

Grade 3: Unit 6, Week 2 Unusual Animals

Read Aloud: **Journey Against All Odds** by Beth Terrill

Wonderful Words: *migration, treacherous, drastic, feat, extinct*

Journey Against All Odds

It's a quiet day on the river. Suddenly, a fish begins splashing and wriggling in the water. It's a female salmon. She is working very hard to dig a hole with her tail. It's exhausting work. The rocks and gravel cut into her flesh, but she doesn't stop. She digs a hole that is one foot deep and three feet wide. When at last the hole is deep and wide enough, she lays over 3,000 bright orange eggs, each the size of a pea. After the eggs are fertilized by the male, the female covers them with gravel.

Several hours after spawning, or laying her eggs, the female salmon and the male salmon die. Their migration to get to this point has been incredibly difficult. This marks both the end and the beginning in the life of a salmon.

All salmon migrate. These amazing fish are born in freshwater streams and rivers. They go through changes for several years and then they are ready for salt water. At this point, they migrate to the ocean and eat and grow until they are fully mature.

When salmon are mature, they do something really amazing. They migrate from the ocean back up the same stream and river to almost the exact spot where they were born. To do this, salmon must swim upstream, against the current. They do this to spawn. Then most kinds of salmon die. The journey of the salmon is known for being very challenging and risky. Let's see why that is.

Back at the stream, the bright orange eggs sit silently and grow. Leaves, small insects, and the clear cold water above them rush by. Salmon eggs must be laid in clean cold water on a bed of gravel. Unfortunately, many trees have been cut down to build homes and buildings. As a result, dirt seeps into the rivers. This dirt is called silt. Silt is soft and gloppy and covers up the salmon eggs which prevents oxygen from reaching them. When this happens, the eggs die.

After several months in a healthy stream, the eggs begin to move. In the glistening water the tiny eggs are spinning. Inside each egg there are two dark spots close together. These are the eyes. Inside these “eyed eggs,” the tiny life spins until the egg breaks open. A tiny fish wiggles out. Baby salmon at this stage are called alevin.

Alevin are white with big orange puffy sacks on their bellies. This is their built-in food supply, called a yolk sack. Alevin grow larger by digesting the nutrients that are in this sack. Thousands of alevin fill the river—it looks like a tiny nursery. As the days go by, the yolk sack gets smaller. When the sack disappears, the tiny fish are about one inch long. Now they are called fry or parr.

Fry are orange-colored with gray stripes on their sides. They match the color of pebbles and rocks on the bottom of the river. This helps them to hide from enemies—mainly larger fish that could swallow them!

Fry need to find food on their own. If a river is polluted, fry may not find food to eat. Anything people pour down their drains can end up in a nearby river. Fertilizer, pesticides, and soap are some of the worst kinds of pollution for fish. This pollution may poison fry and other marine life. In addition, pollution may make the water too warm which also can harm young fry. Most of the foods that fry eat live in cold water. So, if the water temperature isn't right, fry may run out of food.

Fry look for small insects and other tiny water animals to eat. They dart around, hiding behind rocks, then swim to the surface. They jump clear out of the water and land with a tiny splash. The tiny jump is only a fraction of how high a grown salmon can jump. The scientific name for the Pacific salmon means “the leaper.”

After one to three years, fry grow to be about 4 to 8 inches long. Their skin becomes silver, too. They are now ready to migrate to the ocean. Young salmon at this point are called smolts. Most types of fish in the world swim either in fresh water or salt water. But salmon grow and change to live in both! The silver color of the smolt matches the color of the water. Their skin has a slimy feel to it. This slime prepares them for salt water.

Because smolts are bigger than fry, they can be seen more easily. They need to be careful that birds don’t see them. Smolts would make a nice snack for a gull.

Depending on where a smolt lives, the ocean may be very close or extremely far away. In some cases, salmon must swim as far as 1,250 miles just to get to the ocean. All smolts swim tail first down rivers—backwards! The current takes them along.

Smolts face many risks on the way to the ocean. In addition to pollution, dams can make the journey treacherous for the smolts. Dams have turbine engines which can crush the fish. Dams can also cause the water to get warmer making it difficult for the smolts to find food. Many smolts never make it to the ocean.

Finally, the smolt has reached the mouth of the river which empties into the ocean. The main goal, once the ocean is reached, is to eat and grow. Smolts will swim far and wide following food and water currents. Over time, the smolts become adult salmon. As they grow, their heads, mouths, and scales get larger, and they grow teeth.

Salmon eat fish, squid, and shellfish while they continue to grow. They may live in the ocean for four to seven years, depending on the species. Mature pink salmon will weigh anywhere from three to ten pounds, and the chinook can weigh up to 126 pounds. That's why chinook are also called "king salmon."

