Testimony of Vidar G. Wespestad, Ph.D.
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Mr. Chairman and members of the Committee. My name is Vidar Wespestad; I am Chief Scientist of the Pacific Whiting Conservation Cooperative comprised of vessels fishing in the at-sea Pacific Whiting fishery. I also service as science advisor to the American Fishermen's Research Foundation, and a member of the board of the Pacific Groundfish Conservation recently formed by the west coast groundfish industry to develop and fund industry research on Pacific coast groundfish species. Prior to my employment within the fishing industry I was task leader of the Bering Sea stock assessment group at the Alaska Fisheries Science Center and personally conducted the Bering Sea Pollock assessment for 20 years, a resource that grew from about 2 million t at the time of implementation of the FCMA in 1977 to over 12 million t in 1997 when I left NMFS.

During my years in government I found that fishermen had a lot of useful information of value in interpretation of fisheries data. In the groups I work with, I have recommended that industry efforts be directed toward cooperative work with NMFS to fill data gaps in the NMFS assessment. The primary problem facing fishery managers isn't the scientific methods, rather it is a lack of the data required to make scientifically valid results.

The PWCC enthusiastically embraced the concept of cooperative research and invested in improving the available data for whiting assessment. It has also joined with other industry groups to develop research to improve data on associated overfished species that are taken as bycatch in the whiting fishery.

The PWCC has conducted a cooperative survey of juvenile hake and rockfish relative abundance and distribution off Oregon and California since 1998. This survey has added important information to that collected in a NMFS survey over a portion of the PWCC survey. Results from this survey suggest that transport of larvae may vary spatially and reach the continental shelf outside of the existing NMFS index area in some years. With the accumulation of additional data, and improved oceanographic data it may be possible to model and predict the distribution of juvenile whiting and rockfish to better deploy survey effort.

Widow rockfish is a semi-pelagic rockfish that occurs off the west coast of North America from Alaska to California. Widow rockfish have until recently been a target fishery, but current low estimates of abundance has halted directed fishing and it is now a bycatch only fishery. Widow rockfish are found along the outer continental shelf at about 200 m. depth and are highly localized. Dense schools form at dusk and dawn, and they move up in the water column at night to feed, returning to bottom at dawn. Canadian scientists have observed widow rockfish occupying rocky hard bottom with fish moving into fissures and under rocks. This behavior, location over hard bottom, and a highly aggregated distribution make it extremely difficult to assess widow rockfish with traditional trawl methods.

To investigate potential alternative methods of widow rockfish assessment a West Coast trawl industry/NMFS was organized for early 2004. The workshop brought together experienced

widow rockfish trawl fishermen and: developed a catalog of widow rockfish distribution that identifies major concentrations, past and present; documented fishermen observations of behavior relative to vessel, season and oceanographic factors such as tides; identified potential index sites based on distribution and fishermen estimated relative abundance; and used fishermen knowledge for determining best approach – transects – N/unit area (survey box), etc. The fishermen's knowledge was used to develop a range of survey designs for examination of assessment methods. Also several candidate widow rockfish concentrations to test methods were identified from the fishermen's recommendations. Fishermen will participate throughout the program; to develop abundance indexing methods that could potentially be conducted by fishermen. We intend to conduct trials this autumn to test methods.

The PWCC also funds student projects and conductions operational research projects to improve product recovery of the whiting catch and methods to reduce bycatch. This year we are testing a new trawl design that may further reduce salmon bycatch.

The success of the PWCC and the rationalization of walleye pollock by the American Fisheries Act led the at-sea industry joined with the University of Alaska to fund the Pollock Conservation Cooperative Research Center (PCCRC). This combination of industry, government and academia selects projects needed to improve fisheries management of the Bering Sea and Gulf of Alaska ecosystems. Many of the PCCRC projects are directed toward training students in the marine sciences and an opportunity to use industry vessels to obtain data.

Two projects that exemplify how cooperative research works thought the PCCRC are: *Using Commercial Vessels to Collect Acoustic Data* and *An Examination of the Maturation of Walleye Pollock (Theragra chalcogramma) in the Eastern Bering Sea*. Both of these projects combine University, NMFS and Industry scientists and are vehicles for gathering important scientific data and training future researchers.

The first project has been gathering acoustic data for 3 years on relationships between fishing patterns and pollock abundance. Examination of acoustic backscatter along PCC vessel cruise tracks reveled that fishing is concentrated to the area of greatest fishery removals, but show considerable fine-scale structure, including multiple passes over the same area, and overlap between different vessels. These features are important because they would allow evaluation of changes in pollock distribution over time and comparison of data collected by different vessels. Comparison with NOAA research vessel R/V Miller Freeman acoustic estimates over the fishing grounds so similar relative abundance levels. Recent inter-vessel comparisons of EK-60 sounder data between vessels indicate similarity in results and suggest calibration of vessels is possible. The long-term goal is to improve the understanding of fishing operations and to examine the question of the effect of fishing on fish density.

