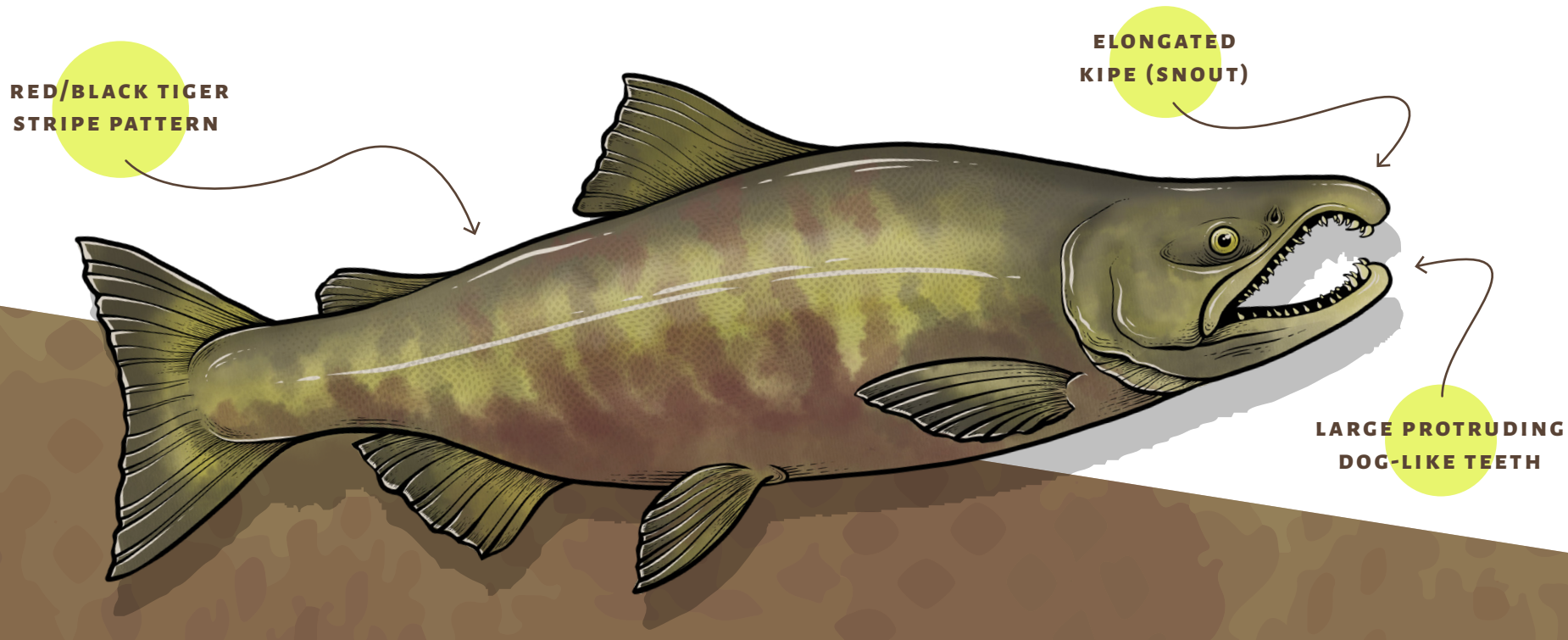
Chum Salmon

A.K.A. “Dog Salmon” / *Oncorhynchus keta*



AVERAGE WEIGHT: **3.5KG**

AVERAGE LENGTH: **61CM**

LIFE CYCLE: **4 YEARS**

MIGRATION DISTANCE: **LONG**

HEALTH: **MEDIUM/HIGH RISK***

**Current federal resourcing is insufficient to adequately track the health of most chum salmon populations*

Chum salmon are among the largest of the five Pacific salmon species that spawn here on the B.C. coast, second in size only to Chinook. Individuals can weigh anywhere from 8 to fifteen pounds and grow up to 3.6 feet (43.2 inches).

During the spawning phase chum salmon change quite drastically. Both males and females experience a dramatic change in appearance when returning to freshwater, developing a tiger pattern of red and black stripes. One of the most prominent and interesting physical changes occurs in the males. These chum grow an elongated snout or “kipe” with large protruding dog-like teeth. Some researchers have speculated that this characteristic is used to compete with other males for mates. This, in combination with the fact that chum are often fed to sled dogs in the north, makes the nickname of dog fish or silverbite easy to understand.

