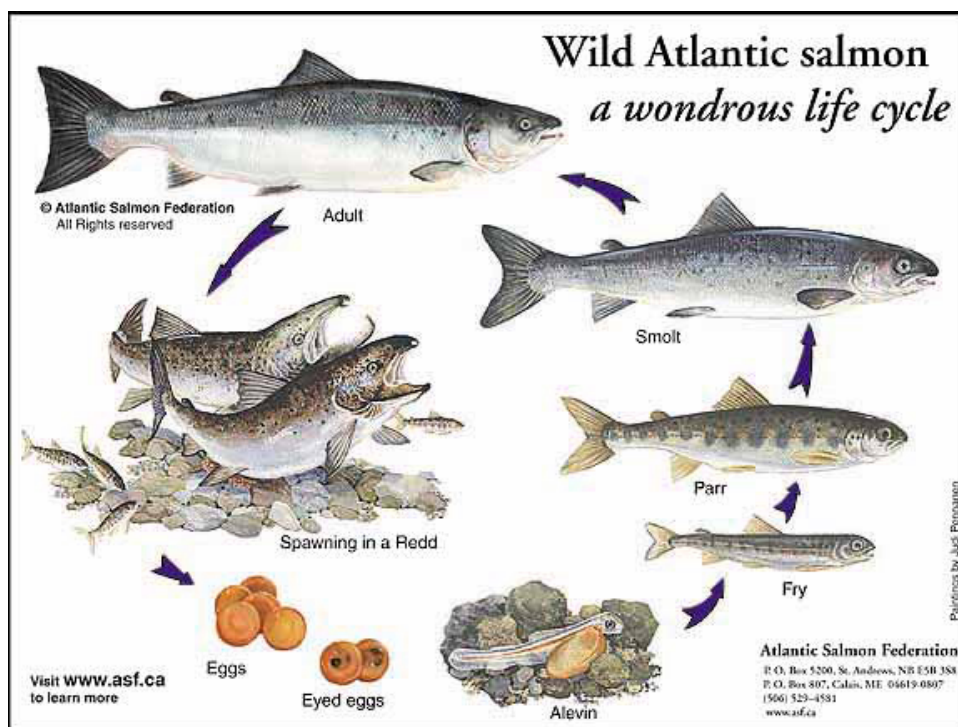
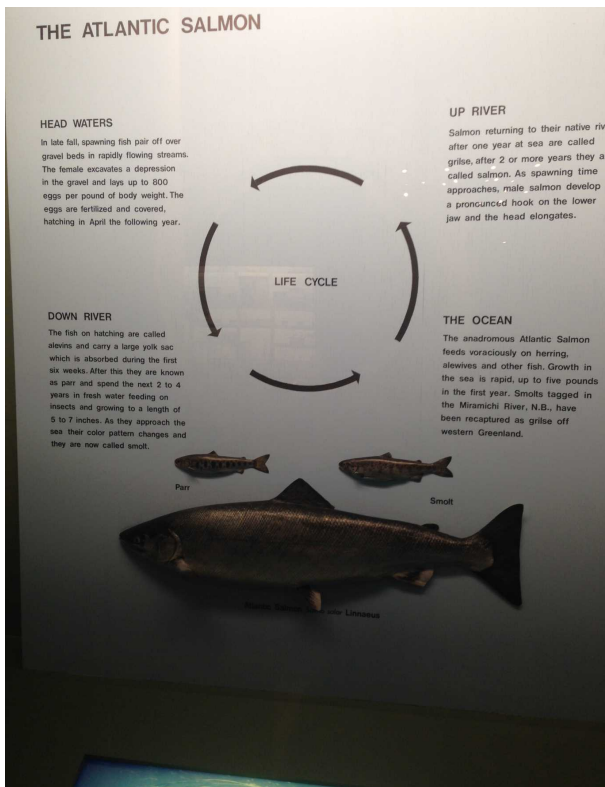


The "Life Cycle of an Atlantic Salmon"





* Get Zach's video!!!

WEBCAM...



Miramichi Valley High School
Environmental Science 120

[Live View](#) | [Help](#)

