird interactions may be explained by the fact that the fleet tends to set the gear in the night, it is possible that seabirds cannot see the bait and therefore do not become hooked."

There are "[v]ery few reports of interactions with birds in the observer data."

There is an International Plan of Action for Seabirds in place covering this fishery.

Information
"Information on by-catch species is available from observers but the quality and reliability of the at-sea observer information is unknown."

Observer coverage has averaged 7.6% of trips over 10 years. Observers are part of the Canadian Department of Fisheries and Oceans observer program.

"A training and certification program, in the proper use of safe handling and release equipment, and data recording protocols is scheduled for March of 2011. Training will be mandatory for vessel operators and at-sea observers."

Conditions

No conditions for certification regarding seabirds were placed on the fishery, although Condition 11, requiring the fishery to develop a research plan to obtain information on ETP species, could potentially include birds. However, Condition 11 seems to be directed more at ETP fish and turtles.

Conclusions

Although this fishery appears to have low levels of seabird bycatch, pelagic longline and swordfish fisheries have a reputation for having significant seabird bycatch. The Canadian Department of Fisheries and Oceans observer data, although obtained from a reasonable 7% coverage, seem to be very reliable for sea turtles, sharks, and sea mammals, but observers are not trained for recording seabird bycatch or interactions, and may not be doing so reliably. Therefore, because of the uncertainty and the fact that pelagic longlines are often very hazardous on seabirds, the fishery should be considered Potentially Medium Risk to Seabirds. Improved information could improve this.

Reviewed: D. A. Wiedenfeld, 28 February 2012

Potentially Medium Risk to Seabirds

NORWAY NORTH EAST ARCTIC HADDOCK FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Fair	Good	Fair	Fair
3	2	18	17	28	10	2
5/6		63/100				2/3

This fishery uses medium and high risk gears, and in some areas of seabird concentration in the Barents Sea. Norwegian regulation and enforcement is good. Vessels in the longline component voluntarily use bird-scaring lines, not to reduce seabird bycatch but to reduce bait loss. Combined with the facts that most fishing is in winter and at night, seabird bycatch is low. However, there remains significant uncertainty, as a result of lack of observer coverage. An important step is that now recording and reporting of seabird bycatch is required by law.

Recommendations

- Obtain qualitative information on seabird interactions and bycatch. This may require placing trained independent observers on board fishing vessels.
- If the data obtained warrant it, implement mitigation methods to reduce seabird bycatch.

Overview

This fishery uses trawl, longline, gillnet, Danish seine, and hook-and-line gears to target haddock (*Melanogrammus aeglefinus*). The fishery comprises both the inshore and offshore haddock fishery; the assessment processes for the two began separately but was later combined. Fishing is carried out in the northeast Artic Ocean within ICES subareas I and II. The fish are sold mainly in Europe. No tonnage of fish landed is given.

The fishery was certified as sustainable in April 2010. The assessment was managed by Moody Marine Ltd. for Norwegian Sea Food Export Council. After the assessment, the annual Surveillance Audits were to be carried out by Det Norske Veritas AS. The assessment team was Andrew Hough and Seran Davies (Moody Marine Ltd.), Stephen Lockwood (private consultant), Alf Håkon Hoel (University of Tromsø), and Graham Pilling (Center for Environment, Fisheries and Aquaculture Science, UK).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

This fishery uses trawl and Danish seine gears, which are medium risk, but also longlines and gillnets, which are high risk, and hook-and-line gears which are low risk. It is not clear what

proportion of fish are taken by each gear type, although it is apparent that trawls capture the greatest tonnage.

"[A]ll vessels within the fleet are indicated to use ['ragged strip' bird scaring lines, or 'kjalkeskrema'] voluntarily to reduce bait loss due to birds."

"Regulations limit the use of autolining in certain seasons (unless pelagic longlining for haddock)."

"Fishing concentrates in the late autumn and winter (October-April, although the period may extend), which reduces the period of overlap with, for example, nesting seabirds."
"Significantly, the predominance of fishing in winter – during darkness – also reduces the bycatch of birds."

"[O]ffal is generally discarded on the opposite side of the vessel to that on which the longline is deployed. These measures are not mandatory and appear to be used variously within the fleet."

Species
"No birds are currently listed as ETP on the red list in Norwegian waters."

"Some self-monitoring of seabird bycatch has occurred in parts of the Norwegian longline fleet, with less than 1 bird per day estimated to be caught (this being a winter, and hence night-time fishery)."

"There is a notional risk of birds being ensnared in the latter stages of hauling [the Danish seine] but such events are likely to be extremely rare but have not be enumerated within this fishery."

"Available information suggests that bird catches are very low in the gillnet fishery and do not include species of high ETP concern."

Information
"Seabird interactions have been recorded through the commissioned vessel scheme."

"Information on seabird interactions is being developed but is not yet available."

In the first annual Surveillance Audit, it was reported that recording of bycatch of seabirds was now required by law in each vessels electronic logbook and reported within 24 hours.

Conditions
Condition 2: "A statistically rigorous monitoring programme should be developed relative to gear type, to allow the extent of interactions to be quantified. Where interactions are found to

be unacceptable the fleet should implement appropriate actions (e.g. formalisation of the use of bird-scaring devices) to minimise interactions or eliminate mortalities of these species."

Conclusions

Vessels in the longline component voluntarily use bird-scaring lines, not to reduce seabird bycatch but to reduce bait loss, and combined with most of the fishing being in winter and at night, seabird bycatch is low. However, this fishery suffers from lack of adequate information, and therefore high uncertainty. This could be alleviated by developing an on-board observer program and possibly also with research into what mitigation methods would be needed and effective, and implementing them.

Reviewed: D. A. Wiedenfeld, 17 February 2012

Potentially Medium Risk to Seabirds

NORWEGIAN NORTH EAST ARCTIC COD FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Good	Good	Poor	Medium
3	2	20	20	30	7	2
5/6		77/100				2/3

The fishery uses five gear types, including two high-risk types, longline and gillnet. The ETP bird species and concentration sites in the fishery are not highly significant. Mitigation methods are known and used, and there is an apparently low level of actual bycatch. However, on-board observation is inadequate, and therefore the level of uncertainty is high.

Recommendations

- Make sure the conditions placed in the certification are followed through: obtain specific information on seabird bycatch.
- Develop an on-board observer program.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery was originally assessed as two fisheries, the offshore (beyond the 12 nm limit) and the inshore fishery (within the 12 nm limit). The two were combined after assessments for both had been completed. This fishery uses five gear types: trawl, longline, gillnet, Danish seine and hook & line, targeting Atlantic cod, *Gadus morhua* in the Barents Sea and Norwegian Sea, ICES Sub-areas I and II within and outside the 12 nm limit, all within FAO Region 27. The certified fishery consists of many vessels, from 10 to 50 m in length. Europe is the predominant market for the fish. The fishery was certified as sustainable in April 2010.

The assessment was managed by Moody Marine Ltd. for the Norwegian Fishing Vessel Owners Association and Norwegian Seafood Export Council. The specialist assessment team was Andrew Hough and Seran Davies (Moody Marine Ltd.); Stephen Lockwood (independent marine environment consultant); Graham Pilling (Centre for Environment, Fisheries and Aquaculture Science, UK); and Alf Håkon Hoel (University of Tromsø).

The gear type is high risk, and presence of ETP species and bird concentrations presents a moderate risk, indicating an overall high risk to seabirds for this category. The risk-reduction scores are: Regulation (20), Mitigation (20), Actual Bycatch (30), and Observation (7), for a total risk score of 77, a high level of reduction. Uncertainty is moderate, although could be improved with better observation. Combining these three factors indicates the fishery has an overall High Risk to Seabirds.

All text in quotation marks is from the certification report.

Gear and Set
Of the five gear types—trawl, longline, gillnet, Danish seine and hook & line—longline and gillnet can pose high risk to seabirds.

"All of the auto-longliners fly plastic 'ragged strip' bird scarers when fishing ['kjalkeskrema']." "The use of this line is not mandatory, but vessels apparently use this device voluntarily, as it reduces the high levels of bait loss."

"Additional methods to reduce bird bycatch have been examined (e.g. the use of special Mustad self-weighed lines that increase their rate of sinking, use of tubes on deployment) and offal is generally discarded on the opposite side of the vessel to that on which the longline is deployed. These measures are not mandatory and appear to be used variously within the fleet. Significantly, the predominance of fishing in winter – during darkness – also reduces the bycatch of birds." IMR (Institute of Marine Research, Norway) research has shown the combination of bird-scaring lines and night setting to reduce bycatch to very low levels, < 1 bird per 58,420 hooks.

"At certain times, and in certain areas, there can be relatively large bycatches of diving seabirds in gill nets, although whether this is within the gill net fishery under certification is unclear." However, it appears that gillnet bycatch occurs primarily in shallow inshore waters, where this fishery is not permitted. (The offshore cod fishery is restricted to > 12 nm offshore.)

Species
None of the species regularly encountered in this fishery are on the Red List. (Steller's Eider, VU, is usually inshore where this fishery is not permitted.) All of the species are considered as iconic species. These include Black-legged Kittiwake (LC), Lesser Black-backed Gull (LC), Common Guillemot (LC), and Atlantic Puffin (LC).

The Institute of Nature Research (NINA) has investigated the fishery and suggests that bird catches are very low in the gillnet fishery and do not include ETP species.

Information
"Main weaknesses identified during the assessment were the impacts to retained non-target species, a lack of gear specific data relating to the interactions of Endangered, Threatened and Protected (ETP) species."

There are few or no on-board observers even on the larger vessels, although all vessels are required to retain everything caught, including all bycatch that will be retained or non-retained, and a log of all bycatch must also be kept. A high proportion of catch is reviewed upon landing.

Although use of observers is mentioned in the report, observer coverage is clearly not adequate.

Management System
There is a fishery management plan for the Barents Sea. Norway regulates the fishery through several mechanisms.

Conditions
Following the assessment, only one condition relating to seabirds was applied to the fishery:

"Condition 2: ETP Species. The team discovered a lack of gear specific information relating to the interactions of ETP species within the fishery. This condition requests the development of a statistically rigorous monitoring programme relative to gear type. Appropriate measures should be designed and implemented where interactions are found to be unacceptable (within the time frame stated)."

See section below for results after the first surveillance audit.

Surveillance Audits
Because the fishery was certified in 2010, only one surveillance audit as been held; the report was issued on 29 June 2011 by Det Norske Veritas Certification AS.

During the first year (between certification and the first surveillance audit) a system of recording all bycatches of seabirds electronically was put into place. The bycatch must be reported within 24 hours. In addition, IMR observers on board the reference fleet ("a representative variety of 13 offshore and 21 inshore vessels; these vessels provide regular biological sampling data") have also begun recording seabird bycatch. The fishery was considered to be on-schedule in meeting the obligations of Condition 2.

Conclusions
The fishery does not appear to be causing significant seabird mortality. The fishers are using mitigation methods that are appropriate where needed, and naturally fish in areas without high numbers of ETP species.

There is, however, a significant issue with this fishery, and that is lack of specific information from the fishery on bycatch. There are few or no observers placed on board, and all reporting of bycatch is by the fishers themselves. This would be worrisome, especially if the fishery were using high-risk gears without mitigation and fishing in areas where there is greater risk to birds. The condition placed on the fishery, to obtain data for specific gear and from the fishery itself, is a good start. It appears that the fishers are amenable to the idea, and by the first surveillance audit had made plans to obtain the information.

However, the low level of on-board observers will still result in uncertainty of the results. Because of this weakness, this fishery should be carefully evaluated and watched by outside parties to assure that the fishery does obtain reliable information on bycatch. Once the information on what birds are being caught, how many, and by which gears, is available and analyzed, it will be necessary to assure that the fishery responds to the information appropriately. This should be taken care of by the process of management and oversight of the fishery, but it should also be considered in future surveillance audits.

Reviewed: D. A. Wiedenfeld, 30 August 2011

Potentially Medium
Risk to Seabirds

NORWEGIAN SAITHE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Good	Fair	Medium
2	2	18	1	28	10	2
4/6		57/100				2/3

Although this fishery does use one high-risk gear type, gillnet, only 4% of the fish landed are caught using that gear. The large majority of fish are caught using trawls, purse seines, or handlines (combined, 96% of fish), which are medium-risk or low-risk gears. However, the certification report presents little information to indicate that seabird bycatch is actually low. Although information from other fisheries in the area and data now being collected for the fishery as a result of the condition of certification placed on it both indicate that seabird bycatch is probably very low, the issue should be addressed directly in the report.

Recommendations

- As required in Condition 2 of the certification, clarify what issues there might be regarding seabird bycatch. This will require addressing seabird bycatch with information from independent on-board observers.
- Determine what mitigation methods may be required to reduce any seabird bycatch that is discovered.

Overview

This fishery uses demersal trawl (85%), purse seine (9%), gillnet (4%), and 2% from handlines to target North Sea saithe *Pollachius virens*. Fishing is carried out in the North Sea in ICES area IV. The fish are exported worldwide, with major markets in the Caribbean and South America, but also in Europe. No tonnage of fish landed is given.

The fishery was certified as sustainable on 14 June 2008. The assessment was managed by Moody Marine Ltd. for Norwegian Seafood Industry. The assessment team was Andrew Hough (Moody Marine Ltd.), David Agnew (MRAG Ltd.), Alf Håkon Hoel (University of Tromsø), and Graham Pilling (Centre for Environment, Fisheries and Aquaculture Science, UK).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

The fishery primarily uses demersal trawl (85% of tonnage landed), purse seine (9%), gillnet (4%), and 2% from handlines. Demersal trawl and purse seine are medium-risk gear types for seabirds, gillnet is a high-risk gear type, and handline is a low-risk gear type.

"The Government will also take steps to reduce bycatches of seabirds through the development and adaptation of suitable gear. In this context, the Government will consider making it mandatory to implement measures that have proved effective in reducing bycatches (such as the "kjalkeskrema" bird-scaring device) which have proved effective in reducing bird bycatch in the longline fishery."

The gill net fishery is most intense during winter, when birds are not breeding.

Species

"Information on bird bycatch within fisheries is incomplete, however. Scattered information about bycatches of various species is available, for example, from longline fisheries and some gill-net fisheries. At certain times, and in certain areas, there can be relatively large bycatches of diving seabirds in gill nets, although whether this is within the saithe gill net fishery is unclear."

"[S]everal observer programmes do operate in the North Sea with other, comparable fleets and issues associated with various gear types (including trawls) have been considered. Interactions of seabirds are reported as being very rare in trawls, with occasional birds being caught in nets."

"Direct interactions of seabirds and purse seines is not expected to represent any significant impact on populations."

"Interactions of seabirds are reported as being very rare in trawls (presumably including Danish seines), with very occasional birds being caught in nets."

"Available information suggests that bird catches are very low in the gillnet fishery and do not include species of high PET concern."

"Reports of seabird interactions with gear do not identify gill nets as having significant interaction with PET seabirds."

"The saithe fishery, however, has a low priority in this [monitoring] programme as catches are invariably clean saithe catches with very low by-catch of other species – fish, birds or marine mammals."

Information

"Seabird interactions have been recorded through the commissioned vessel scheme and have been considered under the BSMP [Barents Sea Management Plan]. Seabird interactions have

been investigated by the Institute of Nature Research (NINA) as to the significance of such interactions on seabird populations."

"Nevertheless, IMR [Institute for Marine Research, Norway] has agreed with NINA [Norwegian Polar Research Institute] to add birds to the list of species recorded by observers embarked on reference-fleet vessels."

Conditions

Condition 2: "Sampling programmes should be initiated to provide statistically robust estimates of the by-catch of all species…. Information should be sufficient to allow an assessment of the impacts of by-catches in relation to the distribution, ecology and abundance of the species and populations affected (commercial and non-commercial fish, mammals and birds)."

"The potential impact of non-target species removals on the populations affected and the wider ecosystem should be evaluated."

"Where assessments of impacts on by-catches are shown to be significant, and for all species identified as PET, appropriate measures to reduce by-catches to acceptable and precautionary levels shall be developed and implemented."

