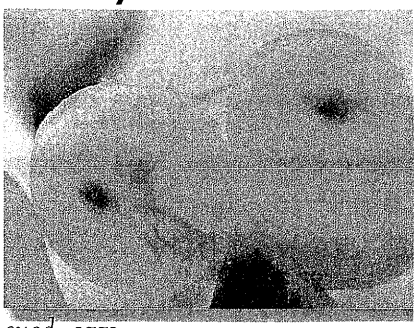
Life Cycle of a WILD Chinook Salmon in Michigan



eyed eggs

The life cycle of Chinook salmon in the Great Lakes can be described as potamodramous, which technically means migrations within fresh water and which describes a fish that spends the bulk of its adult life in large, freshwater lakes (like the Great Lakes), but migrates back to its natal stream to spawn. Chinook salmon, like other Pacific salmon, are not native to the Great Lakes. Both Chinook and Coho salmon were brought to Michigan in the 1960s.

Chinook salmon are native to the Pacific Ocean, where their migrations are anadromous (migrations from salt to fresh water). In their native habitat, these fish generally spend three years living in the ocean. The Great Lakes provide an ocean-like habitat for adult Chinooks, where they spend most of their three-year average lifespan, foraging and growing in preparation for spawning.

From mid-to-late August, adult Chinook, which can weigh more than 30 pounds (our state record is 46+ pounds), begin staging off the mouth of their natal river where they were either stocked or hatched. The decreasing day length (photoperiod) and falling water temperatures prompt the mature salmon to enter the river to seek out appropriate spawning habitat. The salmon use their sense of smell to return to their natal stream sometimes traveling hundreds of miles on their journey.

What Does That Mean?

potamodramous - migrates within fresh water

natal stream - the stream where they originated

anadromous - migrates from salt to fresh water

photoperiod - the relative exposure of an organism to daylight

spawning - the act of laying eggs

redd - spawning bed

plankton - microscopic water borne organisms

sac fry - hatched, young salmon with large yolk sac for nourishment

alevins- another name for sac fry

yolk sac - serves as the food source for the developing embryo

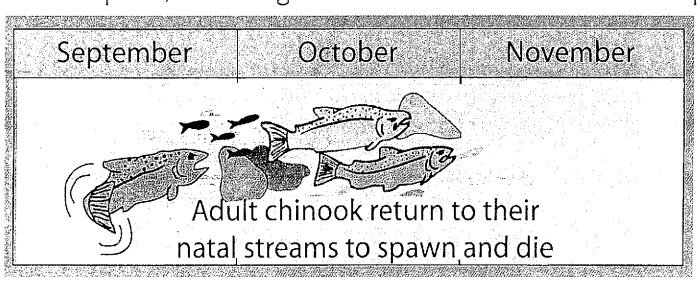
swim-up fry - fry after yolk sac is gone

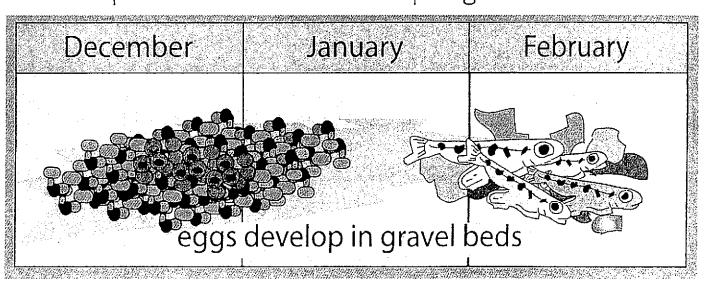
parr - is a juvenile fish, one preparing to leave the fresh waters of its home

smolt/smoltification - process of becoming physiologically adapted to a lake environment. This term in Pacific Salmon refers to them becoming physiologically adapted to salt water.

pelagic fish - spend most the their time foraging offshore in open-water environments

Once in the river, adult Chinook no longer need food and actually stop feeding, living off their body reserves to complete the spawning phase of their life. They still can be caught by anglers, though, as they strike hooks and bait out of aggression. The fish seek out small, clean gravel on which to make their spawning bed called a redd. Once the eggs are fertilized, they are covered over, and remain in the gravel, where they will develop during the winter and early spring. After spawning, all salmon die and their bodies decompose, releasing nutrients into the water to aid plankton production for their offspring.

