

# Bears of Brooks River 2022

## A Guide to their Identification, Lives, and Habits



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#747 at Brooks Falls. Photo courtesy of S. Gage.

Cover photo: During 2021, it was not uncommon to see large numbers of bears gathered at the falls. At times, more than 60 bears (including cubs) could be seen at once. Photo courtesy of L. Law.

# How to Use this Book

This book is intended to present the basic life histories, habits, and identifying characteristics of some of the most frequently seen bears along Brooks River within Katmai National Park. It is not intended to provide a complete checklist of bears at Brooks River, but rather a representative sample.

Chapter one of this book provides general information on Katmai's brown bears. Chapter two presents more specific information about Brooks River and Brooks Camp. Chapter three presents information on how the park studies bears. Chapter four focuses on bear cubs. Chapters five through seven discuss individual bears. In those chapters, bears are arranged first by age classification and sex (subadults, adult females, and adult males) and then numerically by the number biologists have assigned to them.

**Identification:** Look here for information about a bear's body shape, size, color, scars and wounds, shed patterns, ear shape, and claw color.

**Life History:** Read about a bear's behavioral traits, preferred fishing spots, fishing techniques, important life events, and other pertinent information.

## Sample page:

Number, nickname, and other basic information

Age classification and sex

Adult Male

480 Otis

Year First Identified: 2001 as an older subadult or young adult

**Identification**  
In early summer, #480 has a medium to dark blond coat which darkens to brown with blonder patches in the fall. He has tan tipped claws and scars on both sides of his neck. His ears are wide set and his right ear is floppy. His muzzle is long, straight, and narrow. He has a scar above his right eye and is missing his canine teeth.

**Life History**  
#480 was first classified as an older subadult bear in 2001. He, along with #218, use some of the most efficient fishing techniques at the falls. #480 prefers the jacuzzi, but unlike many other bears, he tolerates numerous bears around him while he eats. #480 is one of the few bears that can successfully fish at Brooks Falls in September. Late in the season, he is often seen fishing in the far pool.

Despite the fact that #480 is neither as large nor aggressive as some other male bears, he was rarely displaced from his preferred fishing spot in the jacuzzi from 2005-2011. However in recent years, #480 has slipped down the bear hierarchy. Several bears now regularly displace him from his preferred fishing spots and #114 will steal fish from him. As he has grown older, he is much more prone to being displaced by bears than he is to displace them.

#480 is missing two canine teeth. The injury appears to inhibit his ability to "high-grade" fish – to pick out the fattest parts of passing salmon (skin, brain, and roe). This has not stopped him from putting on the necessary weight for winter survival. Missing teeth is just another obstacle bears like #480 must overcome to survive year after year.

#480 made his return in early July of 2019. Older-looking and a little thinner than in previous years, #480's tenacity again made him one of the fittest bears along the Brooks River. He returned once again to Brooks River in 2020. In 2021, he returned into the river later than he ever has in the past. As he has gotten older, he has had to adapt his behavior to be successful. Using patience as a strategy, he often waits until his preferred fishing spots is available.

July 2021

July 2021

September 2021

July 2017

July 2019

October 2021

September 2020

Each photo is accompanied by a date.

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## Chapter One: Introducing Katmai's Bears



#128 and one of her yearlings in 2021. Photo courtesy of A. Willingham.

# Katmai's Most Famous Creature

**Shoulder Height:** 3-5 feet (.9-1.5 m)

**Length:** 7-10 feet (2.1-3 m)

**Weight (Adult Male):** 600-900 pounds (272-408 kg) in mid-summer

**Weight (Adult Female):** 300-600 pounds (136-272 kg)

**Average Life Span:** 20 years

The only bears to regularly inhabit Katmai National Park and Preserve are brown bears. Scientists currently consider brown bears and grizzly bears to be the same species (*Ursus arctos*). The difference between the two is somewhat arbitrary. In North America, brown bears are commonly distinguished by their access to coastal food sources such as runs of salmon, while grizzlies reside farther inland.

Bears are eating machines, and their survival is dependent on attaining enough calories over the course of the spring, summer, and fall to sustain them through winter hibernation. As the summer wanes into fall, bears spend an increasing amount of time feeding.

Hearing and vision in bears are estimated to be near equivalent to those senses in humans, but a bear's sense of smell, which is many times better than a dog's, sets them apart. Bears use scent to communicate everything from dominance to their presence in an area to receptivity to mating.

Brown bears are distinguished from other North American bear species by several physical characteristics. They usually have a rounded and dish-shaped face, unlike the faces of black or polar bears that usually have a more evenly sloping and straighter facial profile. Polar bears and black bears also lack the prominent shoulder hump found on brown bears. This hump contains muscles that add power to their front legs.

Brown bears' strength comes in part from the rigid anchorage of their thick skeleton, and the position and size of their powerful muscles. Extremely thick bones inside their legs and a plantigrade gait (the whole length of each foot—from heel to toe—touches the ground) help support their great weight.

Brown bears are aptly named for their color. Their brownish fur comes in a wide variety of shades and hues. The fur of brown bears ranges from blonde to dark brown.

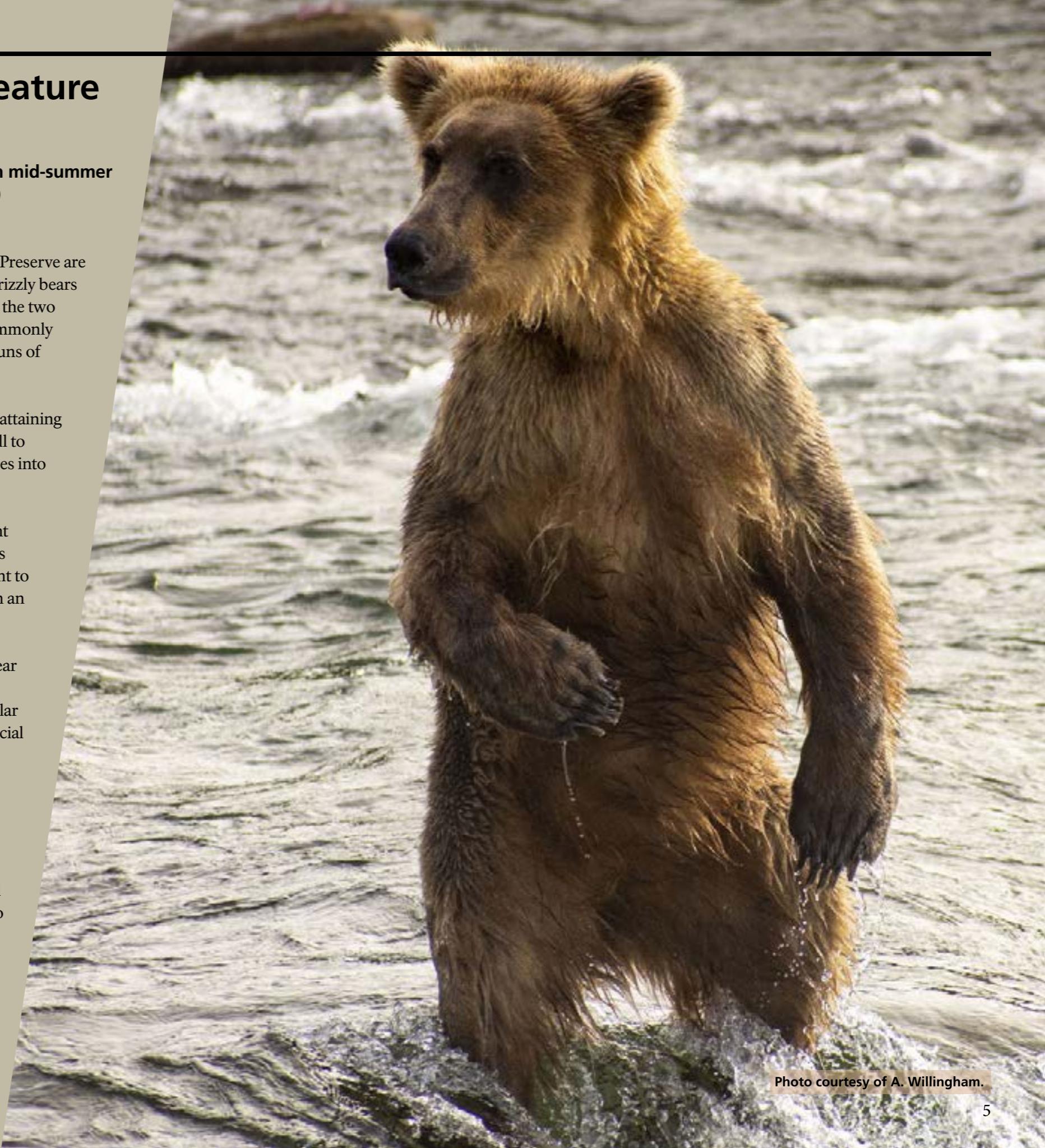


Photo courtesy of A. Willingham.

# The Individual Bear

It is easy to perceive bears as unthinking animals whose actions are dictated by instinct. Bears eat when they are hungry. They sleep when they are tired. They mate when hormones are right. While instinct influences bear behavior (and it may be the major influence), these animals are also highly intelligent. Like other intelligent animals, bears have the ability to adapt, make decisions, and act as individuals.

A large male bear steals salmon from smaller bears. Another, equally large male, ignores the salmon smaller bears catch. A big female fishes at Brooks Falls, but the next year when she has cubs, she never ventures within a third of a mile of the falls. An older adult bear, one that has visited Brooks River for years, still flees from approaching anglers in the river. A younger bear, no more than two years removed from its mother, habitually uses the trails within ten yards of Brooks Lodge. One bear does this, another does that.

Bear watching at Brooks River is unique, because biologists have gathered an incredible amount of information about how bears use this place. This information allows us to follow the life histories of individual bears using Brooks River, sometimes from a bear's first year exploring the river to later in its life as a dominant adult bear.

Even if you only spend one hour watching bears at Brooks River, it is easy to see how each bear is different. These bears are not only distinguished by physical characteristics, but more importantly, they are also distinguished by their habits and behavior. Each bear is a unique individual. Rarely do we have the opportunity to get to know a group of wild animals as individuals. Bear watching at Brooks River, however, gives us that chance.

You are encouraged to get to know the Brooks River bears as the individuals that they are. This book is an aid to their identification. However, providing the information necessary to identify each bear is not the goal or intention of this book. Most importantly, this book serves as a reference for their life history and behavior. A bear's life is full of experiences that are unique to that individual. These experiences affect everything from how they fish to where they den to their tolerance of people.

No matter if you are watching the bears of Brooks River in person or [online](#), take a moment to get to know these animals. The individuality they demonstrate provides great opportunities for us to gain insight into their intelligence and ability to survive in a harsh world.



Not all bears will use the river in the same way. Get to know these animals as individuals. Photo courtesy of C. Spencer.

## Let's Get Fat

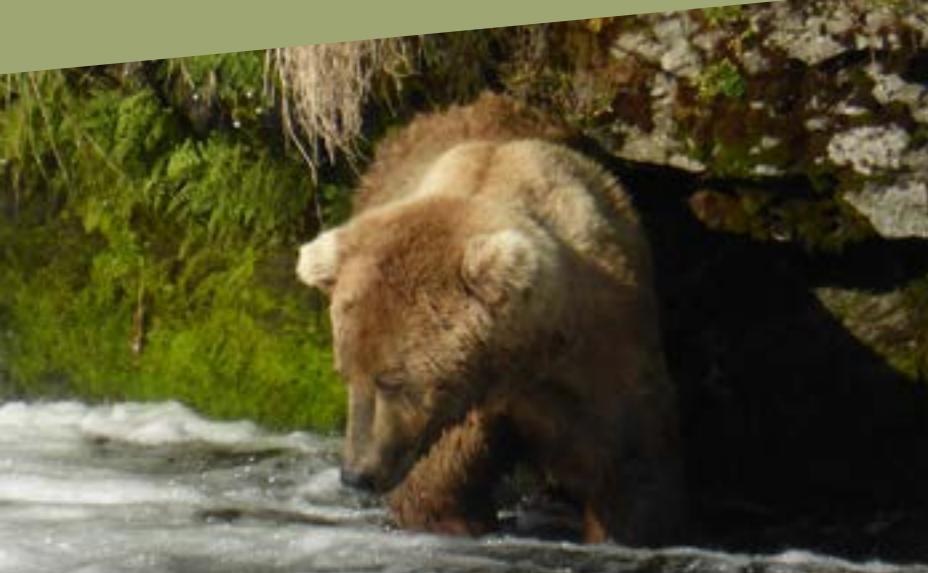
Excessive weight gain is key to a bear's survival. Bears must eat an entire year's worth of food in six months or less in order to survive winter hibernation and continued weight loss in the spring. During hibernation, bears can lose 1/4 to 1/3 of their body weight. Lactating females can lose even more.

In contrast to the famine of winter and spring, Katmai's brown bears rapidly regain weight in summer and fall.

Incredibly, they can sometimes gain over two pounds—one kilogram—of fat per day!

The photos below demonstrate the dramatic weight gain of one Brooks River's more recognizable bears, #480 also known as Otis, from early July to October 2014. This bear is

not the largest on Brooks River, but a reasonable estimate for his mid-summer weight would be 600-700 pounds (272-318 kg). In the fall, this bear might weigh 900 pounds (408 kg) or more.



#480 on July 2, 2014



#480 on July 5, 2014



#480 on July 12, 2014



#480 on July 23, 2014



#480 on September 1, 2014



#480 on September 22, 2014

# Bear Hibernation

One remarkable adaptation that has evolved in some animals is hibernation. Simply and broadly defined, hibernation is a state of dormancy that allows animals to avoid periods of famine. It takes many forms in mammals, but is particularly remarkable in bears.

In the Katmai region, most bears go to their dens and begin hibernation in October and November. Hibernation in bears is most likely triggered by a shortage of high calorie food as well as hormonal changes. After a summer and fall spent gorging on food, a bear's physiology and metabolism shifts in rather incredible ways to help them survive several months without food or water.

When hibernating, a bear's body temperature remains above 88°F (31°C), not much lower than their normal body temperature of 100°F (37.7°C). This is unlike other hibernating mammals, such as arctic ground squirrels whose body temperature drops close to freezing. A bear's heart and respiratory rates, however, drop dramatically. They average only one breath per minute with a heart rate of 8-10 beats per minute in hibernation.

They still need to burn many calories per day while hibernating—sometimes more than 4000 calories per day. When they emerge from their dens in the spring, bears have lost up to 33% of their body weight. Lactating females can lose even more weight.

Surviving a winter without food or water requires fuel, and a bear fuels its body on the fat reserves it acquired during the previous summer and fall. Bears do not eat, drink, urinate, or defecate while in the den. Fat is metabolized to produce water and food, but instead of defecating or urinating to eliminate waste, bears recycle it. Their kidneys shut down almost completely and urea, a major component of urine, is recycled into proteins that maintain a bear's muscle mass and organ tissues. Without the ability to recycle urea, ammonia would build to toxic levels and poison the animal. Since they are living off of their stored body fat, bears also have very high levels of cholesterol in their blood.



Remarkably, healthy bears emerge from hibernation in the spring without losing muscle mass and bone density, or suffering from hardening of the arteries. Can the abilities of a hibernating bear help people in the future?

Perhaps. If we can unlock the physiological secrets of a hibernating bear, then we may be able to find new ways to treat kidney, heart, and bone diseases. We also might be able to more safely send humans on long distance space expeditions if we can find a way to hibernate like a bear.

In the depths of winter, when Katmai's landscape is covered in snow and ice and the wind is howling fiercely, bears are nestled snug in their dens and sleep soundly. Bears are survivors with a very special adaptation—hibernation—that allows them to survive harsh wintertime conditions and famine remarkably well.

**In Katmai, bears dig dens on well vegetated, steep slopes typically between 500-1500 feet (152-457 m) in elevation. This abandoned den was found on Dumpling Mountain.**

# Bear Identification

Individual bears are difficult to identify, especially the first few times you see them. Bears at Brooks River are not tagged or marked for identification. The information in this book is drawn from thousands of hours of data collection, which is used to document long term patterns of bear use along the river.

Often no specific feature is diagnostic of any individual bear. Rangers and biologists use a combination of a bear's physical characteristics, habits, and disposition to identify the animals.

## Body Size and Shape

Overall size and shape are useful identification characteristics, but bears grow rapidly from season to season and year to year. It can also be difficult to gauge a bear's size with little or no frame of reference. Therefore, size and shape is sometimes most useful to differentiate between adults or subadult bears. Since bears are sexually dimorphic, size can be used to differentiate between males and females. Adult male bears can grow twice as large as adult females.

## Claw Color

Most of Katmai's bears have dark claws, but a few have lighter tan-tipped claws and some even have white claws.

## Disposition

There are behaviors that all bears share, but not all bears do the same things in the same way. Some are aggressive towards other bears. They show other bears how dominant they are. Others avoid confrontation and are more subordinate. Some bears are tolerant of people and others will avoid people at almost all costs. These behavioral characteristics are important differences between each bear.

## Ears

Bear ears come in a variety of colors, shapes, and sizes. Note if a bear's ears are large or small, triangular or oval, upright or flopped over. Some bears are even missing all or part of an ear. Generally speaking, the ears on adults are more widely spaced than cubs and subadult bears. Some bears also have very light colored ears, even in the fall.



## Face

Brown bears typically have dished-shaped faces (meaning it's often concave from its eyes and along its muzzle). Like humans though, each bear's face is unique. Look closely at a bear's face to note the shape of its muzzle and the relative position of its eyes.

## Fishing Techniques

Bears have an instinct to eat high calorie foods like salmon, but fishing is a learned behavior. Not all bears fish in the same way or in the same places. This offers great insight into their individuality.

## Fur Color and Shed Pattern

The color of a bear's fur or coat and the pattern it is shed is somewhat consistent from year to year, so it is important to place fur color within the context of the season. Bears shed their old and dead fur, which is often lighter than new fur. In the fall the fur re-grows and repeats the process.

## Scars and Wounds

Almost every bear carries a unique suite of scars and/or wounds. These are very useful for identification. However, wounds heal and a bear's new fall coat can hide scars. Be mindful that not all bears can be identified from scars and wounds alone.

## Sex

Is it a male or female? Genitalia is usually only visible on adult males. It is harder to see on females and younger bears. If you can't see a bear's genitalia, then watch them urinate. Male bears will urinate straight down between their hind legs, while females urinate behind them. This is especially useful when trying to determine the sex of cubs.

# Cub Killer? Infanticide in Bears

Do male bears kill cubs? If so, why? The answers are paradoxically simple and complicated. Yes, bears kill cubs, but no one is completely sure why. Female bears have been observed killing cubs as well, so the behavior is not restricted to just males.

Infanticide is the term commonly used to describe the killing of a bear cub. Several hypotheses have been proposed to explain why bears kill cubs.

## Increased Reproductive Potential

Motivation to mate with a female bear may drive a male to kill her cubs. Biologists describe this behavior as sexually selected infanticide. Female bears won't enter estrus ("heat") as long as they are nursing. If a female loses her cubs in spring or early summer, she may enter estrus and become receptive to mating.

## Food

Bears are cannibalistic, so hunger may motivate some bears to kill cubs. Even subadult and

small adult female bears fall victim to predatory attacks by larger bears.

## Reduced Competition

Perhaps some bears view cubs as potential competitors in the future. Through infanticide, a bear can eliminate a competitor at its weakest point.

These ideas have merit, but there is no "one size fits all" explanation for this behavior. Each idea proposed has evidence to contradict it. Cubs are sometimes killed and not eaten. If a bear kills a cub to reduce competition, that may require a level of forethought and intelligence in bears that has yet to be scientifically demonstrated.