"[T]hese [mitigation methods] should be identified within 3 years of certification and fully implemented within 5 years of certification."

Conclusions

The Public Certification Report for this fishery gives no specifics on species, number of seabird interactions or amount of bycatch, or mitigation methods. Although information from other fisheries in the area, and now information being collected as a result of the condition of certification placed on the fishery indicates that seabird bycatch is probably very low, the issue should have been addressed directly in the certification report.

Reviewed: D. A. Wiedenfeld, 27 February 2012

Potentially Medium Risk to Seabirds

OCI GRAND BANK YELLOWTAIL FLOUNDER TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Low	Good	Poor	Fair	Good	Medium
2	1	18	1	18	16	2
3/6		53/100				2/3

This fishery exclusively uses demersal trawls, which are not high risk to seabirds. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on its failure to report on seabird bycatch. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. Observers are placed on 25% of boats, a very adequate number, although it is not clear if they record any information on seabird bycatch. Based on other, similar fisheries, the bycatch is probably actually very low; however, this is unclear. This fishery could be improved greatly by obtaining and presenting more information on seabird bycatch.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses demersal otter trawl to target yellowtail flounder *Limanda ferruginea*. Fishing is carried out on the Grand Bank, North Atlantic Fisheries Organization Areas 3L, 3N, and 3O. The market for the fresh or frozen fish is North America, with a small amount going to Japan. In 2009 this fishery held a quota of 13,729 mt.

The fishery was certified as sustainable on 28 October 2010. The assessment was managed by Moody Marine Ltd. for Ocean Choice International L.P. The assessment team was Paul Knapman (Moody Marine Ltd.), and Don Aldous, Bruce Atkinson, Rob Blyth Skyrme, and John Angel (all private consultants).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Demersal otter trawl is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
"There is no indication that the yellowtail flounder fishery poses a significant threat to SARA [Species At Risk Act (Canada)] listed seabird or cetacean species."

Information
The report does not have any information specifically on seabird bycatch.

"The fishery is well monitored with a minimum 25% observer coverage."

Conditions
No conditions for certification regarding seabirds were placed on the fishery.

Conclusions
This certification presents almost no information on bycatch of seabirds. Seabird bycatch for this fishery is not mentioned in the reports nor in the literature cited.

Observers are placed on 25% of boats, which is adequate coverage, and although it is not clear that they record seabird interactions, the lack of information from the observers probably indicates that seabird bycatch probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 21 February 2012

Potentially Medium Risk to Seabirds

PACIFIC HAKE (*MERLUCCIUS PRODUCTUS*) MID-WATER TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Poor	Good	Fair	Medium
2	3	19	1	30	12	2
5/6		62/100				2/3

This fishery uses a medium-risk gear in an area with potentially large numbers of ETP seabirds and concentrations of seabirds. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to Uncertainty. The Public Certification Report has almost no mention of any seabird bycatch, nor does it mention any mitigation methods. Observers are placed on 10% of boats; however, it is not clear if they record any information on seabird bycatch. Based on other, similar fisheries, the bycatch is probably actually very low; however, this is unclear. This fishery could be improved greatly by obtaining and presenting more information on seabird bycatch.

Recommendations

- Obtain information directly on seabird bycatch from this specific fishery. This may be achieved by requiring on-board observers already in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses midwater trawls to target Pacific hake *Merluccius productus*. Fishing is carried out in the US EEZ off Washington, Oregon, and California, and Canadian EEZ waters off British Columbia. Pacific hake is used in making surimi and in the frozen fillet and block market. The 2009 TAC was 48,061 mt in the Canadian portion of the fishery and 135,939 mt in the US portion, for a total of 184,000 mt.

The fishery was certified as sustainable on 21 October 2009. The assessment was managed by TAVEL Certification Inc. for the Pacific Whiting Conservation Cooperative, Association of Pacific Hake Fishermen, and Oregon Trawl Commission. The assessment team was Steven Devitt, (TAVEL Certification Inc.), Max Stocker (Stocker and Associates), Jeremy Collie (University of Rhode Island), and Mark Pedersen (Margenex International).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Midwater is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
The fishery is covered by a Fishery Management Plan.

"The assessment team did not find any significant sources of unobserved fishing mortality."

"Seabird interaction has been shown to occur infrequently and not considered a significant source of mortality (WA Seagrant, Ed Melvin)."

"Groundfish trawl fisheries are thought to have minimal interactions with marine birds, even though they are seen feeding on offal."

Information
"The Pacific hake fishery is classified as a category III fishery and impacts are considered low…Reporting of mortality or injury of marine birds is voluntary for category III fisheries."

"Catcher processors and motherships are required to carry one or two observers (depending upon vessel length) at all times. The shoreside fleet continues to experiment with electronic monitoring and also carries at-sea observers as per the groundfish FMP requirements (10 - 20% of catch)." It is not clear that observers record any information on seabird interactions or bycatch.

"The new management measures for the Pacific hake fleet include the requirement for 10% at- sea observer coverage. For any hake fishing north of the 49th parallel or by headed-gutted freezer vessels, 100% at-sea observer coverage is required."

"Observer coverage in the shoreside fishery is low, around 10%. The directed shoreside hake fishery is currently required to carry video cameras that observe catch handling."

The second Annual Surveillance Audit (2011) reports: "The At-Sea Hake Observer Program places fisheries observers on all vessels that process Pacific hake at sea. Processing vessels over 125 feet are required to have full observer coverage for all fishing days. Each vessel carries two observers so that data collection can take place 24 hours a day. Processing vessels 125 feet, or less, are required to have one observer on board for all fishing days. Observers record haul information, determine the official total catch, sample hauls for species composition, collect length and age structure data, complete projects related to salmon, and record marine mammal and sea bird sighting and interaction data. Currently approximately 15 vessels participate in this fishery, which takes place from May through November."

Conditions

Condition 5 requires more information: “A report must be provided with qualitative estimates of the frequency of bottom contact, and interactions with seabirds and mammals.”

Conclusions

This certification operates in with a serious lack of information of bycatch on seabirds from the fishery itself. Seabird bycatch for this fishery is scarcely mentioned in the reports and in the literature cited, and quickly dismissed with little consideration.

Seabird bycatch may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 24 February 2012

Potentially Medium Risk to Seabirds

SCOTTISH PELAGIC SUSTAINABILITY GROUP LTD. ATLANTO-SCANDIAN HERRING (*CLUPEA HARENGUS*) FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	1	3
4/6		38/100				3/3

This fishery uses gear that is medium risk to seabirds, midwater trawl, and does not fish in an area with many ETP seabirds or concentrations of birds. However, the fishery operates in an almost complete lack of information on its interactions and impact on seabirds. Seabirds are barely mentioned in the report. Although anecdotal information and information from other similar fisheries in the North Sea suggest that the fishery probably has low impact on seabirds, because of the lack of information from this fishery specifically, and / or the failure of the assessment team to present any information on seabird interactions, there is a high level of Uncertainty, leading to the fishery's classification as Potentially Medium Risk to Seabirds. Improved information could improve the classification to low risk.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses midwater trawl to target herring *Clupea harengus*. Fishing is carried out in ICES areas I, IIa, IIb, V, and XIV. The market for the fish is 25% to the domestic market and 75% exported. In 2009 the SPSG had a TAC of 24,046 mt.

The fishery was certified as sustainable on 9 March 2010. The assessment was managed by Food Certification International for the Scottish Pelagic Sustainability Group Ltd. The assessment team was Crick Carleton and Martin Gill (Food Certification International), and Paul Medley and Tristan Southall (private consultants).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Midwater trawl is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
There is almost no mention of any bird in the report.

Information
Report does not have any information specifically on seabird bycatch.

From the second Annual Surveillance Audit: "The most recent observer coverage program for this fishery was conducted during the 2010 fishing season based on protocols between Marine Scotland Science and SPSG Ltd (with similar alignment to Mackerel and herring monitoring under EU regulation 812/2004). The outcome of this program was to report the fishery as clean with little to no by-catch, slippage, or ETP interactions. Moving forward, a low risk status was applied to this fishery based on a Marine Scotland Science rating. Due to the need to prioritize resource allocations, the decision was made that observer resources would be better deployed on other fisheries considered to be at higher risk. Consequently, no independent observer program for the SPSG fleet is in place. Nonetheless, the Norwegian component of this fishery continues to operate regular observation of their fleet operating in a similar areas and similar fishing operations. No untoward issues have being reported to the coast guards or coastal states at-sea inspectors."

Conditions
No conditions for certification regarding seabirds were placed on the fishery, but one recommendations was made.

"It would be beneficial to future assessments, if observer reports are provided for the Atlanto- Scandian fishery, giving quantitative corroboration of issues such as ETP species interactions and slippage. This is no more than would be expected for a fishery of this scale and would further enhance the sustainability credentials of the fishery. SPSG could liaise with Scottish research bodies, to facilitate further involvement in future observer programs or to collaborate in any relevant research, which may require observers. **Inherent in this recommendation is the understanding that SPSG vessel must always accept reasonable requests to place observers on board vessels**. [emphasis in original]"

Conclusions
This fishery operates in an almost complete lack of information on its interactions and impact on seabirds. Seabirds are barely mentioned in the report. Anecdotal information and information from other similar fisheries in the North Sea suggest that the fishery probably has low impact on seabirds. However, because of the lack of information from this fishery

specifically, and / or the failure of the assessment team to present any information on seabird interactions, there is a high level of Uncertainty. The assessment did recommend that the fishery adopt the information-recording procedures adopted by the SPSG North Sea herring fishery as a result of its earlier MSC certification, which the Atlanto-Scandian herring fishery apparently is doing. However, this should have been made a condition of certification rather than a recommendation. In addition, enough uncertainty exists because of the lack of information on seabird interactions in the certification report that the fishery should not have been certified without clarifying the seabird issue. If relevant seabird bycatch and mortality information existed at the time of the report, it should have been included.

However, because the fishery in reality probably does not have significant seabird issues, improved information could improve the classification of the fishery to low risk simply by providing information on the seabird interactions.

Reviewed: D. A. Wiedenfeld, 28 February 2012

Potentially Medium Risk to Seabirds

SCOTTISH PELAGIC SUSTAINABILITY GROUP LTD. NORTH SEA HERRING (*CLUPEA HARENGUS*) FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	1	3
4/6		38/100				3/3

This fishery uses gear that is medium risk to seabirds, midwater trawl, and does not fish in an area with many ETP seabirds or concentrations of birds. However, the fishery operates in an almost complete lack of information on its interactions and impact on seabirds. Seabirds are barely mentioned in the report. Although anecdotal information and information from other similar fisheries in the North Sea suggest that the fishery probably has low impact on seabirds, because of the lack of information from this fishery specifically, and / or the failure of the assessment team to present any information on seabird interactions, there is a high level of Uncertainty, leading to the fishery's classification as Potentially Medium Risk to Seabirds. Improved information could improve the classification to low risk.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses midwater trawl to target North Sea herring *Clupea harengus*. Fishing is carried out in the central and northern North Sea. The primary market for the fish is Eastern Europe, Russia, former Soviet republics, and West Africa. No tonnage of fish landed is given.

The fishery was certified as sustainable on 9 July 2008. The assessment was managed by Food Certification International for the Scottish Pelagic Sustainability Group Ltd. The assessment team was Crick Carleton and Martin Gill (Food Certification International), and Paul Medley and Tristan Southall (private consultants).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Midwater trawl is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
"[T]here was no mention of seabird mortality associated with this fishery, and we have found no reference to this in the available literature; on this basis we have assessed this issue as of minor significance."

Information
Report does not have any information specifically on seabird bycatch.

By the third Annual Surveillance Audit (5 August 2011), the fishery had responded to the recommendations by placing a manual on board SPSG vessels. "This Operating manual provides SPSG fishers with information and photos for identifying ETP species, and recording instances of interaction with ETP species. Data sheets provided by SPSG on interaction with ETP species indicate 6 Orca whales were seen during August fishing; however there were no interactions, injury or mortalities with the fishing operation. Discussion with Marine Scotland Science at-sea-observer corroborates that no ETP species interactions were observed during their sessions at sea."

Conditions
No conditions for certification were placed on the fishery, but two recommendations were made.

Recommendation 1: "Record all vessel interactions with any seabirds and marine mammals. Contact should be made with SMRU [Sea Mammal Research Unit] to find out how such information may be recorded and what other help might be provided."

Recommendation 2: "SPSG should formally place on record current vessel operating guidelines in the form of a Vessel Operating Manual to incorporate …the recording of any interaction with Protected, Endangered or Threatened species."

See also the section on "Information," above, for the response to these recommendations.

Conclusions
This fishery operates in an almost complete lack of information on its interactions and impact on seabirds. Seabirds are barely mentioned in the report. Anecdotal information and information from other similar fisheries in the North Sea suggest that the fishery probably has low impact on seabirds. However, because of the lack of information from this fishery specifically, and / or the failure of the assessment team to present any information on seabird interactions, there is a high level of Uncertainty. The assessment did recommend that the fishery begin collecting information on ETP species interactions, and by the third Annual

Surveillance Audit, it appears that the fishery has begun doing so. However, this should have been made a condition of certification rather than a recommendation. In addition, enough uncertainty exists because of the lack of information on seabird interactions in the certification report that the fishery should not have been certified without clarifying the seabird issue. If relevant seabird bycatch and mortality information existed at the time of the report, it should have been included.

However, because the fishery in reality probably does not have significant seabird issues, improved information could improve the classification of the fishery to low risk simply by providing information on the seabird interactions.

Reviewed: D. A. Wiedenfeld, 27 February 2012

Potentially Medium Risk to Seabirds

SCOTTISH PELAGIC SUSTAINABILITY GROUP LTD. WESTERN MACKEREL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Fair	Poor	High
2	2	18	1	18	1	3
4/6		38/100				3/3

This fishery uses gear that is medium risk to seabirds, midwater trawl, and does not fish in an area with many ETP seabirds or concentrations of birds. However, the fishery operates in an almost complete lack of information on its interactions and impact on seabirds. Seabirds are barely mentioned in the report. Although anecdotal information and information from other similar fisheries in the north Atlantic and North Sea suggest that the fishery probably has low impact on seabirds, because of the lack of information from this fishery specifically, and / or the failure of the assessment team to present any information on seabird interactions, there is a high level of Uncertainty, leading to the fishery's classification as Potentially Medium Risk to Seabirds. Improved information could improve the classification to low risk.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses midwater trawl to target mackerel *Scomber scombrus*. Fishing is carried out in ICES areas VI, VII, and IVa. The market for the fish is mainly to Japan, Eastern Europe, and sub-Saharan Africa. In 2009 the fishery landed 140,000 mt.

The fishery was certified as sustainable on 21 January 2009. The assessment was managed by Food Certification International for the Scottish Pelagic Sustainability Group Ltd. The assessment team was Crick Carleton and Martin Gill (Food Certification International), and Paul Medley and Tristan Southall (private consultants).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Midwater trawl is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
There is almost no mention of any bird in the report.

Information
Report does not have any information specifically on seabird bycatch.

From the third Annual Surveillance Audit (15 February 2012): "The SPSG has drawn up and issued to all skippers a protocol to reduce all interactions with ETP species, and the recording of interaction with ETP species – sightings and/or capture. Forms are being regularly completed by SPSG skippers."

Conditions
No conditions for certification were placed on the fishery regarding seabirds, but two recommendations were made.

Recommendation: "[R]ecord all vessel interactions with any seabirds and marine mammals. Contact should be made with SMRU [Sea Mammal Research Unit] to find out how such information may be recorded and what other help might be provided."

Recommendation: "SPSG should formally place on record current vessel operating guidelines in the form of a Vessel Operating Manual to incorporate …the recording of any interaction with Protected, Endangered or Threatened species."

See also the section on "Information," above, for the response to these recommendations.