The maturation rate is an important parameter for determining the optimum exploitation strategy for a fish stock. For eastern Bering Sea walleye pollock maturation rates were developed in the late 1970s (Smith 1981). These rates have been used in assessments since the mid 1980s (Wespestad and Traynor 1989, Ianelli et al. 2001). Maturity data, collected during recent winter surveys in the southeastern Bering Sea, indicate different maturity rates from those developed in

the 1970s (Honkalehto et al. 2001). The difference between the maturity rates could potentially influence estimates of allowable harvest by several thousand metric tons annually. There is some reason to believe that the recent survey-derived estimates of maturation may be biased due to limited temporal-spatial coverage of the eastern Bering Sea pollock stock.

Cooperation by PCC-member company vessels was outstanding during the pollock "A" season in 2002-2004. A total of 14 vessels participated each year in data collection, or 93% of the fleet. This program is a successful integration of the skills of industry, university, and government to collect valuable data needed to insure stable sustainable yields from the resource. In 2002, this program collected observations on 4,468 gonads, more than collected in the history of the NMFS assessment program.

The American Fishermen's Research Foundation (AFRF) has worked with NMFS for over 35 years providing voluntary albacore catch and effort logbooks from albacore vessels. When AFRF was founded in 1971 the albacore industry had a means to become involved in joint research that has improved the knowledge and management of albacore. AFRF was instrumental in albacore tagging projects and its numerous projects has increased knowledge about albacore abundance/distribution patterns and life history. AFRF supports tagging and other research projects through direct chartering of vessels and assisting with tag purchases and tagging supplies.

A current cooperative archival tagging project in which AFRF and NMFS share costs with the following project goals: develop field procedures for applying tags that maximize survival of tagged fish; document details regarding North Pacific albacore biology that are currently only generally understood; determine exact migration routes of juvenile fish (3-4 year old); determine time/temperature/ depth characteristics of migrating fish; and incorporate retrieved data into future stock assessment models

The program for archival tags has been successful in a deployment of over 200 tags since 2001. The tags cost $1500 - $2000 each and are implanted surgically into the albacore. The first archival tagged albacore released on July 29, 2003 at 29 16N, 117 21W was recaptured 10/18/2003 at 32 19N 119 11W by a sport boat. The lucky angler got an albacore and a $500 reward. The recovery of this tag indicates that tagged fish are surviving and provide confidence that these expensive tags will be recovered and provide much needed data on movement and behavior. The data from this tag reveled interesting movement patterns and one can clearly see a diel feeding pattern in which the albacore move to deep waters to feed and then return to surface waters.

Available funding for port sampling of albacore along the west coast has decreased in recent years, and NMFS funded sampling will be restricted to San Pedro, CA, Newport, OR, and Ilwaco, WA. This has created a need for fishermen to provide sampling of catches delivered to non-sampled ports. AFRF has provided sampling tools and NMFS has instructed interested fishermen on sampling methods as a contribution to albacore research. Albacore fishers who land their catch in non-sampled ports have been measuring 50 to 100 fish from the last day of fishing on each trip since 2001. Industry sampling makes a valuable contribution to albacore research and provides vital information for stock assessment and fishery evaluation.

This is not an exhaustive list of industry projects on the west coast. There are many others. A significant point is that most fishing groups wish to engage in cooperative research, but the amount of money available within many of the associations is very limited. We are now at a very difficult point in many of our groundfish fisheries. That is, there is growing evidence that many of the previous overfished species are increasing in abundance; however, stock assessments do not reflect this reality, partially due to an absence of techniques appropriate to assess species that cannot be accurately monitored with bottom trawls. There are several efforts underway to get better assessment data in order to prevent the wholesale closure of productive sustainable resources.

We think that NOAA is improving its efforts to deliver data and information for management of fishery resources; however, I and many in the industry would like to see greater support for cooperative research. NOAA has increased funding levels for cooperative research, but the mode of delivery isn't within the normal communication channels of fishermen or processors. The requirement of competitive bidding for funds is an effective mode when dealing with academics and short-term research projects. However, most of the current problems facing fisheries require both short-term and long-term research in which fishermen have a great deal of knowledge to contribute. Short-term projects are primarily related to gear or non-trawl survey methods that need a large concentration of funding to accomplish. Long-term research is primarily stock monitoring, that requires measurements at the same site over many years to develop a time-series that accurately reflects the trends in the fish population.

Most of all we want to avoid the situation reflected in the following cartoon. We want data of sufficient quality that we can both agree that we are seeing the same result when we analyze the data; and, we want to able to estimate stock trends and that exploitation is at sustainable levels