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FISH-AGE DETERMINATION

"Age Determination of Fishes (Revised)," by Fred E. Lux, Fishery Leaflet 637, illus., 7 pp., June 1971.

How long fishes live and how large they grow vary widely. A European goby lives its life within a single year; it is slightly over one inch long when mature. Other fishes live beyond 100 years.

Age and growth-rate data are vital to fishery management. The growth rate of commercial fish must be known to learn the age and size for harvesting them most efficiently. Age information also helps to judge the results of management practices.

"Three basic methods have been used for age and growth determination of fishes: 1) observation of the growth of fishes of known age, 2) study of fish size-frequencies, and 3) study of seasonal ring formation in hard body parts such as scales and bones. The method used usually depends upon special problems encountered in age determination of a given species."

BLUE CRAB MEAT

"Blue Crab Meat - I. Preservation by Freezing," by Jurgen H. Strasser, Jean S. Lennon, and Frederick J. King, SSR-Fish. No. 630, illus., 26 pp., July 1971.

The blue crab (Callinectes sapidus) is one of the most valuable U.S. commercial shellfishes--"in volume of landings and in value of its food products." The industry has one of the greatest seasonal variations in exvessel prices of any shellfish. Several factors are involved: short life span of crab (2-3 years) and need to keep it alive until cooked to remove the meat. A more significant factor is that meat itself is highly perishable. Virtually all of the present output is sold as fresh meat, "which has a shelf life of up to 10 days at 32° to 38° F."

The authors studied freezing as a method of preserving blue-crab meat for up to 8 months. "The results indicate that a rapid freezing rate, storage below 0° F, and vacuum packaging are preferable to minimize losses in the desirable qualities of freshly picked meat."

CALICO SCALLOPS

"Calico Scallops of the Southeastern United States, 1959-69," by Robert Cummins Jr, SSR-Fish. No. 627, 22 pp., illus., June 1971.

The author summarizes developments in the calico scallop resource of southeastern United States. He provides a background and description of the fishery in North Carolina and its expansion later to Florida grounds. Also, there are sections on quality of the scallop and its parasites, development of processing machinery, recent industry activity, and NMFS technical assistance.

SALMON

"Alaska's Fishery Resources - The Chum Salmon," by Theodore R. Merrell Jr., Fishery Leaflet 623, 7 pp., illus., June 1970.

Although less highly regarded than the others, "the chum salmon, Oncorhynchus keta, is the most widely distributed and second most abundant of the five Pacific salmon. It is one of Alaska's valuable fishery resources."

The chum spawns in late summer and fall. Some spawn in small streams near the ocean;

others travel as far as 1,500 miles from the ocean to spawn in large rivers. The young hatch in midwinter but stay in the stream gravel until spring. Then they emerge and migrate to sea, where they spend 2 to 4 years. They weigh about 10 pounds when they return to spawn and die in their native stream.

Most chum are caught in purse seines and canned; hundreds of thousands are caught in gill nets and fish wheels for human and dog food. The chum fishery is mostly in large rivers running into Bering and Chukchi Seas of northern Alaska. Little biological research has been done on chum salmon, so less is known about them than the other Pacific salmon.

The leaflet also contains information on geographic distribution, life history, economic importance, and selected references.

"Alaska's Fishery Resources - The Pink Salmon," by Jack E. Bailey, Fishery Leaflet 619, 8 pp., illus., March 1969.

"Pink salmon, Oncorhynchus gorbuscha, are called the 'bread and butter fish' of the Alaskan salmon industry because they are the most consistently abundant of the five Pacific salmons in Alaska--pink, sockeye, chinook, coho, and chum.

"The name 'pink' comes from the delicate color of the flesh of the pink salmon, which is also known as 'humpy' or 'humpback' salmon because of the hump that develops on the back of the spawning male."

This leaflet describes the fish; gives its geographic distribution and abundance; natural history (spawning, survival, food and growth, and migrations); economic importance; research and management; and publications.

"Alaska's Fishery Resources - The Sockeye Salmon," by Wilbur L. Hartman, Fishery Leaflet 636, 8 pp., illus., March 1971.

Pink and chum salmon fry that have just emerged from the streambed. The pink salmon are distinguished by their smaller size and the lack of the parr marks that are noticeable on the backs of the chum salmon fry. In the live fish the fins are nearly transparent because they are very thin and unpigmented.

Sockeye salmon, Oncorhynchus nerka, known too as red salmon, come from the river-lake systems in Alaska, Canada, and the Soviet Union. The female carries about 3,500 eggs and spawns in late fall in the inlets and outlets of lakes and in the lakes themselves. The sockeye is a renewable resource economically important to Alaska. "Its deep red flesh, rich in oils, makes the sockeye salmon the most highly prized of the five Pacific salmons for canning or smoking."

The leaflet includes the sockeye's life history, management of fishery, scientific research, and references.