SPAWNING AND RIVER PREFERENCE

Chum are the last of the five Pacific salmon species to return to the creeks and rivers of the Great Bear Rainforest to reproduce, with the seasonal peak in spawning taking place in late autumn. Similar to pinks, they usually prefer smaller, calmer streams and intertidal zones to avoid overcoming river obstacles and powerful falls.

At the time of spawning, chums will be about three or four years old. It's at this phase that a dramatic shift in their appearance also takes place, with bold vertical red and black stripes lining their sides. **Females will typically lay upwards of 3,000 eggs for fertilization.** After this, having completed their lifecycle, all chum salmon die. Each individual only spawns one time in its entire life.

JUVENILE STAGE

During the fry stage of their lifecycle, chum develop dark lines or markings to camouflage themselves from predators in freshwater streams as they out-migrate. Measuring in at just a few centimetres, they typically prey on insect larvae as well as plankton. Like other species of fry, young chum absorb information about their birth streams, imprinting on key characteristics including temperature, water flow, and gravel size. By retaining this knowledge, most adult chum (along with other salmon species) will be able to navigate back to the same place for spawning after spending years growing in the ocean.

In comparison to other salmon species, chum fry are known to make a beeline for the ocean, migrating more quickly to marine waters, soon after they are born. In the spring, these little fry commonly swarm together with juvenile pink salmon to form huge schools before exiting river mouths into ocean shorelines. During this time of year, fry are a common food source for predators like seabirds which can be seen circling river mouths in flocks thousands-strong to feast.

CONSERVATION STATUS AND ECONOMICS

Just as is the case with pink salmon, chum are an important fishery throughout their range, bringing in millions of dollars to the Canadian economy each year. However, a downward trend has been shown in Fisheries and Oceans Canada’s preliminary catch statistics for the past few years.