Even the idea of sexually selected infanticide has issues. Bears are promiscuous. There is no

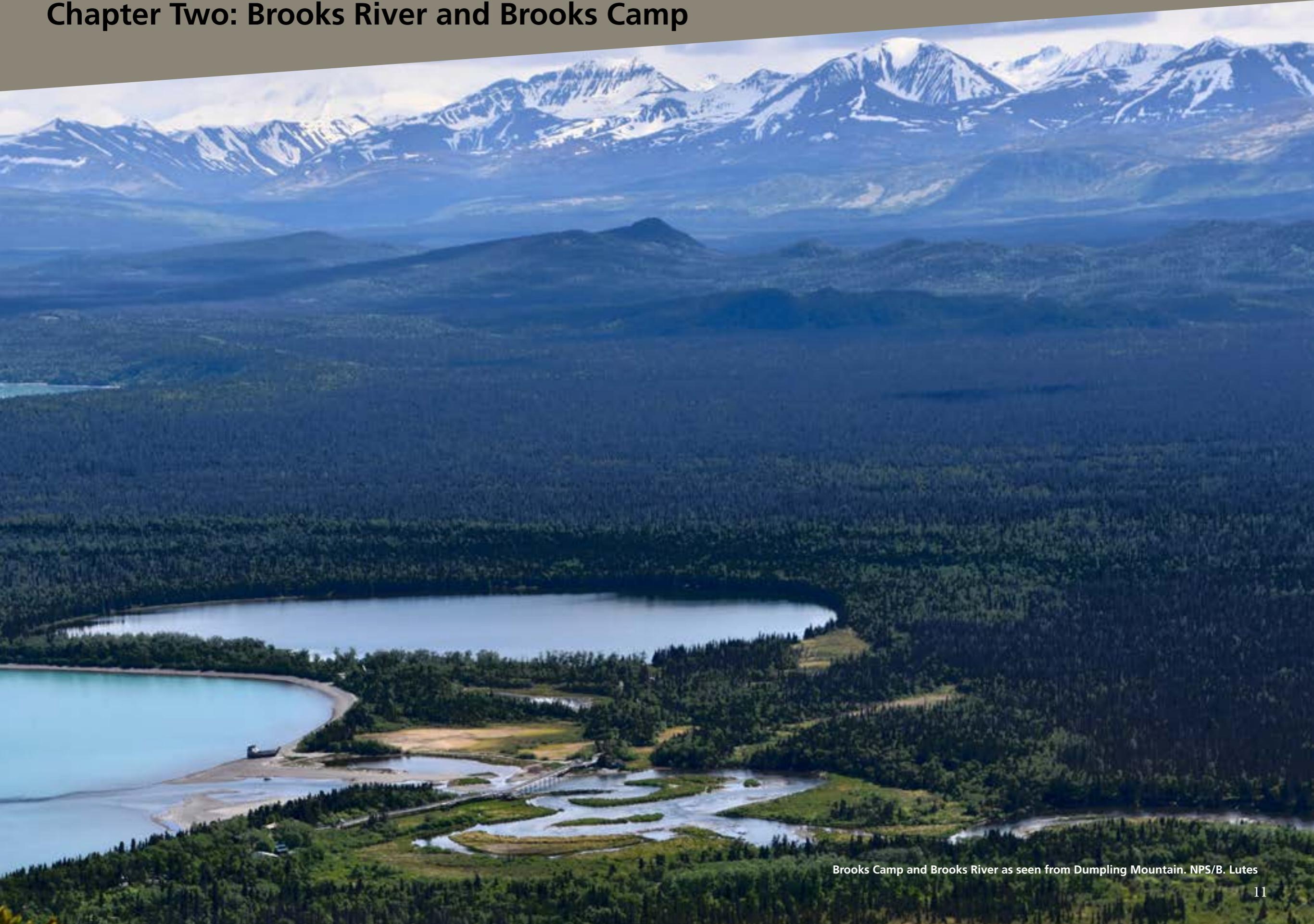
guarantee that an infanticidal male will sire another litter with the mother, nor is there any guarantee that the male bear would even have access to the female. A more dominant male could appropriate the female for himself. Even though few infanticides have been witnessed at Brooks River, they occur during spring, summer, and fall—not just during the mating season which peaks in late spring. Female bears kill cubs too, which does not support the idea of sexually selected infanticide either.

Infanticide may be difficult to reconcile from a human point of view, but bears exist and behave outside of our moral and ethical boundaries. This is a behavior that will continue among Katmai's bears as long as they remain wild creatures, and it is a behavior we may never be able to fully understand or explain.



Photo courtesy of A. Willingham.

## Chapter Two: Brooks River and Brooks Camp



Brooks Camp and Brooks River as seen from Dumpling Mountain. NPS/B. Lutes

# Brooks River

No more than 1.5 miles (2.4 km) long, Brooks River hosts one of the greatest seasonal concentrations of brown bears anywhere on earth.

In early summer, the river becomes one of the first places in the region where bright, energetic, and pre-spawned salmon are

available to bears. Later, in the fall, spawned-out salmon play an important role in the bears' preparation for winter.

and relative position of the bear within its social hierarchy, and a bear's preferred fishing techniques.

How, where, and when bears fish along the river depends on many factors such as the time of year, salmon density, locations of salmon spawning activity, the age



1. Brooks River empties into Naknek Lake.

2. Brooks Camp.

3. During late summer and fall, bears usually congregate in the lower half of Brooks River.

4. The cut bank can provide a fishing area for bears that are less tolerant of people.

5. In July, the riffles area downstream of Brooks Falls is fished most often by less dominant bears and females with offspring.

6. Early in the salmon run, Brooks Falls creates a temporary barrier to migrating salmon. This results in a particularly successful fishing spot for bears.

7. Lake Brooks is the river's source.

# Brooks Falls

Brooks Falls creates a temporary barrier for the surge of migrating salmon through Brooks River. Consequently, Brooks Falls is one of the first places in the region where salmon are accessible to bears.

A bear's fishing location is dependent on its skill and where the bear ranks in the hierarchy. Many of the very dominant males

prefer to fish in the plunge pools below Brooks Falls. The jacuzzi is a particularly sought after fishing spot by those bears. Less dominant bears are often forced to fish at other locations. Only a few bears are skilled enough to successfully fish the lip of the falls.

Some bears are specialists. They've mastered fishing at only one spot. Other bears are skilled enough to fish nearly anywhere.



1. Fish Ladder: Opened in 1950, it is no longer passable to salmon and bears rarely fish here.

2. Lip: Watch here for bears catching leaping salmon.

3. Jacuzzi: This is one of the most productive and sought-after fishing spots.

4. Far Pool: This spot can be occupied by bears who are less tolerant of people.

5. Less dominant bears often wait downstream for their opportunity to access fishing spots or scavenge dead salmon.

6. Downstream to the riffles and Naknek Lake.

# A Year at Brooks Falls: Seasonal Bear Use At Brooks River

Rangers and biologists are frequently asked, “Where are the bears?” The answer depends on the season, but finding the answer is as simple as knowing where the bears are finding food. Patterns of use along Brooks River reflect bears’ ability to learn and adapt to changing conditions—traits that help them survive extreme contrasts between seasons of abundance and famine.

Springtime is a lean season for bears who live in the interior of Katmai National Park and Preserve. Little food is typically available to bears in the spring, so they are dispersed throughout

the area and are only infrequently seen at Brooks Camp in May and June. At this time of the year bears are focused on eating grass and sedge, hunting moose calves, and competing for mates.

When salmon begin to arrive in late June, bears migrate to Brooks River. Bears can be seen fishing at Brooks Falls and in the lower Brooks River through July. Mid-July is typically when the largest number of bears can be seen along the river. After that, bears slowly begin to disperse to other areas.

In August, salmon are beginning to spawn in Brooks River, but

they are less concentrated, remain energetic, and are no longer migrating. This creates difficult fishing conditions for bears and almost all of the bears will leave the area. Like June, there can be days in August when no bears are seen at Brooks Camp. For the bears, salmon fishing is easier in other places. However, for the past five years, there have been increased numbers of salmon and subsequently bears in the Brooks Camp area in August.

By late August, many salmon have already spawned and will begin to die. As the fish weaken and die, bears migrate back to Brooks River to feed. In September, bears are usually present in high numbers as they search for dead and dying salmon. In the fall, bear numbers usually peak by the first week in October.



Bears are largely absent from Brooks River except in July, September, and October.

# Sockeye Salmon of Brooks River

The rivers, lakes, and streams of Bristol Bay host the closing acts of an epic migration. Each summer tens of millions of sockeye salmon leave the North Pacific, driven by instinct to return to the exact spawning grounds where they hatched years earlier. For several hundred thousand salmon the path leads up Brooks River.

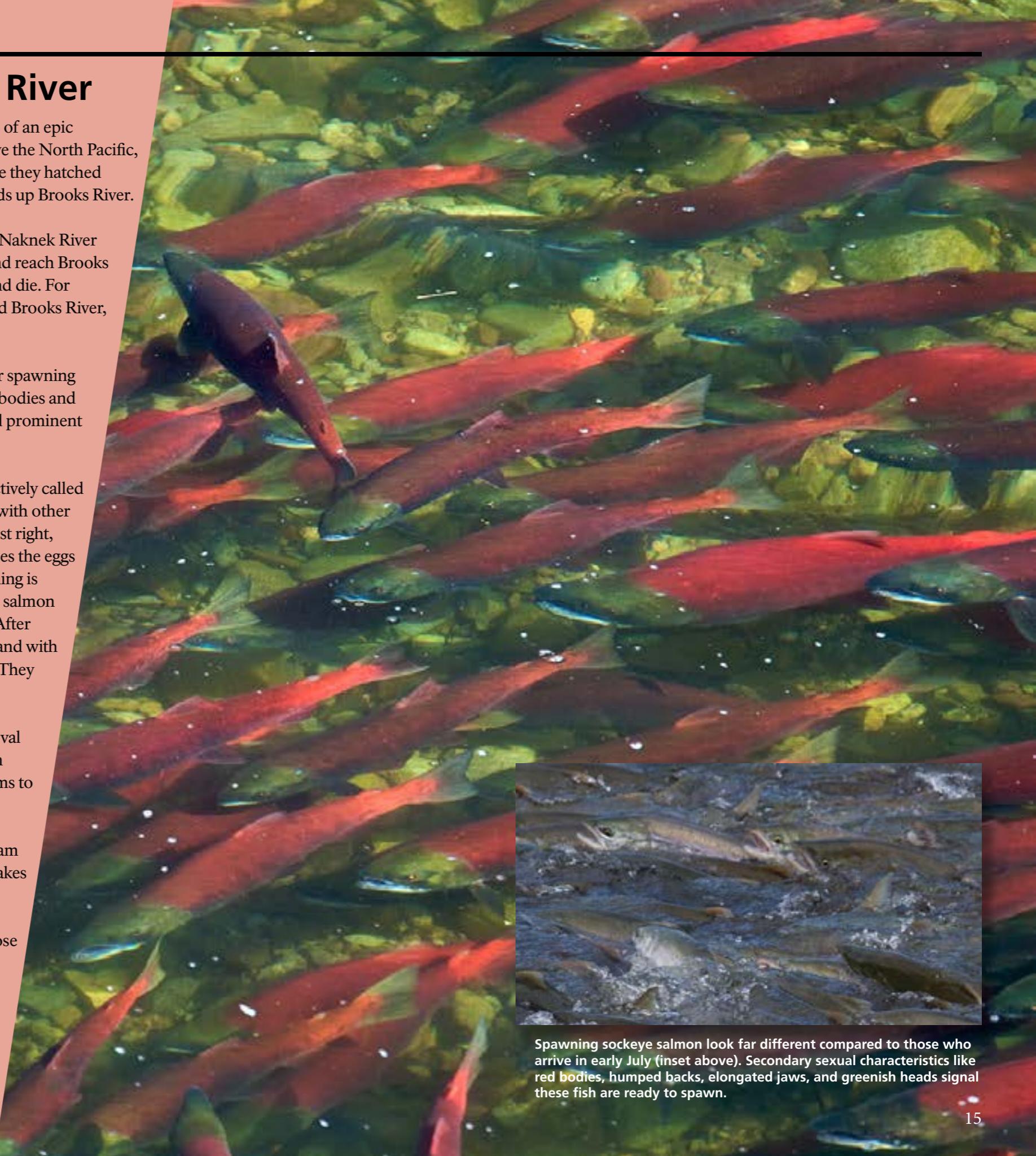
Near the summer solstice, sockeye salmon begin migrating into Naknek River from Bristol Bay. From there, salmon swim into Naknek Lake and reach Brooks River. This is the final stop for some fish; here they will spawn and die. For others, the voyage is not quite over. Their destination lies beyond Brooks River, in the small tributaries of Lake Brooks.

Sockeye salmon reach sexual maturity when they approach their spawning grounds. Their silver color disappears, replaced by red-colored bodies and green heads. They also attain humped backs, elongated jaws and prominent teeth. These features are especially pronounced in male salmon.

Using their tails, female sockeye excavate a series of nests, collectively called a redd, in the river bottom. Males don't dig nests, but they fight with other males for access to females. When a female judges a nest to be just right, she releases eggs in it. Simultaneously, the attending male fertilizes the eggs with milt. Then the female buries the eggs in gravel. Once spawning is complete, a female will defend her redd as long as she can. Male salmon move on and may attempt to fertilize the eggs of other females. After spawning though, salmon are on borrowed time. Spawning-out and with their life purpose complete, they will never return to the ocean. They slowly weaken and die.

Eggs incubate for about four months. After hatching, the tiny larval fish, called alevin, remain in the gravel until they emerge as fry in spring. When large enough, young sockeye fry move from streams to lakes, where they stay for one to two years.

Salmon fry become smolt when they begin to migrate downstream to the ocean. Salmon smolt imprint on their natal streams and lakes while migrating to the ocean. Along this journey, they undergo many physiological changes to prepare for a saltwater existence. Salmon smolt are about to enter a totally new environment, whose conditions they cannot know until they get there. Substantial changes to the kidneys and gills are required for the fish to survive the harsh transition from freshwater to the salty ocean. Sockeye salmon feast in the North Pacific for two additional years. There they grow into the large and beautiful fish who return as adults to spawn.



Spawning sockeye salmon look far different compared to those who arrive in early July (inset above). Secondary sexual characteristics like red bodies, humped backs, elongated jaws, and greenish heads signal these fish are ready to spawn.

# Katmai's Keystone

What makes salmon such interesting and charismatic creatures? Is it their importance to brown bears? Is it the commercial and recreational fishing opportunities they provide? Is it the promise of food through a long winter? What about their epic migrations and battle against the odds?

Of course, all of these things make them interesting and important. For a moment though, consider how salmon are important in other ways that might not be obvious. Salmon are conveyor belts of energy and nutrients. They are the keystone that turns impoverished land and water into productive and vibrant landscapes.

Salmon provide the energy necessary for bears to grow large and fat over the summer and fall. Katmai's bears are larger and experience higher reproductive rates compared to bears without salmon in their diet.

Salmon also provide food for dozens of other species, including fish and invertebrates. Many different fish species gorge on salmon fry and smolt in the spring and salmon eggs in the fall. Anglers often catch arctic char and rainbow trout with stomachs visibly distended with salmon eggs. In the winter, these fish may not eat much at all. They, like bears, are surviving on the energy brought to them by salmon.

Even decomposing salmon are vital to the ecosystem. Dead salmon provide nitrogen and phosphorus that fertilize nutrient poor freshwater lakes and streams. These nutrients boost the primary productivity of plankton, which in turn feed salmon fry. Without this yearly boost, streams and lakes could not support high numbers of salmon fry. Riparian vegetation also grows quicker along salmon streams.

What would the loss of salmon mean for a place like Brooks River? Most people come to watch bears and fish for trophy-sized trout, grayling, and char. Without salmon, Brooks River would not be a world famous fishing destination, because there would be no large fish to catch. Without salmon, no one would visit Brooks Camp to see bears, because no bears would gather here. For thousands of years, people fished at Brooks Falls for salmon too. Even today, salmon are the heartbeat of the area's culture and economy. Without salmon, the economy of Bristol Bay and Southwest Alaska would collapse.

The survival of the modern day Katmai experience, the ecosystem as we've known it, and the history of Brooks River is intimately tied to these fish. They are, without doubt, Katmai's keystone species.



Dead salmon play a vital role in the productivity and abundance of Katmai's ecosystems.

# Bear Safety at Brooks Camp

For many people, a trip to Brooks Camp is a once-in-a-lifetime experience. To protect that experience for future generations, the National Park Service requires all arriving visitors to attend a 20-minute bear orientation and safety talk. This “bear school” teaches visitors how to behave in ways to help protect both themselves and bears. While at Brooks Camp, it is necessary for all of us to follow these simple guidelines:

- Keep an appropriate distance between yourself and bears: Stay at least 50 yards (~46 meters) away from all bears in the Brooks Camp area.
- Prevent bears from obtaining human food and garbage: At Brooks Camp, bears do not associate people with food. To keep bears and people safe, do not carry or consume food and drinks (besides water) while outside, except in designated picnic areas.
- Prevent bears from associating human gear with play items: While at Brooks Camp, any items brought outdoors must be kept within arm's reach at all times. Bears are naturally curious, intelligent, and playful animals who may investigate unattended property and learn to associate human objects with play rewards.
- Bears have the right of way: If you encounter a bear, you should give it the space it needs to continue fishing, walking, or sleeping. This may mean altering your behavior by stopping fishing, moving out of a bear's line of travel by stepping off trail, or waiting until a bear has finished sleeping before continuing to your destination. At times, bears may block access to areas such as the viewing platforms. Pack your patience and remember the bears' freedom is what makes Brooks Camp an exciting destination.
- Avoid surprise encounters: Remain alert and watch for bears. Hike and walk in groups. Talk with your group so that bears hear your approach.

By visiting Katmai, we are entering the bears' home. We have the privilege of observing these wild animals in their natural habitat. It is important to ensure that our behavior remains consistent around bears. This way, bears know what to expect when they encounter us which in turn leads to less stressful situations for both bears and people.

Please visit Katmai's website for [more information about staying safe in bear country](#).



How would you react if you saw a bear resting on the trail? Special rules and regulations apply at Brooks Camp in order to better protect people and bears. Photo courtesy of L. Law.

## To Name or Not to Name?

Bears at Brooks River are assigned numbers for monitoring, management, and identification purposes. Inevitably, some bears acquire nicknames from staff and these nicknames are included in this book, but naming wild animals is not without controversy. Is it appropriate to name wild animals?

Personnel at many bear watching areas in Alaska, like Brooks River, attach nicknames to frequently seen bears. These serve to help people identify, track, and manage the animals. However, names undoubtedly alter the way in which we relate to an animal. For some people, a named bear (or one with ear tags or a radio collar) may seem less wild, and more pet-like, than an unknown counterpart.

Names also carry meaning, intentionally or not. What stigmas would you attach to a young bear nicknamed Fluffy versus a large male bear named Killer? How would those stigmas alter your experience when watching that animal?

With those questions in mind, assigned numbers are certainly more neutral than a name, but over time a number may lead to just as much anthropomorphizing as a nickname. No matter how we relate to these animals though, at Brooks River the bears with nicknames remain wild animals. Management decisions are never based on whether or not a bear is named

and the bears are completely unaware of the numbers and names assigned to them.



#435 is nicknamed Holly. What meanings are associated with that name? Does her nickname change the way you perceive her? Is it appropriate to name wild animals? Photo courtesy of C. Spencer.

# Bearcam! Watch Live Streaming Video of Brooks River and Its Famous Bears

Watch live and follow the activities of the Katmai's bears.

Katmai's bearcams are live, freely accessible, streaming webcams from Brooks River. Cameras are located at Brooks Falls, at the outlet of the Brooks River, near the summit of Dumpling Mountain, and even underwater. Don't miss a second of the action. Go to [go.nps.gov/bearcam](http://go.nps.gov/bearcam) and follow the links to watch the world famous bearcams.

## Join the Bearcam Community

Connect with the growing online community of Katmai and brown bear stewards. Discuss recent and past bearcam events with other fans, share your thoughts on national parks and wildlife conservation, and upload your favorite bearcam screenshots for others to enjoy.

On social media, use #bearcam and join the real-time chat at the bottom of any bearcam page on [www.explore.org/bears](http://www.explore.org/bears).

## Ranger Live Chats

Throughout the year, rangers host live programs on the bearcams to discuss the biology, behavior, and ecology of bears and the salmon they depend on. Check the park's [social media and calendar pages](#) for upcoming live chats.

## Explore.org

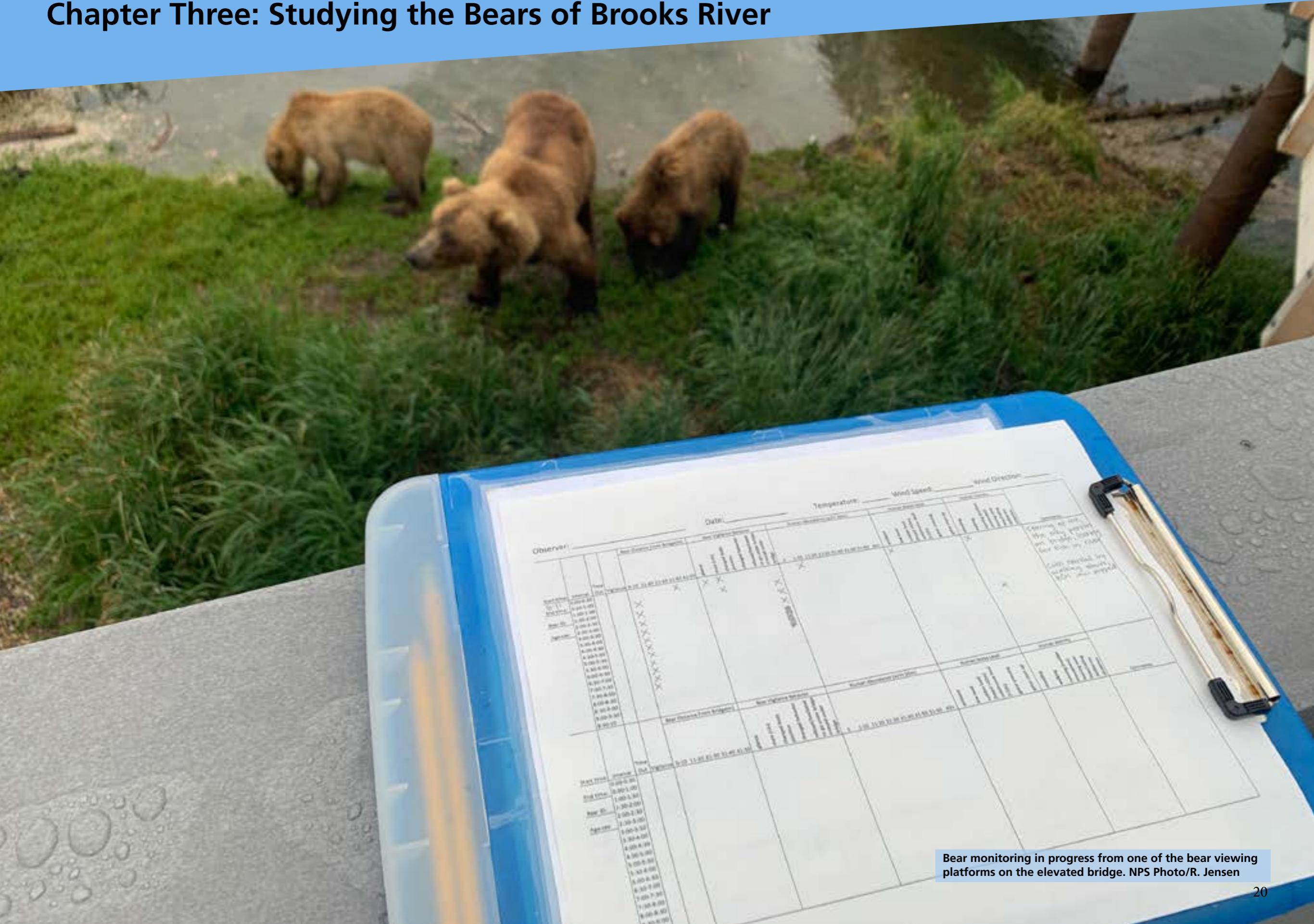
Funding for the installation, maintenance, and technical support for the bearcams is proudly provided by [explore.org](http://explore.org). Explore.org is a philanthropic organization with a mission to champion the selfless acts of others, create a portal into the soul of humanity, and inspire lifelong learning.