SHRIMP

"Alaska's Fishery Resources - The Shrimps," by Louis Barr, Fishery Leaflet 631, 10pp., illus., January 1970.

Shrimp fishing in Alaska began more than 50 years ago. In recent years the annual domestic catch has reached 40 million pounds; in the same period, Japanese and Soviet fishermen in Alaska waters have caught as much as 70 million pounds a year.

The five commercially important Alaskan shrimp are members of the family Pandalidae; the most important is the pink shrimp, Pandalus borealis.

These shrimp all have similar complicated life histories. The shrimp develops first as a male and, after several years, becomes a female. It remains female for the rest of its life.

U.S. fishermen use otter trawls, beam trawls, and pots. They deliver their catch to Alaskan ports; foreign fishermen use larger otter trawls and process the catch at sea.

LIFT NET

"A Lift Net for Catching Bait Fish Attracted to Light," by Hilton M. Floyd, Fishery Leaflet 638, 3 pp., illus., April 1971.

This leaflet "describes the construction and operation of an effective means for collecting small bait fish such as anchovies, sardines, chub mackerel, thread herring, and cigarfish. The gear is small and portable and can be easily handled by one man from a boat, dock, or bridge. Because the net is light, its use is limited to areas of little or no current."

SHELLFISH CONSUMPTION

"Regional and Other Related Aspects of Shellfish Consumption--Some Preliminary Findings From the 1969 Consumer Panel Survey," by Morton M. Miller and Darrel A. Nash, Circular 361, 18 pp., illus., appendix, and errata, June 1971.

A consumer panel of representative U.S. households recorded their purchases of fishery products for 12 months beginning February 1969. They were taking part in a study conducted under sponsorship of the NMFS Division of Economic Research. This leaflet deals mainly with findings on consumption of major shellfish species at home and away from home.

The findings indicate marked regional preferences for individual shellfish items. For example, people in South Atlantic States eat oysters at nearly double the U.S. per-capita rate. Similarly, there is a high consumption rate of clams in Middle Atlantic and New England areas.

"The results of the survey can be developed into useful guidelines for industry decisions, especially in marketing. Also the results can greatly enhance the accuracy of forecasting future economic events in the fishing industry."

BLUE CRAB

"A Report on the Cooperative Blue Crab Study - South Atlantic States," by Robert K. Mahood, Michael D. McKenzie, Douglas P. Middaugh, Sean J. Bollar, John R. Davis, and Dennis Spitsbergen, 32 pp., illus., appendix, Feb. 1970. Chief, NOAA, Federal Aid Division, 144 First Avenue South, St. Petersburg, Florida 33701.

"The cooperative blue crab study was designed to determine the cause(s) of blue crab mortalities and to delineate significant factors affecting the relative abundance of marketable crabs. A multiphased approach provided background information relative to

regional hydrological characteristics, diseases and parasites, and residual pesticides associated with blue crab populations."

Twenty South Atlantic sampling areas were monitored routinely. It produced hydrological data that illustrated typical seasonal patterns.

The researchers collected 195 blue crab samples (1,950 individual crabs) and analyzed these for pesticides.

SOUTH CAROLINA

"An Investigation of the Offshore Demersal Fish Resources of South Carolina," by Charles M. Bearden and Michael D. McKenzie, Technical Report No. 2, 19 pp., illus., May 1971. South Carolina Wildlife Resources Department, Marine Resources Division, Charleston, South Carolina.

The live bottom and continental shelf-edge habitats of South Carolina support many bottom fish. In recent years, commercial fishermen and related fishery interests have recognized the potential economic value of these resources. Federal, State, and local agencies have conducted exploratory fishery surveys.

In March 1970, South Carolina entered into agreement with NMFS to study State's offshore demersal fish resources.

Objectives: 1) "To accumulate and evaluate existing data on the species composition, distribution and availability of commercially valuable demersal fishes found on the Continental Shelf, especially sea basses, snappers, groupers, porgies, and grunts.

2) "To compile additional data on the commercial potentials of offshore fishery resources through exploratory fishing in selected areas using fish traps and handlines.

3) "To supplement existing biological knowledge of the offshore demersal fish populations."

OIL POLLUTION

"Oil Pollution on Wake Island from the Tanker 'R.C. Stoner'," by Reginald M. Gooding, SSR-Fish. No. 636, 12 pp., illus., May 1971, 25 cents. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

In 1967, the tanker R.C. Stoner foundered on a reef about 200 miles southwest of harbor entrance at Wake Island. It was carrying over 6 million gallons of petroleum products.

A shore and underwater survey of the contaminated coastline found that an estimated 2,500 kg. of inshore reef fishes were killed and stranded on shore. "Numerous other fish and invertebrates were probably killed. Evidence is cited which indicates that most of the kill occurred on the shallow reef flat." The author speculates on the lethal effect of the various fuels.