Conclusions
This fishery operates in an almost complete lack of information on its interactions and impact on seabirds. Seabirds are barely mentioned in the report. Anecdotal information and information from other similar fisheries in the North Sea suggest that the fishery probably has low impact on seabirds. However, because of the lack of information from this fishery specifically, and / or the failure of the assessment team to present any information on seabird interactions, there is a high level of Uncertainty. The assessment did recommend that the fishery begin collecting information on ETP species interactions, and by the third Annual Surveillance Audit, it appears that the fishery has begun doing so. However, this should have been made a condition of certification rather than a recommendation. In addition, enough uncertainty exists because of the lack of information on seabird interactions in the certification report that the fishery should not have been certified without clarifying the seabird issue. If relevant seabird bycatch and mortality information existed at the time of the report, it should have been included.

However, because the fishery in reality probably does not have significant seabird issues, improved information could improve the classification of the fishery to low risk simply by providing information on the seabird interactions.

Reviewed: D. A. Wiedenfeld, 28 February 2012

Potentially Medium Risk to Seabirds

SOUTHERN BRITTANY PURSE SEINE SARDINE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	Medium	Good	Poor	Good	Poor	High
2	2	18	1	28	1	3
4/6		48/100				3/3

This fishery exclusively uses purse seines, which are not high risk to seabirds. It is a European-regulated fishery, with good regulation and enforcement. The fishery was ranked as Potentially Medium Risk to Seabirds based almost entirely on lack of information, which leads to high Uncertainty. The Public Certification Report has no mention of any seabird bycatch, either that it exists or does not exist, nor does it mention any mitigation methods. There are no on-board observers nor research studies of bycatch. Based on other, similar fisheries, the bycatch is probably actually very low; however, this is unclear. This fishery could be improved greatly by obtaining and presenting more information on seabird bycatch.

Recommendations

- Obtain information on seabird bycatch. This may be achieved by requiring on-board observers in place to record information on seabird interactions, or because the vessels are small and may not accommodate observers well, research studies to determine the levels of seabird bycatch.
- Using that information, make any changes to the fishery that would be needed to reduce seabird bycatch.

Overview

This fishery uses purse seine to target sardines *Sardina pilchardus*. Fishing is carried out in the Bay of Biscay out to 12 nm in ICES subareas VIIa and VIIe, south of 48°30' and north of the Bretagne and Pays de Loire border, using vessels < 17 m length. The fish are sold fresh, frozen, and canned. In 2009 the catch was estimated at 20,000 mt.

The fishery was certified as sustainable in August 2010. The assessment was managed by Bureau Veritas Certification for the Association des Bolincheurs de Bretagne. The assessment team was Xavière Lagadec (Bureau Veritas Certification), Sophie Des Clers (private consultant), Didier Gascuel (Agrocampus Ouest fishing center), and Marie Lesueur and Olivier Le Pape (Agrocampus Rennes).

Gear and Set

Purse seine is a medium-risk gear type.

No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species
ETP "[b]irds are not concerned."

There is a list of species in French that occur at Iroise Marine Park within the fishing area.

Information
The report does not have any information specifically on seabird bycatch.

There is no on-board observer program, as the vessels are mostly small, although as a condition of certification the fishery will begin monitoring and surveying fishery vessels for bycatch.

Conditions
Condition 3 requires greater information on bycatch. It is not clear that this is directed towards birds, although it could include birds.

Conclusions
This certification operates in an almost complete lack of information of bycatch on seabirds. Seabird bycatch for this fishery is almost not mentioned in the reports nor in the literature cited except in a four-word sentence saying "birds are not concerned."

Seabird bycatch or mortality may be, probably is, very low in this fishery. However, it is probably not zero. The certification of the fishery was given without addressing the issue, not even to demonstrate that it is very low. Information needs to be provided to allow reviewers to determine if seabird bycatch is an issue, or not.

Reviewed: D. A. Wiedenfeld, 24 February 2012

Potentially Medium
Risk to Seabirds

US PACIFIC HALIBUT FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Good	Fair	Fair	Medium
3	3	18	18	20	14	2
6/6		70/100				2/3

This fisher operates with a high-risk gear type, demersal longline, in an area with significant populations of ETP seabirds and concentrations of seabirds. Although the fishing vessels use bird bycatch avoidance measures, the fishery has been operating with low levels of observer coverage and it is not clear what the levels of bycatch are. This leads to significant Uncertainty. Although anecdotal information and information from other fisheries suggests that this fishery probably does not have significant seabird bycatch issues, obtaining more information, as required in the conditions of certification, is imperative.

Recommendations

- Obtain reliable observer information on seabird bycatch through the NMFS Groundfish Observer Program, as required in the conditions of certification.
- Evaluate the possibility of using additional seabird bycatch avoidance measures, such as offal management, night setting, or area closures to further reduce bycatch.
- Implement any other mitigation methods indicated to be warranted by the improved observer information.

Overview

This fishery uses demersal longlines to target halibut *Hippoglosus stenolepis*. Fishing is carried out in the US waters off the coasts of Washington and in Alaska in the Bering Sea and Gulf of Alaska. The market for the fish is in North America with a small amount exported to Europe. The fishery lands about 24,000 mt per year.

The fishery was originally certified as sustainable in April 2006 and was reassessed and re-certified on 10 August 2011. The reassessment was managed by Scientific Certification Systems for the Fishing Vessels Owners Association. The reassessment team was Sabine Daume (Scientific Certification Systems), Steve Martell (University of British Columbia), Tim Essington (University of Washington), and Jon Sutinen (private consultant).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Demersal longline is a high-risk gear type.

"To minimize the take of seabirds, the use of seabird avoidance devices (tori lines) are required by hook-and-line fishing vessels in areas where seabird interactions occur. According to the client (FVOA [Fishing Vessels Owners Association]), tori lines are the only effective way to minimize seabird entanglement by hook-and-line fishing vessels. These measures have resulted in a significant decrease in seabird bycatch in recent years."

"Since 2001 vessels larger than 55' are required to use seabird avoidance devices (tori lines) to minimize the probability of seabird entanglements. These have been demonstrated to be highly effective … at reducing the probability of albatross takes and there is a high degree of compliance."

Species

This fishery is covered by the National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries.

Very few birds at all are caught, mostly gulls and Northern Fulmars. ETP species potentially caught are Black-footed Albatross (EN), Short-tailed Albatross (VU), and Laysan Albatross (NT). Only two Short-tailed Albatross have been killed by the longline fisheries in the eastern Bering Sea since 1998, and these were not killed by halibut fishery. The other species of albatross are not likely to be affected by this fishery.

"2006 (the last year on record) had higher number of seabirds taken in the Gulf of Alaska (815 estimated, 95% CI 531 – 1252), doubling the number from the previous year (424 estimated, 95% CI 314-573). Much of this increase was due to bycatch of gulls."

"[H]alibut fishing by small vessels in Alaska inshore waters are not expected to have significant seabird mortalities because of the rarity of vulnerable seabirds (albatrosses) in those areas."

Information

"For seabirds, there is little data upon which to estimate total takes in halibut fishing (Fitzgerald et al. 2008), although the adoption of seabird avoidance devices and their demonstrated effectiveness at reducing seabird takes in similar longline operations, provides some confidence that current impacts are minimized." However, a decision in October 2010 was made for this fishery to be covered under the Groundfish Observer Program run by the National Marine Fisheries Service, which should provide information to fill the gaps, although full implementation of the program on halibut boats will not be complete until 2013. At that time there will be 100% coverage of larger boats (mostly greater than 30 m) and 30% observer coverage of smaller boats.

Conditions

In the original assessment, conditions for certification were placed on the fishery, to improve observer coverage and reporting of bycatch, and to "develop strategies for managing ecological impacts of the fishery particularly in regard to seabird mortality…Steps toward closing these conditions were made throughout the certification. Milestones included implementing 'snap-on' gear and tori lines to mitigate seabird mortality as well as implementing a trial Video Monitoring System (VMS) to capture the actual bycatch rates… Progress toward conditions was deemed sufficient, although admittedly slow.

In the reassessment five conditions were placed on the fishery. These are all related and overlapping, some having to do with all bycatch species and some directed at ETP bycatch species, but relate to improving bycatch data collection and implementing any responses deemed to be warranted by those data:

Condition 2.2.1: "The fishery shall provide scientifically defensible and comprehensive evidence to the CB [certification body] that all the main bycatch species are highly likely to be within biologically based limits by the third surveillance audit [2014]."

Condition 2.2.3: "Information shall be collected and provided to the CB [certification body] by the third surveillance audit [2014], to support a partial strategy to manage main bycatch species and sufficient data shall continue to be collected to detect any increase in risk to main bycatch species throughout the certification period."

Condition 2.3.1: "The fishery shall provide evidence to the CB [certification body] that the effects of the fishery are highly likely within limits of national and international requirements for the protection of ETP species. This evidence should be provided by the third surveillance audit [2014]."

Condition 2.3.2: "By the third surveillance audit [2014] the fishery shall show that the strategy to manage impacts on ETP species is working, with an objective basis for confidence."

Condition 2.3.3: "The fishery shall have sufficient data to allow fishery related mortality and the impact of fishing to be quantitatively estimated in a scientifically defensible manner for ETP species and provide these estimates to the CB [certification body] by the third surveillance audit [2014]."

Conclusions

The fishery was originally certified as sustainable in 2006, but at that time conditions for certification were placed on the fishery requiring it to improve its monitoring and observer coverage and to implement some seabird bycatch avoidance measures. During the first certification period, the Annual Surveillance audits indicated progress towards those goals, and indeed seabird bycatch was reduced.

However, in the reassessment it was again noted that although the bycatch avoidance measures were in place, information was still lacking as to the actual levels of seabird bycatch in this fishery. As a consequence, conditions for certification were again given to the fishery, to overcome this deficit of information. The fishery was included in the NMFS Groundfish Observer Program, and beginning in 2011 should be receiving greater observer coverage, with full implementation in the program by 2013. This should help to fill the information gaps.

The MSC certification process did apparently improve the fishery and reduce its seabird bycatch. However, because of the lack of information, it is not clear that the fishery should have been certified as sustainable with regard to seabirds in 2006. By 2014 the information should be available to assure that the fishery meets the certification requirements, but that is eight years after the fishery was actually certified.

Although this fishery may have been MSC certifiable in 2006 and 2011, a lack of information should not be assumed to be positive information, and if information is required, it should be obtained before certification is granted and not eight years after.

Reviewed: D. A. Wiedenfeld, 29 February 2012

Potentially Medium
Risk to Seabirds

US PACIFIC SABLEFISH FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Good	Fair	Good	Medium
3	3	18	18	25	15	2
6/6		75/100				2/3

This fishery operates with a high-risk gear type, demersal longline, in an area with significant populations of ETP seabirds and concentrations of seabirds. The fishing vessels use bird bycatch avoidance measures. The fishery has been operating with low levels of observer coverage, levels which may not be adequate. The levels of coverage are planned to be increased by 2013. Although this fishery probably does not have significant seabird bycatch issues, obtaining more information is necessary to assure that bycatch levels remain low and to alleviate problems that arise.

Recommendations

- Improve the levels of observer information on seabird bycatch through the NMFS Groundfish Observer Program, as is already planned.
- Evaluate the possibility of using additional seabird bycatch avoidance measures, such as offal management, night setting, or area closures to further reduce bycatch.
- Implement any other mitigation methods indicated to be warranted by the improved observer information.
- Obtain vessel-specific information on seabird bycatch to identify which vessels are causing the greatest problems, and implement on those vessels mitigation methods to reduce their bycatch.

Overview

This fishery uses demersal longlines to target sablefish *Anoplopoma fimbria*. Fishing is carried out in the US waters in the Bering Sea and Gulf of Alaska. The market for the fish is in Japan with smaller amounts to North America. The fishery lands about 18,100 mt per year.

The fishery was originally certified as sustainable in May 2006 and was reassessed and re-certified in August 2011. The reassessment was managed by Scientific Certification Systems for the Fishing Vessels Owners Association. The reassessment team was Sabine Daume (Scientific Certification Systems), Steve Martell (University of British Columbia), Tim Essington (University of Washington), and Jon Sutinen (private consultant).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set
Demersal longline is a high-risk gear type.

"To minimize the take of seabirds, the use of seabird avoidance devices (tori lines) are required by hook-and-line fishing vessels in areas where seabird interactions occur. According to the client (FVOA [Fishing Vessels Owners Association]), tori lines are the only effective way to minimize seabird entanglement by hook-and-line fishing vessels. These measures have resulted in a significant decrease in seabird bycatch in recent years."

"Since 2001 vessels larger than 55' are required to use seabird avoidance devices (tori lines) to minimize the probability of seabird entanglements. These have been demonstrated to be highly effective … at reducing the probability of albatross takes and there is a high degree of compliance."

Species
This fishery is covered by the National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries.

Very few birds at all are caught, mostly gulls and Northern Fulmars. ETP species potentially caught are Black-footed Albatross (EN), Short-tailed Albatross (VU), and Laysan Albatross (NT). Only two Short-tailed Albatross have been killed by the longline fisheries in the eastern Bering Sea since 1998, and these were not killed by the sablefish fishery.

"Sablefish fisheries are responsible for 85% of the Black-footed albatross takes (average GOA longline takes 2002- 2006 = 75 yr^{-1}). Sablefish fisheries are responsible for 40% of all Laysan Albatross takes (average GOA longline take = 37 yr^{-1}). Fishery-specific bycatch rates are not available for other species in published reports, but other species commonly captured in sablefish longlining include Northern Fulmar (average 2002 – 2006 = 357 yr^{-1}) and gulls (average 2002 – 2006 = 161 yr^{-1})."

"2006 (the last year on record) had higher number of seabirds taken in the Gulf of Alaska (815, 95% CI 531 – 1252), doubling the number from the previous year (424, 95% CI 314-573). Much of this increase was due to bycatch of gulls."

"[T]otal seabird bycatch in sablefish fisheries have increased between 2004 – 2007, chiefly due to increased catches of Northern Fulmars and that … there were significant differences in catch rates among vessels after accounting for number of hooks and the time, season and location of fishing. Vessel effects were most pronounced for shearwaters and albatrosses. They concluded that a more rigorous vessel-specific monitoring of standardized bycatch rates would permit the entire fleet to identify vessels with exceptional bycatch rates and thereby seek to introduce incentives of those vessel operators to change fishing operations to reduce bycatch."

Information

At present, observers cover 30% of trips. However, a decision in October 2010 was made for this fishery to be covered under the Groundfish Observer Program run by the National Marine Fisheries Service, which should provide increased observer coverage, although full implementation of the program not be complete until 2013. At that time there will be 100% coverage of larger boats (mostly greater than 30 m) and 30% observer coverage of smaller boats.

Conditions

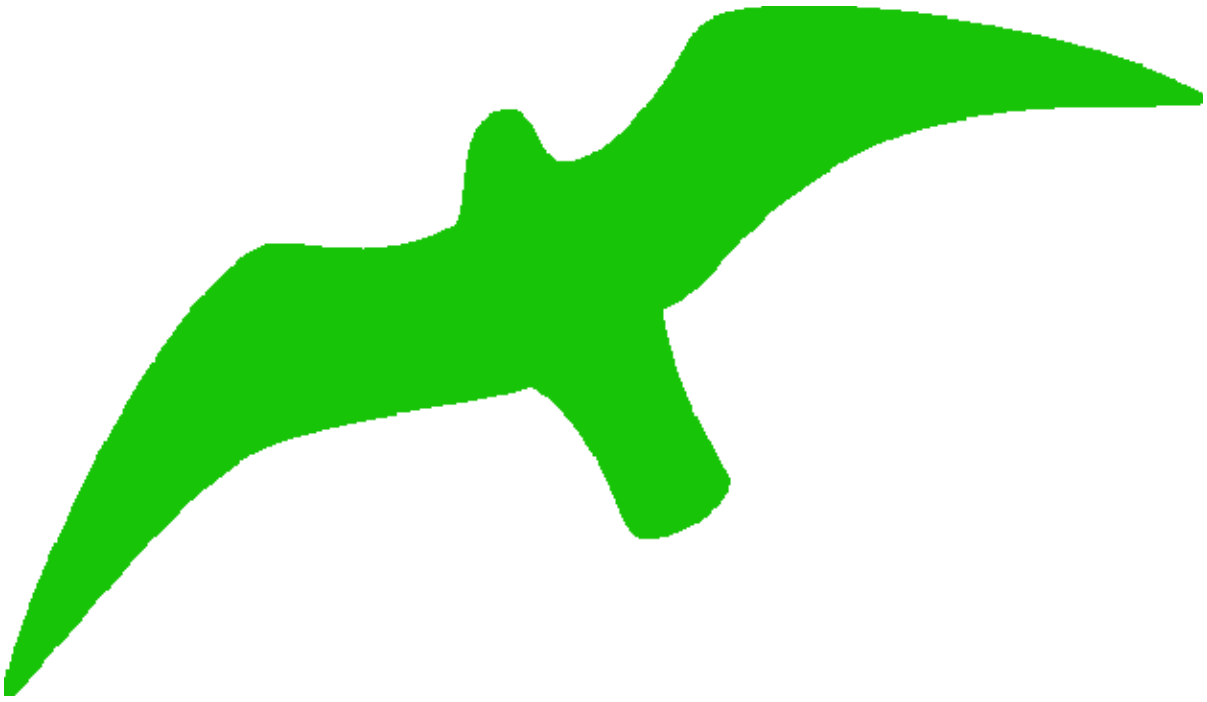
No conditions of certification regarding seabird bycatch were placed on the fishery.

