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WHY LOGBOOKS?

by

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INFORMATIONAL REPORT 76-6

Oregon Department of Fish and Wildlife

March 1976

# INFORMATIONAL REPORT

## WHY LOGBOOKS?

### INTRODUCTION

Much information biologists need to do their job comes from fishermen's logbooks. These logbook data are confidential by law. No single log record, or single skipper's log information can be made available to anyone else. What use is made of these log records, and why are they useful is a question often asked by fishermen. This report tries to answer those questions. Some uses are:

1. Logbook information is the only source of where, when, and how much (per tow or area) fish are caught.
2. A vitally important statistic, effort (hours towed), is only obtainable from logs.
3. For foreign fishery bilateral negotiations, logbooks are the only documented source of what areas and time periods are important to U.S. fishermen.
4. Tagging-migration studies depend in part on logbook data.
5. A fisherman may benefit from the logbook program directly. If he loses or misplaces his logbook, copies are obtainable from O.D.F.W. files.

### LIMITS ON USE OF LOGBOOK AND LANDINGS DATA

There are limits to using log data. One obvious limitation is that catch (and catch per unit of effort) can be and often is biased by market limits on species and/or the amount of fish that will be bought. A second effect biologists must be careful about depends on the type of gear used, including mesh size, otter door size, hanging, size of trawl, etc. These things vary from boat to boat, trip to trip, and can affect how much fish are caught in a drag or trip. Only the skipper can tell biologists

these things either by remarking them in the log or telling us. These are also considered confidential. The biologist should then try to "standardize" or correct raw logbook statistics to take account of such effects.

#### DISCUSSION

How is this information used? Usually, biologists compile all of the log data by all skippers into a table of catch and effort by block-area and month. Dividing the catch by the effort gives us a rough estimate of abundance (catch per hour) for important species, which can then be compared by month or by season or from year to year. Trends in such data help tell us whether a stock is stable or not, assuming we have adequately "tempered" such statistics by accounting for gear and fishing method effects. It may also (and often does) tell us much about the distribution and/or movement of fish area-wise and/or seasonally.

When biologists combine catch per hour data with biological factors (age and sex composition, size, spawning condition) we can then begin to reliably measure stock "health" and calculate biological factors (called parameters) like survival rate and growth rate. These can be used to estimate the sustainable catch of a species in an area.

#### FOREIGN FISHING

With respect to foreign fishery negotiations, the logbook data is the only source of what areas are important; even vital, to American fishermen. This information can be used by U.S. negotiators to try to achieve time and/or area closures on foreign vessels. Such closures have been agreed on, for example, in the black cod fisheries off the Columbia River and other fisheries. In future, important areas, for example, for Dover sole and rockfish fishing may be included. But such economic-based restrictions, as well as those based on biology, will depend entirely or partly

on continued and improved data from fishermen.

It is always best to rely on our own data, if available. Therefore, our own estimates of stock health (and checks on information the foreigners supply us) depend partly on U.S. fishery statistics like catch/hour rather than on the foreigners' information. Catch/hour is one way to measure relative abundance of a stock of fish; the hours part of catch/hour can only be gotten from logs. Until an enforceable 200-mile law is passed, Americans will have to rely on such measures to get what we want.

#### TAGGING STUDIES

Another obvious use of logs is to help obtain information on tagging studies. Only the fisherman can tell us where and when a tagged fish was caught. This gives us information on both migration and relationship of one stock to another, such as whether a petrale sole population off Tillamook Head is part of, or separate from a stock off Cape Lookout or Grays Harbor.

Last, skippers' logbooks are important to a cooperative Oregon State University Sea Grant - O.D.F.W. flatfish study. OSU researchers are trying to construct mathematical models which will give alternative solutions on how one species might affect another; how fishing on one species may affect another and the whole complex (community). Although this is an over-simplified description of the study goals, the study is, again, partly dependent on logbooks.

#### NEEDS AND BENEFITS

Many skippers don't keep logbooks as accurately, or completely as would be most useful. The hauls (estimate of catch by tow) data are often missing or incomplete. We hope some skippers will improve on this. Your living-fishing-depends on the fish, and with your help, they will be better protected and managed for the future. We

hope this will help explain why your information, through logbooks and personal interview, is vital to good management, as well as for more accurate knowledge about the fish themselves. Most fishermen are naturalists themselves. They couldn't continue to be successful if they did not have an instinctive "feel" for why and how fish behave. The biologist can often quantify and scientifically explain and expand on the fisherman's know-how. But you are essential in helping to do the job. Your help is needed and appreciated.