VALUE OF PRELIMINARY CATCH

- **2016: $20 MILLION**
- **2017: $16 MILLION**
- **2018: $7M**

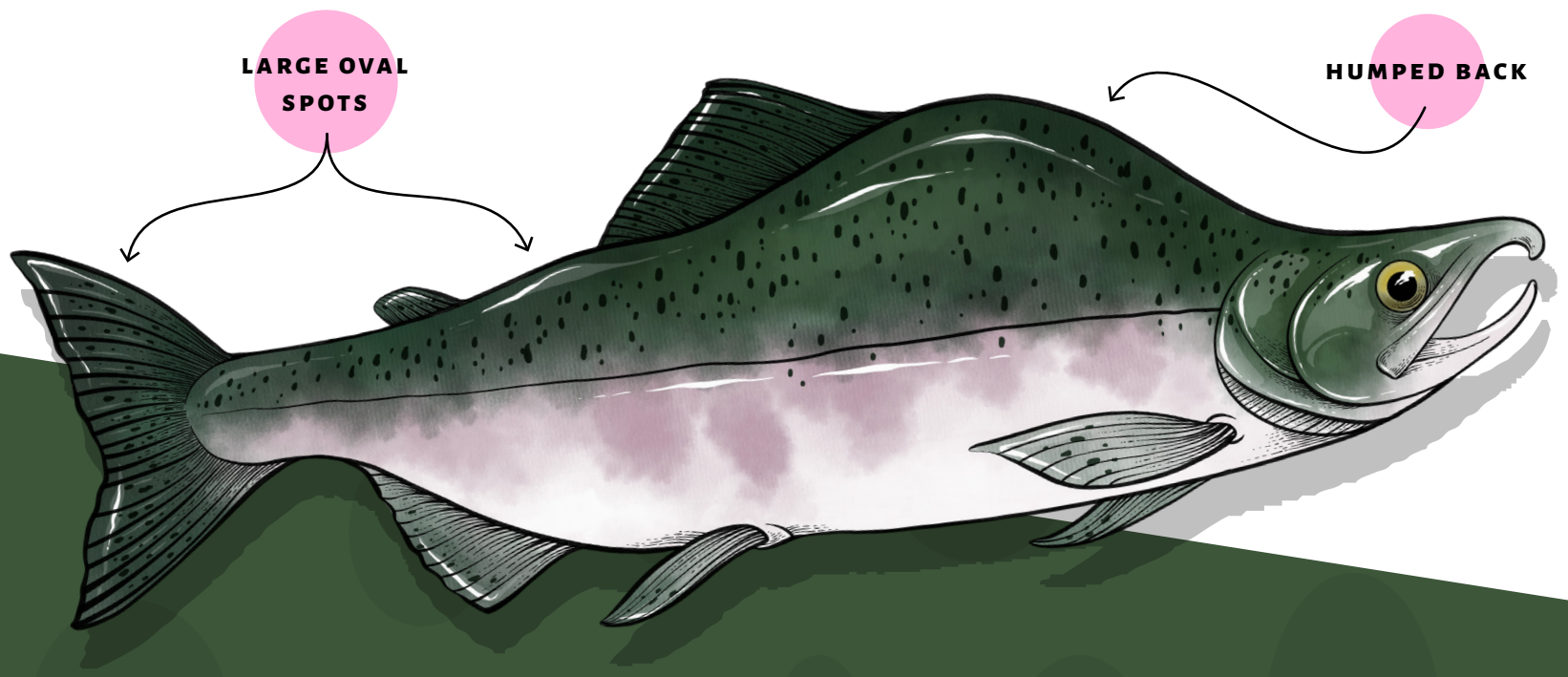
COMMON PREDATORS

A common predator of chum salmon are black bears. Not known to be the pickiest of eaters, black bears will consume almost anything available to them. In the fall, salmon make up a critical portion of their diet before winter. When wild chum are more abundant and available in streams, bears often choose carcasses and eat selective parts, sometimes opting to just bite off the head in order to eat fat-rich brains. They've also been known to target females to feast on their energy-packed eggs.

Sea wolves have also been known to feast on chum regularly. In fact, some studies have shown that salmon make up about 20% of their diet. Similar to bears, these wolves have been known to target the heads of salmon, opting to consume the brains over other parts of the fish.

Pink Salmon

A.K.A. “Humpie” / *Oncorhynchus gorbuscha*



AVERAGE WEIGHT: **2KG**

AVERAGE LENGTH: **40.5CM**

LIFE CYCLE: **2 YEARS**

MIGRATION DISTANCE: **MEDIUM**

HEALTH: **MEDIUM RISK***

**Current federal resourcing is insufficient to adequately track the health of most pink salmon populations*

Despite being the most prolific of the five Pacific salmon species, pinks are by far the least revered by recreational fishermen. This is likely due to their small size and great abundance. As is often the case with species of fish that are found in larger numbers, great abundance has translated to great underappreciation for pinks. However, there’s so much to love about these little salmon!

Nicknamed “humpies”, due to the humped back males develop when spawning, this salmon species gets its common name from the light pink colouring of its flesh. With a short lifespan of only two years, pinks return to the coast in late summer to reproduce. In doing so, they partake in long migrations, sometimes far inland, in freshwater rivers to a preferred spawning area. Extraordinarily, while they tend to mix in with larger populations during their time at sea, each individual pink returns to spawn in the river where it first hatched — truly flexing some powerful navigational prowess.

SPAWNING AND RIVER PREFERENCE

Pinks speedily migrate to the ocean immediately after hatching, spending the least amount of time in freshwater when compared to the other species. Once entering saltwater, they gather in schools and remain in estuaries close to shore. As they grow, they begin spending time feeding in deeper, offshore waters.

With a lifespan of just two years, the shortest of the B.C. salmon, pinks mature and grow faster than any other species. Their short, predictable life cycle has created two distinct populations here in B.C.. Depending on the year, pink salmon can be found in large numbers between July and September. They return every year, with larger numbers in odd years on the south coast and even years on the north coast. The pinks that return in odd years are unrelated to those returning in even years and will not interbreed with each other, even when returning to the same spawning grounds.

Most often, pinks are found migrating to spawn up shallower, calmer creeks and rivers because they cannot jump as high as larger coho or chinook salmon.