Conclusions

Although this fishery was originally certified as sustainable in 2006, specific information from the fishery is still lacking as to the actual levels of seabird bycatch. Although it probably has low levels of seabird bycatch, that is not completely clear. The fishery was included in the NMFS Groundfish Observer Program, and beginning in 2011 should be receiving greater observer coverage, with full implementation in the program by 2013. This should help to fill the information gaps. However, this fishery probably should have received conditions of certification in both the 2006 and 2010 assessments requiring that observer coverage be improved and information gaps filled. A lack of information should not be assumed to be positive information.

Reviewed: D. A. Wiedenfeld, 29 February 2012

POTENTIALLY LOW RISK FISHERIES



Potentially Low Risk to Seabirds

ANTARCTIC KRILL PELAGIC TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Good	Good	Good	Low
2	3	18	25	35	18	1
5/6		96/100				1/3

The Antarctic krill fishery uses a continuous-fishing midwater trawl system. It is not an inherently high-risk fishing method, although the fishery operates in waters frequented by high numbers of seabirds, including numbers of ETP species. The fishery does use a fine-meshed net over the mouth of the trawl to prevent birds from entering, and produces no offal. Observers are placed on all boats, and with good quality observer information, it is clear that there are few seabird interactions. Overall, this fishery is Potentially Low Risk to Seabirds.

Recommendations

- Carry out seabird population numbers and trends and bycatch research directly on the fishery, rather than relying on results from other nearby fisheries.

Overview

This fishery uses midwater trawls to target Antarctic krill *Euphausia superba*. Fishing is carried out in the Southern Ocean south of the Atlantic (CCAMLR / FAO Statistical Area 48). No tonnage of krill landed is given. It is sold mainly to markets in the US and Europe for pharmaceuticals, nutraceuticals, and aquaculture feed.

The fishery was certified as sustainable on 15 June 2010. The assessment was managed by Moody Marine Ltd. For Aker BioMarine, a Norwegian company. The assessment team was Andrew Hough and Seran Davies of Moody Marine Ltd.; Paul Medley, private consultant; Graham Pilling, Centre for Environment, Fisheries and Aquaculture Science, UK; and Andy Payne, private consultant.

Gear and Set

The midwater trawl is a medium-risk gear type. Various trawl configurations are used, but most are similar. A continuous fishing system with continuous pumping of krill from cod-end is sometimes used.

To mitigate bycatch, the trawl net opening is covered by a fine excluder mesh net which actively excludes diving birds such as penguins. Besides this, no other mitigation methods

are specified, although it is mentioned that some are used. Factors that are not direct mitigation but contribute to the low impact of the fishery is the design of the trawl system, with warps entering water very close to boat, so that BSLs are not necessary. The continuous fishing system means that very hauls are very infrequent (only perhaps once every 25 days), thereby reducing the likelihood of catching birds on shooting or hauling. Only cleaned nets are deployed; the nets sink rapidly; the net closes on hauling. Finally, all bycatch is retained and krill is not processed on board but only frozen, so no offal or waste is produced.

Species

The area of the fishery includes Black-browed Albatross (EN), Macaroni Penguin (VU), and Gray-headed Albatross (VU). There may be other species of ETP southern albatross and petrels and seabirds, although not mentioned. Additional non-threatened species include Gentoo Penguin (NT), Adélie Penguin (LC), Chinstrap Penguin (LC), Light-mantled Albatross (NT), Southern Giant Petrel (LC), and Antarctic Prion (LC).

Actual bycatch is very low, with no seabird bycatch in the 2006-2007 season and only one instance in 2004-2005. Trawling often takes place during the winter months (particularly at South Georgia) when birds are not feeding chicks and hence food foraging is reduced.

Information

Observers are placed on 100% of trips, and do record seabird interactions.

Many of review items are based on studies from outside the fishery area.

Conditions

No conditions for certification or recommendations regarding seabirds were placed on the fishery.

Conclusions

This fishery appears to be well regulated and monitored. Although fishing is carried out in an area with many species of ETP birds and fairly high concentrations of birds, the fishing method is not very high risk, and the fishery uses mitigation methods that are probably adequate. The fishery also appears to have good observer coverage and information. The greatest weakness in information appears to be that research information on bird population status and trends appears to be from areas outside the area affected by the fishery. Better information would be from the fishery itself.

Reviewed: D. A. Wiedenfeld, 23 January 2012

Potentially Low Risk to Seabirds

ARGENTINEAN HOKI (*MACRURONUS MAGELLANICUS*) BOTTOM AND SEMI-PELAGIC TRAWL NET FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Good	Good	Good	Low
2	3	15	20	28	15	1
5/6		78/100				1/3

The hoki fishery operates in an area with very high numbers of threatened albatrosses and petrels. Although, it uses a medium risk trawls, there still are, of course, bird strikes, some leading to mortalities. Argentina is a signatory to ACAP, and has in place a National Action Plan for the Reduction of Bird-fishery Interactions. Observer levels on board the fishing vessels are high, and observers are trained to record bird interactions. An important feature of the certification is that it will require the fishery to use bird-scaring lines (tori lines) or similar mitigation methods such as cones placed on the warps, to reduce bird strikes. It is unusual for a certification to require gear changes or mitigation for seabirds.

Recommendations

- Follow through on implementation of the conditions of certification, to use bird-scaring equipment on all trawls and to implement the National Action Plan for the Reduction of Bird-fishery Interactions.

Overview

This fishery uses midwater and bottom trawls to target Argentinean hoki (*Macruronus magellanicus*). Fishing is carried out in the Argentine EEZ and adjacent waters from 35° to 56° South Latitude. The markets for fish is almost completely outside of Argentina, with a significant portion of the fish exported to Japan, and a part of that already processed into surimi. In 2008 the fishery landed 110,267 mt.

The fishery was is still in assessment. The assessment process has been managed by Organización Internacional Agropecuaria for a client group (Estremar S.A., San Arawa S.A., Pesantar S.A. / Pespasa S.A., Yuken S.A., and Grupo Valastro). The assessment team was Carolina V. Minte-Vera, María R. Perier, Edgardo Di Giacomo, Miguel A. Rey Sosa, Raúl J. Bridi, Marcelo L. Morales Yokobori, and Pedro Landa..

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Midwater and bottom trawls are medium-risk gear types, with greatest risk to seabirds from warp strikes.

A device used "consists of installing a plastic cone that is placed on the trawl warps…. This mitigation measure was developed in Argentina and the effectiveness of this was assessed in vessels targeting hake in the waters of the Golfo San Jorge. This device reduced by 89% the number of seabirds contacts with the cables and was no recorded mortality of birds."

Species

"The Argentine continental shelf is one of most important feeding areas for albatrosses and Petrels." There are numerous species of albatross and petrels, including Black-browed Albatross (EN), Sooty Albatross (EN), Atlantic Petrel (EN), and Northern and Southern giant petrels. A fairly complete listing of IUCN Red List species is in Table 48. An excellent map (Figure 105) shows seabird concentrations and fishing effort areas, to indicate where they overlap.

Argentina ratified ACAP on 7 June 2006. Argentina has in place a National Action Plan for the Reduction of Bird-fishery Interactions (PAN-Aves 2010: Plan de Acción Nacional Para Reducir La Interacción De Aves Con Pesquerías en la República Argentina: http://www.minagri.gob.ar/SAGPyA/pesca/pesca_maritima/plandeaccionnacional/03-PAN-AVES).

"From 14,671 observed contacts with the fishing gear, 56% corresponded to Black-browed Albatrosses (70% of them were adult individuals), Cape Petrels *Daption capensis* (17%), White-chinned Petrels *Procellaria aequinoctialis* (12%), Southern Giant Petrels *Marconectes giganteus* (6%), and Southern Royal Albatrosses *Diomedea epomophora* and Northern Royal Albatrosses *Diomedea sanfordi* (7%), among others. A rate of 25.47 contacts per hour was estimated during the sampling period. Over 98% of the interactions corresponded to light contacts with the warp cables occurring while birds were either on the water or flying. Kernel analysis showed that the intensity of interactions (in terms of the observed number of contacts with gear) was largely explained by the distribution of the fishing effort (i.e. most of the contacts observed in focal and core areas) in most areas."

"A total of 22 heavy contacts with fishing gear or the vessel (82% of them corresponding to Black-browed Albatrosses) represented a rate of 0.04 heavy contacts per hour (Table 50). Confirmed mortalities included seven Black-browed Albatrosses and three Southern Royal Albatrosses. In the first species, all individuals were adult birds and mortalities were caused by severe collisions with the warp cable (five cases) and entanglements with the net while birds were scavenging during the hauling operation. Five of these mortalities occurred in fall and the other two in winter…."

Information

"The Assessment Team has not been provided or informed on the existence of accurate and verifiable information for all impacts, mortalities and injuries and the consequences for the ETP species, although INIDEP On Board Observers Program provides enough information to

allow fishery related mortality and the impact of the fishery under assessment to be quantitatively estimated."

An "On Board Observers Program provides direct information about the fishery and the species involved." A special training course on birds is given to On Board Observers, and observers are regularly de-briefed following voyages.

"Observer coverage of over 400 settings and 130 days of embarkation is expected by the end of the current year [2011]. Data collection was taken by trained observers following protocols adopted previously in the South West Atlantic."

Conditions

Three conditions relating to seabirds are to be placed on the fishery for certification.

- To provide evidence that the indirect effects have been considered and that they are thought to be unlikely to create unacceptable impacts..
- Implement tory lines or similar tested effective measures on trawlers.
- Implement the National Action Plan for the Reduction of Bird-fishery Interactions (PAN-Aves).

All three were to be complied with by the fourth Annual Surveillance Audit.

Conclusions

The report on the Argentinean hoki fishery is one of the most complete produced, with regard to seabird information, although not always well-organized.

The fishery harvests from waters with very high numbers of seabirds, including numbers of threatened albatrosses and petrels. Although it uses a medium risk gear, trawls, there still are, of course, bird strikes, some leading to mortalities. The fishery is required however by international treaty, Argentine national law, and the conditions placed on the fishery by the MSC certification to address these issues. An important feature of the certification is that it will require the fishery to use bird-scaring lines (tori lines) or similar mitigation methods such as cones placed on the warps, to reduce bird strikes. It is unusual for a certification to require gear changes or mitigation for seabirds.

Reviewed: D. A. Wiedenfeld, 2 February 2012

AUSTRALIAN HEARD ISLAND & McDONALD ISLANDS PATAGONIAN TOOTHFISH FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Good	Good	Good	Low
3	3	19	20	32	18	1
5/6		89/100				1/3

The HIMI toothfish fishery uses demersal trawls and longlines, which could carry a high risk to seabirds. The islands are home to a large colony of Macaroni Penguins and other seabirds. However, mitigation methods used are very effective, and there is very high levels of regulation, enforcement, and observation. Therefore, bycatch is very low. This fishery uses the appropriate best-practices.

Recommendations

- Continue the best-practices being used, and monitor the results of bycatch observation..

Overview

This fishery uses Demersal trawl and demersal longlines to target Patagonian Toothfish *Dissostichus eleginoides*. Fishing is carried out in Australian Fishing Zone (AFZ) surrounding Heard and McDonald islands (HIMI) out to 200 nautical miles, which is all within the CCAMLR application area. The primary market for the fish is the US, Japan, China, and Eastern Europe. In the 2008-2009 season 2,324 mt were landed; the TAC is 2,500 mt.

The fishery is still in assessment. The assessment is being managed by Scientific Certification Systems for Austral Fisheries Pty. Ltd. and Australian Longline Pty. Ltd. The assessment team was Sabine Daume (Scientific Certification Systems), Mary Lack (Shellack Pty Ltd.), and Alexander Morison (Morison Aquatic Science).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

The main gear type is demersal trawl, a medium-risk gear type, but the fishery also uses demersal longlines, a high-risk gear type.

Mitigation methods for seabirds include: “7) mandatory streamer (tori) lines and line weighting for the longline sector to mitigate bird interactions, and 8) minimization of lighting to also reduce bird interactions along with a range of voluntary measures by industry….”

They also include “1) prohibiting the discharge of offal and other waste, 2) temporary and permanent spatial closures, 3) temporal closures for longline fishing (no fishing between November and the 15th of April is allowed each year, as that coincides with the main breeding and feeding season for seabirds).”

Species

Heard and Macdonald Islands are home to a breeding colony of as many as 2 million Macaroni Penguins (VU). The fishery area also has populations of some albatross.

“Since 2000, AFMA [Australian Fisheries Management Authority] reports that there have been 13 seabird mortalities combined from both sectors of the HIMI toothfish fishery.”

“After many innovations in the fishery, interaction rates with ETP species are very low. In the most recent fishing year reported by CCAMLR no seabird mortalities were observed in the trawl sector and 2 Cape petrel mortalities were recorded in the longline sector.” These data are from 2010.

Information

For seabirds, there is evidence that the mitigation measures are effective based on observer coverage, with low numbers of interactions (CCAMLR 2010).

Mitigation methods “go hand in hand with requirements including 100% observer coverage (2 full time observers per vessel per trip), mandatory reporting of all interactions with any endangered, threatened or protected species (ETPS), shot by shot reporting of all target species and bycatch, and ongoing consideration of bycatch by SARAG” (Sub-Antarctic Resource Assessment Group).

“Compliance with these measures [mitigation] is very high, as there are two observers on each vessel with 100% coverage of all fishing activities, along with automated satellite monitoring systems on each boat, providing position data on a regular basis to the management agencies and CCAMLR.”

Conditions

No conditions for certification regarding seabirds were placed on the fishery.

Conclusions

The HIMI toothfish fishery operates under close regulation and monitoring, and uses effective mitigation measures. The amount of information on the fishery is very good. This is a well-run fishery from the perspective of seabird conservation.

Reviewed: D. A. Wiedenfeld, 3 February 2012

AUSTRALIAN MACKEREL ICEFISH FISHERY

Potentially Low Risk to Seabirds

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Good	Good	Good	Low
2	3	18	20	33	20	1
5/6		91/100				1/3

This fishery is well managed. It uses midwater and bottom trawls, both medium-risk gears. Although the fishery operates very near a large penguin colony, it uses appropriate mitigation methods. All fishery operations are observed, leading to very low Uncertainty. Seabird bycatch or fatal interactions are apparently very low.

Recommendations

- Carry out research to determine if harvest of icefish reduces food sources for seabirds, affecting their populations.

Overview

This fishery uses midwater and bottom trawls to target mackerel icefish *Champsocephalus gunnari*. Fishing is carried out around Heard and MacDonald Islands in the Australian Antarctic Territory EEZ. The fishery annually lands about 1,200 mt.