Live streaming webcams capture the excitement and drama of a summer season along Brooks River. There are several cameras at Brooks Falls and the lower river. Photo courtesy of L. Law.

explore

## Chapter Three: Studying the Bears of Brooks River



Bear monitoring in progress from one of the bear viewing platforms on the elevated bridge. NPS Photo/R. Jensen

# Monitoring Bears at Brooks River

Bear watching at Brooks River is different than most other bear watching sites in Alaska, especially when you consider the depth of information collected about individual bears. Since 2001, biologists at Katmai have conducted in-depth monitoring sessions along Brooks River to record data on bear and human use of the area.

Over time, this information has grown into one of the most comprehensive data sets about bear use of a particular place ever recorded. Park managers can use this data set to follow trends in bear numbers, how bears interact with each other, and how humans impact their movement and behavior. This information provides park managers with the data necessary to make informed decisions about the management of the river. It also provides the public with a great deal of information and insight into the lives of these amazing animals.

## How is this information collected?

The river from Brooks Falls downstream to its mouth on Naknek Lake is divided into several observation zones for data collection. Observation sessions take place from the Falls Platform, from the bridge, and from a tree stand in the cut bank area.

## What data are collected?

Observation sessions are scheduled to produce balanced sampling by time of day and sample zone. Biologists collect a wide variety of information during bear monitoring sessions. They note the number of bears present along the river, identify individual bears and document their characteristics, record behavior and activity, and count the number of people present. Counts of people and behavior of each bear in view are recorded at 10 minute intervals.

From year to year, records of identifying characteristics of individual bears are maintained, and each bear identified is assigned a unique identification number. The age (adult or subadult) and sex of each bear is also recorded. Age classification is a subjective determination, based primarily on size and behavior (and often on the documented identification history of the bear). Sex is determined by observation of urination, posture, genitalia, or presence of offspring. Photo records are maintained for as many different individuals as possible. The photo records are an important aspect of recognizing individual bears across seasons and years, particularly when several biologists are involved in data collection.



A bear's fishing activity is just one of the many behaviors recorded by Katmai's staff. Photo courtesy of A. Willingham.

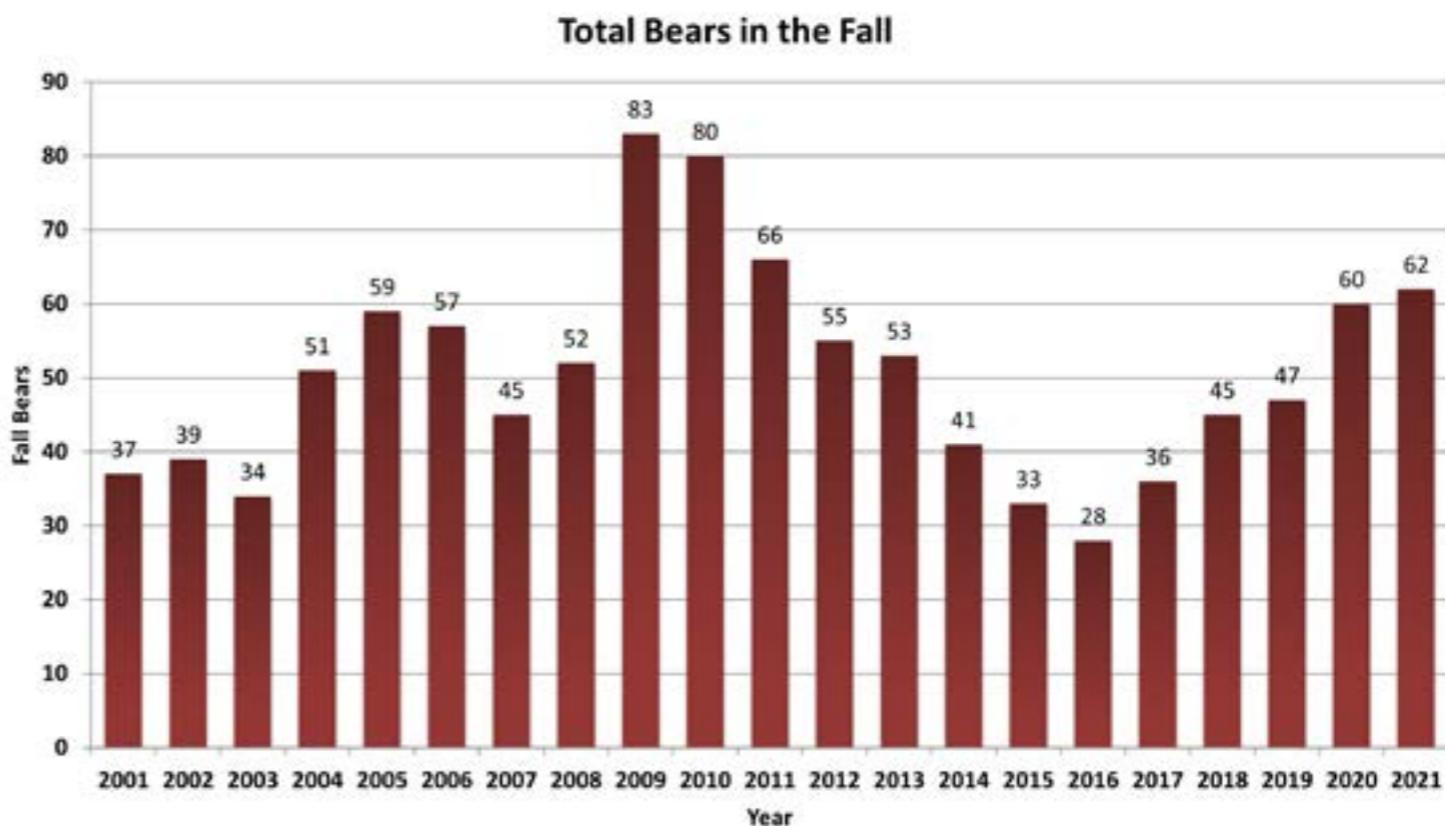
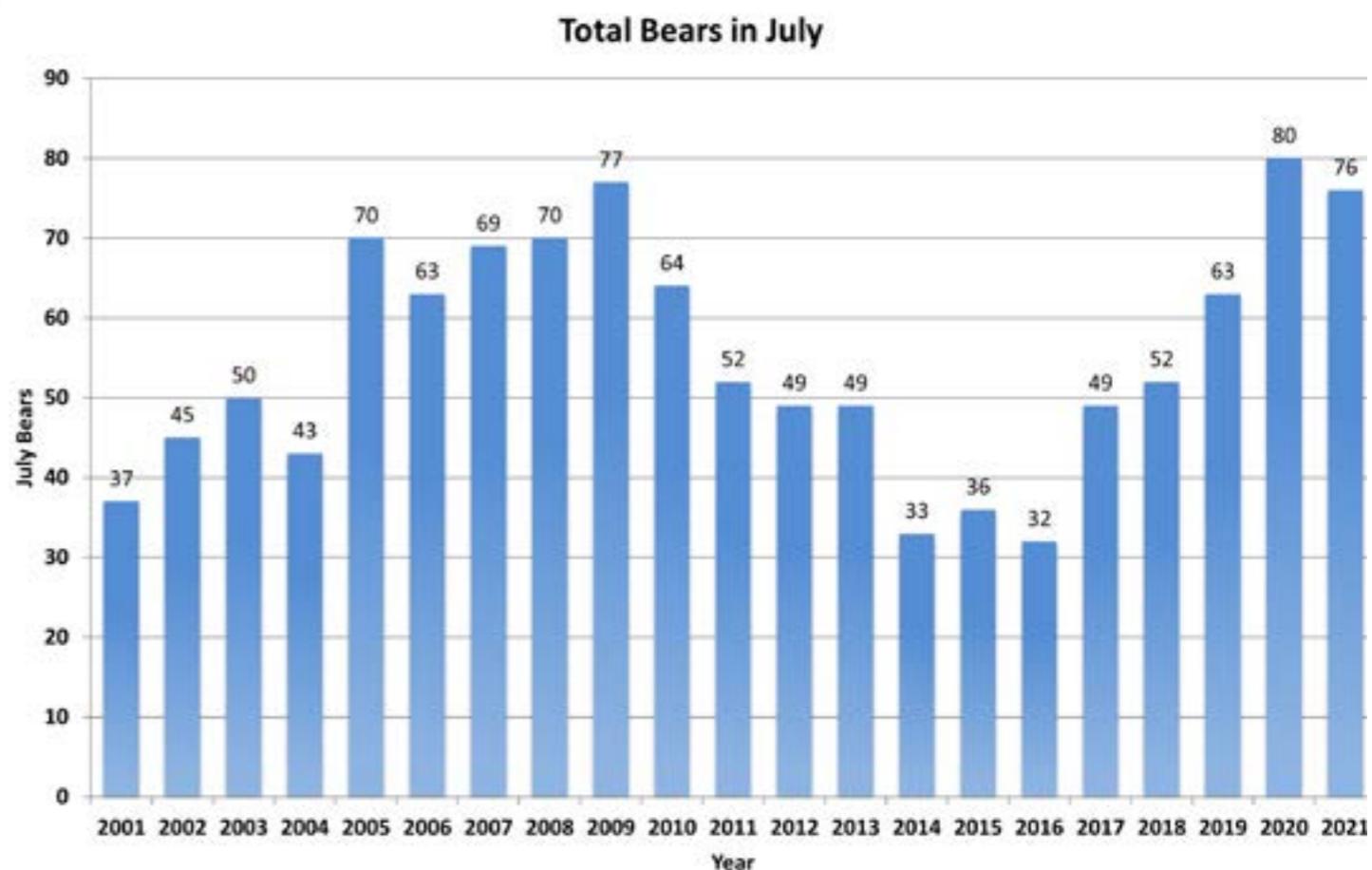
# How Many Bears Use Brooks River?

High numbers of bears at Brooks River may be a relatively new phenomenon in Katmai National Park's recent history. Archeological excavations reveal evidence of extensive human use on the river for thousands of years. During much of this time, humans and bears directly competed for access to salmon. When humans gathered at Brooks Falls to fish, bears may have been displaced. After the establishment of Katmai National Monument in 1918, and especially after the monument was expanded to include the Brooks River area in 1931, bears were granted a high level of protection. Even so, anecdotal evidence suggests that Katmai's bear population was at an ebb in the 1950s. Since then, the number of bears using Brooks River has greatly increased. Why?

Abundant salmon are likely the reason for this trend. Bear survival and productivity is directly linked to salmon. About 20% of the Naknek River's salmon escapement migrate to Brooks River. Also, over the past 30 years, Katmai's bear management policies have placed increasing emphasis on minimizing bear-human conflicts. Bear cubs that accompany their mothers to Brooks River typically experience relatively benign contacts with people. Thus, as these cubs grow into adults we would expect the number and proportion of adults tolerant of people to increase.

In the 1970s, very few bears used Brooks River in July (usually not more than 6-8 bears) while 25-40 bears used Brooks River in the fall during that same time, but in the 1980s, bears began to fish at Brooks Falls during July in ever increasing numbers. By the early 2000s, bear numbers in July surpassed bear numbers in the fall. Bear numbers also differ from season to season. Brooks River is one of the first streams in Katmai where migrating salmon become accessible to bears (and the caloric value of bright pre-spawned salmon is exceptionally high). In contrast, spawning and spawned-out salmon are available at several streams during the fall.

How many bears use the river now? During late June through July, the annual cumulative total number of independent bears identified regularly using Brooks River during 2001-2021 has ranged from 32 to 80. During fall (September through early October), the annual cumulative total of bears has ranged from 28 to 83. Typically, another 5 to 10 transient bears are documented in each of the two monitoring periods annually. In 2021, 76 individual bears were identified in July and 62 in fall.



## Do the Same Bears Return to Brooks River Each Year?

Bears are creatures of habit. Once they learn when and where food is available, they will return to those places again and again. Since Brooks River typically offers reliable access to salmon, many of the bears seen at Brooks River each year are recognized from prior years. Some bears use the river every year of their life.

The majority of newly recognized bears are subadult bears who are establishing their own home ranges and experiencing life away from their mother for the first time. However, almost every year a few mature adult bears who are unknown to park staff visit the river. Some are transient; they stay for only short periods of time and are never seen again. Others are persuaded to stay and fish for salmon in subsequent years.

The “cast” of bears seen on the river each season is relatively consistent. For example, during 2007, an unusually active year with over 100 different bears, 50 of the 69 independent bears identified on the Brooks River in July were recognized from previous years. Similarly, 34 of the 45 independent bears identified during fall were recognized from previous seasons. Recognizing bears from year to year is difficult; therefore, these figures should be considered minimum estimates.

Each year, a number of bears are also recognized between the periods of July and fall bear use at Brooks River. Recognizing bears between July and fall within a single year can be very difficult. Bears that can’t be re-identified are assigned new three-digit numbers.



#402 first came to Brooks River with her mother in the late 1990s. She has returned every year since. Top photo shows #402 as a 3.5 year-old subadult in 2001. Bottom photo is from 2021.

# Predator and Prey at Brooks River

What might cause bear abundance to vary at Brooks River? This is a tale of predator and prey over years, months, and minutes. Comparing overall bear numbers with salmon escapement reveals a long term relationship. Escapement is the number of fish not captured by commercial fishing and migrating inland to spawn. The number of bears at Brooks River has risen and fallen over the past years and seems to closely parallel a rise and decline in salmon abundance. Large runs of salmon support greater numbers of bears and increase reproduction rates. Like many predator-prey relationships though, predator numbers lag behind prey abundance.

Since the late 1990s, rangers at Brooks Falls have counted bears, salmon, and people at Brooks Falls. From late June to early August, staff record individual bears seen at the river near the falls and the number of people standing on the Brooks Falls wildlife viewing platform. Jumping salmon also are counted for one minute to document their relative abundance. This data is collected every half hour from approximately 9 a.m. to 4 p.m. As the number of sockeye salmon migrating through Brooks River increases, bear numbers too steadily increase.

Bear numbers at Brooks Falls also vary considerably on a day to day, hour to hour, time scale. During extreme highs in salmon abundance, fish are so plentiful and easy to catch that many bears are satiated quickly. At these moments, bears spend less time fishing, because they get full and move out of the water to rest. When lesser numbers of salmon are seen at the falls, bears often spend more time fishing and more bears are seen. When you watch salmon and bears at Brooks Falls, look for these patterns to emerge. It's a real life drama of predator and prey.



Figure 1. This graph plots the average number of bears observed (blue bars) and salmon jumping (red line) on a daily basis at Brooks Falls in July. Bear numbers typically peak in mid-July after the majority of fish have migrated through the river.

Background photo courtesy of S. Gage.

# Sudden Deaths of Two Bears in 2015

In late October 2015 two bears, an adult male and a spring cub, died within one week at Brooks River. These deaths highlighted a major risk that all organisms face—*infectious disease*.

In Katmai, a place with some of the highest densities of bears anywhere in the world, rangers and biologists rarely see a bear die or find dead bears. Still, the information about the few recorded bear deaths can help us glean some knowledge about the end of a bear's life. During the past 36 years at Brooks River, only about 15 bear deaths have been documented. Almost all of these deaths were caused by other bears, but illness and disease will take its toll.

On October 21, 2015, bear cam viewers watched a mother bear (#451) and her two spring cubs. One of the cubs stumbled as it walked. The cub collapsed at the base of the viewing platform near one of the cams. For two and a half days, it remained there. #451 and her other cub remained nearby for most of this time before it died on October 23. The cub was collected for necropsy on Saturday, October 24.

A few hours after the dead cub was retrieved, webcam viewers noticed a large, brown, stationary object at the lake shore near where the cub died. It did not move in the following days. Due to its size, color, and location, park staff believed it was a dead bear. Since the possibility for a disease outbreak or human-caused deaths existed, park staff returned to Brooks River, conducted a gross field necropsy, and sent samples to a lab for further analysis. When they returned, they identified the bear as #868.

Results from a laboratory analysis indicate that the cub likely died from canine adenovirus type-I (CAV-1). This disease is also called canine infectious hepatitis. Infectious canine hepatitis is a viral disease found worldwide that primarily infects dogs, foxes, wolves, coyotes, and bears. A 1998 study documented about 10% of brown bears on the Alaska Peninsula had the antibodies that indicate they had contact with the virus. The tissue samples from the cub tested negative for rabies and canine distemper. Analysis was conducted by USGS staff at the National Wildlife Health Center (NWHC).

#868's cause of death is undetermined. No signs of outward trauma were visible on him, except for a broken nose (the nose could have been broken when he collapsed to the ground). 10-12 gallons of fluid were present in his abdominal cavity, which is not a normal finding. #868 tested negative for CAV-1 and rabies. No parasites were observed in the tongue or abdominal cavity fluid. It *appears* that his death is unrelated to the cub's, but there is no evidence that he died from a sudden, traumatic injury. However, samples from 868 were decomposing rapidly by the time they reached the lab for analysis which prevent us from ever knowing his cause of death.

For more information on these deaths, see [photos of the field necropsy on #868](#) and [photos of the cub when it was collected](#), and delve into [more information of other causes of bear mortality in Katmai](#).



Wildlife technicians examined #451's dead cub for visible signs of trauma before collecting it.



#868's body was examined and necropsied in the field. He was estimated to weigh 900 pounds.

# Brown Bear Genetics Study

Brooks Camp offers a unique opportunity to scientists who want to learn about brown bears. It's one of the densest populations of wild bears anywhere in the world, and what's more, Brooks Camp is a developed space. Despite its remote location, the infrastructure for electricity, housing, and the ability to resupply regularly make living with brown bears a reality.

Under these circumstances, wildlife biologists are poised to make some important discoveries about the world's largest land predators.

## Why Study Genetics?

The primary goal of the Brown Bear Genetics Study was to evaluate gene flow between populations of bears in Brooks Camp and bear populations in nearby locations. The presence, or absence, of shared genes in separate populations of bears sheds light on the extent of bear movements on the Alaska Peninsula. For instance, do the bears we see in Brooks Camp travel across

the Aleutian Range? Brown bears are capable of traveling such distances, but we don't know the extent of their actual movements.

A secondary goal of the study was to determine a family tree of the bears in Brooks Camp. Through careful observation, Katmai's biologists have tracked some relationships between mother and offspring, but since male bears play no part in the rearing of cubs, paternal genetic lines have always been a mystery. The study has helped to create a genetic map of the Brooks Camp bears.

## How the study was carried out

In order to evaluate genetic information, DNA samples were taken from each bear involved in the study. To do this, biologists implemented two separate modes of sample retrieval. The first was by using a hair snare. Barbed wire was placed on trees that had been scent marked, with the hope that a bear would return to rub on the tree again, leaving hair behind for the researchers. The

second is was by using a CO<sub>2</sub> powered dart gun. Biologists shot a biopsy dart that was designed to fall out of the bear shortly after impact, retrieving a tissue sample and allowing the bear to carry on with its business, relatively undisturbed. Since the identity of each bear that was darted was recorded, these samples were available for use in the composition of a genetic map of Brooks Camp bears.

All samples taken from Brooks Camp were compared to samples taken from bears on the coast of Katmai and from nearby bear populations located along the Alaska Peninsula. Depending on the level of shared genes between different populations, biologists can then determine the extent of bears' movements in and around Katmai.

Results indicate that bears on the Katmai coast and those at Brooks Camp do have some genetic distinction, not a high level, but enough for it to be statistically important. There are several possible reasons for this, it could be that the Aleutian Range creates a physical barrier between the two populations, or there is no reason to travel through the Range where little food is available compared to locations on the coast and Brooks Camp that have high concentrations of food while the Range itself does not, or it could be for other reasons. Overall, the bear population at Katmai was shown to be genetically healthy and diverse, with greater genetic diversity than other populations in North America. Learn more about the genetics research by watching the recorded ranger chat on explore.org's [YouTube page](#).



Ranger Jaime Gehring removes a hair sample from a hair snare.

# Chapter 4: Cubs



#909's spring cub stands on a rock in the middle of Brooks River. Photo courtesy of L. Law.

