British Columbia Groundfish Fishery

The British Columbia (BC) groundfish fishery has one of the most sophisticated monitoring programs to date, employing multiple monitoring strategies in order to efficiently and effectively track total catch—both landings and discards. The fishery comprises over 300 vessels that target multiple groundfish species (e.g., halibut, sablefish, rockfish, and lingcod) using a variety of gear (e.g., trawl, demersal longline, hand line, troll, and traps).[1] Halibut and sablefish have been managed under a catch share since the early 1990s, with the trawl fleet converting to a catch share in 1997, and the remainder of the fleet in the 2007.

The monitoring program is designed to support management goals such as accounting for all catch (landed and discarded) and requiring fishermen to be individually accountable for their catch. Fishermen, managers, and third party providers have developed an innovative approach to achieve these goals in a cost-effective manner. The following highlights the fishery's monitoring strategies and briefly discusses program funding and effectiveness.

Monitoring Strategy: Hail in/Hail out
Fishery: All groundfish vessels

Monitoring Strategy: Dockside
Fishery: All groundfish vessels
Method: 100% independent verification of all weights for all species for every landing made by the groundfish fleet. In the trawl fishery, the landed weights are used to verify at-sea observer estimates and subsequently to make area allocations of at-sea estimates proportionate to landed weights. In the hook and line fisheries, the verified landed piece counts are used to verify skippers' logbook piece counts as part of the audit process.[1] This forms part of their rating to determine the necessary level of video review. The cross-reference of data between hails, self-reporting, and electronic monitoring provides a high level of confidence in the information for a relatively low cost, and the high costs of funding additional audits encourages honest reporting.

Monitoring Strategy: At-sea observers
Fishery: Offshore trawl vessels
Method: 100% at-sea observer coverage

Fishery: Hook and line and trap vessels
Method: 100% at-sea coverage is accomplished through an electronic monitoring system (EMS) that audits the self-reported data fishermen collect on effort, catch, and catch disposition in logbooks.[2]

Photo courtesy of Wes Erikson

Since the data that are collected and self-reported in fishing logs are utilized for science and management, a high level of confidence is needed in these data. As a result, 10% of landings on hook and line and trap vessels are randomly audited against the fishermen's self-reported logs to ensure accuracy. This level of coverage was chosen since more frequent audits would have been cost prohibitive to industry. If self-reported data and the audit have a low level of agreement, then additional audits (up to 100% of sets) are conducted and paid for by the fishermen.[3]

Monitoring Strategy: Video

Fishery: Hook and line and trap vessels

Method: Sizes of some species are independently verified as being either legal or sublegal through the use of video, using a ruler mounted on the vessel. At-sea discards of legal size catch are assessed so they can be accounted for in individual quotas.[1]

Funding

The Canadian Department of Fisheries and Oceans (DFO) and industry jointly fund the monitoring program, with industry covering most of the costs. At the beginning of the program DFO planned to cover 30% of the cost of electronic monitoring for the first two years of operation. This level of contribution has continued beyond the initial two years. The government also pays for 33% of the annual costs of the at-sea observer program for the offshore trawl fleet, and 30% of the observer costs for the small inshore trawl fleet.[1] The remaining costs are entirely funded by industry.

Program Effectiveness

A comprehensive evaluation of the BC groundfish monitoring program was conducted in 2009.[4] Results showed that groundfish and rockfish TACs are no longer being exceeded, fishermen are passing their audit checks, and the program was collecting valuable information on bycatch of particular species. Additionally, there have been financial gains from the sale of non-target catch, data for research and assessment have improved, and overall monitoring of the rockfish conservation areas has been enhanced. Finally, programmatic goals concerning social, economic, and conservation objectives are being met.

Sources

[1] Stebbins, S. 2010. Archipelago Marine Research, Ltd., Victoria, BC., Personal communication, November 2010.
[2] Stebbins, S., R.J. Trumble, and B. Turris. 2009. *Monitoring the Gulf of Mexico commercial reef fish fishery, a review and discussion*. Archipelago Marine Research, Ltd., Victoria, BC. 99 pp.
[3] Stebbins, S. 2010. Archipelago Marine Research, Ltd., Victoria, BC., Personal communication, July and August 2010.
[4] Department of Fisheries and Oceans Canada (DFO) Pacific Region. 2009. *Evaluation of the commercial groundfish integration pilot program*, November 2009. 27 pp. Available at: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/Groundfish/documents/Groundfish_evaluation.pdf