ECOSYSTEM ROLE

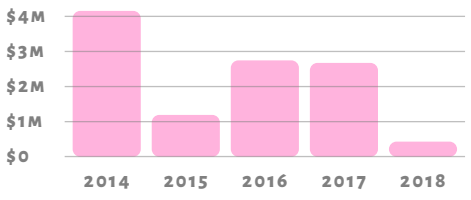
As the most abundant species of wild salmon on the B.C. coast, pink salmon provide a massive delivery of nutrients to rainforest ecosystems. During the oceanic component of their lives, they are an important prey for species like Steller sea lions and killer whales. As they return to rivers and creeks to spawn, they also provide an important source of nutrients for numerous species that inhabit B.C.’s coastal watersheds. Bears, birds, wolves and countless other terrestrial creatures depend on pinks to sustain themselves before harsh Canadian winters.

Did you know, trees found along the rivers of the Great Bear Rainforest rely on dead salmon for vital nutrients to help them grow!

ECONOMICS

Pink salmon are an important fishery species throughout their range, with tens of millions of individuals caught by net fisheries each year. Here on the B.C. coast, pink salmon fisheries bring in millions annually. However, commercial catches for pinks have gone down dramatically over the past number of years.

VALUE OF PRELIMINARY CATCH FROM 2014-2018 *(Source: DFO)*



These numbers point to concerns around population decline. Although the Department of Fisheries and Oceans (DFO) puts limits on the catch when population levels appear low, this is usually a last-minute response whereas utilizing methods to conserve native species like increased monitoring, habitat preservation would be more effective in addressing the root cause of said declines.This lack of foresight is putting pinks and our salmon economy at risk.