## Identification

Cubs are small, young bears dependent on an adult female. First year cubs are called spring cubs or cubs-of-the-year, and are generally very small with dark fur. They can sometimes have a natal collar, a band of lighter fur around their neck. Cubs in their second summer are called yearlings. Their coats are generally lighter than spring cubs, especially early in the summer.

Relative size can help differentiate between spring, yearling, and 2.5 year-old cubs. Overall, spring cubs are very small compared to their mothers. Yearling cubs are often taller than spring cubs, while 2.5 year-old bears can be nearly as large as their mother.

## Life History

Cubs are born in the den in mid-winter. At this time they are hairless, blind, and only weigh about one pound (.45 kg). After birth, they nurse and grow rapidly until the mother emerges from the den in mid-spring. When they exit the den with their mother, they may weigh 12 pounds (5.5 kg) or more, but their rapid growth doesn't end there. By the fall, they may weigh 60 pounds (27.2 kg) or more—equivalent to 6000% of their birth weight just 10 months before!

Spring cubs are highly dependent on mother's milk during their first year. Cubs will nurse as long as they remain with their mother, although as cubs mature they rely less and less on mother's milk for nutrition. Separation between mother and cub

occurs in the spring after the family exits the den. In the Katmai region, cubs typically remain with their mothers through 2-3 summers.

Cubs form strong, albeit temporary, social bonds with their siblings and mother. Cubs' playful demeanor often mask the risks they face. Mortality is very high within the Katmai region. As many as two-thirds of cubs will not survive their first year. Infanticide, drowning, illness, and injury are some of the many dangers that these young bears face.

# Why Aren't Cubs Numbered?

Bear cubs are just as interesting to watch as adult bears. They struggle, compete, they're charismatic, and undeniably charming. We can learn from and be inspired by cubs in the same ways we do from adult bears.

So if we watch cubs for all the same reasons that we watch adults, why are they treated differently in this book, and in the research conducted within the park? We do not assign numbers to dependent cubs, nor do we "count" them as individuals while monitoring bear activity on Brooks River.

Individual bear cubs are difficult to distinguish within and between litters, and change drastically from year to year. This makes accurate spring-time identification of returning cubs very difficult. The risk of misidentifying individual cubs is too high to conduct accurate monitoring of bears beginning in their first years.

The high mortality rate of young brown bears poses another challenge to monitoring them. As a species, nearly 50% of all brown bear spring cubs do not survive to adulthood.

An exception to this practice was made in a previous version of this book with #503. He was abandoned, so was no longer dependent on his mother #402, but was later adopted by #435 Holly. The unusual set of circumstances made him a kind of "quasi-sub-adult," resulting in his inclusion in the 2015 Bears of Brooks River.

Only one similar situation has occurred since with #63. Thus the normal protocol for bear monitoring will carry on, and cubs will remain excluded from this book for identification purposes.



Photo courtesy of N. Boak.

# Chapter 5: Subadults



#208 glances at the river. Photo courtesy of T. Carmack.

## Identification

Subadults are generally small to medium-sized bears. Like adolescent humans, subadults appear to have not yet grown into their body, which sometimes gives them the impression of having a big head and ears. Behaviorally, they can be recognized by their playful and inquisitive nature. You might see a subadult play-fighting, chasing a duck, or awkwardly attempting to fish. They are often skittish around larger adult bears.

Young adult females and large older cubs can sometimes be confused with subadults. Young adult females usually appear less

lanky and more filled-out. They will also behave more confidently than a subadult. Older cubs are accompanied by their mother, unlike an independent subadult.

## Life History

Subadults are young brown bears between two to four years old. They are independent of their mothers but have not yet matured into adult bears.

The distinction between a subadult and an adult bear is somewhat arbitrary and is defined by reaching sexual maturity. Like humans, there is no set age when this happens, but it

generally occurs around the bear's fifth year. Until they reach maturity, subadults spend their time learning how to fit into the complex world of bears.

Because of their relatively small size and low position in the bear hierarchy, the subadult years are a difficult time in a bear's life. As the lowest members of the bear hierarchy, they are forced to yield space and food resources to larger adults. Subadults are relegated to the less than desirable fishing spots, and sometimes face predation by other bears.

## 25

Year First Identified: 2.5 year-old subadult in 2019

### Identification:

#25 has light tipped claws with a mottled blonde coat and darker face. Her ears tend to be lighter than her coat.

### Life History:

#25 and #26 are the suspected offspring of #435 from the same litter. #25 is female. In 2021, #25 was observed in both July and fall.



#25 October 2020



#25 July 2021



#25 August 2021

## 26

Year First Identified: 2.5 year-old subadult in 2019

### Identification:

#26's face is darker than her coat. Her ears are also dark but with a light rim.

### Life History:

#25 and #26 are the suspected offspring of #435 from the same litter. #26 is female. In 2021, she appeared to have an injured leg early in the season which seemed to heal by the fall.



#26 September 2020



#26 July 2021



#26 September 2021

## 27

Year First Identified: 2.5 year-old subadult in 2019

### Identification:

#27 has a brown-tanish coat with a lighter grizzled head.

### Life History:

#27 is the suspected offspring of #451. #27 is male and has two sibblings #28 and #29. In 2020, #27 was observed diving and he had a limp for most of July. In 2021, it was not uncommon to see #27 beg for fish below the falls.



#27 October 2020



#27 July 2021



#27 September 2021

## 101

Year First Identified: 2.5 year-old subadult in 2020

### Identification:

#101 is larger for a female at her age. She has lighter ears and a darker face, which is similar to her mother, #402.

### Life History:

#101, #102, and #103 are the suspected offspring of #402 from the same litter. #101 is female. In 2020, she was seen frequently with her siblings and appeared to be the most dominant of them. After being emancipated, it's not uncommon for subadults to be seen with their siblings. #101 was seen in July and fall of 2021.



#101 July 2020



#101 September 2020



#101 September 2021

## 102

Year First Identified: 2.5 year-old subadult in 2020

### Identification:

#102 has rounded ears and a shorter muzzle.

### Life History:

#101, #102, and #103 are the suspected offspring of #402 from the same litter. #102 is female. In 2020, she was seen frequently with her siblings. In 2021, #102 was seen in July chasing salmon--a 'dash and grab' fishing style. She will also scavenge them.



#102 June 2020



#102 June 2020



#102 September 2021

## 103

Year First Identified: 2.5 year-old subadult in 2020

### Identification:

#103 has a dark blonde grizzled coat and ears that sit on top of his head.

### Life History:

#101, #102, and #103 are the suspected offspring of #402 from the same litter. #103 is male. In 2020, he was seen frequently with his siblings. #103 is believed to have been seen in early 2021.



#103 July 2020



#103 July 2020



#103 September 2020

# 129, 131, 133

# Subadults

## 129

Year First Identified: 2.5 year-old subadult in 2020

### Identification:

#129 has a slightly upturned muzzle and ears relatively the same color as his head.

### Life History:

#129, #131, and #133 are all suspected offspring of #482 from the same litter. #129 is female. In 2020, #129 was seen mostly with her siblings.



#129 July 2020



#129 July 2021



#129 September 2021

## 131

Year First Identified: 2.5 year-old subadult in 2020

### Identification:

#131's face is slightly darker than her coat and she has a slightly upturned muzzle. She has a very blond coat in early summer.

### Life History:

#129, #131, and #133 are all suspected offspring of #482 from the same litter. #131 is female. In July 2020, she was seen mostly with her siblings. In fall, she was slightly more independent though still occasionally seen with her siblings.



#131 July 2020



#131 July 2021



#131 September 2021

## 133

Year First Identified: 2.5 year-old subadult in 2020

### Identification:

#133 has a similar body to her siblings though her muzzle is slightly longer.

### Life History:

#129, #131, and #133 are all suspected offspring of #482 from the same litter. #133 is female. In 2020, #133 was seen mostly with her siblings. In 2021, she occasionally met up with her siblings.



#133 July 2020



#133 July 2021



#133 September 2021

# 203, 204, 205

# Subadults

## 203

Year First Identified: 2.5 year-old subadult in 2021

### Identification:

#203 has light rimmed ears and a lighter coat than her female sibling #204.

### Life History:

#203, #204, and #205 are the suspected offspring of #273. #203 is female. She was occasionally seen with her sibling #204.



#203 September 2021



#203 September 2021



#203 October 2021

## 204

Year First Identified: 2.5 year-old subadult in 2021

### Identification:

#204 has a darker coat than her female sibling #203.

### Life History:

#203, #204, and #205 are the suspected offspring of #273. #204 is female. She was occasionally seen with her sibling #203.



#204 September 2021



#204 September 2021



#204 September 2021

## 205

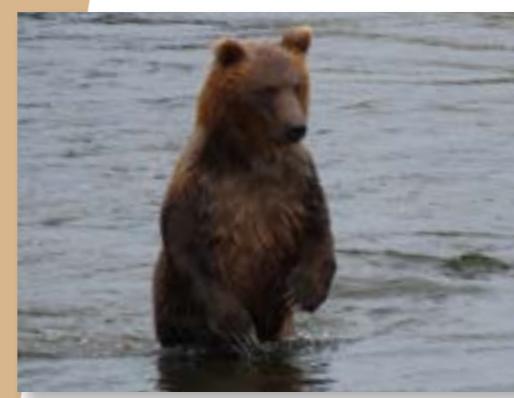
Year First Identified: 2.5 year-old subadult in 2021

### Identification:

#205 is a small subadult with a brown coat. In fall 2021, he had an unshed head with darker fur around the eyes.

### Life History:

#203, #204, and #205 are the suspected offspring of #273. #205 is male.



#205 September 2021



#205 September 2021



#205 September 2021

## 207

**Year First Identified:** 2.5 year-old subadult in 2021

**Identification:**

#207 is a small male subadult. #207 has a blonde coat.

**Life History:**

#207 is the suspected offspring of #719 and sibling to #208. Both #207 and his brother did well on the river during their first independent summer in 2021.



#207 July 2021



#207 September 2021



#207 September 2021

## 208

**Year First Identified:** 2.5 year-old subadult in 2021

**Identification:**

#208 is a small male subadult. #208 has a brown coat and is darker than his sibling #207.

**Life History:**

#208 is the suspected offspring of #719 and sibling to #207. Both #208 and his brother did well on the river during their first independent summer in 2021. #208 could often be heard calling to his sibling when they were in close proximity.



#208 July 2021



#208 September 2021



#208 September 2021

## Chapter 5: Adult Females



#94 sits on a rock. Photo courtesy of L. Law.

### Identification

Adult female bears, like their male counterparts, have bodies that look filled in, their heads appear smaller in proportion to their bodies, and their ears are generally wide-set. Genitalia is usually difficult to see on female bears, but you can still identify adult females by watching them urinate. Females will urinate backward between their hind legs.

Male bears usually carry more scars and wounds than females, but scarring or wounds concentrated on the back of a bear's neck can occasionally be an identifier of females. These scars can

be the result of male bears biting them during copulation. The presence of cubs is an absolute indicator that you are looking at a female. Male bears play no role in raising young.

### Life History

Adult females, or sows, generally weigh one-half to three-quarters as much as males, but can still grow to weigh between 300-600 pounds (136-272 kg) or more at maturity.

In the Katmai region, female bears generally reach sexual maturity around five years of age, but they may not produce their first litter until several years later. Mating takes place in late spring

and early summer. However, fertilized embryos will not implant in the uterus until a female dens for the winter. This delayed implantation is a remarkable adaptation which allows the female to give birth in the den—a place where the vulnerable newborn cubs are most protected. A female may have no offspring at all if her body didn't receive the nutrition it needs over the course of the summer and fall.

In the Katmai region, females typically keep their cubs through two summers, and less commonly through three summers.

**Year First Identified: Subadult in 2007**

**Number of Known Litters: 3**

#### Identification

#39 is a medium-small female. She has large ears, a dark blonde coat with a darker face and legs, and a slight v-pattern on her forehead. Her eyes have occasionally appeared sunken when seen. In the fall, she has a grizzled, dark blond coat and her ears look smaller than earlier in the summer.

#### Life History

Early in the summer, #39 fishes Brooks Falls but usually has a low success rate in that area. She appeared to be wary of people and other bears, especially when she was caring for a cub in 2011 and 2012.

#39 was not seen in 2016, but she returned to the river in 2017 with three yearling cubs. That year, the family fished in all areas of the river. Mother bears will sometimes avoid areas where they expect to encounter other bears, so #39 may have avoided the river in 2016 to provide her first-year cubs with greater security. #39 often fished at Brooks Falls with all three of her cubs during July and August. In the fall, she frequented the lower river and cutbank.

She was seen infrequently in July 2019 with two cubs. In 2020, #39 returned to Brooks River with her two yearlings and was seen regularly. In 2021, #39 was seen mostly at Brooks Falls and only during the July monitoring sessions.



August 2020



July 2021



October 2020



July 2021



July 2012



September 2014



July 2017

# 94

# Adult Female

Year First Identified: Adult in 2008

Number of Known Litters: 3

## Identification:

#94 is a medium-large adult female with a uniform brown coat, a slightly tapered muzzle that turns up at the nose, dark eye rings, and spade-shaped, proportionally large ears. In the fall, her coat is darker, but still appears uniformly brown. She is often very fat later in the year. She will often sit on rocks at Brooks Falls in July.

## Life History

When #94 was identified in 2008, she arrived at Brooks Camp with three spring cubs. That year, she frequently fished in the river near the old floating bridge, even with large groups of people present. Since then, #94 is often seen fishing at Brooks Falls and the riffles in July and in the fall at the river mouth in the lake.

During 2011 she mated with at least four males: #45, #218, #747, and #856. However, she had no cubs with her when first seen in 2012, nor did she have cubs in 2013 or 2014. Whether she lost cubs, or simply failed to give birth, is unknown. However, she returned to Brooks River with two spring cubs in September 2015. By the end of 2016, only one yearling cub remained.

#94 made regular appearances at Brooks River throughout the year in 2017. In 2018, #94 returned to the Brooks River with three spring cubs. They remained with her throughout the season and were often seen on the lower river all the way into late October. In 2019, #94 returned with all three cubs. She frequented the lower river, often finding protected areas to nurse.

In 2020, she returned with her cubs, keeping her litter for a third summer, which is surprising since she kept her previous litters for only two summers.



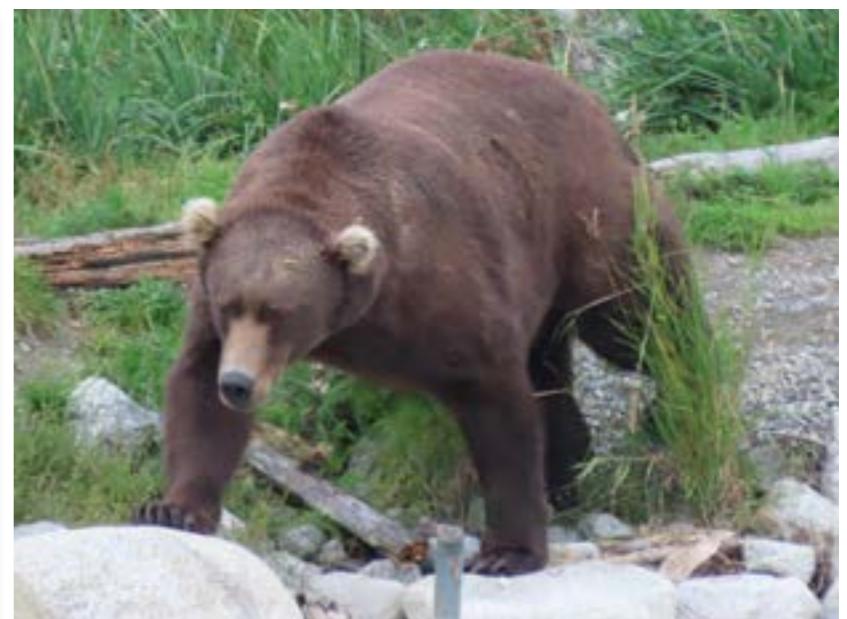
July 2021



June 2021



October 2021



September 2021



July 2014



July 2019



September 2019

# 128 Grazer

Year First Identified: 4.5 year-old subadult in 2009

Number of Known Litters: 2

## Identification

#128 is a large adult female with a blond to light blond coat and dark patches around her eyes. She has a sloping and straighter facial profile and her large, oval-shaped, and widely spaced ears are very distinctive. In the fall, her coat darkens to dark blond, but her ears remain light blond.

## Life History

#128 is believed to be the offspring of #408. She was part of a litter of three cubs that #408 kept for three summers from 2005 to 2007. #128 is one of the most skilled bears to fish the lip of Brooks Falls. In the fall, she will fish the lower river area, cut bank, and riffles.

#128 is another bear who has learned to associate people with fish. This is a behavior shared with other bears like #438 and #854.

In early July 2016, #128 returned to Brooks River with three spring cubs. While fishing the falls, #128 initially avoided fishing the lip, instead opting to “dash-and-grab” around the area closest to the falls platform. Later in July, #128 began to occasionally fish the lip, but remained wary of other bears in proximity to her cubs.

#128 proved to be remarkably protective of her first litter. She was seen chasing off and attacking several other females and dominant males who approached too closely. Her aggressive approach paid off as #128 kept all three cubs healthy through the end of 2017. In early 2018, she returned with and then separated from her three cubs. The two smaller cubs now have their own numbers, #902 and #903. #128 returned to Brooks Falls in early June 2019, a solo sow.

#128 returned to Brooks Falls with two spring cubs in 2020 and returned in 2021 again with both cubs. Similar to her first litter, she was very protective of her cubs. She often displays situational dominance and this allows her access to prime fishing spots. In 2021, she was frequently seen fishing the lip of the falls. Both of her yearlings were also successful fishing this location, a notable achievement for cubs of their age.

# Adult Female



July 2017



September 2021



September 2021



September 2020



#128 (left) as a 2.5 year-old with #408.



July 2019



June 2020

# 132

# Adult Female

Year First Identified: 4.5 year-old subadult in 2009

Number of Known Litters: 3

## Identification

#132 is a large female. In early summer, her coat is dark blonde to light brown and shaggy. In the fall, her coat is brown with some grizzled fur on her head and shoulders. Her ears are faintly light tipped and lean slightly forward. Her face is distinguished from other bears by the inverted V or chevron pattern of fur on her forehead.

## Life History

Until #132 arrived at Brooks River in 2014 with cubs, she appeared to be somewhat habituated to people. Her behavior was noticeably different with cubs. Instead of tolerating people, she often avoided them. Bears often change their behavior to best fit the circumstances. In this case #132 may have altered her behavior because she viewed people as a potential threat or competitor.

By the end of 2016, all three of her 2.5 year old cubs were seen frequenting the lower river with her, fishing and often pushing other bears away. Cubs often separate from their mother at 2.5 years, but keeping them for an additional summer may have given #132 an advantage. Given the size of her cubs, the family “gang” was a force to be reckoned with. In 2017, #132 returned to fish Brooks River on her own, presumably after separating from her three cubs.

One of the most poignant stories of the 2018 season involved bear #132. She returned in June with two spring cubs. On July 3, #856 was chasing another large male when they encountered #132 and her spring cubs. During this encounter, #856 killed one of the cubs. After a brief separation, #132 and her second cub were reunited and continued to be seen along the river into late October.

#132 returned with her yearling to Brooks River in 2019. The single yearling grew large under #132’s care. In 2020, #132 separated from her cub.

In 2021, #132 returned with three spring cubs in tow. In July however, she was seen with only two cubs. Spring cubs face the highest mortality rates in the bear world.



July 2021



July 2021



September 2021



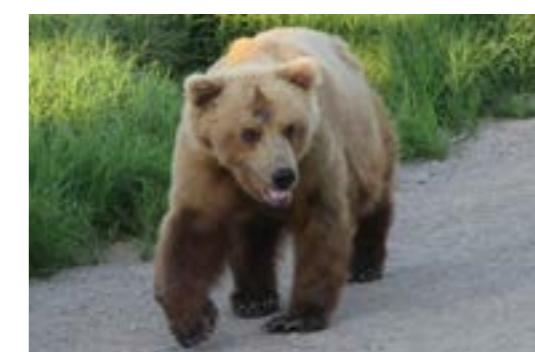
September 2021



July 2015



September 2017



July 2019

# 171

# Adult Female

Year First Identified: Subadult in 2009

Number of Known Litters: 3

## Identification

#171 is a medium-sized female with widely spaced, somewhat triangular shaped ears, a “smiling” gape, and a prominent brow ridge. In July, her coat is dark blond. In fall, her coat is more brown and grizzled. Her legs are typically darker than her back and face.

## Life History

This bear has been seen using Brooks River every fall since 2009, but she only sporadically uses the river in July. She seems tolerant of people on wildlife viewing platforms, yet she appears to avoid people in other locations. #171 often avoids other bears and is not tolerant of their approach.

In July 2014, she returned to Brooks River with two small spring cubs. When she was last seen in the fall, she only had one cub. In 2015, no cubs remained from this litter. This was #171’s first documented litter. No one knows why this bear’s cubs disappeared, but it is not uncommon for bear cubs to die from a myriad of circumstances.

In July 2016, #171 again returned to Brooks River, this time with three spring cubs in tow. She was most often observed fishing along the cut bank with her cubs treed on shore. Unlike some other bears, #171 was not seen consistently throughout the summer or fall.

