

# FISHERIES FACT SHEET

## Life History, Migration and Reproduction of Pacific Salmon

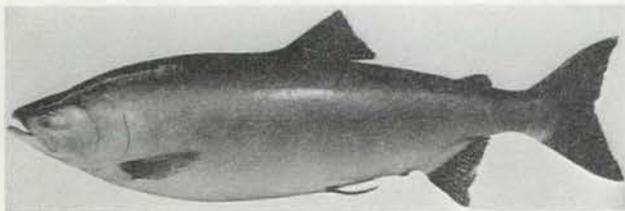
**T**HERE are five kinds, or species, of Pacific salmon in British Columbia. Their common and scientific names are:

Sockeye (*Oncorhynchus nerka*)  
Pink (*Oncorhynchus gorbuscha*)  
Chum (*Oncorhynchus keta*)  
Coho (*Oncorhynchus kisutch*)  
Chinook or  
spring (*Oncorhynchus tshawytscha*)

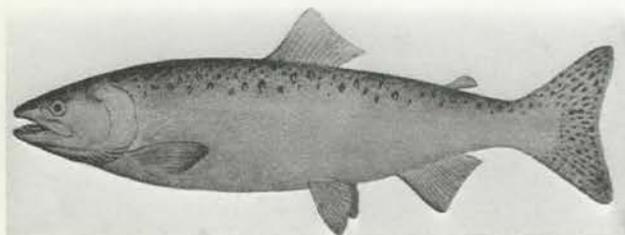
Except for some races of sockeye which remain throughout their life in lakes (known by many names but most commonly as "Kokanees") all salmon are anadromous. That is, they begin their life in fresh water, grow and mature in the ocean and return to fresh water to spawn. More detailed accounts of the life-history of individual species are given in other Fact Sheets forming part of this series.

### SPAWNING AND DEVELOPMENT

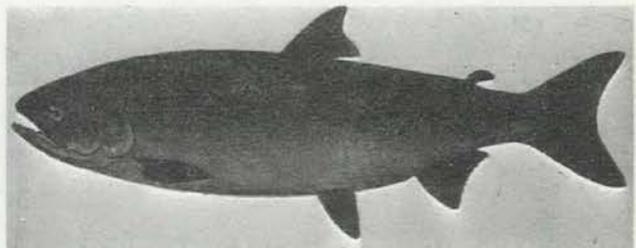
Adult salmon enter rivers and streams from late summer to early winter, the exact time differing between stocks and species. The female, upon choosing a suitable spawning site, digs a nest or



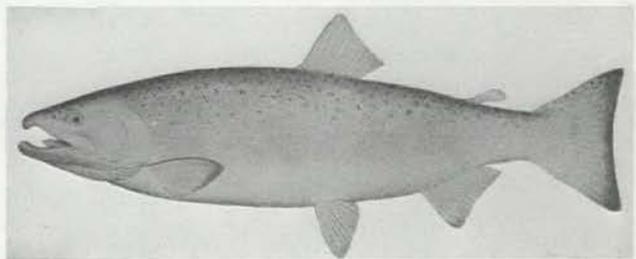
SOCKEYE SALMON



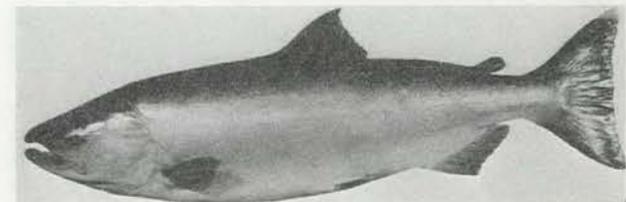
PINK SALMON



CHUM SALMON



COHO SALMON



CHINOOK or SPRING SALMON

"redd" in the streambed. The male, meanwhile, remains in close attendance, courting the female and fending off competing males. When the redd is completed, the female drops into it and releases some of her thousands of eggs, the numbers varying between species and size of individual. At this moment the male moves alongside his mate and releases milt, thus fertilizing the eggs. The female, then with snout, fin and tail covers the eggs while the male returns to his post to resume vigilance. This sequence of redd-building, courting and spawning is repeated until the sex products of both male and female are exhausted, and having spawned once each depart and shortly die.