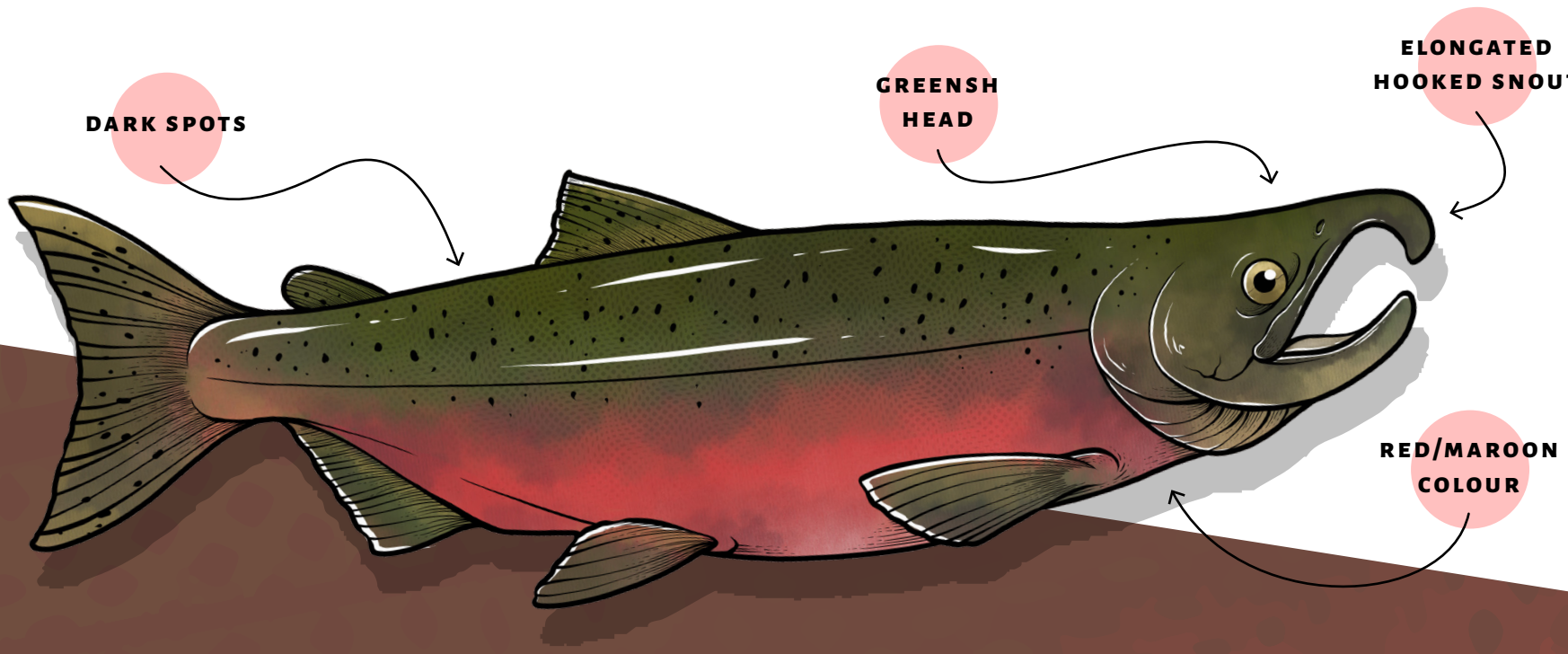
CONSERVATION STATUS

The smallest of B.C.’s wild salmon species, pink salmon are also the most highly abundant and considered by many to be the least vulnerable to extinction. However, recent low pink returns in certain areas of the coast have highlighted a need for stronger management and monitoring.

In a 2019 report published by Watershed Watch, numerous concerns related to salmon returns from the previous year (2018) were highlighted. It was an abysmal year with once abundant wild salmon runs coming back in shockingly low numbers across all of the species, leading to fisheries closures. Along the central and north coast in areas including Kitkatla, Douglas Channel, Princess Royal Island, Bella Bella, Namu, and Bella Coola, the pink salmon returns were some of the lowest on record. In many locations, there were no fisheries at all. The report found, “Skeena pink returns continue to be terrible. They are now only a fraction of their escapement goal. It is almost inconceivable, but DFO continued to allow fisheries on this depleted population.”

Coho Salmon

A.K.A. “Silver Salmon” / *Oncorhynchus kisutch*



AVERAGE WEIGHT: **3.75KG**

AVERAGE LENGTH: **61CM**

LIFE CYCLE: **3 YEARS**

MIGRATION DISTANCE: **MEDIUM**

HEALTH: **MEDIUM RISK***

**Current federal resourcing is insufficient to adequately track the health of most coho salmon populations*

Coho salmon are one of the most highly abundant and adaptable of the five Pacific salmon species that return to the B.C. coast. Still, they have seen concerning population trends in recent years. Thanks to their incredible acrobatics, jumping and leaping whilst migrating upriver and over waterfalls, coho salmon are a challenge to catch by wildlife and sport fisherman alike.

Typically, coho will weigh around eight to twelve lbs and measure in around 18 to 24 inches in length, but of course, many have been caught nearly twice this size. In the ocean stage of their life cycle coho are easily identifiable thanks to the blue colouring along their backs. When returning to rivers, they undergo an extreme physical change, developing bright red colouring along their sides and dark spots on their backs.

SPAWNING AND RIVER PREFERENCE

During the oceanic residence phase of their life cycle, coho spend most of their time in coastal waters. After three or four years at sea, they’ve grown large enough to return to their birth rivers for spawning. Typically, the distribution of spawning habitat for coho salmon is usually clustered in watersheds. Often, they prefer migrating up slow-moving waters and shallow streams to spawning grounds but have been known to display incredible acrobatic feats, leaping both up and sideways to pass by powerful river rapids and falls.

JUVENILE STAGE

After the spawning season in the fall, young coho salmon fry hatch in freshwater gravel nests known as “redds”. They emerge from these safe havens the following spring but linger in the fresh water for a while before migrating back to the ocean. Usually, juvenile cohos spend an entire year or more in freshwater before making their journey to the ocean.

Juvenile coho have been known to defend their territory rigorously through threatening displays. They perform a series of body maneuvers, turning sideways to any intruders and spreading their fins to make them appear large. Simultaneously they shake and shimmy their bodies in an attempt to ward off unwelcome guests. Scientists have dubbed this interesting phenomenon the “wig-wag dance”.