#171 returned to Brooks River in July and fall of 2017. She initially had all three yearling cubs, but was soon after seen with only two. Both these yearlings were very small, and often treed themselves in the presence of other bears. She returned to the river again in 2018 without cubs. Whether the cubs were separated from her before she returned to the river we don’t know.

In 2019, #171 returned with her third litter, two spring cubs. Later that summer, she was seen with just one cub. In 2020, #171 returned as a single female. It is unknown what happened to her cub from the previous year. In 2021, #171 was seen mating with #503 and being courted by #821.



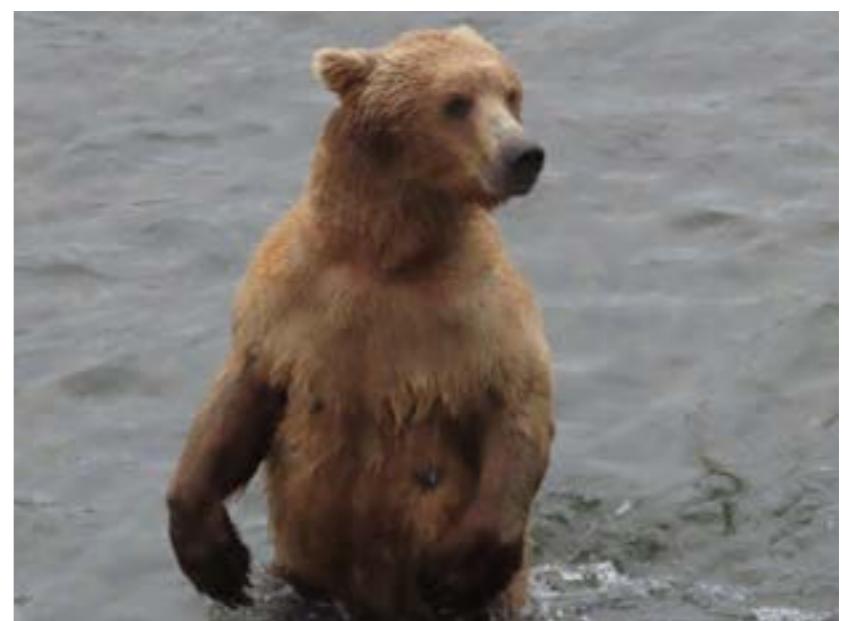
July 2021



July 2021



July 2019



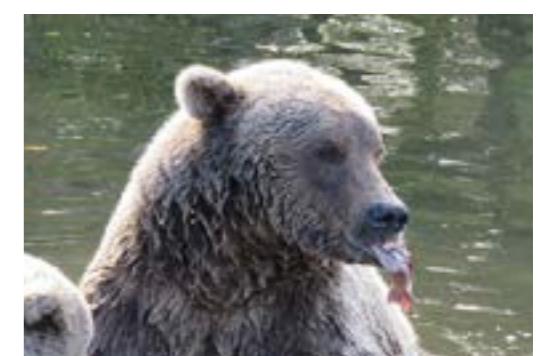
July 2020



July 2011



July 2017



September 2017

# 261

# Adult Female

Year First Identified: 2.5 year-old subadult in 2010

Number of Known Litters: 0

## Identification

#261 is a medium-large bear with a grizzled dark blond coat that darkens to brown in the fall. Her neck is shaggy and her ears are light tipped and triangular. She has a semi-prominent shoulder hump, lacks a prominent brow, and has a flat, wide forehead. She has a dark face, particularly around her eyes. During the summer months, a small scar is visible above her tail.

## Life History

#261 has been observed using Brooks River every year in the fall since 2010. She is the offspring of #477. Having no known litters, this bear often goes unnoticed by bear viewers.

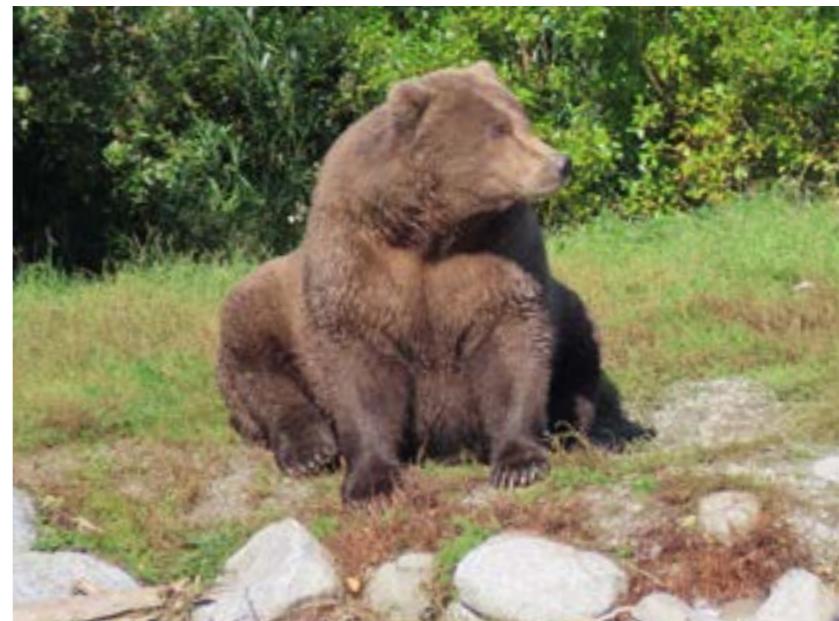
In 2016, #261 arrived at Brooks River for the first time in early July. We cannot know the motive for her change in behavior, but flexibility is one example of why brown bears are such a successful species.

Also in 2016, #261 fished all areas of Brooks River during summer and fall, using mostly the “dash-and-grab” technique. She was seen occasionally playing with #503.

#261 was seen in 2017, 2018, 2019, 2020, and 2021. She has never been seen with cubs. This could be because she has not yet had cubs or because she has had them and lost them before she was seen at the river.



July 2021



September 2021



September 2021



September 2020



July 2017



September 2019



July 2020

**Year First Identified:** Older subadult in 2011

**Number of Known Litters:** 2

#### Identification

#273 is medium-sized female with a blonde, shaggy coat and darker legs. Her ears are large and round. She has a furry face and a large “goatee” in the summer. Her eyes are closely set with dark eye rings. In the fall, her coat is light brown.

#### Life History

#273 returned to Brooks River in July 2015 with one spring cub. She proved to be an attentive, playful mother and her cub mimicked her behavior closely. The antics of mother and cub quickly captured the attention of bear watchers at Brooks Camp and on the bearcams.

For several years, #273 seemed to show little curiosity towards human buildings or gear, but that changed in 2015 when she damaged several structures at Brooks Camp. Bears are curious creatures that often investigate strange and novel objects. Human habituated bears, like #273, are more likely to find and explore human buildings and equipment, often damaging them in the process.

Brooks Camp’s location—in habitat that attracts and harbors bears—creates a high likelihood for conflict between people and bears. While #273’s behavior was unwelcome, she was only expressing her curiosity and playfulness. [Special regulations](#) apply to Brooks River to help reduce the risk of bear and human conflicts. It is not possible or appropriate to manage the curiosity out of bears, but we can alter our behavior to reduce the chances that bears will express their curiosity on human property. When you visit Brooks Camp, be sure to give bears adequate space and do not leave anything unattended.

In 2019, #273 returned to the Brooks River with three spring cubs. She frequented the lower river and was often seen on the spit. Her cubs were seen inspecting vehicles and, after most rangers had departed from Brooks Camp, they would curiously investigate empty cabins. In 2020, #273 returned to Brooks River with all three cubs. When she was seen again in 2021, she had separated from her litter.



July 2021



July 2021



July 2019



October 2020



July 2017



September 2017



September 2019

# 284

# Adult Female

Year First Identified: 3.5 year-old subadult in 2011

Number of Known Litters: 2

## Identification

#284 is a medium-sized adult with a uniformly dark blond or medium-brown coat in July. In the fall, her coat is brown and very grizzled. She has a very prominent shoulder hump and a tapered muzzle. #284 looks remarkably similar to #708, who is her mother.

## Life History

As a subadult, #284 was curious and explored the world around her through play. People watched her dig holes, bounce on fallen trees, slide down the river bank, and balance pumice on her nose. Her behavior has been described as erratic and even “crazy,” but these terms are not accurate descriptors. #284’s behavior was typical of many subadult bears who are still learning and exploring their world.

#284 should be given extra space. Despite growing up in the Brooks River area and often encountering humans, she has hop-charged people on several occasions. #284 also seems to pay extra attention to anglers, suggesting that she may have gotten fish from people in the past and now associates the two.

In 2016, #284 returned to Brooks River with her first litter, two spring cubs. The family fished the riffles, cut bank, and lower river area. #284 often stands on her hind legs while fishing, perhaps to better see nearby salmon. This is a behavior she shares with her mother, #708. She continued to raise both cubs through 2017. She remained defensive around humans, hop-charging (when a bear moves toward someone with a rapid, stiff-legged, hopping gait) bear management staff several times throughout the season. One of the cubs from her 2016 litter returned to Brooks River as an independent bear and is now identified as #901.

#284 has also been seen at Margo Creek, a salmon spawning stream located about 12 miles from Brooks River. She returned to Brooks River in 2020 with two spring cubs, representing her second litter.



July 2021



July 2021



September 2021



September 2021



#284 as a subadult in July 2012



July 2019



July 2014

# 402

# Adult Female

Year First Identified: 3.5 year-old subadult in 2001

Number of Known Litters: 7

## Identification

When seen from the front or rear, #402's ears have comma or crescent-like profile and her ears are oval or slightly triangular in shape and erect. In July, she often has long fur under her muzzle that resembles a goatee. During the fall months, her fur is brown and grizzled.

## Life History

#402 is often seen at Brooks Falls in July where she fishes the lip of the falls and will sometimes dive for salmon in the jacuzzi. She is among the few females who will fish at Brooks Falls with spring cubs. In fall, she often fishes the lower Brooks River and the lake.

#402 has had seven known litters, more than any other bear on record at Brooks River. In 2007, she arrived at Brooks River with a single spring cub, but soon lost it. If females lose their cubs early in the year, they may mate and give birth the following winter. This happened to #402, because in 2008 she returned to Brooks River with three spring cubs.

In July 2011, after a prolonged confrontation with #856, #402 and her smallest cub became separated. During this time the cub was completely defenseless. #856 later returned and killed the cub.

In June 2014, #402 returned to Brooks River with one cub remaining from her 2013 litter. This cub, now a yearling, was separated from #402 for [extended periods of time](#) and #402 soon [separated permanently from her yearling as #856 courted her](#).

The yearling was eventually [adopted by #435](#). To the surprise of many, #402 returned to Brooks River in 2015 [with four new cubs](#).

In early summer 2016, #402 returned with three of her cubs, now yearlings. Within a few weeks another cub was lost. #402 continued to raise her two remaining cubs through the fall of 2016. They were last seen as a family group in spring 2017.

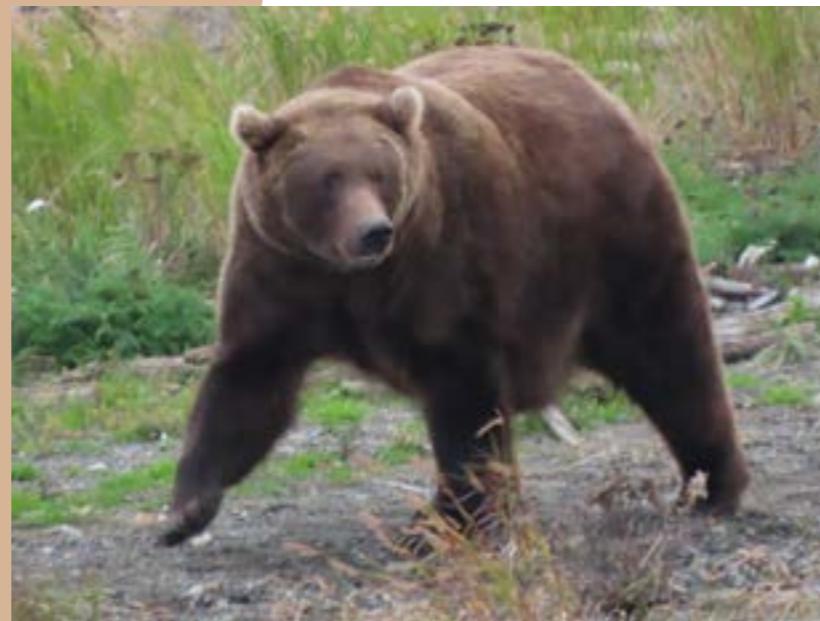
In 2018, #402 arrived with her seventh litter—another litter of four cubs. When #402 showed up at Brooks Camp in 2019 she had only three yearling cubs with her. It is unknown how the fourth cub was lost. After separating from this litter in spring 2020, #402 returned to the river.. In 2021, #402 was courted by some of Brooks River's most dominant bears, #747 and #856.



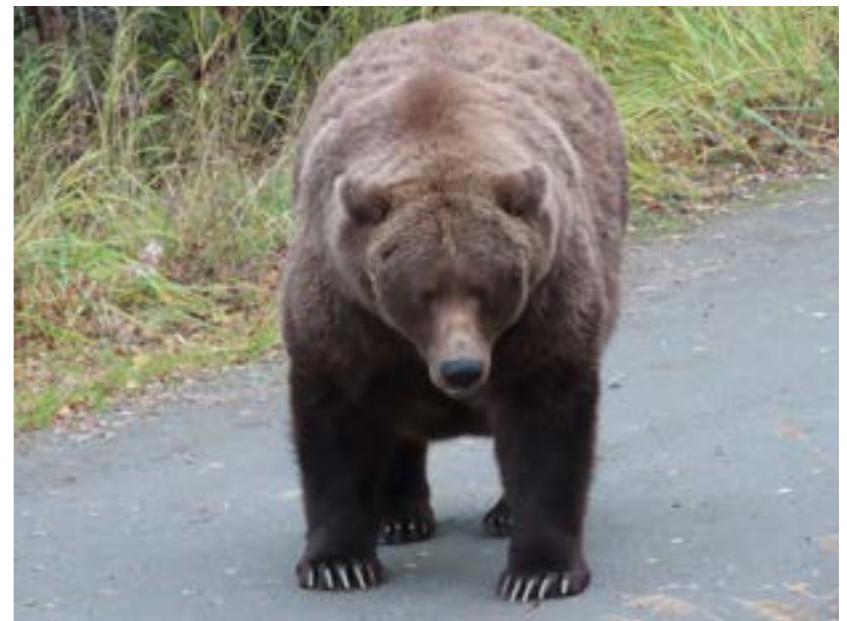
July 2021



July 2021



September 2021



September 2021



July 2004



#402 as a subadult in June 2002



September 2020

# 435 Holly

Adult Female

Year First Identified: Young adult or older subadult in 2001

Number of Known Litters: 4

## Identification

#435 is a medium-sized bear with a distinctive light blonde coat in early summer. In fall, her coat darkens and can be described as the color of a toasted marshmallow. Her ears are large and very blond. She has a dished-shaped face, a short muzzle, and tan colored claws. Her dark eye rings are distinctive early in the summer.

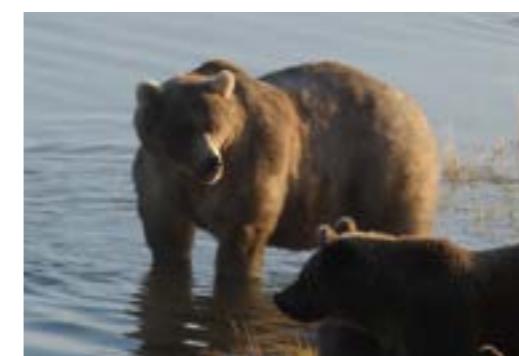
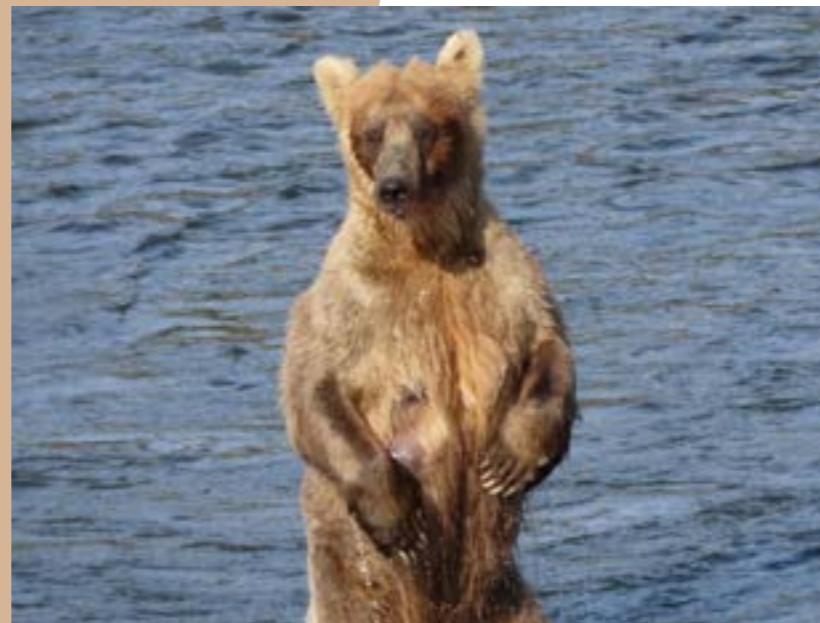
## Life History

#435 is one of the most recognizable bears to use Brooks River. She is the mother of #89, who she successfully weaned despite #89's injured leg when he was a yearling. However, not all of her attempts to raise cubs have been successful. In 2009, she returned with one spring cub, but this cub was killed by #814.

In 2014, #435 again returned to Brooks River with one spring cub. By September, she became one of Brooks River's most famous bears when [she adopted #402's abandoned yearling](#). In 2015, [the mixed family returned to Brooks River](#). Adoption of cubs by bears is very rare. Bears are generally self-concerned creatures who are not known for displays of altruism.

Some biologists hypothesize that altruism evolved in some animals as a result of shared genes. If costs to your own fitness are not too great, it would make sense for you to care for your siblings and their offspring because you share genes with them, genes that will be passed on when they reproduce. However, #435 and #402, the yearling's biological mother, are not known to be related. We will never know why #435 became an adoptive mother, which makes the event even more intriguing.

#435 returned to Brooks River in July 2017 with two spring cubs. She returned with both cubs in 2018. She was single in 2019 after separating from her cubs in the spring. In 2020, #435 returned with a single cub. This cub was seen playing with several other spring cubs and one of #273's yearlings. The cub encountered a porcupine which resulted in several quills stuck in its paw that eventually worked their way out. In 2021, she returned with her yearling.



July 2012

#435 (center) with her adopted yearling in 2014

September 2021

# 477 Sara

Year First Identified: Adult in 2001

Number of Known Litters: 4

## Identification

#477 is a medium-sized adult female bear with light colored, oval shaped ears and long, distinctive white claws. In July, her coat is light brown or dark blond. In the fall, her coat is more uniformly brown. She has a long, straight snout and a droopy lower lip.

## Life History

To date, #477 is the oldest known bear at Brooks River according to park records. Since 2001, this bear has visited Brooks River sporadically. Some years she uses the river in July and in the fall. In other years, she is only seen in one season but not the other or not at all. In July, she will fish at the riffles and the cut bank. During fall, she fishes the upper Brooks River near the outlet of Lake Brooks and the cut bank, perhaps to avoid the presence of groups of people. She does not appear to consistently tolerate people in the river.

#477 was not identified in 2016, but was seen in July 2017, mostly fishing in the riffles area below Brooks Falls. While #477 used Brooks River in July 2017, she seemed to prefer other locations since she was not seen that fall. She was seen once in 2019.

In 2020, #477 was only seen in July, though frequently. #477 was again seen in summer 2021.



July 2021



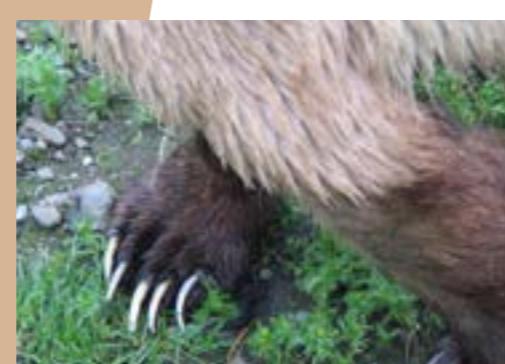
July 2021



July 2020



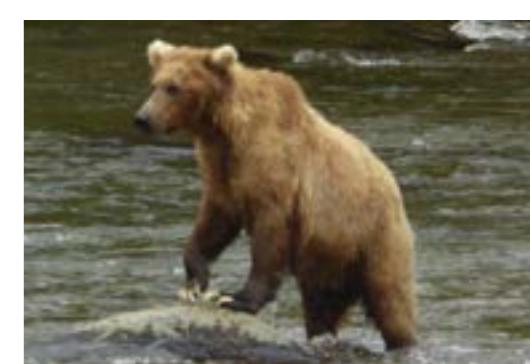
July 2020



July 2010



July 2006



June 2015

# 482 Brett

Year First Identified: Young adult in 2001

Number of Known Litters: 5

## Identification

#482 is a medium-sized adult. She has a shaggy dark blond coat with legs that are darker than her body. Her ears are tall, triangular, and match her head in color. Her eyes are dark and her muzzle is short and blocky.

## Life History

First observed in 2001, #482 was an infrequent user of the Brooks River, appearing mostly in the fall until 2007. Between 2008 and 2012, she used Brooks River in July, but she was not identified at the river at all between 2013 and 2016.