The fishery was originally certified as sustainable on 31 March 2006 and following reassessment was re-certified on 21 June 2011. The reassessment was managed by Scientific Certification Systems for Austral Fisheries Pty. The reassessment team was Mary Lack (Shellack Pty., Ltd.), Sabine Daume (Scientific Certification Systems), Alexander Morison (Morison Aquatic Sciences), and Chris Wilcox (Commonwealth Scientific and Industrial Research Organization [CSIRO]).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

The fishery uses midwater and bottom trawls, both medium-risk gear types.

The trawl net has no transponder cables ("third wires"), which reduce the likelihood of bird strikes.

Offal is retained during trawling.

Midwater trawling is not permitted during seabird breeding season, and midwater trawling is not permitted during daytime. Bottom trawling is permitted at both of these times, so the reduction in risk to seabirds is only partial.

No other mitigation methods or use of mitigation methods on gear are specifically mentioned or described in the certification report, but it does say that "measures [are] in place to limit bird and mammal interactions with fishing gear." These latter may include the offal management or lack of transponder wires.

Species

Heard and Macdonald Islands are home to a breeding colony of as many as 2 million Macaroni Penguins (VU). The fishery area also has populations of some albatross.

Seabird mortality is very low. "Since 1997 there have been 41 seabird interactions in the HIMI fishery, 38 of which resulted in death of the birds."

"In the 7 fishing seasons between 2002 and 2009 a total of 16 seabirds were killed, including albatross and petrels…. In the most recent fishing year reported by CCAMLR no seabirds were killed."

Information

Two observers are placed on board each of 100% of boats and observe 100% of fishing activities. Observer data includes records of seabird interactions and mortality.

Conditions

No conditions for certification regarding seabirds were placed on the fishery in the original assessment.

In the reassessment, Condition 2.5.1 required research on the role of the icefish "as prey items in the diets of higher level predators including marine mammals, fish, and seabirds."

Conclusions

The HIMI icefish fishery appears to be well-regulated and well-managed with regard to seabirds. Although the fishery operates very close to a 2 million-bird breeding colony of Macaroni Penguins, it appears to have very low interaction with the birds. Observation is complete, with two observers on board each boat, such that 100% of fishing operations can be monitored. The primary issue with regard to seabirds appears no to be bycatch or interactions with gear or boats, but rather of effects of the fishery on seabird prey sources. This issue is to be addressed as a condition of the re-certification.

Reviewed: D. A. Wiedenfeld, 24 January 2012

Potentially Low Risk to Seabirds

BERING SEA AND ALEUTIAN ISLANDS FLATFISH FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Poor	Good	Good	Low
2	3	20	1	30	18	1
5/6		69/100				1/3

This fishery uses a medium risk gear type, otter trawl, but fishes in an area with ETP albatross and sea ducks, and in areas with concentrations of Northern Fulmars and shearwaters. However, regulation and enforcement are good. No mitigation methods are mentioned, giving the fishery a low score on that issue. However, independent observers are placed on significant numbers of boats, and Uncertainty is low. The fishery appears to have low seabird bycatch and mortality.

Recommendations

- Obtain improved information on seabird interactions and mortality, and if the information warrants, implement effective mitigation methods. This action, which was a condition of certification, is already under way.

Overview

This fishery uses otter trawls to target five species yellowfin sole (*Pleuronectes asper*), flathead sole (*Hippoglossoides elassodon*), arrowtooth flounder (*Atheresthes stomias*), Alaska plaice (*Pleuronectes quadrituberculatus*), and northern rock sole (*Lepidopsetta polyxystra*). Fishing is carried out in the US EEZ in the Bering Sea and Aleutian Islands. The markets for fish are worldwide. In 2007 the catch was 266,000 mt.

The fishery was certified as sustainable on 1 June 2010. The assessment was managed by Moody Marine Ltd. For the Best Use Coalition. The assessment team was Paul Knapman (Moody Marine Ltd.), Joe Powers (Louisiana State University), Geoff Tingley (Centre for Environment Fisheries and Aquaculture Science, UK), and Susan Hanna (Oregon State University).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Otter trawls are a medium-risk gear type. The trawls used for flatfish are lower risk than other trawls, because the warps and third wire (sonde), if used, enter the water closer to the stern of the boat, reducing the likelihood of warp strikes.

No mitigation methods or use of mitigation methods are mentioned in the certification report, although it is mentioned that "Spatial areas are closed to fishery operations around … seabird breeding colonies, etc.," which would reduce seabird interactions.

Species

The fishery operates in areas with Short-tailed Albatross (VU), Spectacled Eider (LC) and Steller's Eider (VU).

"Impacts and acceptable limits have been estimated for protected species, such as short tailed albatross, but have not been determined for other impacted birds such as the Northern fulmar."

Information from 2004 showed estimates of fairly large number of Northern Fulmar (LC) and shearwaters, but no albatross.

Information

NMFS-certified observers are placed on vessels over a minimum 60 feet LOA 30% of the time and 100% of the time on vessels longer than 125 feet LOA, and two observers are placed on catcher-processors.

Conditions

One condition for certification was placed on the fishery, requiring study of interactions of the fishery with seabirds, number of seabirds affected, and the effect of sonde wires on seabird mortality.

"The client is required to provide adequate quantitative estimates of the effects of the fishery on seabirds by the first annual surveillance audit." That audit provided a review of new information and literature sources, indicating that the flatfish fisheries were not likely a source of significant seabird mortality.

Conclusions

Although the fishery operates in an area with threatened seabirds, it appears to have low bycatch and mortality. The main issue with the fishery is the need for improved information, which was a condition of certification, and which appears to be under way after the first Annual Surveillance Audit. The fishery received a "Poor" evaluation in the present review because no mitigation methods are used or at least none are mentioned as being used. Mitigation methods may not be necessary in this fishery. However, clarification of the need and use of mitigation would improve the evaluation of the fishery.

Reviewed: D. A. Wiedenfeld, 25 January 2012

Potentially Low Risk to Seabirds

BERING SEA / ALEUTIAN ISLANDS POLLOCK (*THERAGRA CHALCOGRAMMA*) FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Poor	Good	Good	Low
2	3	20	1	30	18	1
5/6		69/100				1/3

The BS/AI pollock fishery uses a medium-risk gear type, midwater trawl, but operates in an area with threatened Short-tailed Albatross. The regulation and enforcement of the fishery is good, and observer coverage is good. As a result, Uncertainty is low. However, it is unknown if the fishery uses any mitigation methods, or if mitigation is necessary. Nonetheless, bycatch is low, indicating that this fishery is Potentially Low Risk to Seabirds.

Recommendations

- Obtain improved data on seabird bycatch, and present the data in a clear and interpretable way.

Overview

This fishery uses midwater trawls to target Alaska pollock *Theragra chalcogramma*. Fishing is carried out in the US EEZ of the eastern Bering Sea and Aleutian Islands. The markets for fish are the US, Japan, and Europe. The fishery lands about 1 million mt per year.

The fishery was originally certified as sustainable on 14 February 2005 and re-certified on 14 December 2010. The assessment was managed by Moody Marine Ltd. for At-sea Processors Association Ltd. The assessment team was Paul Knapman and Andy Hough (Moody Marine Ltd.), Jake Rice and Don Bowen (Department of Fisheries and Oceans, Canada), Susan Hanna (Oregon State University), and Rob Blyth-Skyrme (Ichthys Marine).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Midwater trawl is a medium-risk gear type. No mitigation methods or use of mitigation methods are mentioned in the certification report.

Species

The fishery operates in areas with Short-tailed Albatross (VU), Spectacled Eider (LC) and Steller's Eider (VU).

"Seabirds taken in the pollock fishery include Laysan albatross (*Phoebastria immutabilis*), unidentified albatross, northern fulmars (*Fulmarus glacialis*), gulls (*Larus* spp.), shearwaters, (*Puffinus* spp.), and unidentified seabirds (those not identified to one of the other ten groups). Northern fulmars and gulls are generally taken in the largest numbers." These numbers, however, are low.

"Based on data collected by observers of the pollock fishery, no Short-tailed Albatross were taken in 2005 and 2006."

"Based on observed data [the eiders] appear to rarely interact with the pollock fishery and none were taken between 2004 and 2006."

Information

NMFS-certified observers are placed on vessels over a minimum 60 feet LOA 30% of the time and 100% of the time on vessels longer than 125 feet LOA, and two observers are placed on catcher-processors.

Conditions

No conditions regarding seabirds were made in either the original or re-assessment.

Conclusions

The pollock fishery appears to have very little impact on seabirds. Its gear type is medium-risk, but the actual seabird bycatch and mortality appears to be low. With high levels of observer coverage and good quality research information, uncertainty is low.

Reviewed: D. A. Wiedenfeld, 25 January 2012

Potentially Low Risk to Seabirds

BRITISH COLUMBIA HOOK & LINE SPINY DOGFISH FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Fair	Good	Good	Low
3	2	18	12	30	18	1
5/6		78/100				1/3

Although this fishery uses the highest risk gear type, longline, the fishers are using some mitigation methods, although the precise type of mitigation is not specified. Nonetheless, monitoring information is good, and indicates that there is very low levels of bycatch. Monitoring will improve in oncoming years as a new monitoring system is implemented. Nevertheless, this fishery could further assure that seabird bycatch is not a significant issue by present information more clearly on the bycatch and mitigation methods.

Recommendations

- Obtain and present improved information on seabird bycatch and interactions.
- Present information on what mitigation or seabird bycatch avoidance methods are being used.
- If the information indicates that it is warranted, implement appropriate and effective mitigation methods.

Overview

This fishery uses demersal longlines to target spiny dogfish *Squalus suckleyi*. Fishing is carried out using mostly small vessels about 14 m length in the northeastern Pacific Ocean in the Canadian EEZ, especially in the Strait of Georgia. The market for the smoked fish is Germany, but fresh and frozen fish are exported to Europe and the Orient. No tonnage of fish landed is given.

The fishery was certified as sustainable in September 2011. The assessment was managed by Moody Marine Ltd. for BC Dogfish Hook & Line Industry Association. The assessment team was Ian Scott (Moody Marine Ltd.), John Musick (TerraMare Partners Inc.), and Robert O'Boyle (Beta Scientific Consulting Inc.).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Demersal longline a high-risk gear type.

It is not specified what mitigation methods are being used, but some methods are required by Canadian law and enforced by the Canadian Department of Fisheries and Oceans (DFO).

"There were a total of 3 occurrences [in 2009] in the H&L [=hook and line] fleet where vessels failed to deploy their seabird avoidance gear."

Species

"Regarding birds, while there are no instances of hookings in the outside fishery, there were five hookings in the inside fishery, three of which were released." These were all apparently gulls.

"The relatively low seabird interaction with the directed SD fishery may be due to the relation between the location of the fishing activity and whether birds are present in the area."

Information

Beginning in the 2011-2012 season, there was to be 100% coverage of all trips by either on-board observers or video monitoring.

Conditions

No conditions for certification regarding seabirds were placed on the fishery.

Conclusions

The spiny dogfish fishery, although it uses a high-risk gear type, has very low seabird bycatch. This is apparently a result of Canadian regulation and enforcement, which requires the use of bird avoidance methods, and a result of low numbers of seabirds in the area of the fishery. Although observation and monitoring levels have been adequate, beginning in the 2011-2012 season monitoring should improve. However, the confidence that the fishery is actually low risk to the fishery would be improved now with a clearer presentation of mitigation methods.

Reviewed: D. A. Wiedenfeld, 21 February 2012

Potentially Low Risk to Seabirds

CANADIAN HALIBUT FISHERY OFF THE COAST OF BRITISH COLUMBIA

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Good	Fair	Good	Low
3	3	18	20	24	17	1
6/6		79/100				1/3

This fishery uses a high risk gear type, demersal longline, and in an area where there are ETP seabirds, especially albatross. Mitigation methods (bird scaring lines) are required. Although Canadian Wildlife Service and Dept. of Fisheries and Oceans regulation and enforcement is good, nonetheless there is a remains some bycatch, although this was only two albatross in 2008. Observers are required on all boats, but observers should be trained to identify seabirds to species, and to record more completely any seabird interactions.

Recommendations

- Improve the quality of observer data, by recording all interactions to bird species. This may require training of observers in species identification and data recording procedures.
- Assure that all mitigation methods are being employed, and if compliance is 100%, determine methods to further reduce seabird, especially albatross, bycatch.

Overview

This fishery uses demersal longlines to target Pacific halibut *Hippoglossus stenolepis*. Fishing is carried out in Canadian Pacific waters. The primary market is North America, although some fish are exported to the UK and Europe. The annual landing is about 5,300 mt.

The fishery was certified as sustainable on 30 September 2009. The assessment was managed by Scientific Certification Systems for the Pacific Halibut Management Association of British Columbia. The assessment team was Chet Chaffee (Scientific Certification Systems) and Bruce Turris.

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

The fishery uses demersal longlines, a high risk gear type.

The only mitigation method mentioned in the Public Certification Report is the use of bird-scaring lines (tori lines). Use of bird-scaring lines was required beginning in 2002.

Species

There has been no recorded bycatch of any Short-tailed Albatross (VU) in the Canadian fishery. Black-footed Albatross (EN) bycatch was high (5-64 individuals per year) before the use of bird scaring lines beginning in 2002. Nevertheless, there were 31 "albatrosses" caught in 2006. These albatrosses were not identified to species.

"[T]here were two albatross interactions recorded in 2008. The species of albatross was not identified so it is impossible to say whether they were black-footed albatross or not. Bird avoidance devices are deployed with the fishing gear and interactions are rare. Compliance is nearly 100% with only 2 incidence of non-compliance in 2008."

Northern Fulmar, Herring Gull, and Glaucous-winged Gull (all LC) have been reported as caught, but in very low numbers (10 individuals total in five years).

Information

There is 100% coverage at-sea monitoring in the fishery, and captains are required to maintain a logbook with bird interactions. Although bird interactions are recorded, the fishery seems to lack species-specific information on which albatross species are being caught.

Conditions

Condition 2.1.4.1 Develop a plan to understand and mitigate risks to bycatch species. It is not clear that this refers to seabirds, although seabirds would be included.

Conclusions

Although this fishery uses a high risk gear type, demersal longline in an area where there are albatross, buycatch seems to be low. In the most recent year with data, 2008, it is noticeably lower than in 2000, probably due to required mitigation methods (bird scaring lines) and good enforcement by the Canadian Wildlife Service and Dept. of Fisheries and Oceans. Although this fishery is generally good, it should remain being monitored to assure that bird bycatch is further reduced.

Reviewed: D. A. Wiedenfeld, 24 January 2012

GRUPO REGAL SPAIN HAKE LONGLINE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Medium	Good	Good	Good	Poor	Low
3	2	18	23	28	7	1
5/6		76/100				1/3

This fishery uses high-risk demersal longlines and fishes in an area with significant seabirds and seabird concentrations. However, the fishery uses several and effective mitigation methods, the most effective of which appear to be night-setting with the ship's lights off. This has reduced the actual bycatch to very low levels. The vessels in the fishery also record information on bycatch and the fishery has a bycatch code of conduct. The amount of observer coverage, however is low, and there remains some concern about compliance with all mitigation methods. If assurance that compliance is good can be obtained, this fishery could confirm that it is low risk to seabirds.

Recommendations

- Assure that all vessels are complying with requirements for use of mitigation methods, especially night-setting without lights, and recording of seabird interactions.
- Increase observer coverage to assure that the information needed to monitor the fishery is available.

Overview

This fishery uses demersal longlines to target hake *Merluccius merluccius*. Fishing is carried out in the North East Atlantic in FAO statistical area 27 (ICES subareas: VI, VII, and VIII a,b,d,e). The market for the fish is Spain and France. Landings in the most recent fishing year were 1,100 mt.

The fishery is still in assessment for certification. The assessment is being managed by Food Certification International Ltd. for Grupo Regal and Associate Companies. The assessment team was Antonio Hervás (Food Certification International Ltd.), Tristan Southall, Maria del Carmen Arenas, and Paul Macintyre.

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Demersal longline is a high-risk gear type.