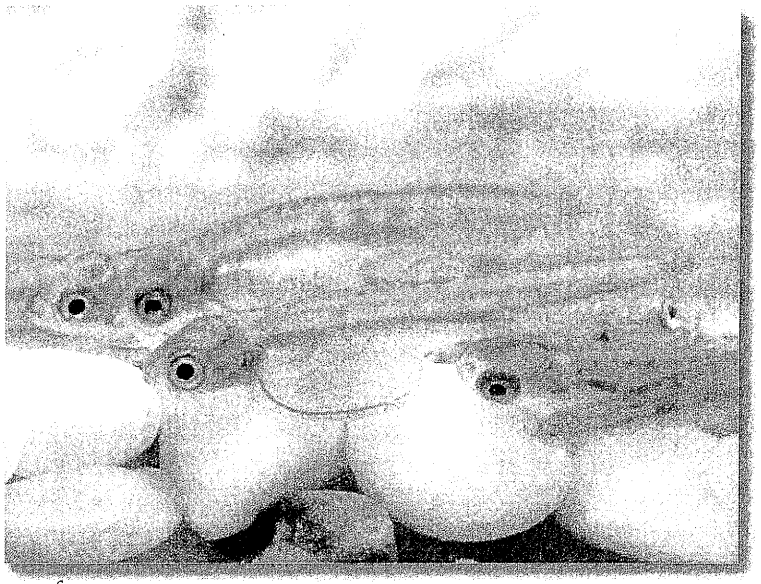




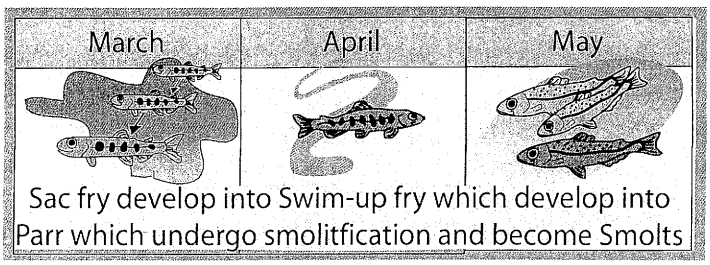
As winter passes and the water begins to warm, ***sac fry*** hatch from the eggs. The sac fry, also called ***alevins***, remain in the gravel while they take nourishment from their ***yolk sac***. Once the yolk sac has been absorbed, the young salmon begin to emerge from the gravel. Now called ***swim-up fry***, they begin feeding on insects and insect larvae in the stream. After the small Chinook, now called ***parr***, have spent a month or two growing in the warming waters of the stream, the increasing day length and water temperature trigger a physiological change in the fish called ***smoltification***. During this process, the fish lose their "parr" marks and take on a much more silvery appearance, which is their protective coloration for the "fish-eat-fish" world they are about to enter. They are now called smolt. In early June, the smolts migrate downstream out of their natal river and into the Great Lakes. This is an especially perilous time for the young Chinook since they must run through a gauntlet of fish-eating predators that include pike, walleyes, smallmouth bass and brown trout, as well as kingfishers, great blue herons, double-crested cormorants, gulls, terns and mergansers. It truly is survival of the fittest!

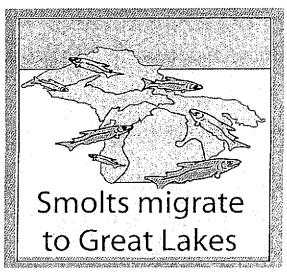
Once in the Great Lakes, the chinook will continue to feed on aquatic insects until they are large enough to start feeding on small fish. They now will begin growing quickly. The high protein content of their exclusively fish-based diet coupled with the Chinook's voracious appetite results in a very high growth rate. Their preferred food is alewives, but, like most other fish, they are opportunists and will eat whatever is available to them. Chinook salmon are ***pelagic*** fish, which means they spend most of their time foraging offshore in open-water environments.

They will spend two to four years (three is most common) foraging in the pelagic zones of the Great Lakes until they reach sexual maturity. Then, as fall approaches, these fish will begin to stage off the mouth of their natal streams and the cycle begins again.



sac fry





LIFE CYCLE OF A SALMON STORY

Stage	*Included on panel*	*Accuracy of information*
Egg		
Alevin (sac fry)		
Parr (swim up fry)		
Smolt		
Adult		
Spawning (beginning or end)		

TOTAL POINTS

_____

LIFE CYCLE OF A SALMON STORY

Stage	*Included on panel*	*Accuracy of information*
Egg		
Alevin (sac fry)		
Parr (swim up fry)		
Smolt		
Adult		
Spawning (beginning or end)		

TOTAL POINTS

_____