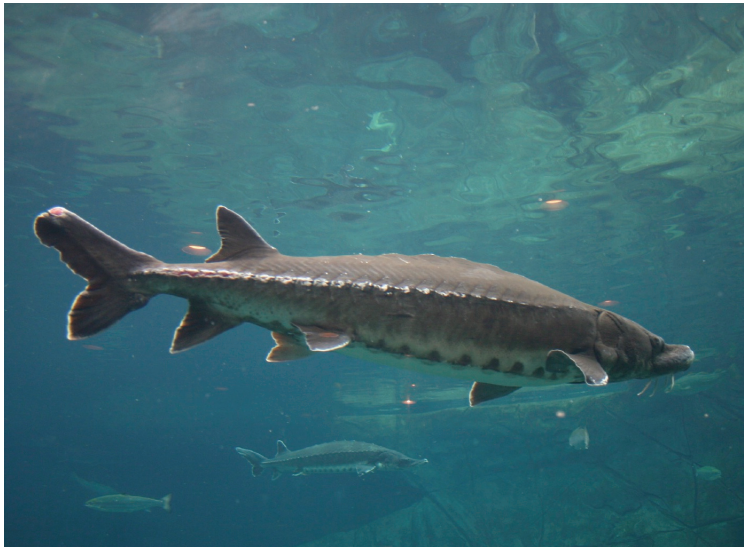
Great Ambassador



The Lake Sturgeon

FOR THE TEACHER

Over the course of this unit students will learn a great deal about the water and history of the Great Lakes and some of the aspects that make it an important and unique resource for us all. The common theme throughout all parts of this resource is our Great Lakes champion, Sally Sturgeon. Sally is a Lake Sturgeon. It is estimated that Sally is about 120 years old. Given everything Sally has been through it is amazing that she has survived so long.

In this Great Champion activity, students will learn more about Lake Sturgeon and what is now being done to protect and restore their species. Have your students read the story on the next page or present it to the class using the Junior Old Friend PowerPoint presentation. Next, present the Junior Great Champion segment of the PowerPoint presentation. Finally, they should complete the Lake Sturgeon/Blue Shark Venn Diagram Activity. Many people's reaction when seeing a sturgeon for the first time is that it resembles a shark. While there are sure to be some similarities between these two giant fish, after thorough examination your students will see they are very different. After completing this activity students can go to the online game, **Sally vs Sharky** quiz.

An Old Friend

Today is a perfect day for fishing—you could say fishing for a friend. Ron and David are sitting quietly on the edge of Wolf River …waiting …watching …for Sally. She is an old friend of Ron's, and he is anxious for David to meet her. David has brought his cameras because he plans to capture Sally on film. They hope Sally will be arriving soon.

The men's eyes dart over the water's surface looking for ripples and dark shadows. Ron Bruch knows what to look for because he has been to the river before. In fact it is his favourite place to meet Sally. He is a biologist and the most important part of his job is to help Lake Sturgeon, like Sally, from disappearing completely from the Great Lakes.

This is David Lickley's first time to Wolf River, here in northeast Wisconsin, where the river drains into Lake Michigan. Before he came he did lots of research on the subject of sturgeon, the Great Lakes and its ecosystem. That is because he wants to make an IMAX® film for Science North called, Mysteries of the Great Lakes.

Suddenly a giant silvery body shoots out of the water like a torpedo then lands with a resounding splash. It is Sally leaping up to greet Ron. He jumps into the river and wraps his arms around her thick armour-plated torso. Then he struggles to help her writhing seven foot (2.13 m), 270 pound (122 kg) body to shore. The pain shooting up his legs reminds him what a beating his knees take whenever he visits with Sally.

David is busy with his camera, eagerly taking pictures of the biologist and the giant bottom-feeder. He watches as Ron checks Sally's bar code ID and then measures and weighs her. What David finds most fascinating is the way Ron massages the ancient fish in a special way that stimulates her to release her eggs.

Sally has laid many eggs in her lifetime. Every four or five years she returns to Wolf River to spawn. She was born here around 1880, shortly after Canada became a country. The Lakes were quieter then and there was more wildlife and no large cities. But over the years people built cities, and then water dams to provide power for them. Then steam ships and freighters soon brought danger, noise, pollution and invasive species that made it difficult for Sally and her kind to thrive.