"Mitigation measures for the avoidance of sea birds captures include:

- Scare-birds [sic] lines
- Fish waste shall not be though over board when shooting gear
- Crew training to free birds from hooks when caught.
- Gear shooting at night only
- Boat stern lights shall be off when shooting
- Try to reach a high sinking rate with the use of weights"

"The main mitigation measure in terms of determining the scale of likely bycatch is simply whether deck lights are on, during night time hours at the time of shooting and hauling gear. The Grupo Regal Code of Conduct states that lights will be off, and the design of the vessel, with a substantial shelter deck means that light loss is low. In addition, the vessels under certification take the further precautionary step of employing bird scarer devices – streamers set on a line above the longline itself, to further deter any birds targeting the bait."

Species

"The bird species most likely to interact with the fishery are *Puffinus puffinus* (Manx Shearwater), *Puffinus gravis* (Great Shearwater), *Fulmaris glaciaris* (Northern Fulmar). None of these are listed specifically on the EC Birds Directive. However, there is also a potential, though lesser, interaction with *Larus marinus* (Great Black-backed Gull) and *Hydrobates pelagicus* (European Storm-Petrel), which are listed on the EC Birds Directive and for which member states must therefore establish protected sites."

"An assessment of all catches by Spanish longline vessels operating in area 7 showed the 0.005% of catches by weight were seabirds – leading to the conclusion that bycatches of seabirds were rare in this fishery. This corroborates the findings of newly implemented on-board data recording protocols for incidental bycatches of bird species, which shows 2 birds were caught in 2 and half months of fishing. In 2010, the ICES Working Group on Seabird Ecology (WGSE) report on a 2009 study done by Birdlife International. Although this shows a higher level of bird bycatch (around 1 bird per 1000 hooks), it concludes that when the observer asked deck lighting to be switched off, bycatch was virtually eliminated."

Information

"Finally, the vessels under assessment have implemented detailed and comprehensive onboard reporting protocols for unintended bycatch, which lists all potential bird species and is supported by a species identification fact sheet."

"Studies have also been carried out on the efficacy of the bird scarer device employed by the Grupo Regal vessels under assessment – as a result there is a quantitative understanding of bird bycatch both when the mitigations measures are, or are not being used."

"Further information is routinely collected by the Grupo Regal crews on any incidental capture of seabirds." "To facilitate in this task all vessels carry a bird identification guide – of the main species which are most likely to be encountered during normal fishing operations."

Conditions

Condition 4: "…independent verification that the code of conduct [regarding seabirds] is implemented correctly and is achieving its objectives." "Independent verification (e.g. through an observer program) of the correct implementation of mitigation measures and evidence of non-significant interactions with associated mortality of birds." This is to be completed by the first Annual Surveillance Audit.

Conclusions

Because this the fishery uses effective mitigation methods, it has reduced actual bycatch of seabirds to very low levels. The amount of observer coverage, however is low, and there remains some concern about compliance with all mitigation methods. If assurance that compliance is good can be obtained, this fishery could confirm that it is low risk to seabirds.

One concern about this fishery is that it is only one part of a much larger Spanish longline fishery, a part that has a reputation for high seabird bycatch. Although the Unit of Certification in this fishery seems to be very "clean" with regard to seabird bycatch, it cannot be assumed that all Spanish hake fishing is equal.

Reviewed: D. A. Wiedenfeld, 23 February 2012

GULF OF ALASKA FLATFISH TRAWL FISHERY

Potentially Low Risk to Seabirds

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Fair	Good	Good	Low
2	3	18	9	33	18	1
5/6		78/100				1/3

This fishery uses a medium risk gear type, otter trawl, but fishes in an area with high concentrations of seabirds and significant ETP seabirds. However, bycatch and fatal interactions are very low, and observer coverage and information from research are both good, assuring correct interpretation. Although little is done in the way of mitigation, little mitigation is probably required.

Recommendations

- Continue to monitor the fishery to assure that seabird bycatch and mortality remains low.

Overview

This fishery uses demersal otter trawls to target five species: flathead sole *Hippoglossoides elassodon*, arrowtooth flounder *Atheresthes stomias*, rex sole *Glyptocephalus zachirus*, northern rock sole *Lepidopsetta polyxystra*, and southern rock sole *L. bilineata*. Each has its own certification report, but because all are caught together, they are always grouped together. Fishing is carried out in the US EEZ in the Gulf of Alaska. The fish are marketed worldwide. The fishery landed 81,220 mt in 2007.

The fishery was certified as sustainable on 1 June 2010. The assessment was managed by Moody Marine Ltd. for the Best Use Coalition. The assessment team was Joe Powers, Geoff Tingley, Susan Hanna, Paul Knapman.

All text in quotation marks is from the certification report or the surveillance audit.

Gear and Set

Otter (demersal) trawl is a medium-risk gear type.

The only mitigation method mentioned as used to prevent seabird interactions is replacement of sonde wire by wireless systems, thereby reducing the number of cables entering the water to two (the trawl warps themselves).

"[T]hird wire and warp strikes are likely to be less of an issue for most flatfish fisheries due to the generally steeper angle of entry to the water of the trawl warps and third wire cable for non-pelagic trawls used for flatfish in Alaska. This means that the entry point is often closer to the prop wash at the vessel stern where bird activity is lower relative to areas further astern."

Species

There have been no records of bycatch of Short-tailed Albatross (VU) in the Gulf of Alaska since 2000.

Very few birds at all are caught, almost 100% gulls. The first Annual Surveillance Audit (2011) reported data from 2006 for this fishery, in which 202 birds were killed, of which 199 were gulls and three were Northern Fulmars. The 2011 Annual Surveillance Audit has a very good discussion of seabird issues, including bycatch, and fatal and non-fatal interactions with gear in this fishery.

Information

Observers on a high percentage of boats (small boats 30% of time, larger boasts 100%)

Conditions

Condition 3: "…the interactions of the trawl fisheries with seabirds requires better quantitative definition, especially in the extent of the net sonde (third) cable in causing injury and mortality...The client is required to provide adequate quantitative estimates of the effects of the fishery on seabirds by the first annual surveillance audit." The first Annual Surveillance Audit (2011) reported data from 2006 for this fishery, in which 202 birds were killed, of which 199 were gulls not identified to species, and three were Northern Fulmars.

Conclusions

The Public Certification Report shows, and especially the 2011 Annual Surveillance Audit covers in detail, the issues of seabird bycatch and both fata and non-fatal interactions by seabirds with the gear. Bycatch and fatal interactions are very low, and observer coverage and information from research are both good, assuring correct interpretation. Although little is done in the way of mitigation, little mitigation is probably required. For a fishery of this scale, it appears to have very small effects on seabirds.

Reviewed: D. A. Wiedenfeld, 24 February 2012

GULF OF ALASKA PACIFIC COD FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Fair	Good	Good	Low
3	3	18	13	27	15	1
6/6		73/100				1/3

This fishery uses a medium risk gear type, otter trawl, but also uses high-risk longlines. The fishery area has high concentrations of seabirds and significant ETP seabirds. However, bycatch and fatal interactions are low, and observer coverage and information from research are both good, assuring correct interpretation. Mitigation in the longline component seems to be adequate, and little mitigation is probably required in the trawl, pot, and jig components.

Recommendations

- Continue to monitor the fishery to assure that seabird bycatch and mortality remains low.

Overview

This fishery uses trawls, longlines, pots, and jigs to target Pacific cod *Gadus macrocephalus*. Fishing is carried out in the US EEZ in the Gulf of Alaska. The fish are marketed worldwide. The total allowable catch in 2010 was 59,563 mt.

The fishery was certified as sustainable on 22 January 2010. The assessment was managed by Moody Marine Ltd. for the Alaska Fisheries Development Foundation, Inc. The assessment team was Andrew Hough and Paul Knapman (Moody Marine Ltd.), Bob Mohn and Don Bowen (Department of Fisheries and Oceans, Canada), and Susan Hanna (Oregon State University).

All text in quotation marks is from the certification report or the surveillance audit.

Gear and Set

The longline gear is high risk to seabirds. Trawls are a medium-risk gear type, and pots and jigs are low risk to seabirds.

"Longline vessels may deploy seabird bycatch avoidance mechanisms, including streamers, paired streamers, or other devices. This equipment is deployed along with the longline equipment to frighten seabirds away from gear."

Species

"The current ESA Biological Opinion allows for four Short-tailed Albatross mortalities over a two-year period in the groundfish longline fleet."

There have been no records of bycatch of Short-tailed Albatross (VU) in the Gulf of Alaska since 2000.

"Implementation of streamer lines has resulted ~69% reduction in Seabird bycatch in demersal groundfish fisheries."

"The seabird species most likely to be caught in longline gear are northern fulmars and gulls, which constitute more than 75% of bird bycatch. The albatross species are also taken regularly, although in much lower numbers."

"In 2006 the Pacific cod longline fishery was estimated to have taken ~800 seabirds, dominated by gulls and northern fulmar."

"Given that no eiders were taken in the 2006 fishery, interactions between the long-line fishery and threatened Steller's Eider are considered to be negligible in the GOA."

Information

Observers on a high percentage of boats (small boats 30% of time, larger boasts 100%).

Alaska Department of Fish and Game "personnel are also opportunistically placed on commercial vessels as observers to collect biological data and bycatch information."

"Interactions between seabirds and the longline fishery are monitored by observers…Observers are also instructed to record vessel strikes and report all bird strikes involving spectacled and Steller's Eiders (including sex) as well as all seabirds taken in gear."

"While the overall level of observer coverage in the Pacific cod fishery is considered to be good there are deficiencies and recognised concerns with the level of observer coverage for vessels <60' and in the 60'-125' sector. These are being addressed by the Council."

"Weight or numbers of target and non-target bycatch species (invertebrates, fish, marine mammals, reptiles, and birds) caught in the longline fishery are recorded in the Daily Catch Production Logbook maintained by the vessel operator and reported to NOAA Fisheries Regulation."

Conditions

Condition 2: "The client is required to provide quantitative information on the accidental bycatch of seabirds to the species level. It is required that this Condition is met by the second annual surveillance audit."

Conclusions

Bycatch and fatal interactions are very low in this fishery, largely due to the use of appropriate mitigation measures such as the use of streamer lines when setting the longlines. Observer coverage and information from research are both good, assuring correct interpretation. For a fishery of this scale, it appears to have very small effects on seabirds.

Reviewed: D. A. Wiedenfeld, 24 February 2012

Potentially Low Risk to Seabirds

GULF OF ALASKA POLLOCK (*THERAGRA CHALCOGRAMMA*) FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Poor	Good	Good	Low
2	3	18	1	33	18	1
5/6		70/100				1/3

This fishery uses a medium risk gear type, midwater trawl, but fishes in an area with high concentrations of seabirds and significant ETP seabirds. However, bycatch and fatal interactions are very low, and observer coverage and information from research are both good, assuring correct interpretation. Although little is done in the way of mitigation, little mitigation is probably required.

Recommendations

- Continue to monitor the fishery to assure that seabird bycatch and mortality remains low.

Overview

This fishery uses midwater trawls to target pollock *Theragra chalcogramma*. Fishing is carried out in the US EEZ in the Gulf of Alaska. The fish are marketed in Japan (principally surimi and roe), and the US and Europe (frozen filets). The fishery lands about 49,900 mt annually.

The fishery was originally certified as sustainable on 27 April 2005 and re-certified on 30 September 2010. The reassessment was managed by Moody Marine Ltd. for the At-Sea Processors Association Ltd. The reassessment team was Andy Hough and Paul Knapman (Moody Marine Ltd.), Rob Blyth-Skyrme (private consultant), Jake Rice (Department of Fisheries and Oceans, Canada), and Susan Hanna, (Oregon State University).

All text in quotation marks is from the certification report or the surveillance audit.

Gear and Set

Pelagic midwater trawl is a medium-risk gear type.

No mitigation methods are mentioned as being used to prevent seabird bycatch in this fishery.

Species

"Seabirds are caught incidentally in the pollock fishery, but the numbers are generally low (data from the AFSC Coordinated Seabird Studies)."

In the period from 2007-2010 in all Gulf of Alaska groundfish trawls combined (not just the pollock fishery), an average of 63 birds were taken as bycatch each year, all Northern Fulmars (NOAA Alaska Fisheries Science Center report, August 2011).

"Seabirds taken in the pollock fishery include Laysan Albatross, unidentified albatross, Northern Fulmars (*Fulmarus glacialis*), gulls, shearwaters, and unidentified seabirds (those not identified to one of the other ten groups). Northern Fulmars and gulls are generally taken in the largest numbers (AFSC Seabird Coordinated Studies 2004, 2006)."

"In general, seabird bycatch in trawl fisheries in the GOA have been low. For example, in 2006 no seabirds were taken in the Observed catch. Estimated bycatch rate in the pollock fishery varied from 0 to 0.11/1000 t [metric tonnes] during the period 1998-2006[.] An average of 1.4 unidentified alcids were taken annually in the pollock fishery during that period."

Information

Observers on a high percentage of boats (small boats 30% of time, larger boasts 100%).

Conditions

No conditions for certification or recommendations were placed on the fishery in the reassessment directly relating to seabird issues, although a number of indirect conditions may affect seabirds.

Conclusions

Probably as a result of the gear type used, midwater trawl, bycatch and fatal interactions with seabirds are very low, and observer coverage and information from research are both good, assuring correct interpretation. Although little is done in the way of mitigation, little mitigation is probably required. For a fishery of this scale, it appears to have very small effects on seabirds.

Reviewed: D. A. Wiedenfeld, 27 February 2012

NEW ZEALAND SOUTHERN BLUE WHITING TRAWL FISHERIES

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Good	Good	Good	Low
2	3	20	25	30	18	1
5/6		93/100				1/3

The southern blue whiting trawl uses a medium-risk to seabirds gear type, pelagic trawl. Although there are significant concentrations of seabirds and numbers of ETP seabirds in the area of the fishery, effective mitigation methods are used, and regulation, enforcement, and monitoring are strong. Bycatch is therefore low. This fishery poses a low risk to seabirds.

Recommendations

- Continue monitoring to ensure that the fishery remains very low risk to seabirds.

Overview

This fishery uses pelagic trawl to target southern blue whiting (*Micromesistius australis*). Fishing is carried out in the New Zealand EEZ in five management areas (SBW1, SBW6A, SBW6B, SBW6I and SBW6R). The primary market for the frozen fish is Europe, Japan, and Russia. The Deepwater Group Ltd. has a TAC for the 2008-2009 season of 36,800 mt.

The fishery is still in assessment. The assessment is being managed by Intertek Moody Marine Ltd. for Deepwater Group Ltd. The assessment team is Andrew Hough and Seran Davies (Intertek Moody Marine Ltd.), Paul Medley (independent consultant), Graham Pilling (Center for Environment, Fisheries and Aquaculture Science, UK), and Jo Akroyd, (Jo Akroyd Ltd.).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Pelagic trawl is a medium-risk gear type.

"For seabirds, general mitigation approaches are being employed by trawlers and include mandatory use of seabird scaring devices as well as voluntary industry-led codes of practice, which are supported through legislation and audited by government observers. Regulations require the use of one of three potential bird scaring devices: paired streamer lines, a bird baffler or a warp deflector, which must be deployed as soon as possible after trawl shooting by all trawlers 28m or greater in length. These devices have been shown through the observer programme data to have successfully reduced warp strikes. Vessel Management Plans are

developed on a vessel-specific basis. These include methodologies to manage offal discharge during periods of vulnerability for seabirds, and are audited by MFish [Ministry of Fisheries, New Zealand] observers. This approach allows mitigation methods to be adapted to a particular vessel's operations, aiming to significantly reduce the risk of incidental interactions. While mincing of offal has been suggested prior to discharge, this approach is not effective in reducing activity of all seabird species around vessels. Cleaning of the net before shooting is also required. Warp cable bird strike mitigation has also been studied …. Studies on trawl net interaction mitigation processes are underway …, which noted that the benefits of net binding on shooting appeared minimal for pelagic trawls due to low bird incidence at that time of the operation, but that it may prove a beneficial mitigation for demersal (e.g. squid) trawls. Trials on vessel turns to close the net during retrieval indicated merits of this procedure as a mitigation measure and suggested this be used when high numbers of seabirds were actively feeding in the proximity of the trawl net. Further mitigation methods are being developed to reduce mortalities caused by trawl net capture. Reporting practices are also in place so that bird captures trigger action by DWG [Deepwater Group] and are reported to MFish. The fact that the fisheries operate during the austral winter will further reduce bird interactions and the fisheries are assessed by the Level 1 Risk Assessment… as low to negligible risk with a high level of confidence."