CONSERVATION STATUS

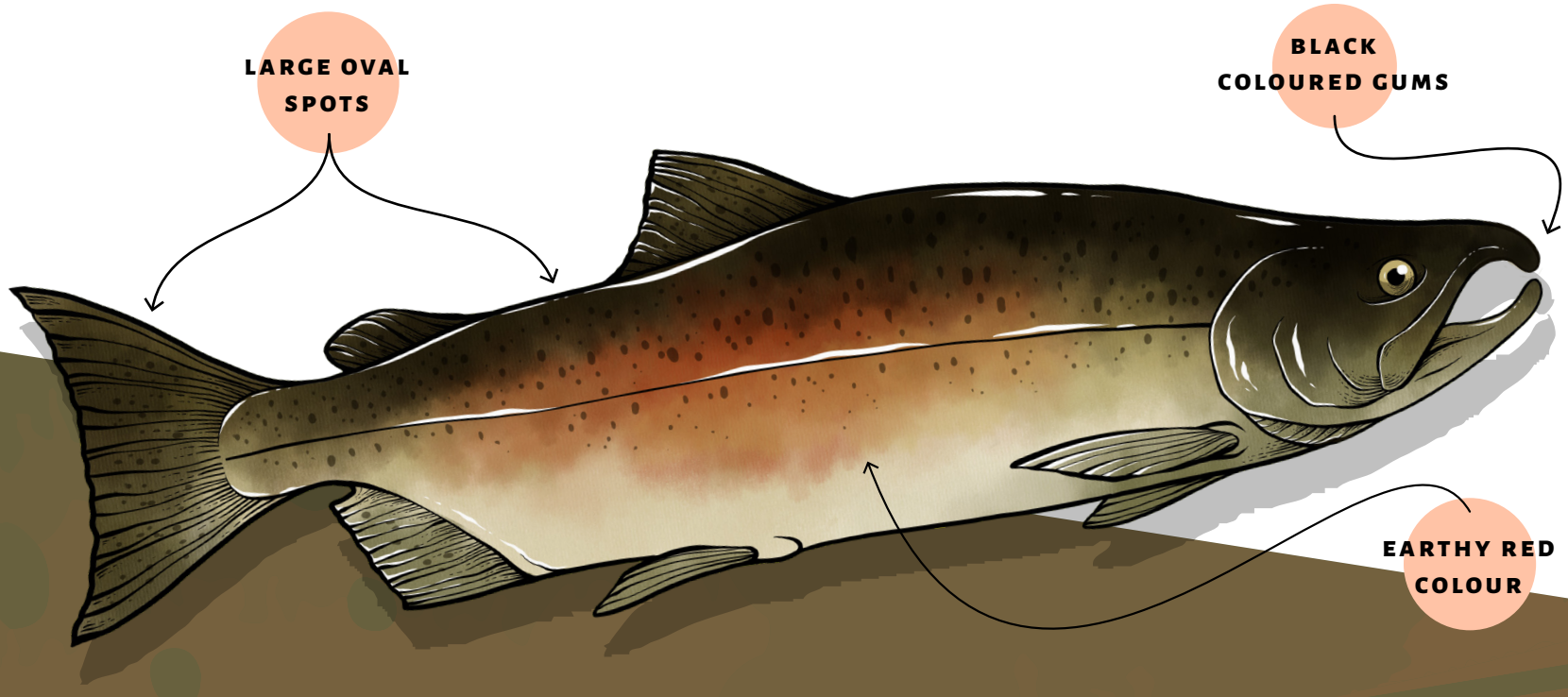
After a brief collapse in the 1970s and 80s, the coho salmon stock in areas of B.C.’s central and north coast are thought to be slowly rebuilding, but still have yet to reach their full potential. With overall health of the ecosystem struggling and a lack of adequate population monitoring taking place, coho runs returns)have not been consistently abundant.

COMMON PREDATORS

As coho salmon migrate up the creeks and rivers of the Great Bear Rainforest, bears congregate in huge numbers along the shoreline in anticipation. These bears display a wide variety of fishing techniques but one of the most impressive can be witnessed alongside powerful rapids. Here, bears tend to be territorial for the most advantageous feeding spots, with dominance hierarchies formed based on the most powerful individuals. They wait patiently at strategic points beside the rapids for leaping coho that can be snatched from the air.