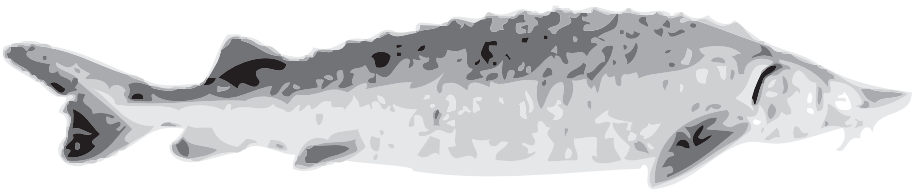
Even though David had prepared himself, he is still surprised at Sally's strange and almost frightening appearance. He has heard that Lake Sturgeon are sometimes called living fossils. Despite her somewhat shark-like features he also knows that she is considered by many a champion of the Great Lakes. That is because Sally's ancestors have been on Earth since the Upper Cretaceous period, about 136 million years ago. That was the same time when dinosaurs were at the height of their development. Today sturgeon are the oldest and largest freshwater fish in North America and that is what makes Sally one of the mysteries and wonders of the Great Lakes.

For Ron, there is no doubt that Sally and her kind are champions. Even after all the pollution, introduction of invasive species and other alterations to her ecosystem Sally has lived for more than 120 years. For all he knows there may even be older female sturgeon in the Lakes. That is because females are capable of living for as much a 150 years. That is not the case for male sturgeon though—they generally only live for about 55 years and are a lot smaller than females too.

Ron wants to help revive the sturgeon population in the Great Lakes. So he will take Sally's eggs back to a laboratory where they will be safe from predators. When they have hatched and the juveniles are big enough they will be released back into Wolf River to become the next generation of Lake Sturgeon.

After their short visit Ron helps Sally back into the river. He and David watch as Sally drifts off with the current, heading for the place where she will lay the rest of her eggs—thousands and thousands of them. Now Ron and David return to the shore and relax on the river bank, satisfied with their encounter with this living fossil, this champion of the Great Lakes. Yes, it certainly has been a perfect day for fishing.

LAKE STURGEON FACTSHEET



Appearance

The sturgeon is called a living fossil because it first appeared about 136 million years ago when dinosaurs roamed the Earth. There are 29 different species around the world; five are native to North America. A sturgeon has:

- been around since the time of the dinosaurs
- a torpedo-shaped body
- a shark-like tail fin
- a single, flexible rod called a notochord, instead of a backbone
- no teeth
- cartilage skeleton
- white belly
- olive brown or grey upper body
- a swim bladder for floating
- 1 dorsal fin
- rows of razor sharp protective plates, called scutes, instead of scales
- four tentacle-like feelers called barbels, near the mouth, used to find food
- spiral valve in gut

Range

- the Mississippi, Lake Michigan, Superior, Huron, Erie and Ontario drainage basins
- freshwater

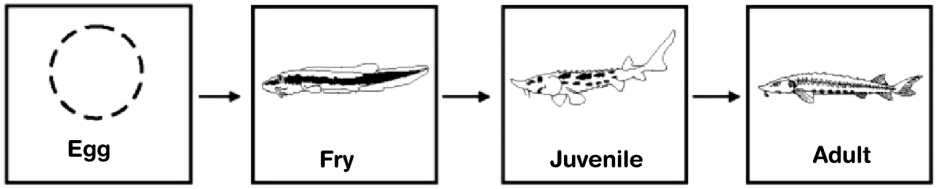
Diet

Lake Sturgeon are omnivores. They eat snails, insect larvae, leeches, small clams, other invertebrates and plants.

Size

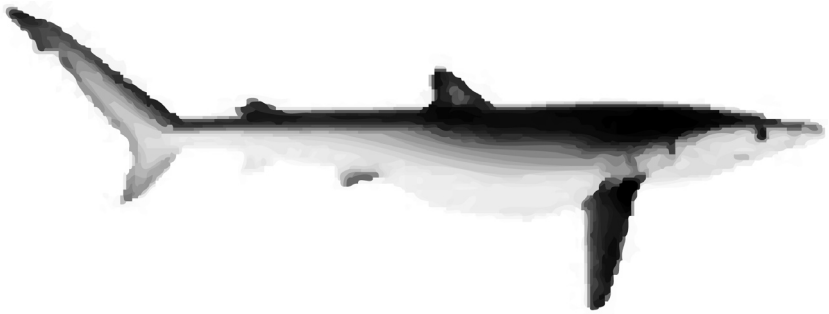
Females are bigger than males: females: 7 ft (2.13 m) and up to 270 lbs (122 kg); males: 5–6 ft (1.85 m) and up to 150 lbs (68 kg)

Reproduction



- sturgeon lay eggs
- females lay 4,000 to 7,000 eggs per pound (8,800 to 15,400 eggs per kg) of body weight
- lay their eggs in rocky shoals of streams, freshwater
- female sturgeon mature at about 24 years; males mature at about 15 years
- male life span—up to 55 years; female life span—80 to 150 years

BLUE SHARK FACTSHEET



Appearance

Blue sharks first appeared nearly 400 million years ago. There are 375 species of sharks around the world. The blue shark has:

- been around since the time of the dinosaurs
- torpedo shaped body
- shark's tail
- notochord instead of backbone
- many sharp serated teeth
- cartilage skeleton
- white belly
- indigo blue upper body
- no swim bladder, must swim constantly or sink
- 2 dorsal fins
- scales like sandpaper
- electro receptive organs called ampullae used to find food
- spiral valve in gut

Range

- found in the Atlantic, Pacific and Indian Oceans, both inshore and offshore waters
- saltwater

Diet

Blue sharks are carnivores. They eat fish such as herring, silver hake, cod, haddock, mackerel, butterfish, tuna and swordfish, invertebrates and carcasses.