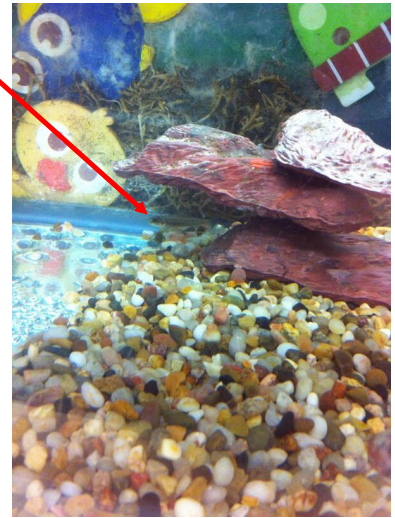
Environmental Science 120 Salmon Tank



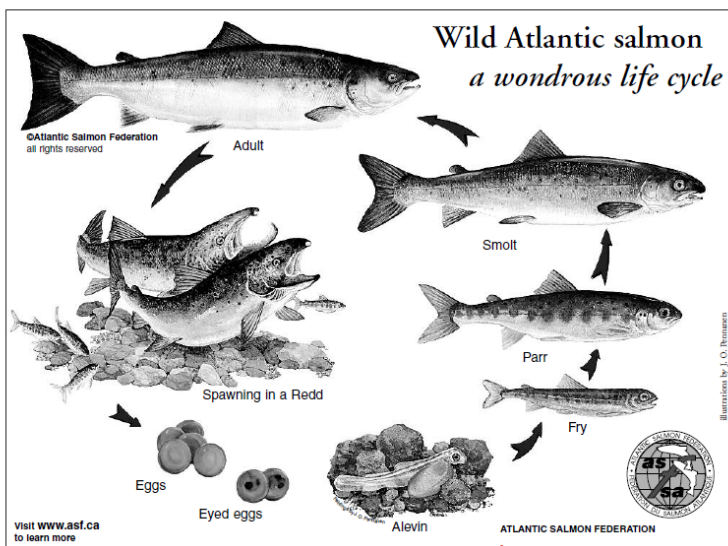
ALEVIN...

BUBBLES (FRY)...

EYED EGGS...



A Lifetime Journey – the pocket version



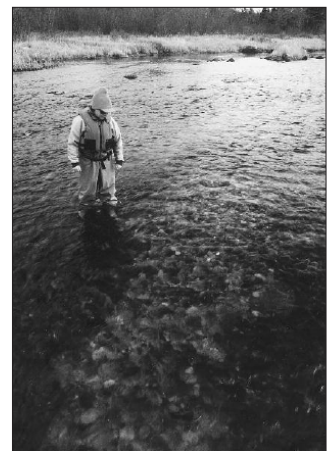
Redd → gravel where the eggs are layed and fertilized.

A Special Streambed

Loose gravel of mixed sizes, up to 9cm/3in covers this section of riverbed. Here wild Atlantic salmon have excavated the loose rock (grey area) in order to lay their eggs. After digging out 20cm. / 8in. of the gravel, the eggs have been fertilized, and then been covered again by the female.

This redd, as it is called, is indicated by the lighter gravel. While gravel around it has algae growing on the surface, the newly churned streambed does not. Thus the lighter tone.

Late the following spring the eggs will hatch, and the alevin will live off their yolk sac beneath the gravel. As this food supply is used up, the small Atlantic salmon will emerge, and swim above the gravel areas of nearby riffle areas.



Tom Moffat

Wild Atlantic salmon vary in appearance during their lifetime. Until the early 19th century the life cycle was not understood and documented, and Parr and Smolt were assumed to be different species of fish.

- EGGS - Pea-sized orange eggs are deposited in riverbed gravel in autumn, and hatch the following early spring. As the eggs develop, the eyes of the developing wild salmon can be seen through the semi-transparent membrane.
- ALEVIN The partly transparent alevin hatch and remain hidden in the riverbed gravels, feeding from the attached yolk sac. They are about 2 cm or less than 1 inch in length.
- FRY - Wriggling up from the gravel, fry begin feeding on microscopic life in the stream. They eventually reach a length of 5 to 8 cm./2 to 3in. before transforming into parr.
- PARR - The vertical markings, called 'parr marks' appear, with a single red dot between. Parr remain in the river for 2 to 6 years, depending on water temperatures and food availability.
- SMOLT - At a length of 12 to 24 cm/4.7 to 9.5 in. a springtime transformation of the parr into smolt takes place. A silvery sheen replaces the parr marks, and internally they undergo a complex transformation to survive in saltwater. On the downstream journey the odors of the smolt's native river are imprinted on its memory, to be recalled when it returns to spawn.
- ADULT - Silvery hunters, adult wild salmon live one or more years at sea. Wild salmon that return after one year at sea are called GRILSE.
Adult salmon return to home rivers, entering freshwater between April and November. Once in freshwater they stop feeding, living off accumulated fat reserves.