Chinook Salmon

A.K.A. Spring, King, Tyee / *Oncorhynchus tshawytscha*



AVERAGE WEIGHT: **14KG**

AVERAGE LENGTH: **125CM**

LIFE CYCLE: **4-7 YEARS**

MIGRATION DISTANCE: **LONG**

HEALTH: **EXTREMELY HIGH RISK***

**Current federal resourcing is insufficient to adequately track the health of most Chinook salmon populations*

Chinook salmon are the biggest of the five species of wild Pacific salmon and can weigh more than 45 kilos (100 lbs)! Typically they average out at a far lighter 14 kilos (30 lbs) and most measure out between 100 and 152 centimeters (40 and 60 inches) when they reach maturity. Along the Pacific coast, these salmon range from Alaska all the way down to California. Some of the common nicknames for this species include King salmon, Spring salmon, and Tyee. They've also been referred to as "blackmouth" due to the dark coloured pigmentation that occurs on their gum lines. During the ocean phase of Chinook lifecycles, they have a silvery blue colouring. This changes to earthy reds and a coppery black once they return to creeks and rivers for spawning.

SPAWNING AND RIVER PREFERENCE

The ocean phase of a Chinook salmon's life cycle can last anywhere between one and eight years. During this time, they feed and grow in coastal waters, storing up the energy needed for a physically gruelling spawning migration. Upon re-entering freshwater Chinook often choose larger river systems but have also been known to use small headwaters as well. As the largest of the five salmon species, it's no surprise that Chinook exhibit some of the most impressive feats of strength and endurance, sometimes travelling as far as 3,000 kilometres upriver to elevations of more than 1,500 metres above sea level. During these long migrations, they battle intense rapids and unrelenting waterfalls. Amazingly, throughout their entire journey to spawning grounds, Chinook do not feed. As soon as they spawn the next generation, individuals of this species die.

JUVENILE STAGE

The length of time young Chinook salmon spend in freshwater river systems after hatching is dependent on a variety of factors like water temperatur. Generally, the juvenile Chinook in southern areas stay for shorter periods of a few months to a year. In northern locations, Chinook usually spend at least a year, and sometimes more, in freshwater before migrating back to the ocean. At this point in their life cycle, young Chinook can usually be found amidst woody debris or in underwater grass beds sheltering themselves from predators.

CONSERVATION STATUS

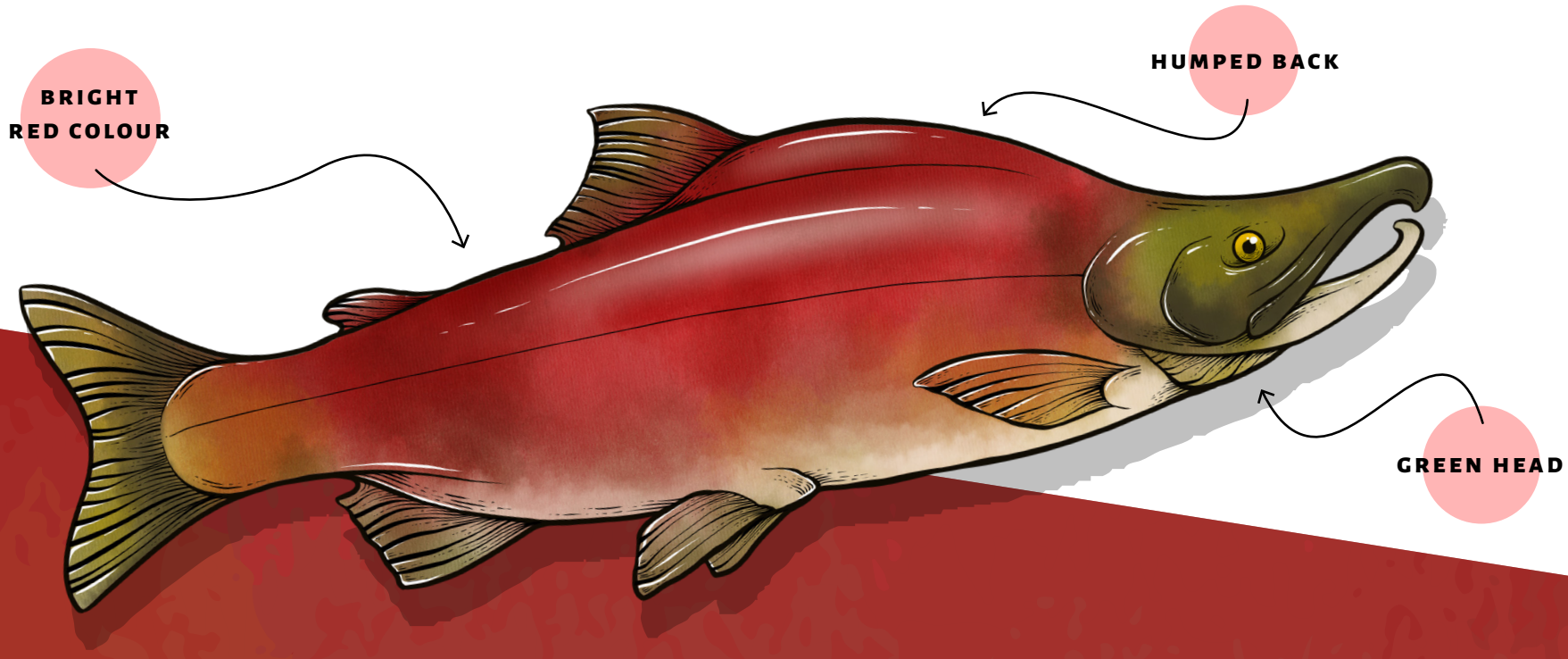
Chinook salmon are vulnerable to a variety of stressors and threats such as habitat degradation and blocked access to spawning grounds caused by human development, as well as a lack of adequate monitoring which leads to poor fisheries management decisions. Along B.C.'s north coast, in fisheries management Area 6, Chinook have much smaller spawning populations and returns compared to the other four wild salmon species and overharvesting has been a problem in recent years. Many populations of Chinook along the coast are endangered while others are listed as threatened.