Size

Males and females are about the same size: 7-11 ft (2.1 – 3.3 m) long and approximately 415 lbs (188 kg)

Reproduction

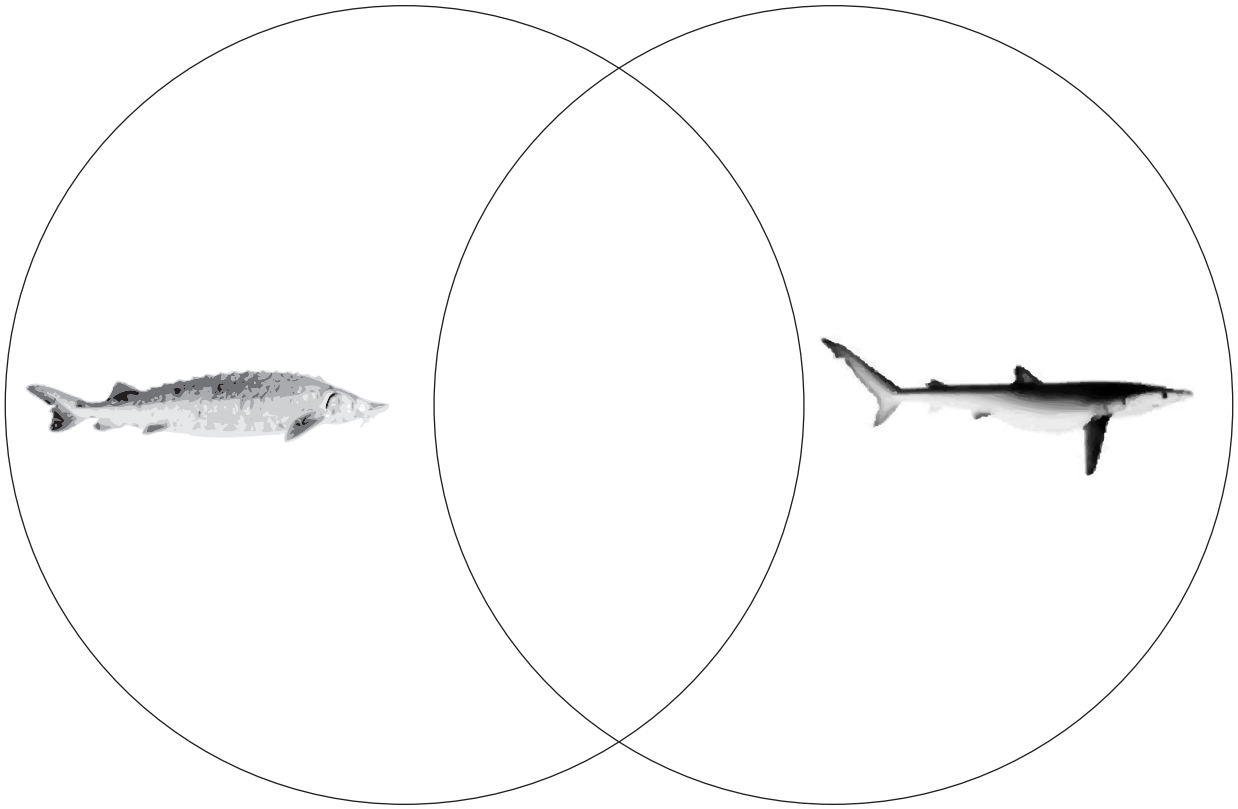
- give birth to little sharks called pups
- from 25 to 130 pups per litter
- give birth in the open sea, saltwater
- females reach sexual maturity at 5 to 6 years of age, males at 4 or 5
- life span up to 25 years

LAKE STURGEON/BLUE SHARK VENN DIAGRAM ACTIVITY

Student's Name: **Class:**

Picture yourself snorkeling around one of the Great Lakes. Suddenly a huge beady-eyed creature with sharp armoured scales swiftly comes into view. You have never seen anything like it before in your life. What should you do? A) reach out your hand to pet it; B) be somewhat cautious and keep a safe distance or; C) gulp down a pail full of water while trying to scream SHARK!

After studying the Lake Sturgeon and Blue Shark Factsheets do a comparison of the two fish. You be the judge as to how similar they really are. Use the Venn Diagram below.



(Answer: If you picked "c" don't feel bad, because many people have come face to face with a Lake Sturgeon and imagined it looked like a shark.)