"[N]one use trawl sonar as cabled systems are illegal in New Zealand waters, to prevent seabird mortalities."

Species

Gray-headed Albatross, Northern Giant Petrel, Light-mantled Albatross, Campbell Albatross

"In 2007/08 in 6B, one Salvin's Albatross and one Grey Petrel were observed caught, while in previous years a single Grey Petrel was caught."

"In 2007/08, one Campbell Albatross was caught, while in previous years a single bird was caught, of a different species."

Information

"Seabird and marine mammal interactions in the southern blue whiting fishery have been analyzed in a number of studies…, which provide detailed breakdowns of interactions and model the likely impact of the total fishing fleet based upon data from observed vessels. Population estimation studies are also underway for both birds and marine mammals, which will allow the likely impact of interactions on ETP species populations to be evaluated. In turn, ecological risk assessment studies for birds are underway …, which will allow evaluations to focus on potentially more at risk species."

"The observers monitored between 29% and 44% of trawls annually during the period 2002-2007."

"The Ministry of Fisheries completed a sea bird risk assessment process in 2011 which assessed the relative risk of fishery units to seabird species. This study indicated that for those albatross and petrel species likely to interact with this trawl fishery, the potential additional risk represented by the fishery under certification was less than 1%. The Ministry

of Fisheries is currently finalizing a new seabird policy to manage incidental interactions between seabirds and fisheries."

Conditions

No conditions for certification regarding seabirds were placed on the fishery.

Conclusions

Through the use of effective mitigation methods, regulation, enforcement, and monitoring, seabird bycatch in this fishery is low. The fishery has very good information, planning, and governance structures, providing it with an exemplary framework for assuring that the fishery is sustainable with regard to seabirds.

It appears that the lessons learned from the original and re-certifications of the New Zealand Commercial Hoki Fishery have been understood and effectively implemented.

Reviewed: D. A. Wiedenfeld, 7 February 2012

ROSS SEA TOOTHFISH LONGLINE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Good	Good	Good	Low
3	3	20	20	33	18	1
6/6		91/100				1/3

This fishery uses high risk gear in an area with high risk for seabird bycatch, but because of effective mitigation is not causing seabird mortality. Observation coverage is 100%, with observers specifically recording seabird interactions. Seabird mortality has therefore been very low, despite the high risk gear.

Recommendations

- Maintain the effective mitigation and low levels of seabird bycatch..

Overview

This fishery uses demersal longlines to target toothfish (*Dissostichus mawsoni*). Fishing is carried out in the Ross Sea in CCAMLR subareas 88.1 and 88.2. The market for the fish is the US and Asia. No tonnage of fish landed is given.

The fishery was certified as sustainable in November 2010. The assessment was managed by Moody Marine Ltd. for Argos Georgia Ltd., Sanford Ltd., and NZLL Ltd. The assessment team was Andrew Hough (Moody Marine Ltd.), Jo Akroyd (Jo Akroyd Ltd.), Paul Medley (independent consultant), and Jake Rice (Canadian Stock Assessment Secretariat, DFO, Canada).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Demersal longline is a high-risk gear type.

"[M]itigation measures associated with deployment and retrieval of the gear in this fishery have resulted in only one seabird death reported as a result of fishing during the entire 11 year operation of the fishery, … Discarding is not permitted in this fishery as a seabird mortality mitigation measure."

Mitigation methods apparently include offal management, appropriate "longline weighting for seabird conservation." Otherwise, the mitigation methods used are not described.

Species
The one mortality was of a Giant Petrel.

"The target seabird mortality rate is zero and this has been consistently achieved in recent years."

"The most abundant penguins are Emperor Penguins and Adelie Penguins."

"Petrels number in the millions in Ross Sea, with 6 species present, with nearly two-thirds Antarctic Petrels and nearly half the rest being Snow Petrels."

"Two species of albatross also forage in the area during the summer."

Information
"[T]here is 100% observer coverage in this fishery." Two observers (one international CCAMLR scientific observer and one national observer) are placed on board each boat.

"Bycatch, particularly seabird bycatch, will continue to be a priority recording and reporting responsibility of observers."

Conditions
No conditions for certification regarding seabirds were placed on the fishery.

Conclusions
The Ross Sea toothfish longline uses effective mitigation, and has very low seabird bycatch, as demonstrated by high observer coverage.

Reviewed: D. A. Wiedenfeld, 22 February 2012

Potentially Low Risk to Seabirds

SOUTH GEORGIA ICEFISH TRAWL FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Medium	High	Good	Good	Good	Good	Good
2	3	18	20	28	18	1
5/6		84/100				1/3

This fishery operates with medium-risk gear, but in an area with high concentrations of seabirds and many ETP species. However, because of proper use of mitigation methods, actual bycatch is very low, and can be reliably determined from 100% observer coverage.

Recommendations

- Continue improving mitigation methods to further reduce seabird mortality, following recommendations of the certification report.
- Maintain high levels of observer coverage and the high levels of data integrity already present.

Overview

This fishery uses pelagic trawls to target icefish *Champsocephalus gunnari*. Fishing is carried out in the South Georgia Maritime Zone, within CCAMLR Subarea 48.3. The primary market is southeast Asia and eastern Europe. No tonnage of fish landed is given.

The fishery was certified as sustainable on 22 October 2010. The assessment was managed by Moody Marine Ltd. for Polar Ltd. The assessment team was Andrew Hough and Jason Combes (both of Moody Marine Ltd.), Paul Medley (independent consultant), and Jake Rice (Canadian Stock Assessment Secretariat, Department of Fisheries and Oceans, Canada).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Pelagic trawl is a medium-risk gear type.

"There are several bird mitigation measures that are used to prevent birds from meshing whilst shooting the trawl. After hauling the gear is carefully cleaned to remove any fish that are meshed or left in the extension or cod end. The gear is bound up with sisal string (biodegradable) from the cod end forward...This tying up and weighting of the gear ensures that it quickly sinks when shot away over the stern of the MFV [marine fishing vessel] thus reducing the time when birds may become meshed."

"Net binding on setting … combined with net weighting, to reduce bird interactions on setting of the net (an additional requirement to CCAMLR Conservation measure 42-01). This approach is now a condition of SGSSI licensing for icefish vessels, and has proved effective in reducing bird bycatch on setting."

"These measures [net binding on setting and net weighting] are in addition to requirements to clean nets prior to shooting, and prohibition of offal discharge during shooting and hauling procedures. Vessels are required to notify the Government of SGSSI of the measures that will be used within the season as part of the licensing requirements. Water cannons and streamer lines may also be used, but are optional. Further reductions in birds striking warps will be helped by the increasing use of wireless SCANMAR gear. When Polar MFVs haul they steam ahead as slowly as possible whilst hauling the net so that the angle of ascent is as steep as possible, thereby giving the net minimum surface time. The issue of bird bycatch is still present, but birds stand a greater chance of survival. There is a strict limit on bird bycatch of 20 birds/vessel/CCAMLR year." See also the following section.

"Listed [mitigation] measures are:

- net cleaning
- no discharge of offal 30 mins before shooting /after hauling,
- recording incidental bird mortality.

Some vessels also use streamers."

Species

"For 2005/06, 33 bird mortalities (11 Black-browed Albatross (*Thalassarche melaonphrys*), 20 White-chinned Petrels (*Procellaria aequinoctialis*), 1 Grey-headed Albatross (*Diomedea chrysostoma*) and 1 other petrel species) were reported in the entire icefish trawl fishery around SGSSI (ie the UoC fleet operated by Polar plus the [known] UoC sector of the fleet). In addition, 89 birds were released alive, uninjured. The rate of mortality was 0.07 birds per trawl. All birds – bar one - were killed on the haul. Bycatch was much lower in 2006/07, with only 6 birds caught, three being released alive."

"Two king penguins were caught during the 07/08 season, although this occurred during a scientific survey when towing under unusual circumstances that are not standard commercial practices. This is a very rare event, as gear is generally set deeper than penguins dive."

"Few vessels reach the limit on bird mortality of 20 birds per season (only one vessel has done so in recent years as a result of a one-off accident)."

"While in recent years there was undoubtedly a bycatch problem in this fishery, in the last two years particularly, the level of bycatch has been greatly reduced and work is required to reduce bycatch further, particularly to identify measures to reduce bycatch on the haul."

"The target seabird mortality rate is considered (by BirdLife International) not to pose a significant additional risk to PET species. Interactions are continually monitored through the observer programme."

This area is covered by an International Plan of Action for seabirds.

Information

"Consistent with CCAMLR standards, SGSSI [South Georgia and the South Sandwich Islands] authorities require 100% observer coverage of vessels in the icefish fishery."

"Fisheries inspectors and the marine officer at KEP [King Edward point] regularly speak to the observers by radio so that major issues quickly become known."

"Observers have good ID guides for icefish and all bycatch species that will be observed within the icefish trawl fishery"

Conditions

No conditions for certification regarding seabirds were placed on the fishery, but one recommendation was made, to implement the most effective bird mitigation measures. As a part of this recommendation it was further suggested:

- "a review/report [on seabird bycatch and mitigation methods]
- protocols developed and implemented that participant fishing boats must follow
- monitoring procedures for fishery officer and observers at the surveillance audit at the end of the first year of certification."

Conclusions

The fishery operates in a well-regulated environment, and monitoring and enforcement is high quality. Because appropriate mitigation methods are used, actual bycatch is very low, and can be reliably determined from 100% observer coverage. With further efforts, the fishery can reduce its already-low seabird mortality.

Reviewed: D. A. Wiedenfeld, 23 February 2012

SOUTH GEORGIA PATAGONIAN TOOTHFISH LONGLINE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	High	Good	Good	Good	Good	Good
3	3	18	20	33	20	1
6/6		95/100				1/3

This fishery operates with high-risk gear and in an area with high concentrations of seabirds and many ETP species. However, because of proper use of mitigation methods, actual bycatch is very low, and can be reliably determined from 100% observer coverage.

Recommendations

- Continue to use the effective mitigation methods now in place to assure that seabird mortality remains low.
- Maintain high levels of observer coverage and the high levels of data integrity already present.

Overview

This fishery uses demersal longlines to target Patagonian toothfish *Dissostichus eleginoides.* Fishing is carried out in the South Georgia Maritime Zone, around the island of South Georgia and the plateau to the west around Shag Rock, within CCAMLR Subarea 48.3. The market is the US, Europe, and Japan. The annual haul is about 3,500 mt.

The fishery was originally certified as sustainable in March 2004 and re-certified on 17 Sep 2009. The reassessment was managed by Moody Marine Ltd. for the Government of South Georgia and the South Sandwich Islands. The reassessment team was Andrew Hough and Jason Combes (both of Moody Marine Ltd.), Paul Medley (independent consultant), Graham Pilling (Centre for Environment, Fisheries and Aquaculture Science, UK) and Jake Rice (Canadian Stock Assessment Secretariat, Department of Fisheries and Oceans, Canada).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Demersal longline is a high-risk gear type.

"Licensed vessels are required to follow all CCAMLR and GSGSSI [Government of South Georgia and South Sandwich Islands] mitigation measures to reduce seabird mortality, including a closed summer season (during seabird breeding seasons), night-setting, use of approved streamer lines and strategic offal discharge [on the opposite side to hauling] or

retention by some vessels within CCAMLR waters. Measures are also in place to reduce the loss of hooks in offal to essentially zero." The mitigation methods required also include use of appropriate line weighting regimes and defrosting of bait so that lines quickly sink below the foraging depth of the birds.

"New mitigation measures on the discard of hooks in offal have also been noted to be effective."

"Autoliners are being limited in their number to reduce the bycatch of particular species."

Species

"Recent mitigation measures have proved highly successful and bird bycatch has been reported to be zero in SGSSI [South Georgia and South Sandwich Islands] in the last two years." Data show the bycatch of seabirds was high in the 1990s but declined dramatically following the 1999 fishing season, and continued to decline in the early 2000s to zero by 2006.

"While no explicit limit has been set, the implicit expected level has been a zero bycatch of seabirds within the fishery. Mitigation measures have been in place to reduce bycatch during setting and hauling. These measures appear to have been effective and successful, with a zero bird bycatch noted within the fishery by observers in the past two fishing seasons."

The second Annual Surveillance Report (2011) reported: "Diligent monitoring identified one bird mortality, during the entire season, which was a White chinned Petrel."

This area is covered by an International Plan of Action for seabirds.

Information

"The licensed fishery is closely monitored with daily catch reporting, and inspections of all port calls. 100% observer coverage ensures monitoring is accurate and adds biological sampling of catches, bycatch and incidental mortality. GSGSSI carries out research surveys at regular intervals to allow fishery-independent evaluation of impact of catches on stock size and productivity."

"There is a requirement under CM (2007) for 100% observer coverage."

"Observers record all direct interactions of seabirds with longline gears. The issue of discarded hooks in offal found in birds [sic] nests has been discussed in detail, being monitored through BAS activities."

Conditions

No conditions for certification or recommendations regarding seabirds were placed on the fishery.

Conclusions

The fishery operates in a well-regulated environment, and monitoring and enforcement is high quality. Because appropriate mitigation methods are used, actual bycatch is very low to none, and can be reliably determined from 100% observer coverage. There is little improvement that could be made with regard to seabirds in this fishery.

Reviewed: D. A. Wiedenfeld, 23 February 2012

Potentially Low Risk to Seabirds

SOUTHEAST US NORTH ATLANTIC SWORDFISH PELAGIC LONGLINE AND HANDGEAR BUOY LINE FISHERY

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
High	Low	Good	Good	Good	Fair	Fair
3	1	18	18	30	14	2
4/6		80/100				2/3

This fishery uses a high risk gear type, pelagic longline, but fishes in an area with a low number of ETP bird species and no seabird concentrations. The fishery is regulated by US law and international agreement. Although pelagic longline and swordfish fisheries have a reputation for having significant seabird bycatch, because of its location, night-setting, and use of circle hooks in this fishery, it appears that the levels of seabird bycatch here are very low. This is confirmed with observer data from the Pelagic Observer Program, which has covered on about 2-6%, although up to 13% in 2008 of days fished. Nevertheless, there remains some uncertainty as to whether the observers are properly trained to record seabird interactions. Because of this uncertainty, the fishery should be considered Potentially Medium Risk to Seabird

Recommendations

- Improve observer training and specifically record seabird interactions and bycatch.
- If the information from the improved data warrants, develop and implement appropriate measures to avoid seabird bycatch and mortality.

Overview

This fishery uses pelagic longline and handgear buoy line to target swordfish *Xiphias gladius*. Fishing is carried out off the Florida East Coast in state and federal (US EEZ) waters, predominantly between Fort Pierce and the Florida Straits. The fish are marketed fresh in the US. Approximately 200 mt of fish are landed each year.

The fishery was certified as sustainable in December 2011. The assessment was managed by MRAG Americas Inc. for Day Boat Seafood LLC. The assessment team was Robert Trumble, Graeme Parkes, and Rebecca Mitchell (all of MRAG Americas Inc.) and Joseph Powers(School of the Coast and Environment, Louisiana State University).

All text in quotation marks is from the certification report or surveillance audits.

Gear and Set

Pelagic longline is a high-risk gear type, whereas buoy gear (a single buoy with two hooks) is low risk to seabirds. Only a small amount of swordfish in this fishery are taken with buoy gear.

"There are no [mitigation] measures currently in place….Measures brought in to reduce other bycatch species (circle hooks) are considered likely to reduce bird bycatch further in the region."

"When targeting swordfish, the lines generally are deployed at sunset and hauled at sunrise." This reduces the likelihood of seabird bycatch, although it is not done specifically to avoid seabirds.