#482 returned to the Brooks River in 2018 with three spring cubs in tow. She was around for much of the summer and was seen again in the fall with all three cubs looking healthy and growing.

#482 was seen often along the Brooks River in 2019 with her three yearlings (all female). One yearling had a distinctive very light blond coat. She was spotted along Margot Creek in August.

#482 returned to Brooks River in 2020 and separated from her two-year old cubs. She was courted by #747.

In 2021, #482 returned with two spring cubs. Her cubs could occasionally be seen riding on her back as she fished in the lower river.

# Adult Female



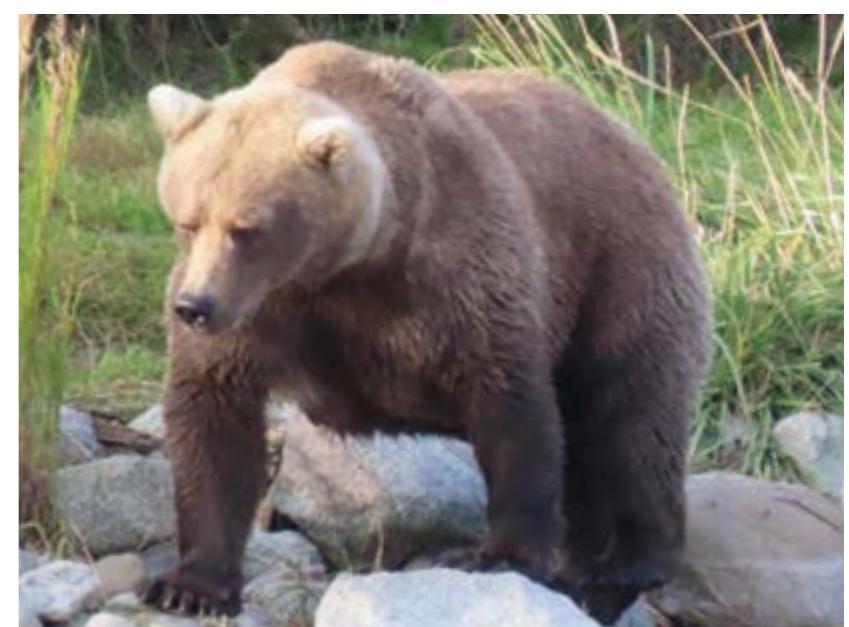
July 2021



July 2021



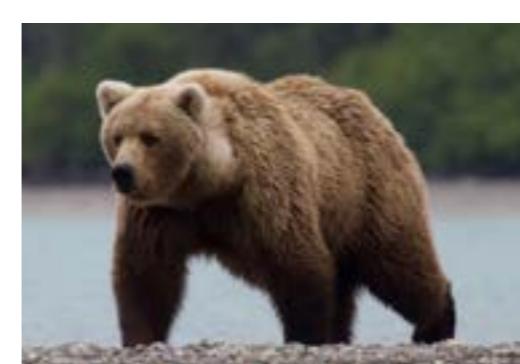
September 2021



September 2021



July 2014



July 2017



July 2019

# 504

# Adult Female

Year First Identified: Young adult in 2014

Number of Known Litters: 2

## Identification

#504 is a medium-sized adult female with a brown coat, dark face, skinny tapered muzzle, and distinctive large, tall ears. In July, her coat is medium brown. In fall, her coat becomes dark brown, with grizzled fur around her head and shoulders. She has a semi-prominent shoulder hump and lacks a prominent brow.

## Life History

This bear was not frequently observed at Brooks River until the summer of 2016. She was first identified as a young adult bear in 2014 but was not seen in 2015. She returned in 2016 with two small yearling cubs. One of the cubs was darker and larger than the other. #504 and her cubs appeared remarkably thin when initially seen that July. Though wary of other bears, #504 continued to visit the falls, cut bank, and lower river consistently through the end of fall, gaining critical weight for the coming winter.

This bear appeared highly intolerant of people and other bears throughout the 2016 season. On several occasions, she charged park staff and was often seen chasing other family groups and single bears away from the river. Bears who react defensively towards people or other bears are not “problem” bears, they are acting for their survival and to protect their cubs. Bears like #504 should be given extra caution and space. She does not show the same level of defensiveness when she is not caring for cubs.

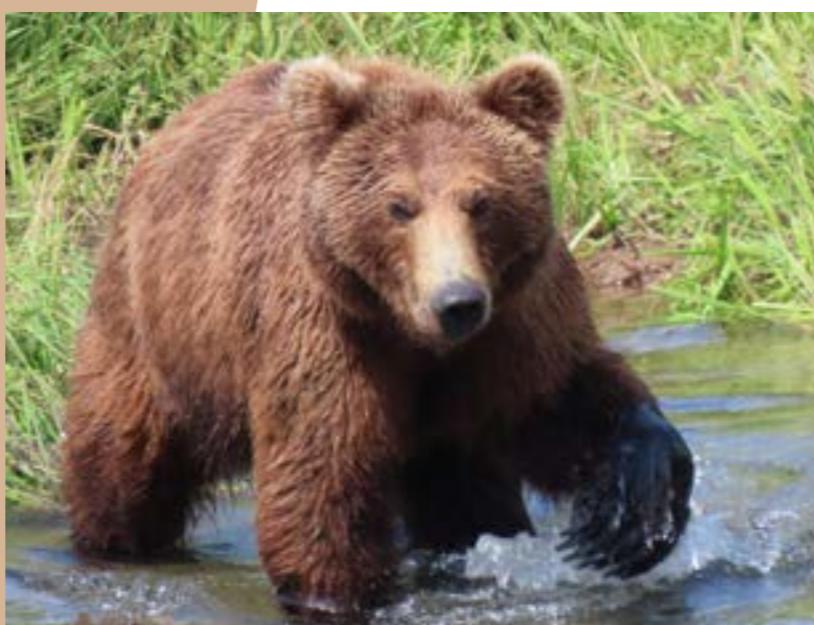
#504 was seen in both July and fall 2018. She was also seen in July of 2019, but not in the fall. #504 returned to Brooks River in 2020 with no new cubs. When #504 returned in 2021, she had three spring cubs. Later in the summer, she was observed with only two.



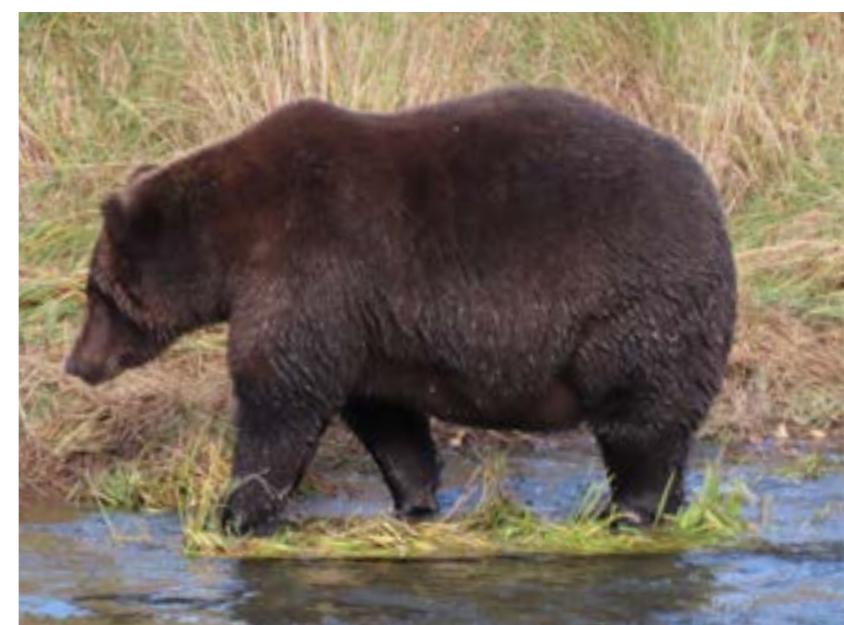
July 2021



July 2021



July 2021



September 2020



July 2014



September 2016



July 2020

# 505

# Adult Female

Year First Identified: Adult in 2014

Number of Known Litters: 1

## Identification

#505 is a medium-sized adult bear. In summer, her coat is brown with a blonder mane and ears. She has a short, tapered, conical muzzle and a round face. Her claws are dark with tan colored tips.

## Life History

Little information is known about this bear. When she was first identified in July 2014, she seemed inexperienced at Brooks Falls. At the time, she would try to fish nearly everywhere at the falls where she could gain access. Eventually, #505 settled into a routine of fishing the lip, begging, and occasionally stealing salmon, behaviors that she continued in 2015.



July 2019



July 2020

When attempting to steal or beg salmon, she will sometimes stand on her hind legs below the lip, while reaching up to grab or catch partially eaten salmon drifting towards her. #505 will also lie flat on her stomach and coyly reach out with her front paws in an attempt to steal fish.



July 2021



July 2021

#505 was briefly seen at the end of July 2018 with two spring cubs—her first litter. She was not observed in the fall.

#505 came back to the Brooks River in June 2019 with her two yearling cubs. Shortly after arriving, one of her cubs became severely ill. She and the cub's sibling stayed with the sick cub for several days, but as its condition deteriorated, #505 and the healthy cub left to do what they had to do to survive themselves. The ill cub did not give up, though. Rangers spotted it walking, albeit with difficulty, along the Valley of Ten Thousand Smokes Road near Brooks River. About a week later, the yearling had recovered enough to scavenge fish. Because it was alone, park biologists assigned it #63.

In 2020, #505 returned with both of her cubs. Remarkably, #63 reunited with #505 after its prolonged separation from mother. #63 was noticeably more independent compared to his sibling which was observed begging from #505 more.

#505 returned in 2021 and was seen in July but not in fall.



July 2015



July 2017



July 2019

# 610

## Adult Female

Year First Identified: Young subadult in 2015

Number of Known Litters: 0

### Identification

#610 is a small adult female and has a poofy blond coat and dark legs. This bear has a prominent shoulder hump, tall hips, and a dark face. An indent above her top right hip is a scar from a large wound sustained in 2015. A smaller scar is also visible on the back of the left heel.

### Life History

She was seen scavenging for fish in the lower river area in both fall 2015 and 2016. Extremely skittish, #610 immediately leaves the area when other bears approach.

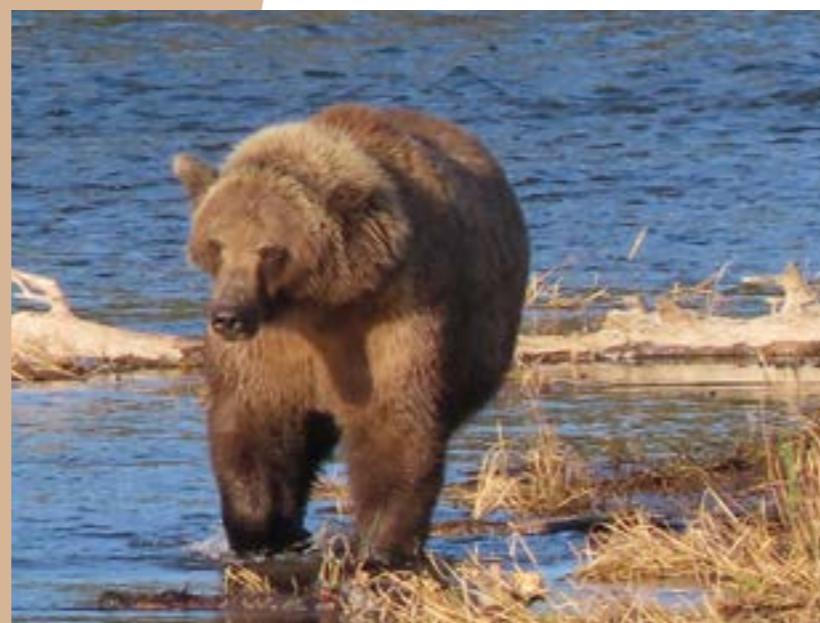
Due to #610's size and behavior, it has been speculated that this bear was a yearling cub that was separated prematurely from her mother in 2015. Survival is difficult for all brown bears, and those difficulties (predation, starvation, disease, etc.) are magnified for a bear that has had limited protection and learning experience. #610 showed incredible resiliency by overcoming the challenges she has faced thus far.



July 2021



July 2021



September 2021



September 2021



September 2015



July 2019



September 2019

# 708 Amelia

Year First Identified: 2.5 year-old subadult in 2003

Number of Known Litters: 3

## Identification

This bear has a small, but rotund body. In June and July, she has a light brown coat. By the fall, her coat becomes uniformly brown, with more reddish fur around neck in some years. #708's ears are perched high on her head. She has dark claws and a straight and short muzzle that resembles #468, who is believed to be her mother.

## Life History

As a subadult and young adult, #708 was very well known by visitors and staff. She would often pass directly through camp if not discouraged—even while raising her first cub. More recently, however, she is rarely seen moving through Brooks Camp.

This bear has been seen fishing nearly everywhere in the river—falls, cut bank, lower river, and even at Lake Brooks. She often stands on her hind legs for prolonged periods to scan the river, which is a behavior that is also displayed by one of her former cubs, #284.

#708 is believed to be the offspring of #468. She was nicknamed in her subadult years because of her propensity to disappear. She was not identified in 2015.

In 2016, #708 returned to Brooks River with two large yearling cubs. She was most often seen fishing with her cubs along the cut bank and lower river. She returned in 2017 with both cubs, then 2.5 year olds, and raised them through the fall. She separated from them in the spring of 2018.

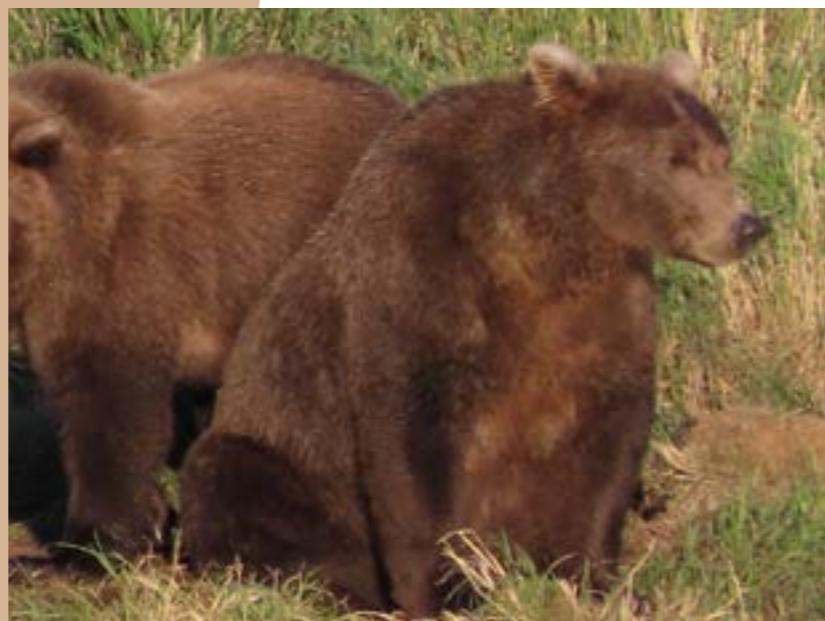
#708 arrived at Brooks River in 2019 with two spring cubs. She could be seen throughout the season with her cubs, especially in the lower river along the spit. In 2020, she returned with both cubs.

In 2021, #708 returned with her two cubs and kept them for a third summer. In late July, for a short period of time, her darker cub was separated from the family group but the three of them reuinted in August.

## Adult Female



July 2021



September 2021



September 2021



September 2019

July 2010

#708 as a subadult in July 2003

# 717

Year First Identified: 2.5 year-old subadult in 2016

Number of Known Litters: 0

## Identification

#717 is a small bear with a shaggy blond coat. Her legs are skinny and lighter in color than her body. Her ears are blond, rectangular, and placed on the top of her head. Her muzzle is skinny, upturned, and tapered to a point. Her eyes are set close together.

## Life History

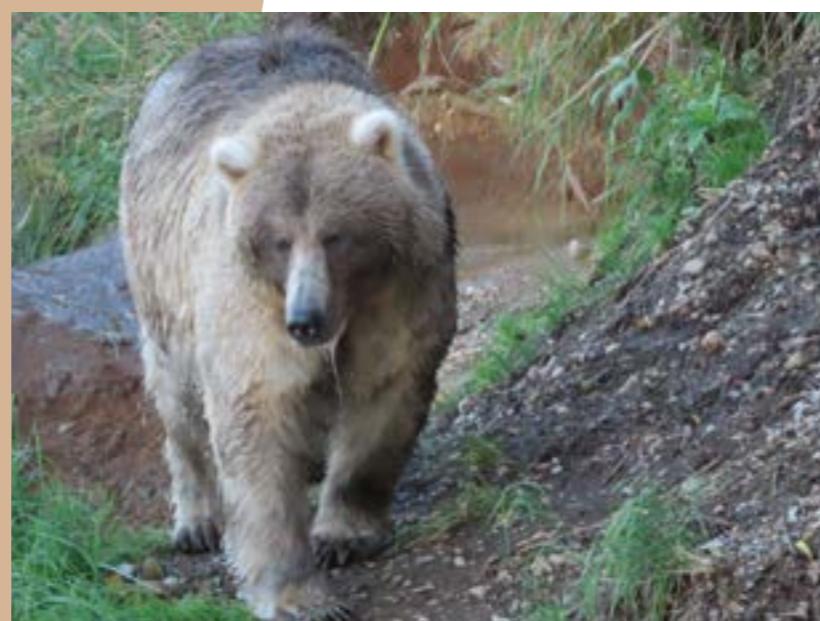
As a small subadult in 2017, #717 survived by exercising caution around other bears and by capitalizing on scavenging opportunities. She was seen in July eating scraps of salmon along the cut bank and riffles area. In the fall, she was observed fishing the cut bank and lower river.

As a subadult, she was often relegated to the least preferred fishing locations. However, as an adult, #717 now holds her own on the river.

## Adult Female



July 2021



September 2021



September 2021



July 2017



July 2017



July 2019

# 719

Year First Identified: 2.5 year-old subadult in 2016

Known Litters: 1

## Identification

#719 is a medium-sized adult, with a shaggy blond coat that darkens slightly in the fall. She has large oval ears that are even lighter blond than her body. Her face can be dark brown when she sheds fur in that area and her claws are tan-tipped. She is the offspring of #435 and resembles a miniature version of #435.

## Life History

#719 is an example of the brown bear's capacity to learn and adapt its behavior for survival. In 2014, #719's mother adopted a lone yearling, #503. She was very social with her adopted brother and they frequently played. After separating from her mother in spring 2016, #719 followed and played with #503. Soon after, and continuing to the end of fall, #719 began to follow #402 and her two yearling cubs.

Although #402 would occasionally charge #719 and drive her away, #402 appeared relatively tolerant of #719's presence. #719's behavior had several benefits: she was able to continue to learn survival skills by "sitting in" on the lessons #402 gave to her own cubs; she was shown the best fishing spots; and she received protection—other bears were much less likely to approach her when #402 and her cubs were nearby. In one instance, #402 even stopped a charge from #435 that was directed at #719.

Ironically, #402 is the biological mother of #503, #719's adopted sibling. We cannot know how cognizant #719 was of the events surrounding her development, but brown bears are intelligent. #719 appears to have learned from #503's adoption, and applied that knowledge to her own situation. She seems to have identified the risks and rewards of approaching an unknown bear, and used that knowledge to give herself the best chance at survival. In 2017, and again in 2018, #719 frequently played and traveled with other subadults. Similar to the advantages gained by following #402 in 2016, #719 was often seen with other bears.

#719 returned to the Brooks River in 2019 with two spring cubs. Although she could be defensive when raising her first litter, #719 remained playful. In one notable instance, she tried to play with an unrelated bear. Mother bears will often play with their cubs, but it is extremely rare for them to play with other bears while raising cubs.

## Adult Female



July 2021



July 2021



September 2021



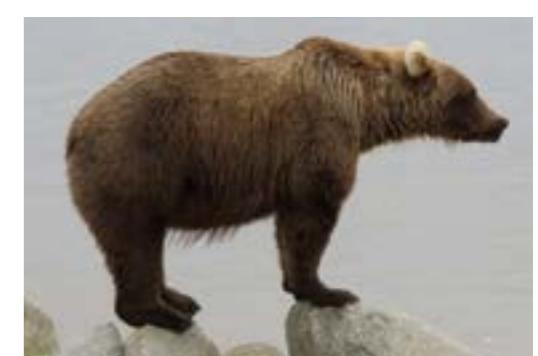
September 2021



July 2019



July 2019



September 2019

# 806

# Adult Female

**Year First Identified:** Young adult in 2017

**Known litters:** 1

## Identification:

#806 is an average-sized female. She has a light brown coat with darker legs than her body. She has light tipped claws and an apparent over-bite profile. Her ears are triangular and the same color as her head.

## Life History

She is suspected to be the offspring of #132. #806 appears to be tolerant of other bears and people. She plays with other young bears and has also been seen approaching other adult female bears.

#806 fishes throughout Brooks River, using the lower river, cutbank and falls. She successfully fishes the lip of the falls for silver salmon during September and October—making her a conspicuous presence to bear viewers. Not all bears learn to fish the lip of the falls. It's possible that she observed other bears and learned from them.

This bear was only seen once in 2018. In 2020, #806 returned to Brooks River with one spring cub. The cub was observed playing with #435's cub.

