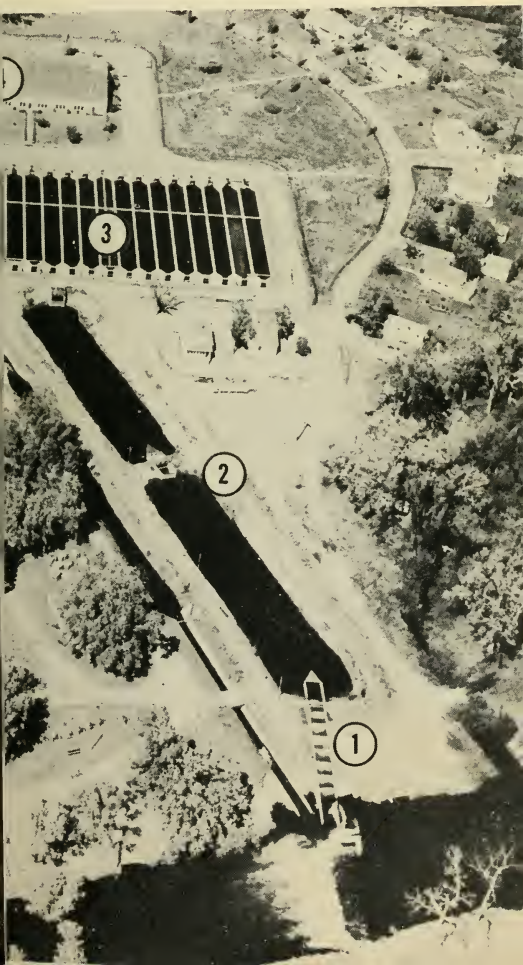
THIS IS A SALMON HATCHERY

PRODUCING SALMON TO MAINTAIN COMMERCIAL AND SPORT FISHERIES



WHY THE SALMON HATCHERY?

To maintain the resource, enough of the mature salmon entering a river must spawn successfully. Soil erosion and subsequent silting of streams, domestic and industrial pollution, small irrigation dams, and major multiple-purpose dams have in varying degrees limited spawning and destroyed young salmon. To counteract the effects of these, salmon hatcheries are necessary.

Hatchery salmon released into streams augment the natural runs of adults returning to spawn. Often when ancestral spawning areas have been blocked, hatcheries have been able to start runs in other streams by planting fish in them. These fish, after their interlude in the ocean, return to the area of their planting, and new runs are established.

Although natural reproduction is desirable because of its economy, the hatchery is becoming increasingly necessary to maintain the resource where natural reproduction has become wholly or partly impossible.

Photo by Homer Kelly.

Salmon: Eyed egg to almost complete absorption of yolk sac. (About 3 times natural size.)

SALMON FACTS

In commercial fisheries of the United States and Alaska, the Pacific salmon are second only to tunas in economic value.

Salmon are rich in proteins, fats, and vitamins, and especially good for canning. Bulk of the catch is canned, though large quantities are sold on the fresh-fish markets, and considerable amounts are frozen, pickled, and smoked.

Adult salmon stop feeding when they enter fresh water. Stored fats provide sustenance for developing eggs and milt, and for energy for the upstream journey.

When salmon enter the rivers, their flesh is firm; when they are ready to spawn, the flesh is soft and undesirable.

Adult Pacific salmon can leap vertically 8 to 10 feet if water conditions are ideal, but such heights usually will block passage upstream.

For the sportsman, important salmon are the king or chinook and the silver or coho. They may be caught by trolling, spinning, or casting.

THE PACIFIC S

Five salmon species are native to the Pacific coast from San Francisco to northeastern Alaska: King (Chinook, Spring); Red (Sockeye, Blueback); Silver (Coho); Chum (Dog); Pink (Humpback). Kings are largest, average about 25 pounds, though many weigh 100 pounds or more. Pinks are smallest, average about 3 pounds.

Pacific salmon are anadromous—they spend most of their lives at sea and ascend freshwater streams to spawn, in late summer or fall. Eggs are deposited in gravel of stream beds and hatch the following spring. Young salmon may start for the ocean at once or stay in the streams a year or more; some red salmon may stay in fresh-water lakes all their lives.

Ocean life is 2 to 4 years. When mature, salmon return—some migrate hundreds of miles—to the streams of their birth to spawn and complete their life cycle. All Pacific salmon die after they have spawned.

Commercial and sport fishermen catch salmon in the ocean and the rivers when the fish are returning to their home streams to spawn. As a rule only kings and silvers strike at lures of sport fishermen.