Species

This fishery is covered by the US National Plan of Action-Seabirds and by the International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries.

"No seabird bycatch has ever been observed in the FEC [Florida East Coast] region in the US Atlantic pelagic longline fishery; seabirds will therefore not be scored further under ETP species."
the low levels of bird bycatch…" recorded across the Atlantic US pelagic longline fleet (101 incidental mortality of birds between 1992 and 2008).

Information

"Continued monitoring of bird bycatch [through the pelagic observer program] and annual reports to ICCAT [Inter-American Tropical Tuna Commission] and within NMFS [National Marine Fisheries Service] determine whether the fishery under certification continues to have no impact on seabirds. The management framework in place has provision for implementation of measures/actions should the situation change in the future."

"Observer sampling has varied considerably over the last decades over 2-6% of sea days (although in 2008 it reached 13% of the sets)."

"The Pelagic Observer Program (POP) initiated in 1992 is directed by the SE Fisheries Science Center (SEFSC), and places observers aboard U.S. longline vessels that currently hold swordfish permits. The target observer coverage for the POP is 8% of total reported sets as of 2004 when a Biological Opinion (BiOp) for Atlantic pelagic longline for HMS was released."

Conditions

No conditions for certification regarding seabirds were placed on the fishery, although Condition 2.4, requiring the fishery to develop a research plan to obtain information on ETP

species, could potentially include birds. However, Condition 2.4 seems to be directed more at sea turtles.

Conclusions

Although this fishery appears to have low levels of seabird bycatch, pelagic longline and swordfish fisheries have a reputation for having significant seabird bycatch. The Pelagic Observer Program data, although obtained from a reasonable level of coverage, seem to be very reliable for sea turtles, sharks, and sea mammals, but observers are not trained for recording seabird bycatch or interactions, and may not be doing so reliably. Therefore, because of the uncertainty and the fact that pelagic longlines are often very hazardous on seabirds, the fishery could improve it data collection and levels of information on seabird interactions.

Reviewed: D. A. Wiedenfeld, 28 February 2012

Potentially Low Risk to Seabirds

TRISTAN DA CUNHA FISHERY FOR ROCK LOBSTER *JASUS TRISTANI*

Gear	Birds Present	Regulations	Mitigation	Bycatch	Observation	Uncertainty
Low	High	Good	Good	Good	Poor	High
1	3	20	18	32	1	3
4/6		71/100				3/3

Although the fishery operates with very low-risk gear (lobster traps), the fishery is located in and around the nesting islands of five threatened seabird species, three of which nest nowhere else. The main threat appears to be from birds striking the large vessel. Mitigation methods are used, especially reduction of deck lighting. Anecdotal reports indicate that there are fewer than 20 bird strikes per year, and not all of these are fatalities. However, there is no observer information at all. Conditions were placed on the fishery to obtain observer data and to develop a research program on bycatch species. A reduction in Uncertainty would benefit this fishery, but it is already Potentially Low Risk to Seabirds.

Recommendations

- Obtain quantified observer data on seabird bycatch and interactions.
- If the data from the observers indicate that it is warranted, adjust the fishery to assure no bycatch.
- Continue vigilance, because this fishery is located in an area of high significance to some highly threatened seabirds.

Overview

This is a small fishery, with an annual catch of only 435 mt, and carried out by a single factory vessel and nine small motorboats. The lobsters (Tristan da Cunha rock lobster, *Jasus tristani*) are caught using traps. The fishing is carried out around Tristan da Cunha, Gough, Nightingale and Inaccessible islands and Vema Seamount, in FAO Region 41. The markets for the lobsters are in Japan and the US.

The fishery was certified as sustainable on 20 June 2011. The assessment was managed by MacAllister Elliott and Partners Ltd. for Ovenstone Agencies (Pty) Ltd. The assessment team was Jo Gascoigne (Bangor University, UK), Johan Groeneveld (Oceanographic Research Institute, South Africa), and David Japp (CapFish, South Africa).

All text in quotation marks is from the certification report.

Gear and Set

The lobsters are caught using traps of three types; small box traps, large monster traps, and hoop net traps. The only mitigation methods used is night-time light reduction and control (no use of floodlights and the reduction of deck lighting).

Species

The Tristan da Cunha archipelago has populations of several highly threatened seabirds. It is the sole nesting site of the Tristan Albatross (*Diomedea dabbenena*; CR), Atlantic Yellow-nosed Albatross (*Thalassarche chlororhynchos*; EN), and Atlantic Petrel (*Pterodroma incerta*; EN). Wandering Albatross (*Diomedea exulans*; VU) and Sooty Albatross (*Phoebetria fusca*; EN) also nest in the islands, but not exclusively. Other seabirds in the area are White-chinned Petrel (*Procellaria aequinoctialis*; VU), Northern and Southern giant petrels (*Macronectes halli*, LC, and *M. giganteus*, LC), Great-winged Petrel (*Pterodroma macroptera*; LC), Soft-plumaged Petrel (*P. mollis*; LC), Spectacled Petrel (*Procellaria conspicillata*; VU) and Gray Petrel (*P. cinerea*; NT).

There are no records of bycatch of any seabirds in the lobster traps. The single factory vessel has recorded bird strikes over 35 years, something below 20 per year. Bird strikes are mostly associated with foggy conditions. There is a protocol for releasing unharmed birds that land on the boat.

The Tristan da Cunha government is a signatory to ACAP.

Information

There is no observer program for the lobster fishery, and there is no information on seabirds as bycatch. There is likely very low seabird bycatch or mortality, so this may not be important; however, information is needed to assure that it is not important.

Conditions

The assessors placed one condition regarding seabirds on the lobster fishery, Condition 2.3.3. This condition "requires that quantitative data be collected on interactions of the Edinburgh [factory vessel] with birds (bird strikes or landings)." "The data should be periodically reviewed to ensure that mortality on ETP species from this fishery remains low. The system should be in place within two years of certification." The certification was in June 2011, so compliance is required by June 2013.

A second condition, Condition 3.2.4, was placed on the fishery that could include seabird effects. The fishery is required to develop a research plan, for research to provide information useful to the fishery. This plan could potentially include research on seabirds, and in fact could be used to comply with Condition 2.3.3.

Conclusions

The assessment seems to adequately consider seabird issues in this fishery. The gear used is very low risk, but several of the bird species encountered in the archipelago are highly threatened, especially Tristan Albatross. The greatest threat to these birds appears to be direct strikes with the one factory vessel, something which probably does not occur frequently. The primary issue for the fishery appears to be the lack of quantitative information on bird strikes and mortality. The assessors therefore placed a condition to remedy this issue within two years. Once quantitative information is obtained, the condition also requires that the information is to be used to adapt the fishery to further reduce seabird mortality.

These appear to be the appropriate responses.

Reviewed: D. A. Wiedenfeld, 23 September 2011

Potentially Low Risk to Seabirds

LIST OF ADDITIONAL FISHERIES WITH LOW RISK TO SEABIRDS

The following list of fisheries are those which are certified or in assessment but which were reviewed and deemed to be of sufficiently low risk to seabirds as to not require an in-depth analysis. This is usually because the gear type used is medium-risk or low-risk and there are few ETP seabirds or seabird concentrations that would be affected by the fishery.

Fishery	Date Certified	Ocean	Gear
American Albacore Fishing Association Pacific Albacore Tuna - North	23 Aug 2007	Pacific	Pole and line, troll and jig
American Albacore Fishing Association Pacific Albacore Tuna - South	23 Aug 2007	Pacific	Pole and line, troll and jig
American Western Fish Boat Owners Association (WFOA) North Pacific Albacore Tuna	1 Mar 2010	Pacific	Pole and line, troll and jig
Atlantic Deep Sea Red Crab	3 Sep 2009	NW Atlantic	Pots on lines
Barents Sea cod and Barents Sea haddock	1 Nov 2010	NE Atlantic	Demersal Trawl
Burry Inlet Cockles	1 Feb 2007	NE Atlantic	Hand raking and sieving
Canada Offshore Northern Shrimp	In process	NW Atlantic	Trawl
Canada Scotia-Fundy Haddock	22 Oct 2010	NW Atlantic	Demersal otter trawl, Gillnet, demersal longline, handline
Canadian Highly Migratory Species Foundation (CHMSF) British Columbia North Pacific Albacore Tuna	1 Mar 2010	Pacific	Troll and jig
Comapêche and Euronor Cod and Haddock	In process	Arctic	Demersal otter trawl
Cornwall sardine, UK	1 Jul 2010	NE Atlantic	Drift nets and ring nets
CSHMAC Celtic Sea herring, sprat & sardine Trawl	In process	NE Atlantic	Pelagic pair trawl
Danish Pelagic Producers Organisation Atlanto Scandian herring	21 Jul 2009	NE Atlantic	Purse seine and pelagic trawl
Danish Pelagic Producers Organisation North East Atlantic mackerel	21 Jul 2009	NE Atlantic	Purse seine and pelagic trawl
Danish Pelagic Producers Organisation North Sea Herring	25 Jun 2009	NE Atlantic	Purse seine and pelagic trawl
Denmark Blue Shell Mussel	15 Jan 2010	NE Atlantic	Mussel dredge
DFPO Denmark North Sea & Skagerrak Saithe	1 Feb 2011	NE Atlantic	Demersal trawl, Danish seine and set net
Dutch Rod and Line Fishery for Sea Bass	1 Dec 2011	NE Atlantic	Rod and line
Eastern Canada Offshore Lobster	2 Jun 2010	NW Atlantic	Pots on lines
Eastern Canada Offshore Scallop Fishery	1 Mar 2010	NW Atlantic	Dredge, New Bedford scallop rake
Ekofish Group-North Sea Twin Rigged Otter Trawl Plaice	4 Jun 2009	NE Atlantic	Demersal otter trawl
Euronor Saithe	10 Mar 2010	NE Atlantic	Bottom trawl
Faroese Pelagic Organization (FPO) Atlanto-Scandian Herring	2 Mar 2010	NE Atlantic	Pelagic trawl and purse seine
Germany Eastern Baltic Cod	1 Aug 2011	NE Atlantic	Trawl
Germany North Sea Saithe Trawl	8 Oct 2008	NE Atlantic	Demersal otter trawl
Gulf of California, Mexico – Sardine	21 Jul 2011	Pacific	Purse seine

Fishery	Date Certified	Ocean	Gear
Hastings fleet Dover Sole Trawl and Gill-Net	9 Jul 2009	NE Atlantic	Demersal trawl and gillnet
Isefjord and East Jutland Danish Blue Shell Mussel	In process	NE Atlantic	Mussel dredge
Iturup Island Pink and Chum Salmon	10 Sep 2009	Pacific	Coastal stationary fish traps
Küstenfischer Nord eG Heiligenhafen Eastern Baltic Cod	1 Oct 2011	NE Atlantic	Bottom and pelagic trawls
Kyoto Danish Seine Fishery Federation Snow Crab and Flathead Flounder	19 Sep 2008	Pacific	Danish seine
Lake Hjälmaren Pikeperch Fish-Trap and Gillnet	7 Aug 2006	Inland lake	Trap and gillnet
Lakes and Coorong, South Australia	13 Jun 2008	Southern	Many
Limfjord Blue Shell Mussel (Rope Grown)	In process	NE Atlantic	Cultivated
Louisiana Blue Crab	In process	Atlantic, Western Central	Trap
Maldives Pole & Line Skipjack Tuna	In process	Indian	Pole and line
Mexico Baja California Pole and Line Yellowfin and Skipjack Tuna	In process	Pacific	Pole and line
Mexico Baja California Red Rock Lobster	1 Apr 2004	Pacific	Trap
Netherlands Blue Shell Mussel	28 Jul 2011	NE Atlantic	Dredge and bottom culture
Netherlands Suspended Culture Mussel	1 Jul 2011	NE Atlantic	Cultivated
New Zealand Albacore Tuna Troll	1 May 2011	Pacific	Troll
Normandy and Jersey Lobster	1 Jun 2011	NE Atlantic	Pots
North East Atlantic Mackerel Pelagic Trawl, Purse-Seine and Handline	30 Apr 2009	NE Atlantic	Purse seine, midwater trawl and handlines
North Eastern Inshore Fisheries and Conservation Authority Sea Bass	Withdrawn	NE Atlantic	Intertidal fixed gillnets
North Menai Strait Mussel	1 Nov 2010	NE Atlantic	Mussel dredge
North West Atlantic Canada Harpoon Swordfish	18 Jun 2010	NW Atlantic	Harpoon
Norway North East Arctic Cold Water Prawn	In process	NE Atlantic	Trawl
Norway North Sea and Skagerrak Herring	30 Apr 2009	NE Atlantic	Pelagic trawl and purse seine
Norway Spring Spawning Herring	30 Apr 2009	NE Atlantic	Purse seine and pelagic trawl
Oregon Dungeness Crab	1 Dec 2010	Pacific	Pots on lines
Oregon Pink Shrimp	1 Dec 2007	Pacific	Demersal otter trawl
Osprey Trawlers North Sea Twin-Rigged Plaice	1 Sep 2010	NE Atlantic	Demersal twin-rigged trawl
Patagonian Scallop	1 Dec 2006	South Atlantic / Indian Ocean	Demersal otter trawl
Pelagic Freezer-Trawler Association Atlanto-Scandian Herring Pelagic Trawl	1 Jul 2010	NE Atlantic	Pelagic trawl
Pelagic Freezer-Trawler Association North East Atlantic Mackerel Pelagic Trawl	10 Jul 2009	NE Atlantic	Pelagic midwater trawl
Pelagic Freezer-Trawler Association North Sea Herring	1 May 2011	NE Atlantic	Pelagic trawl
Pescafria-Pesquera Rodriguez Barents Sea Cod	1 Feb 2012	NE Atlantic	Demersal otter trawl
PNA Western and Central Pacific Skipjack Tuna	1 Dec 2011	Pacific	Purse seine
Portugal Sardine Purse Seine	14 Jan 2010	NE Atlantic	Purse seine
Royal Frysk Jutland Blue Shell Mussel Dredge	In process	NE Atlantic	Mussel dredge
Scapêche and Compagnie de Pêche de St. Malo Saithe	1 Jan 2011	NE Atlantic	Demersal otter trawl
Scotian Shelf Shrimp	1 Jun 2011	NW Atlantic	Demersal otter trawl
Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea Haddock	29 Oct 2010	NE Atlantic	Seine, trawl

Fishery	Date Certified	Ocean	Gear
Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea Nephrops	In process	NE Atlantic	Trawl
Seafood Romo East Jutland and Isefjord Blue Shell Mussel Dredge	In process	NE Atlantic	Dredge
South-west Handline Mackerel	1 Feb 2007	NE Atlantic	Handline
Spencer Gulf King Prawn	1 Aug 2011	Indian	Demersal otter trawl
SPPO North East Atlantic Mackerel	1 Sep 2011	NE Atlantic	Purse seine and pelagic trawl
SPPO North Sea Herring	26 May 2010	NE Atlantic	Pelagic trawl
SPSG West of Scotland Herring Pelagic Trawl	In process	NE Atlantic	Pelagic trawl
SSMO Shetland Inshore Brown & Velvet Crab, Lobster and Scallop Fishery	In process	NE Atlantic	Pots and dredge
Stornoway Nephrops Trawl	14 Apr 2009	NE Atlantic	Demersal otter trawl
Suriname Atlantic Seabob Shrimp	1 Nov 2011	Atlantic, Western Central	Demersal otter trawl
Tosakatsuo Suisan Pole and Line Skipjack Tuna	4 Nov 2009	Pacific	Pole and line
UK Fisheries/DFFU/Doggerbank Group Saithe	1 Jan 2011	NE Atlantic	Bottom trawl
Vietnam Ben Tre Clam Hand Gathered	9 Nov 2009	Pacific	Hand raking
VMI East Jutland Blue Shell Mussel Dredge	In process	NE Atlantic	Mussel dredge
Western Australia Rock Lobster	1 Dec 2006	South Atlantic / Indian Ocean	Pots on lines