#806 returned with her yearling in 2021. She was seen frequently fishing the lip with her cub. The cub was seen playing with #435's cub and sharing a fish with one of #128's yearlings.



July 2021



July 2021



September 2021



September 2021



September 2017



July 2019



September 2019

# 813 Nostril Bear

Year First Identified: Subadult in 2004

Number of Known Litters: 3

## Identification

#813 is an average-sized female bear. In July, she has brown, evenly colored fur that can sometimes be ragged in appearance. In the fall, her fur is also brown but appears less ragged. Her most distinctive feature is her oddly shaped nostrils.

## Life History

This bear has infrequently used Brooks River during her adult life. When she was a subadult she was documented along the river more consistently. Bears can use their curiosity and powerful sense of smell to find and exploit new food resources. It is likely that she has found another place to fish during those years. When she is at Brooks River, she will fish at the falls in July as well as the cut bank and lower river. This bear typically does not use areas with high human use.

Her first documented litter was in 2014 when she returned to Brooks River with three spring cubs. In 2015, #813 returned with two yearling cubs from the 2014 litter. Mother bears in Katmai usually keep their cubs for two to three summers. No one knows if she kept her cubs another summer because #813 was not identified in 2016 or 2017.

#813 returned to Brooks River in 2018 with two spring cubs. She was seen on occasion in July and she was also seen in the fall with both cubs. #813 was seen briefly in 2019 with her two cubs. She was not observed in 2020 or in 2021.

# Adult Female



July 2019



September 2014



July 2015



September 2014



July 2013



September 2014



September 2014

# 854 Divot

Year First Identified: 2.5 year-old subadult in 2004

Number of Known Litters: 3

## Identification:

#854 is medium-sized female. She has a golden-blond coat in July which darkens by late August to brown. Her muzzle is short and straight. In July, #854 often has a noticeable shed patch on her forehead. Her most distinctive feature is a circular scar around her neck from a wire snare that was removed in July 2014 ([see next page](#)). This scar, however, can sometimes be hard to see.

## Life History

#854 shares a similar life history as her sibling #790. DNA analysis confirmed that her mother is #216 and #24 is her father. As a young bear, she was often seen at the mouth of Brooks River in May digging in exposed gravel. Apparently attracted to rotten scraps of salmon left from the previous year. The divots she left in the gravel inspired her nickname.

In mid-July 2014, #854 arrived at Brooks River with two yearlings. After fishing in the lower Brooks River for a day or two, the family disappeared for about two weeks. When she returned on July 28, she had only one yearling and a wire snare tightly constricting her neck. Park staff successfully removed the snare.

#854 returned to Brooks River in fall 2016 with three spring cubs. She was seen using the river frequently, often near Lake Brooks and at the mouth of Naknek Lake. She continued to raise all three cubs through fall of 2017.

This bear returned alone in 2018 presumably having separated from her cubs. She was often seen at the falls, sometimes begging other bears for salmon or waiting for scraps, as well as doing her own fishing. No matter her techniques, she is very successful at fattening up for the winter.

#854 was seen frequently along the Brooks River in 2019. She arrived early in the season and was pursued as a potential mate by many male bears. In 2020, #854 returned and was seen with two spring cubs. In 2021, she returned with her two yearlings. She frequently displaced other bears, including large males, to gain access to her preferred fishing spots.

# Adult Female



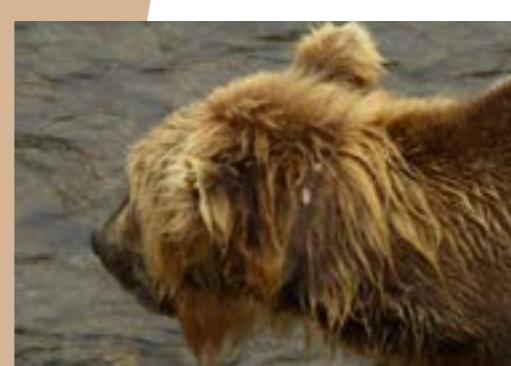
July 2021



September 2021



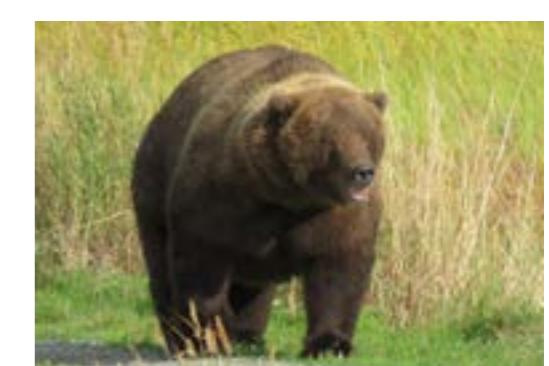
September 2021



#854's scar from a wire snare, July 2015



July 2019



July 2019

# Removing a Wire Snare from #854 Divot

A team of park rangers and biologists successfully removed a wire snare from the neck of a bear.

In mid-July 2014, #854 arrived at Brooks River with two yearlings. After fishing in the lower Brooks River for a day or two the family disappeared for about two weeks. When she returned on July 28, she had only one yearling and a wire snare tightly constricting her neck.

Katmai is a large park, but wild animals do not recognize our political boundaries. #854 likely got caught in an illegally set, out of season snare designed to capture wolves. Four days before she returned to Brooks River, she was photographed outside of the park (near King Salmon) with the snare around her neck.

Rangers and park biologists tracked #854 and her yearling to a small stream that drains the eastern slopes of Dumpling Mountain. On July 30, park staff tranquilized #854 and successfully removed the snare. The snare had cut into her neck about one inch (2.5 cm) deep. Luckily the snare had not completely penetrated her epidermal layer.

By October 2014, this bear and her yearling cub appeared very fat and healthy. By removing the snare, park staff rectified a mistake and gave this bear family the best chance of survival.

[Read a complete description of the effort to remove the snare.](#)  
[Watch a video of the effort.](#)



© Tina Crowe

#854 with a wire snare around her neck on July 24 near King Salmon, AK.



#854 with wire snare after she returned to Brooks River on July 28.



Park staff removed the snare while she was tranquilized.



#854 lies unconscious during snare removal.  
Note the wound on her neck.



A lip tattoo was applied for future  
identification.



Recovery from the tranquilizer took hours.  
Here #854 had yet to regain use of her legs.

# 901

# Adult Female

Year First Identified: 2.5 year-old subadult in 2018

Number of Known Litters: 0

## Identification:

#901 is a small female with blonde rimmed, triangular ears. Her face is darker with a lighter muzzle

## Life Histories

#901 is believed to be the offspring of #284. #901 seemed to mature quickly. As a four year-old bear, #901 behaved much like a young adult, including mating with #151. She was observed charging other bears that tried to play with her and she actively defended her fishing spots.

#901 was considered an adult in 2021. She was seen throughout the river, frequently around the lodge and visitor center area, and fishing Naknek Lake from the beach. #901 was also courted by #821.



July 2021



July 2021



September 2021



September 2021



June 2019



June 2020



October 2020

# 902

# Adult Female

## Identification

Year First Identified: 2.5 year-old subadult in 2018

Number of Known Litters: 0

## Identification:

#901 is a small female with lighter claws and ears that are lighter than her coat. She has a dished face profile.

## Life Histories

#902 was seen in both 2020 and 2021. She is the suspected offspring of #128 and takes after #128 in that she can be defensive at times.



July 2021



July 2021



September 2021



September 2021



June 2020



July 2020



September 2020

# 908

## Adult Female

Year First Identified: 3.5 year-old Subadult in 2018

Number of Known Litters: 0

### Identification

#908 is a medium-sized female. She has light colored claws and blonde triangular ears. Her face has a near straight profile.

### Life History

#908 is a suspected offspring of #708 and sibling of #907. She was emancipated in 2018 as a three year old. She was considered an adult in 2020.

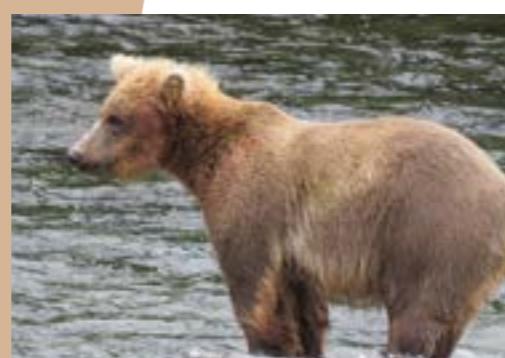
In 2021, she was often seen fishing the same spots as she had with #708 as a cub, showing that some fishing behaviors are learned.



July 2021



September 2021



September 2018



July 2019

September 2019

# 909

## Adult Female

Year First Identified: 2.5 year-old Subadult in 2018

Number of Known Litters: 1

### Identification

#909 is a small adult female. She has large blond forward pointing ears.

### Life History

#909 is the offspring of #409. During her first two years of independence, she and her sibling #910 spent considerable time together. As a subadult, she often chased and scavenged salmon throughout the river but also fished the lip frequently.

In 2021, she returned with two spring cubs. By early summer, she only had one spring cub. Like many sows with cubs, #909 appeared to adapt her behavior to give her cub the best chance of survival. In prior years, #909 frequently fished on the lip of Brooks Falls, but she mostly avoided that area for several weeks in early summer and only began to venture there with regularity at the end of July. She frequently treed her cub while fishing. The cub, however, often followed #909 into the river. The family group often faced heavy competition for fishing spots. At one time, her cub charged another bear who approached #909 after she had caught a fish.



July 2021



September 2021



September 2021



September 2021



June 2020



September 2020



July 2021

# 910

## Adult Female

Year First Identified: 2.5 year-old Subadult in 2018

Number of Known Litters: 0

### Identification

#910 is a smaller female. She has darker more rounded ears than her sibling #909.

### Life History

#910 is the offspring of #409. In 2018, #910 had a limp during the summer but appeared healed by fall. She was seen in both 2019 and 2020.

In 2021, #910 was occasionally seen fishing in close proximity to her sister #909. She proved herself to be a successful young adult bear and was often seen fishing the lip in July.



July 2021



July 2021



September 2021



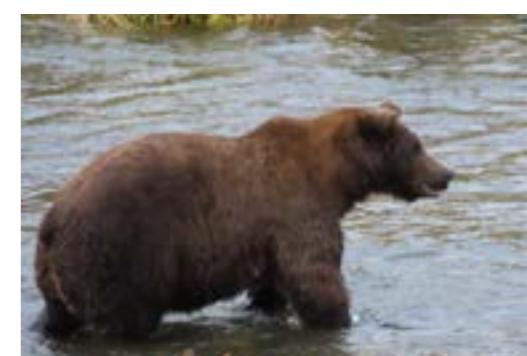
September 2021



July 2018

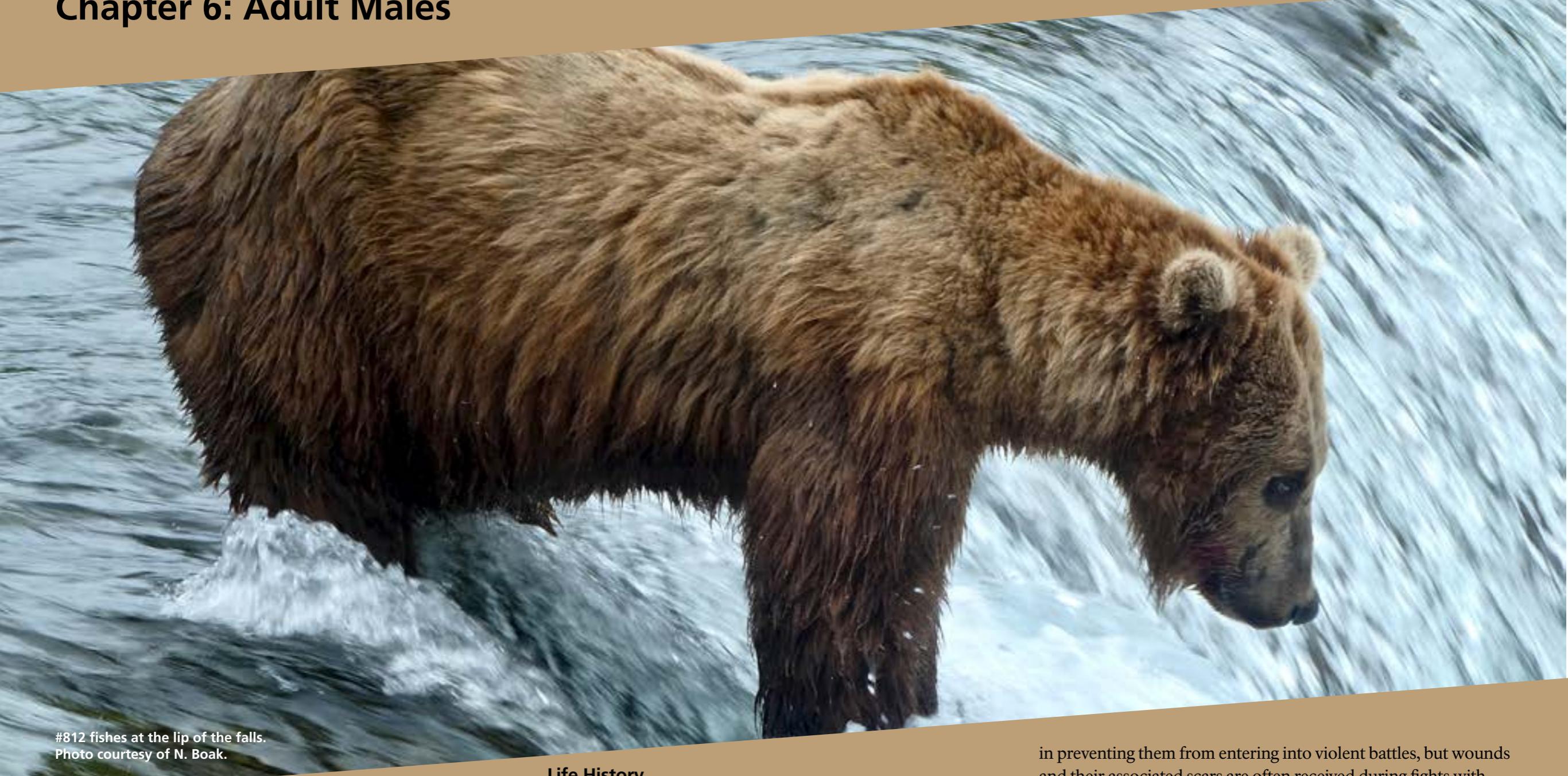


July 2020



September 2020

# Chapter 6: Adult Males



#812 fishes at the lip of the falls.

Photo courtesy of N. Boak.

## Identification

The largest bears frequenting Brooks River are adult males, also called boars. Like full grown adult females, their bodies appear filled in, their heads appear smaller in proportion to their bodies, and their ears are generally wide-set. When male bears shed their fur in the early summer, scars are often visible. Looking for genitalia is the easiest way to identify male bears, but you can also determine the sex of adult bears by watching them urinate. Male bears will urinate straight down between their hind legs.

## Life History

Due to their large size and strength, no other class of brown bear is able to compete physically with a large adult male.

They can stand 3-5 feet (.9-1.5 m) at the shoulder and measure 7-10 feet (2.1-3 m) in length. Most adult males typically weigh 600-900 pounds (272-408 kg) in mid-summer. By October and November, large adult male bears in Katmai can weigh well over 1000 pounds (454 kg).

The best fishing spots at Brooks Falls are dominated by adult males. Hierarchy and displays of dominance play important roles

in preventing them from entering into violent battles, but wounds and their associated scars are often received during fights with other males. These fights can be the result of competition for food resources (access or appropriation) or for the opportunity to mate with females.

During mating season, boars may wander great distances in search of females in estrus. Once they locate an estrous female, they may need to follow her closely for days before she becomes receptive to mating. During this time, the male must defend access to her from other males.

# 32 Chunk

Year First Identified: Young subadult in 2007

## Identification

#32 is a large adult male. In early summer, his coat is medium-brown and he sheds the fur on his shoulders first. He has numerous small and wounds around his neck and face, including one across his muzzle from 2021. His ears are distinctly pointed, and he has a prominent brow. In the fall, his coat is a uniform dark brown. In all seasons, he appears to carry more weight in his hind quarters than in front which gives #32 a distinctive silhouette.

## Life History

#32 was first identified as a young subadult in 2007. Over the past several years, he has become increasingly dominant along the river. He is subordinate to only the very largest and most dominant adult males. He will sometimes attempt to steal fish from other bears.

#32 fishes at the falls and the lower river. At Brooks Falls, he fishes the far pool and in the jacuzzi. #32 is sometimes seen in the Brooks River area in May and June. During this time he appeared to be courting adult females.

After family separation, young male bears often disperse away from their mother's home range to establish their own. A home range is a geographical area that a bear inhabits over the course of a year, often dominated by the search for food and mating opportunities. Like many bears, #32 tends to fish at Brooks River during the peak of the salmon run in July and then he leaves to fish elsewhere until the salmon start to spawn and float back downstream in fall. His home range not only includes Brooks River, but other nearby areas as well as he travels to different food sources as the seasons change.

In 2021, #32 continued to be one of the most dominant bears on the river. Despite this, it is not uncommon to also see him patiently wait to scavenge leftovers. He returned in July with a large gash across his muzzle. While we do not know how he got this scar, many large males often accrue scars as a result of vying for mating opportunities.

## Adult Male



July 2021



July 2021



September 2021



September 2021



July 2007



July 2019



September 2011

**Year First Identified: Subadult in 2007**

#### Identification

#68 is large adult male with light rimmed ears and a heart-shaped face with a distinct part down the middle. He also has light-tipped claws.

#### Life History

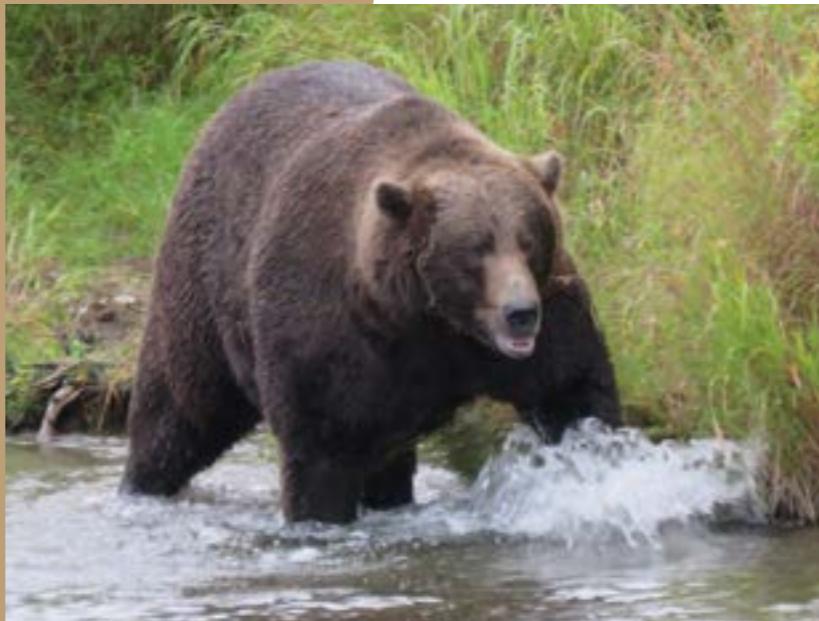
This bear has been seen at Brooks River every year from 2007 to 2019, though most years he is only observed in the fall. When #68 visits Brooks Falls in July, he often fishes the jacuzzi.

In September 2011, #68 was seen with a large wound on his lower right leg. At the end of the month, he had trouble moving that leg and appeared to be dragging it. However, he appears to have made a full recovery and has even grown in size. His history is another example of toughness and resiliency—a hallmark of brown bears.

#68 may be a bear that is difficult to recognize in July. There is a controversy as to whether a bear identified as #603 in July is actually bear #68. Often, it can be difficult to identify bears over the course of the season. Individuals can look different from the beginning of the season, when they are shedding their fur, to later in the season when their fur has grown out. Additionally, from July to fall, bears undergo tremendous changes in weight, gaining sometimes several hundred pounds.

In 2018, #68 was not observed in July but he was seen in the fall. In 2019, #68 began to challenge the established hierarchy of bears #747 and #856, the most dominant bears along the Brooks River. He fought with and defeated #747, the river's largest bear, in a violent battle. Bear #68 is a couple of years younger than #747 and #856. He appears willing to assert his dominance as he experiences the peak of his size and strength.

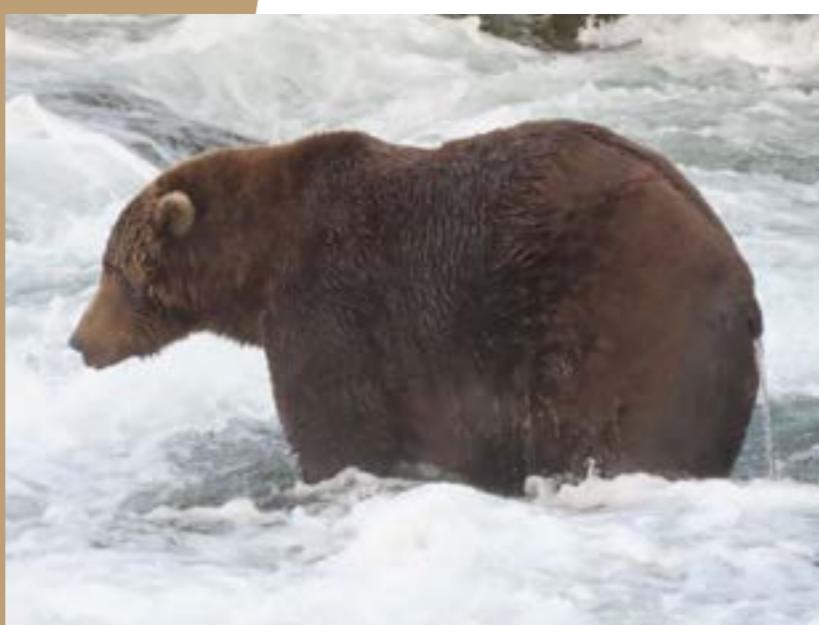
#68 was not seen in 2020 or in 2021.



