**“Comparing Fish Life Cycles”**

***On cam Question:*** “So how the life cycles compare between some different fish species that call the same body of water as their home?”

Fish, humans, birds, and all living organisms go through a “life cycle”. This life cycle begins at birth until they reach reproductive maturity. Within that life cycle, the organism typically goes through a number of physical changes. They can also have a yearly cycle of various activities or behaviors within their life cycle. Similar organisms that share the same ecosystem can have very different life cycles.

For instance, let’s compare the life cycle of two species of fish that both live in Wisconsin’s Wolf River. The largest game fish in the river is the sturgeon, where adults can measure over 80 inches and weigh 200 pounds. The smallest game fish is the brook trout with adults measuring 8 to 12 inches and weighing less than a half-pound.

We’ll begin with the sturgeon in the Wolf River system. Most adults live in Lake Winnebago much of the year and “migrate” in the springtime many miles upstream in the Wolf River to spawn. Sturgeon females must be 25 years old before they are mature enough to spawn. They can only spawn every 4 to 6 years, yet they can live to be over 100 years old.

The mature females can lay up to a half million eggs that the males fertilize in the rocky shallows. Those eggs incubate for about a week before they hatch as fry. They retain their yoke sack for a few days as a food source before they begin feeding on other food sources in the river. When they are half-year old, they are about 10 inches long. They live in the river as “sub-adults” and begin migrating down river where they will eventually end up in Lake Winnebago when they are between 5 and 10 years old.

Now let’s look at the brook trout who also lives in the Wolf River. Adult fish “migrate” a relatively short distance from their habitat in the river into smaller creeks or shallow waters to spawn. Brook trout spawn during the fall, with adult females laying about 500 eggs. They lay the eggs in clusters and cover them with gravel using their tail. The eggs incubate for about 4 months, so that they hatch during the springtime when natural food will become more abundant. Brook trout are mature enough to spawn at 2 years old and only live to about 5 years old.

So here are two fish that share the same river system yet they are very different in their life cycle. Let’s do a direct comparison to review the major differences in their life cycles.

Sturgeon females must be 25 years old to reproduce. Brook trout females can reproduce at 2 years old.

Sturgeon can lay about 500,000 eggs. Brook trout lay about 500 eggs.

Sturgeon spawn in the spring, while brook trout spawn in the fall.

Sturgeon eggs incubate about a week, while brook trout eggs incubate about 4 months.

Sturgeon can live over 100 years, while brook trout live about 5 years.

Sturgeon can weigh 200 pounds, while brook trout usually weigh less than a pound.

Sturgeon can be over 80 inches long, while brook trout average 8 to 12 inches.

Sturgeon spawn every 4 to 6 years, while brook trout spawn every year.

Despite all their very striking differences, the little brook trout and the huge sturgeon share one similar food source – insects that spend some of their life cycle in the water. A major part of both of their diets are insects that live in the water during their larva and pupa stages. Lake flies and Mayflies are two examples. The brook trout is also an excellent hunter of adult insects that fly near the surface of the water.

As you can see, knowing the life cycle of different species helps scientists better understand how they might affect the rest of the ecosystem, and in turn, what factors may affect them.