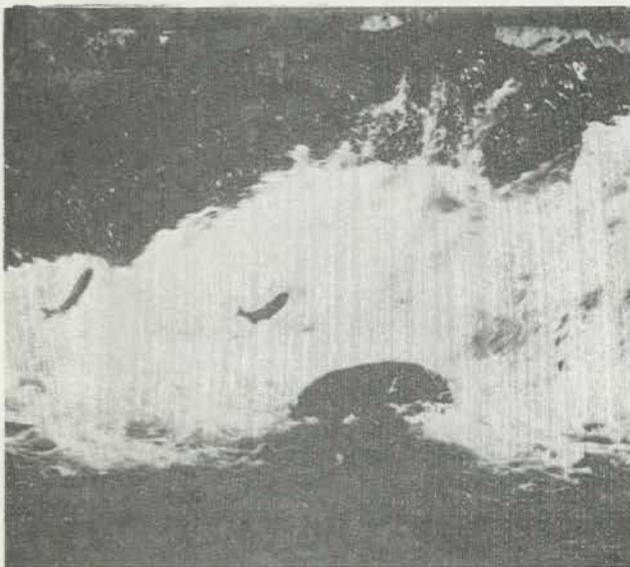
Of the eggs spawned, some hatch while others

are lost as a result of poor stream conditions or predation by trout and other stream fishes. The time required for hatching is influenced by the temperature of the stream. The newborn salmon, or alevin, remains hidden until spring in the gravels forming the streambed. Receiving nourishment from a yolk-sac attached to the under side of its body, the alevin gradually transforms into a miniature salmon, and in the spring emerges from the gravel as a fry. Depending on the species, the fry migrates either immediately to sea, or remains in the stream or river for a few months, or takes up lake-residence for a year, usually, or two before going to sea. Those living in lakes for a year or more are known as smolts when they leave for the sea.

In the ocean, as in fresh water, the different species as well as stocks of the same species spend varying amounts of time, ranging from about 14 months for pinks to 4 or 5 years for chums and chinooks.

#### DISTRIBUTION AND MIGRATION

Along the Pacific coast of North America salmon occur from central California northward into the Arctic Ocean as far east as the Mackenzie



*Salmon fighting their way upstream to the spawning grounds.*

River, but are most abundant between southern British Columbia and western Alaska. Within this length of coastline the geographic range of each species overlaps considerably so that some species at the same time occupy not only the same geographic territory but frequently the same stream.

During their ocean life, salmon range widely throughout the northern North Pacific Ocean and the



*Fish ladders such as this one at Stamp Falls, B.C., help salmon move upstream.*

Bering Sea, occurring farther south in the winter than in summer. In the spring and summer maturing fish depart the high seas for coastal spawning grounds, travelling at rates which increase as the fish matures. Salmon originating in British Columbia inhabit the eastern North Pacific Ocean where they become intermixed with salmon from Alaska, and to a much lesser extent, with some from Asia.

#### SIZE AND GROWTH

The size of salmon varies between species, as well as between individuals of the same and different stocks. On the average, chinooks are the largest of the salmons, followed in order of size by chums, coho, sockeye and pinks. While smallest in ultimate size, pinks grow more rapidly than the other species, reaching an average length of 24 inches and an average weight of 4 pounds from the time they leave the streams as fry and return as adults, a period of about 14 months. Chinooks frequently reach a weight of 50 pounds and on occasion 100 pounds.

Maturing salmon, silver and corpulent and belonging to many runs, enter coastal waters during the summer and fall where they are caught by purse-seine, gill net and trolling gear. The average annual catch of salmon in British Columbia amounts to about 180,000,000 pounds and has a landed value of about \$25,000,000. (Prepared by the Fisheries Research Board of Canada Biological Station, Nanaimo, B.C.)