COMMON PREDATORS

Chinook salmon are very integral in the diet of Southern Resident Killer Whales (SRKW), being one of the only prey items that the whales eat. With only 73 individuals remaining, the fate of these whales – Canada's most endangered marine mammal – is intrinsically linked to that of Chinook salmon. With many populations of Chinook endangered while others are listed as threatened, it comes no surprise that numerous researchers have attributed the main driver of the decline of SRKW to the vanishing of Chinook salmon in recent years.

Sockeye Salmon

A.K.A. Red Salmon / *Oncorhynchus nerka*



AVERAGE WEIGHT: **2.5KG**

AVERAGE LENGTH: **56CM**

LIFE CYCLE: **3-5 YEARS**

MIGRATION DISTANCE: **VERY LONG**

HEALTH: **EXTREMELY HIGH RISK***

**Current federal resourcing is insufficient to adequately track the health of most sockeye salmon populations*

Sockeye salmon are among the smaller of the five species of wild Pacific salmon, but are considered more valuable due to their highly sought after meat. With slim, strikingly coloured bodies, sockeye are a beautiful sight to witness, colouring the rivers and lakes of the Pacific Northwest bright red as groups return for spawning. They typically measure in around 30 inches and usually weigh about 15 pounds, but have been recorded at greater sizes.

SPAWNING & RIVER PREFERENCE

Sockeye salmon have been known to travel vast distances to their preferred spawning grounds. The Fraser, Nass, and Skeena Rivers are major migration routes for these commercially important fish. Interestingly, when spawning, they choose streams and rivers that are connected to lakes where they like to spend time. After hatching in freshwater, juvenile sockeye salmon remain in their natal habitat for as much as three years, longer than any of the other five wild Pacific salmon species.

JUVENILE STAGE

Sockeye salmon eggs hatch in the winter and newborns remain sheltered by gravel, living off their yolk sacs for some time. During spring, these young fish emerge into freshwater habitats as fry. Unique to the five Pacific salmon species, sockeye will spend one to three years living in freshwater systems with lakes. During this time, they feed on zooplankton and small crustaceans before their journey to the ocean.

CONSERVATION STATUS

Sockeye, while still relatively abundant, have seen declines in their returns since the mid-1990s and have lost 33% of their spawning populations. Sockeye harvests have decreased dramatically due to a Fraser River sockeye moratorium based on concerns of recent returns. In 2019, Fraser river sockeye had a return of 485,900 individuals, making it the lowest run since 1893.