SPAWNING IN A REDD -

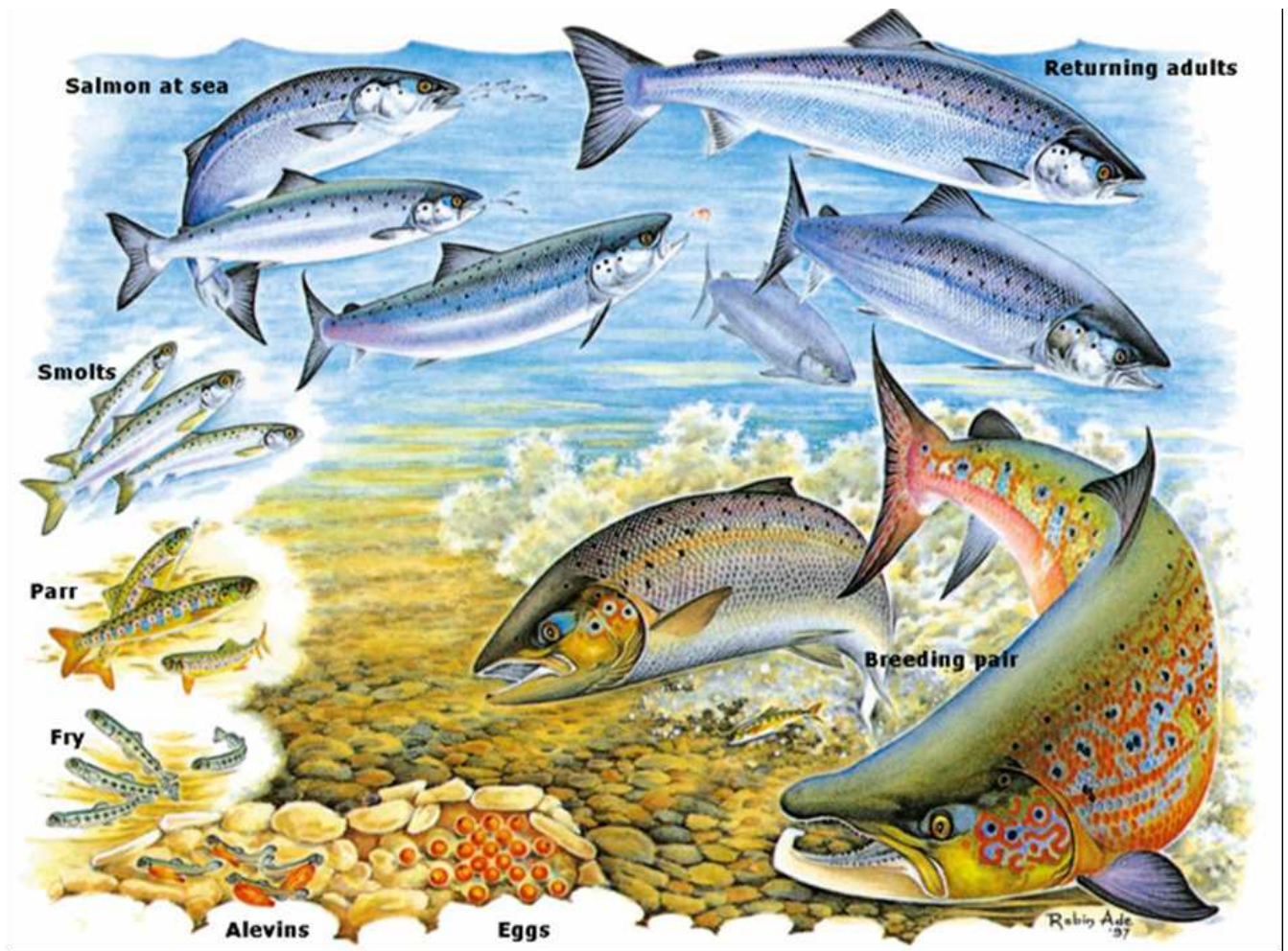
In late fall the wild Atlantic salmon spawn. The female digs a 10-30cm/4-12 in. deep nest called a REDD in the gravel bottom of the stream. Her eggs and the milt from an adult male are released into the redd, the gravel replaced with additional tail thrusts. In some cases sexually mature male parr manage to fertilize a percentage of the eggs. In the painting parr are seen swimming nearby, looking for an opportunity. The female may lay 1,500 eggs or more for each kg./2.2 lb of body weight. - Thus a 12 pound female salmon will lay about 8,000 eggs, completing the life cycle.

The Heart of a Salmon

An adult Atlantic salmon's heart rate will vary with the temperature of the water – and with the exertion.

In water at 16 C, a salmon's heart rate was measured at 67 beats when resting in still water – and reaching 91 beats when exercising for more than an hour.

Interestingly, soon after exercise begins, the salmon's heart rate actually drops, as it reduces blood flow to the outer parts of the body, in order to increase efficiency of the muscles.



THE PREDATOR GAME

Atlantic salmon and trout are pursued by a wide variety of predators during their lives. Below are shown a wide variety of these predators.

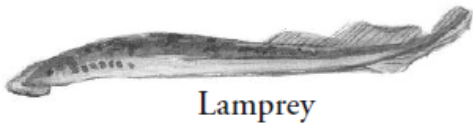
For each predator, can you determine what life stage the salmon or trout might be prey? **HOMEWORK...**



Seal



Cormorant



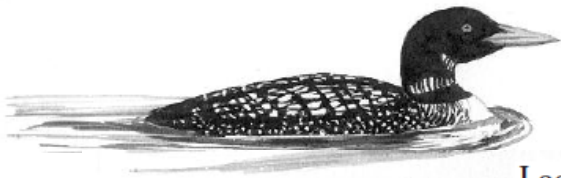
Lamprey



Angler



Great Blue Heron



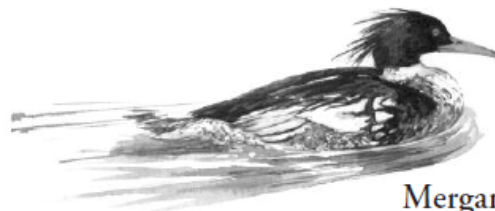
Loon



Otter



Kingfisher



Merganser

Illustrations by J. O. Penmanen
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