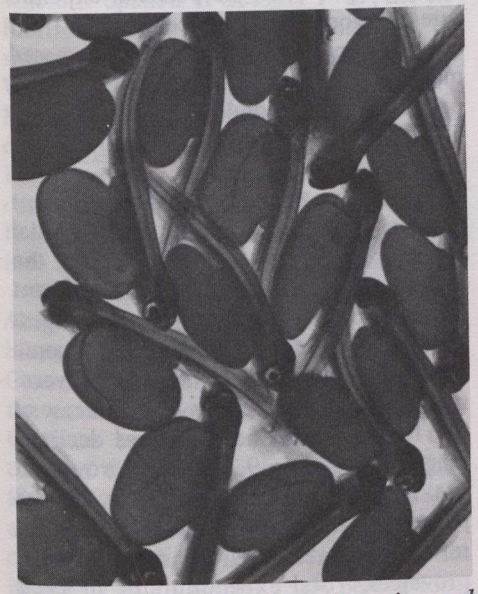
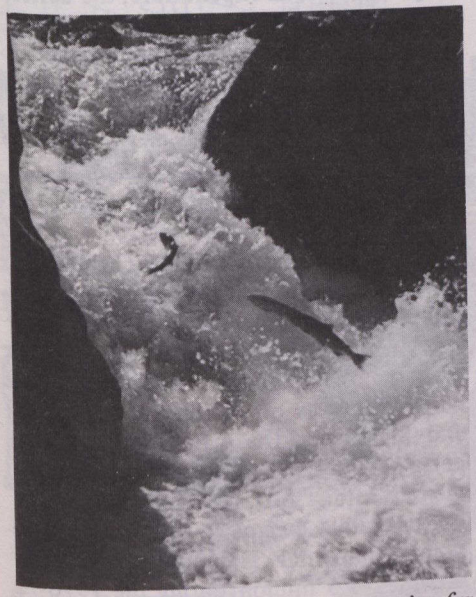
The return of the salmon

Alyn Edwards, western correspondent for *Canadian Scene,* writes of the visitors who come from "all over the world" to Weaver Creek near Harrison Lake, 80 km east of Vancouver, to witness the annual miracle of Pacific salmon spawning in man-made waterways. The sockeye salmon runs to Weaver Creek have become known internationally since the salmon eggs were first collected there in 1885 for transplanting to other areas.



Tony Pletcher

The eyed egg hatches in early spring and becomes an "Alevin" with a yolk sac suspended from its body. It grows rapidly under the gravel, feeding on a completely balanced diet contained in the yolk sac.



Carl Kupka

Migrating from streams and estuaries far into the open ocean, salmon return always to the river of origin, their source of life, and the crucial area for stock management and preservation.

The mysterious return of the sockeye salmon from the far northern reaches of the Pacific Ocean to the sparkling mountain streams where they were born is a most romantic tragedy of nature, a spectacle of joy and sadness, of brilliant autumn beauty and the sorrow of death. It's a phenomenon that has never been fully explained by scientists as the fish, driven by some overwhelming compulsion, assemble near the Gulf of Alaska after four years of feeding. Now fully mature, they head unerringly for the mouth of the Fraser River, where they wait for several weeks before heading upriver. How they find their way to the river's mouth is unknown. They fight their way up the Fraser River system from the Pacific Ocean, a gruelling journey which ends in death but means renewed life for the salmon species.

Transformation

The salmon stop feeding as they enter fresh water and from then on live on stored body fats. And then a spectacular change occurs. Normally a blue-tinged silver, the fish start turning a brilliant scarlet, with pea green snouts. The female retains her graceful, sleek body lines but the male develops a humped back and a protruding upper jaw armed with sharp teeth which he uses to fight off other males.

After arriving in one of the artificial spawning channels in the first week of October, the female hollows out a bed in the gravel, 25 cm deep. Some days after reaching the gravelbeds, she lays as many as 3,000 pinkish eggs. The male fertilizes them with a secretion of milky substance, and the female scoops gravel over the eggs with her fanning tail and a sideways wiggle.

Once the spawning is over, the salmon's life is finished. Weak and exhausted, their bodies float downstream – carrion for birds and animals. But the life of the species continues. The eggs start developing immediately and hatch in December. By March, the young two-cm long salmon fry emerge from the gravel bottom to migrate down Weaver Creek and into Harrison Lake. Within a year, the ten-cm smolts follow the current of the Harrison and Fraser Rivers into the ocean where they stay until, nearing the end of their four-year life cycle, they return to the spawning grounds to begin life anew.

The 13-hectare Weaver Creek site holds nearly three km of gravel-bottomed controlled spawning grounds. The Federal Government constructed the facility in 1965 after the number of annual spawning salmon dropped from 20,000 every October to less than 8,000. Now the annual worth of the salmon catch to fishermen represents ten times the initial $250,000 investment.

The Weaver Creek Salmon Project, and several others just like it in British Columbia, are operated by the International Pacific Salmon Fisheries Commission.

One great significance of the Pacific salmon runs is in their contribution of substantial quantities of high quality protein to world food resources.

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