Salmon are strong swimmers. They can swim up to 30 miles a day. People originally thought that salmon didn't swim very far once they were in the ocean. Now we know that salmon travel very far. They swim out into the deepest parts of the ocean. A salmon from Washington State can swim as far away as Alaska. In fact, some travel as far as 2,500 miles from the mouth of their river.

Salmon fishing is very big business. Many people love the taste of salmon. Thousands of salmon are caught each year in huge nets. Over the years, fishing has drastically reduced the number of salmon. Salmon are also eaten by other fish and animals. Seals, sea lions, whales, sharks, and large birds all love the taste of salmon.

Although there are many different types of salmon from many different places, salmon from all over the world swim and feed together in the ocean. Surprisingly, when the time comes for mature salmon to return home, they all remember and go their separate ways. The salmon return home at different times.

How do salmon find their way in the ocean when they have gone so far? Scientists think that salmon use the sun and water currents to navigate back to the part of the ocean where their stream empties out. As the salmon get closer to the mouths of their rivers, there may be a hundred streams and rivers that empty into the ocean. The question is how do salmon find their stream? Scientists think that salmon primarily use their powerful sense of smell to find their river. The plants and animals that are found in a particular river or stream all have a unique scent. The salmon

“remembers” this smell over the course of its life. When the time comes, the salmon will search relentlessly until it finds this river.

Once the salmon enters the freshwater river it will not eat again. All the strength that the salmon needs must be gained from the food it ate while in the ocean.

Salmon swim back up their rivers to within a few yards of where they were born. As salmon begin swimming up their rivers, their skin color changes. Males become orange-red—the mark of a returning salmon.

Swimming upstream is very difficult. Fast water is rushing down against them. They must swim up against the flow, swishing their powerful tails back and forth to propel themselves up the river. If they come to a part of the river that is too shallow to swim through, salmon will sometimes wait until a heavy rain comes. Other times salmon will struggle over shallow areas. Rocks may scratch its sides as it flips along, but the salmon remains determined.

A young smolt faced the risks of coming down a river blocked by a dam. As an adult swimming back up the same river, the salmon sometimes uses fish ladders. A fish ladder is a series of pools built along the side of a dam. Salmon swim and jump from one pool to the next and eventually get around the dam.

Some rivers have huge waterfalls. When the fish was a smolt, it was easy to swim down the waterfall. Now the adult salmon must find a way to get back up.

Perhaps the most amazing feat of salmon is their ability to leap up waterfalls. With tons of water rushing down in a waterfall, it would seem that the salmon wouldn't have a chance. An adult salmon, however, with a swish of its large tail and a flex of its powerful muscles, can leap eight feet out of the water. Then, wriggling in mid-air, it leaps up and over the waterfall. Sometimes it misses

its target and is thrown back into the river. A salmon will try again and again until it either succeeds or dies.

Salmon have been observed jumping as high as eleven feet into the air to get up a waterfall. Amazingly, many salmon do make it. Thousands of salmon in every river injure themselves trying to get back to where they were born. Their scales fall off. They get gashes and cuts. They tear their fins on jagged rocks. No salmon can be assured a successful completion of its journey. Sometimes only one or two in every hundred are successful. Those that do make it find the spot where they were born. Then the female lays her eggs.

In several months, bright orange eggs will begin spinning in the glistening water. After that, the process will begin again.

Scientists are certain that, unless big changes are made, many types of wild salmon will become extinct. Salmon are respected and loved not only as a source of food, but as an example of strength and determination. There are no guarantees, but hopefully people will be able to restore the habitats of wild salmon so they can continue to make their amazing journey.

migration

Define: Migration is the act of moving from one place to another.

Example: There was a **migration** of people from the South to the North after the Civil War.

Ask: Why do you think there is a **migration** of Canadian geese to the south for the winter?

treacherous

Define: Treacherous means full of danger, hazardous.

Example: I was not prepared for the steep, **treacherous** hike up the mountain.

Ask: Why would driving during a hurricane be **treacherous**?

drastic

Define: If something is **drastic**, it is very strong or harsh; it is beyond what is average

Example: The storm **drastically** changed our coastline.

Ask: If the price of a shirt is **drastically** reduced, why is it a good deal?

feat

Define: A **feat** is an act or achievement that usually shows boldness or courage.

Example: The athlete's impressive **feat** was to complete a triathlon.

Ask: What **feat** would you like to accomplish?

extinct

Define: If something is **extinct**, it no longer exists; it has died out.

Example: Remains of the **extinct** woolly mammoth have been found in North America.

Ask: Why should we try to save plants and animals that are in danger of becoming **extinct**?