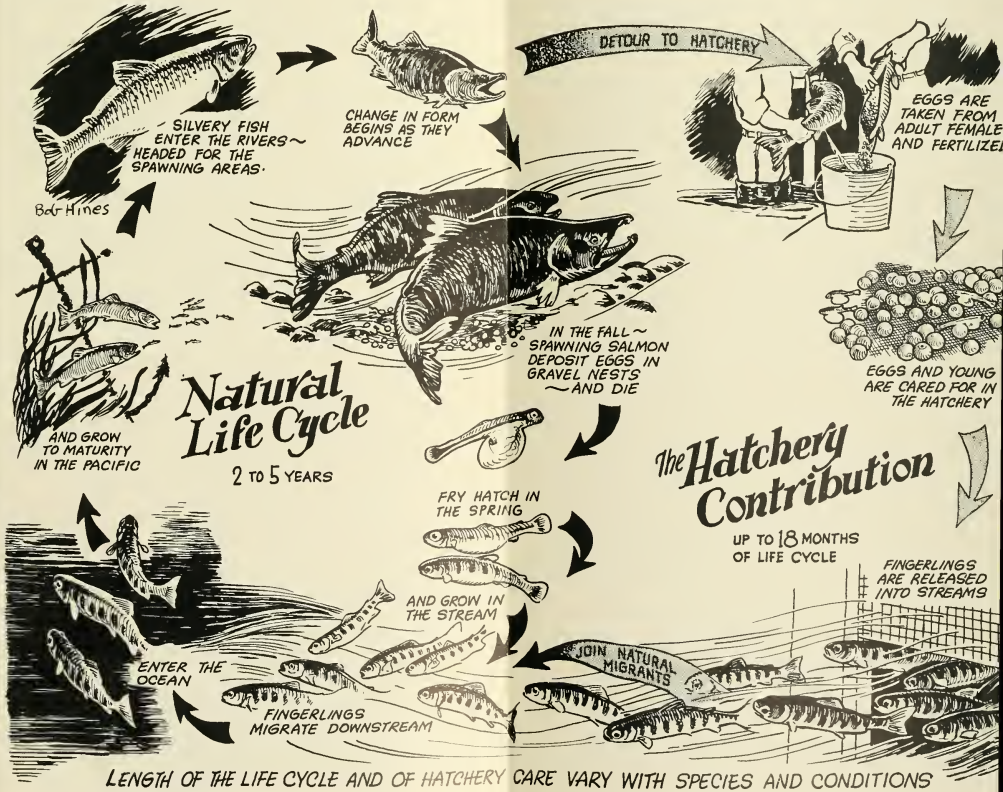
LMON

NATURAL LIFE

The diagram shows the life cycle of salmon. Adults may spawn near the ocean or hundreds of miles upstream. Each female produces up to 8,000 eggs, depending on species and size. Since predators, floods, silt, freezing, and drought destroy many eggs and young fish, the number of young salmon migrating to the sea is probably less than 10 percent of the number of eggs spawned.

HATCHERY PHASE

The salmon hatchery supplements natur propagation. From egg to downstrean migrating size, salmon are cared for i the hatchery, and natural stream losses ar eliminated. The number of hatchery-reare salmon released to migrate to the sea usually more than 75 percent of the egg spawned.



LENGTH OF THE LIFE CYCLE AND OF HATCHERY CARE VARY WITH SPECIES AND CONDITIONS

ALMON

NATURAL LIFE

The diagram shows the life cycle of salmon. Adults may spawn near the ocean or hundreds of miles upstream. Each female produces up to 8,000 eggs, depending on species and size. Since predators, floods, silt, freezing, and drought destroy many eggs and young fish, the number of young salmon migrating to the sea is probably less than 10 percent of the number of eggs spawned.

HATCHERY PHASE

The salmon hatchery supplements natural propagation. From egg to downstream-migrating size, salmon are cared for in the hatchery, and natural stream losses are eliminated. The number of hatchery-reared salmon released to migrate to the sea is usually more than 75 percent of the eggs spawned.

LENGTH OF THE LIFE CYCLE AND OF HATCHERY CARE VARY WITH SPECIES AND CONDITIONS

IN THE HATCHERY

The Fish and Wildlife Service operates a number of salmon hatcheries in the Pacific Coast States, principally on the Columbia and Sacramento Rivers.

Mature salmon are collected as they ascend the streams (often they return direct to hatchery ponds). Since they would die after spawning, the fish are killed to facilitate handling, and eggs are taken from the females and fertilized with milt from the males.

Eggs hatch after about 2 months in the hatchery troughs. For about 3 weeks the fry subsist by absorbing the yolk sacs attached to them; then the young salmon are given food.

The small fingerling salmon are transferred to outside ponds where they feed and grow rapidly. Food consists of animal and fish visceral products and fish meals. The larger the salmon are at the time of release, the greater the chance of their survival to return as adult fish.

The Fish and Wildlife Service is a public agency dedicated to the conservation of the Nation's fish and wildlife resources. The Service operates salmon, trout, and bass hatcheries for stocking public waters; maintains wildlife refuges; controls predatory animals; manages commercial fisheries; and engages in fish and wildlife research and related activities. The Service's regional office at Swan Island, Portland, Oreg., supervises activities in the west-coast States.

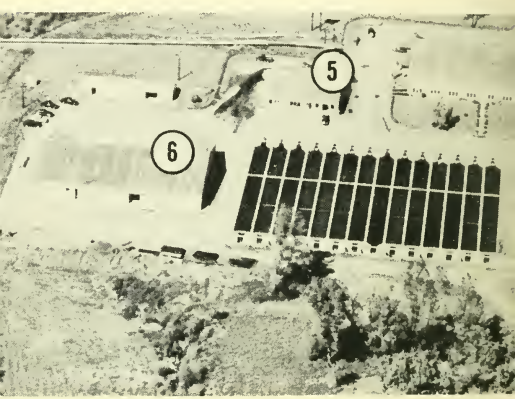


Photo by Dick Black

Coleman Salmon-Cultural Station, Anderson, Calif.

① Fish ladder
② Holding and spawning ponds
③ Rearing ponds
④ Hatchery building
⑤ Food storage and preparation
⑥ Shop and storage

Visitors are welcome at all Service hatcheries. Probably the most interesting operation at salmon hatcheries is the spawning during the fall months.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Circular 25

U. S. GOVERNMENT PRINTING OFFICE: 1953—O-277980

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. - - - - - Price 5 cents.