September 2019



September 2016



September 2019



September 2019



#603 in July 2018. Some observers speculate that bear #603 is bear #68.



September 2010



September 2015

# 83 Wayne Brother

Year First Identified: Adult in 2008

## Identification

#83 is a large bodied bear. In July, he often sports a light brown coat, dark eye rings as well as numerous small scars and wounds on his face, neck, and front legs. Like many large adult males, his ears are wide set. He displays a large scar on his right shoulder from a wound received in 2012. In 2015, he had a large, deep wound above his hips that appeared to have reopened in 2016. As of 2017, the wound had healed but produced a recognizable scar. In the fall, his coat is medium brown with grizzled highlights especially around his neck.

## Life History

#83 is another adult bear that matured along the Brooks River. He is believed to be the offspring of #438 and the sibling of #868.

Even though #83 and #868 undoubtedly shared many of the same learning experiences as cubs, they differed in their fishing styles and held different ranks in the bear hierarchy. In July, #83 fishes below Brooks Falls in the jacuzzi and, especially, near the middle of the falls. In the fall, #83 fishes the cut bank and lower river like most bears.

#83 has many visible scars which tell a tale of competition for survival. It is not uncommon to see bears with scars and open wounds, especially male bears in early summer. These scars are often the result of fighting to gain access to food and mating opportunities. Bears show a remarkable capacity to heal and recover from injuries and do so without the intervention of park rangers (unless an injury is human caused).

In 2021, #83 returned to Brooks with several wounds, including one on his right hip. He was also observed falling off a bank above the office while backing away from #128. There were no noticeable injuries from this encounter.



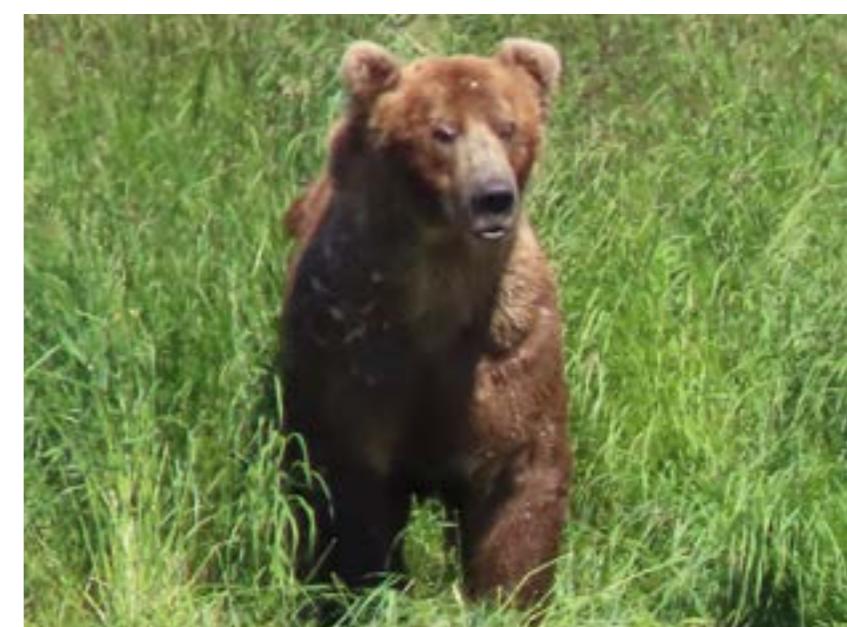
June 2021



July 2021



July 2021



July 2021



September 2017



July 2019



October 2020

# 89 Backpack

Year First Identified: 2.5 year-old subadult in 2008

## Identification

#89 is a medium-sized adult bear. He has a distinctive face with dark, round eye rings, and a straight muzzle. His coat is usually lighter blond in early summer, but it changes to a grizzled, dark blond or brown in the fall.

## Life History

#89 was born in 2006. He is the offspring of #435 and was first observed as an independent bear in 2008.

As a yearling cub in 2007, his right front leg was injured and he limped noticeably throughout the summer. Remarkably, by early fall, his leg appeared to have healed. The injury was not noticeable in 2008, which was his first summer as an independent bear. This is another example of the [resilient nature of bears](#) and their ability to persevere through significant injuries.

In July 2014, he would regularly fish at Brooks Falls near much larger bears that tolerated his presence. As a young adult he was a playful bear. In 2014 and 2015, for example, he was seen play fighting with #32, #151, #274, and #474.

#89 is typically seen fishing the falls in July. #89 was seen in July 2018 primarily fishing beneath the falls between the jacuzzi and the back wall.

In 2019, #89 continued his pattern of fishing at Brooks Falls primarily in July. Although a large bear, he does not challenge other boars and doesn't often show dominance towards other bears. #89 tends to move away when more dominant bears appear at the falls.

#89 was again seen in July 2020. In 2021, #89 was seen more frequently than in the past and was seen both in the summer and fall.



July 2021



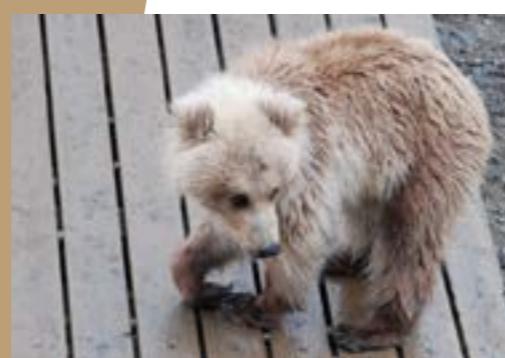
July 2021



September 2021



September 2021



#89 as a yearling cub with an injured leg in 2007



June 2019



July 2020

# 115

# Adult Male

Year First Identified: Adult in 2008

## Identification

#115 is a large adult male with a wavy dark brown coat. He sometimes has a lighter patch of fur on the right side of his neck. His ears are light tipped and his muzzle is thick, blocky, and slightly upturned.

## Life History

#115 has only been identified in the fall, although he doesn't use Brooks River every year. He generally is first seen late in September. In 2018, he fished the falls. For several years, he was seen most often at the cutbank and lower river.

In 2021, while #115 was present along the river, he was not seen enough times to make the bear monitoring scans.



September 2017



September 2017



September 2017



October 2017



October 2014



September 2015



October 2014

# 151 Walker

Year First Identified: 2.5 year-old subadult in 2009

## Identification

#151 is a large adult male. He has upright and wide-set ears, a long tapering muzzle, and large dark eye rings that are especially prominent in early summer.

## Life History

#151 regularly visits Brooks Falls in July and fishes at the cut bank and lower Brooks River in the fall. As a young adult, #151 was sometimes displaced from his preferred fishing spots. However, as he has matured into a fully grown adult, he is only displaced by the most dominant bears.

#151 was a particularly playful bear in his young adult years. He was observed playing extensively with #503, #289, #32, and others. Bears hone survival skills by engaging in play. Play-fighting can improve the strength, speed, coordination, and muscle-memory needed during real fights. In contrast to his youth, he has become less tolerant of other bears, including his former playmates, as his priorities have shifted.

In 2018, #151 rarely seemed to leave the river. With another strong red salmon run, followed by silver salmon, he was seen at the falls almost daily from July through mid October. He seemed to favor the area around the far wall. While this bear continued to play with #503, it occasionally turned into brief, but real, fighting.

In 2019, #151 grew to be one of the largest bears along the Brooks River. In the early part of the season, he tends to fish in an eddy in the riffles and switches to fishing the lip later in the season.

He returned to the river in 2020 and by the end of fall was estimated to weigh around 1,000 pounds.

In 2021, #151 remained one of the largest bears on Brooks River. He asserted himself along the river. This assertive disposition, along with his large size, secured him access to some of the most productive fishing locations.

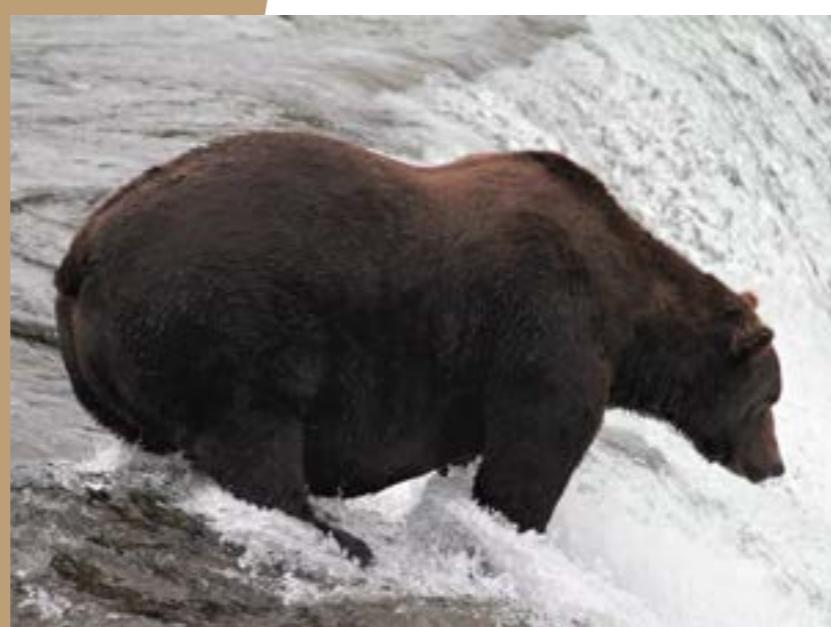
# Adult Male



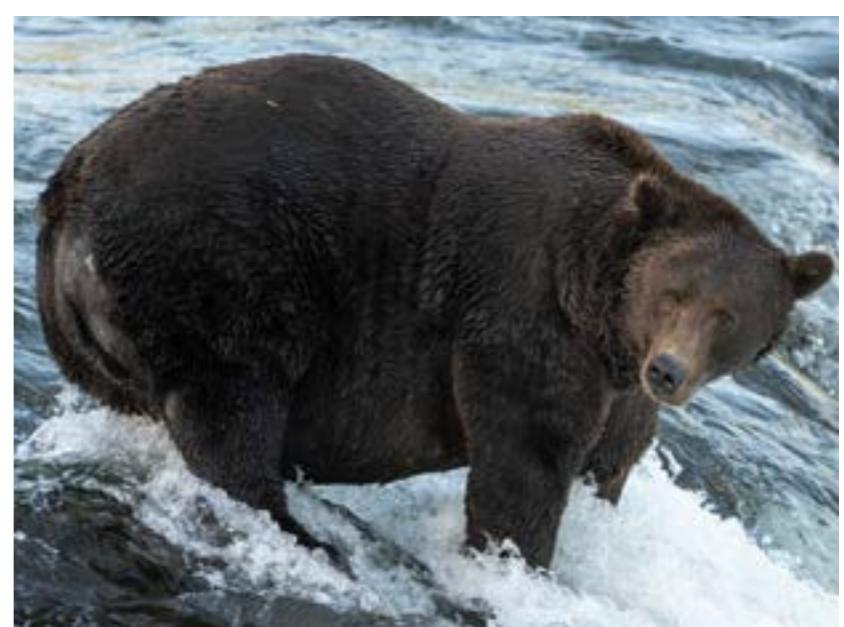
June 2021



July 2021



September 2021



September 2021



July 2014



#151 plays with #755 in July 2017



August 2020

**Year First Identified:** 4.5 year-old subadult in 2011

#### Identification

#274 is an adult male. His coat is dark blond with unique patches on both shoulders. He has blonde, wide-set ears. He has a distinct fur part on his face and has a dished muzzle.

#### Life History

Like #83 and #868, #274 is believed to be the offspring of #438. As a young adult bear, #274 appeared more confident around larger adults than other bears his age, often approaching them much closer than other young bears would dare.

He attempted to fish the lip, fish ladder, and the jacuzzi, but in 2015, he was seen most often fishing the cut bank and lower river. He has had success fishing the riffles and by scavenging scraps from other bears. In one notable moment in 2013, he managed to steal a fish from #856 when that bear confronted another male. Seeing that #856 had left his fish unattended, #274 swooped in, picked it up, and ran quickly down river before the dominant boar turned around.

In recent years, #274 has changed his pattern of use of the river. While he used regularly fish the falls in July, that is no longer the case as he is now more frequently only seen in the fall, as was the case in 2020



September 2021



October 2021



September 2021



September 2020



June 2014



June 2017



September 2017

# 299

# Adult Male

Year First Identified: Adult in 2021

## Identification

#299 is an adult male. He has a prominent shoulder hump. He has a shorter muzzle and his nose has the appearance of being smashed in.

## Life History

#299 is a bear that we still don't know much about. He tends to be wary of other bears. His habits suggest that he is not habituated to people or other bears, unlike many bears who have frequented Brooks River for the majority of their lives. He has occasionally been seen in fall dating back to at least 2018, but has never made enough bear monitoring scans to be given a number until 2021.



September 2021



September 2021



September 2021



September 2021



September 2021



September 2021



September 2021

# 469

# Adult Male

Year First Identified: Adult in 2001

## Identification

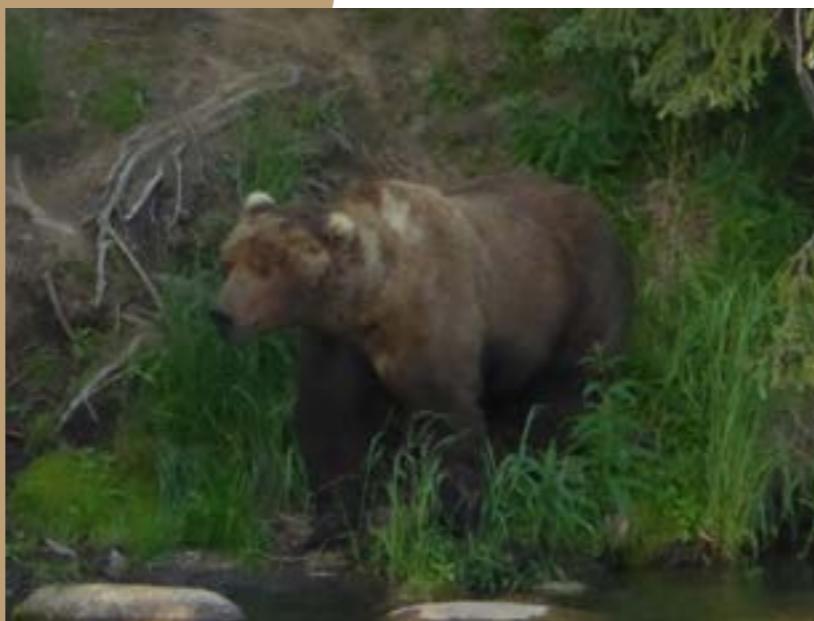
#469 is a medium-large male bear. His claws are dark and he has short, round ears. His muzzle is blocky and straight. #469's coat is brown. His most distinctive feature is a blond, diamond-shaped patch of fur on his left shoulder.

## Life History

From 2001-2011, #469 was an irregular user of the Brooks River and Naknek Lake in the fall. He was usually only seen in the morning and would leave the area when human activity increased. This may indicate that #469 is not tolerant of people. In 2013, this pattern was broken when he was seen fishing regularly at Brooks Falls in July—even with large numbers of people watching from the Falls Platform.

It is unknown why #469 changed his habits. When he arrived in 2013, he was limping and would not place any weight on his left hind leg. This injury may have reduced his ability to find food elsewhere or he may have just discovered the fishing opportunities at Brooks Falls in July. Whatever the reason, #469 modified his behavior to fish at the falls. Bears, even older bears, shift their habits and behaviors when necessary for survival.

This bear was also seen guarding a bear carcass in October 2012. It is unknown whether or not #469 killed the bear. From 2012 onward, #469 has only been seen sporadically. He was not seen in 2014 but he made one brief appearance at Brooks Falls in June 2015. During fall 2016, a bear was spotted with a similar blond diamond-shaped patch of fur on his left shoulder, though it is not certain it was indeed #469. He was not identified in 2017. There was a brief sighting of him in October 2018. While he has not been identified during bear monitoring sessions from 2019-2021, there were several credible sightings of him on the bear cams in fall of 2021. He, along with #477, were likely the oldest bears to use the river last year.



June 2015



September 2010



July 2013



September 2012



July 2013



July 2013



September 2006

**Year First Identified: Adult in 2014**

#### Identification

This is a medium-sized adult male bear with a dark, smooth looking face. His ears are light tipped and his coat is dark brown with longer fur on his back and neck.

#### Life History

#474 is another bear only seen at Brooks River in the fall. Like most bears in September and October, he tends to fish the cutbank and lower river areas, although he typically doesn't fish the mouth of the river when many people are present. Many bears that are only seen in the fall and typically fish the cutbank area, like #474, are not usually tolerant of the close proximity of people.

In recent years, #474 was seen fishing at Brooks Falls for silver salmon. #474 was seen only in late fall of both 2019 and 2020. In 2021, #474 did not make the bear monitoring scans but he was seen in fall.



September 2017



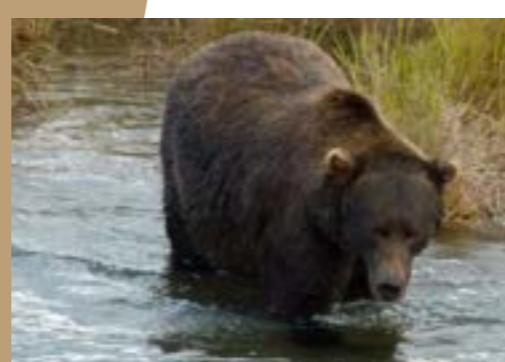
September 2019



September 2019



September 2017



September 2015



September 2015



October 2014

# 480 Otis

**Year First Identified:** 2001 as an older subadult or young adult

## Identification

In early summer, #480 has a medium to dark blond coat which darkens to brown with blonder patches in the fall. He has tan tipped claws and scars on both sides of his neck. His ears are wide set and his right ear is floppy. His muzzle is long, straight, and narrow. He has a scar above his right eye.

## Life History

#480 was first classified as an older subadult bear in 2001. He uses some of the most efficient fishing techniques at the falls. #480 prefers the jacuzzi, but unlike many other bears, he tolerates numerous bears around him while he eats. #480 is one of the few bears that can successfully fish at Brooks Falls in September. Late in the season, he is often seen fishing in the far pool.

Despite the fact that #480 is neither as large nor aggressive as some other male bears, he was rarely displaced from his preferred fishing spot in the jacuzzi from 2005-2011. However in recent years, #480 has slipped down the bear hierarchy. Several bears now regularly displace him from his preferred fishing spots. As he has grown older, he is now much more prone to being displaced by bears than he is to displace them.

#480 is missing two canine teeth. The injury appears to inhibit his ability to “high-grade” fish—to pick out the fattiest parts of the salmon (skin, brain, and roe). This has not stopped him from putting on the necessary weight for winter survival. Missing teeth is just another obstacle older bears like #480 must overcome to survive year after year.

Otis has been noticeably skinny when he’s returned in recent years. Despite this, he’s used his skill, experience, and tenacity to become quite fat in the fall. In 2021, he returned to the river later than he ever has in the past. As he has gotten older, he has had to adapt his behavior to be successful. Using patience as a strategy, he often waits until his preferred fishing spots are available to avoid conflict.

# Adult Male



July 2021



July 2021



September 2021



October 2021



July 2017



July 2019



September 2020

# 503

# Adult Male

Year First Identified: 1.5 year-old cub in 2014

## Identification

#503 is a tall and lanky adult male. In July, his fur is light to medium-brown and he sheds dark eye rings and a dark face. His neck and head are usually last to shed. In the fall, his fur darkens to a grizzled-brown and is slightly lighter on his head and neck. He has a protruding lower lip, tall brown ears, and dark claws.

## Life History

#503 has a unique life history. As a cub, #503 originally belonged to #402, but after an unusually timed series of events, he was [abandoned by his biological mother](#) in early July. Most cubs are pushed away by their mothers in the spring after two to three summers. As a lone and small yearling, he faced many threats to his survival, not the least of which was other bears. Since he was then independent and observed during several bear monitoring sessions, he was assigned #503.

By the end of July, [he was adopted by #435](#), a female with a single spring cub. #435 treated her adopted yearling just like her biological spring cub. She allowed him to [nurse](#), take fish from her, and play with the spring cub. We will never know #435's reasons for adopting the yearling with any certainty, but bears, even young bears, are adaptable and smart. They possess the ability to recognize favorable situations and take advantage of them. In #503's case, the reward (protection, food) was worth taking the risk (intolerant bear, injury, death) of approaching a strange bear. Instead, his strategy helped to ensure his survival.

#435 continued to raise #503 through 2015 and separated from him along with her biological cub in spring of 2016.

In 2017, #503 often played with bears similar to his increasing size. He regularly fished at Brooks Falls in the presence of far larger and more dominant bears. This behavior continued in 2018 and younger subadult bears often gathered around him as he fished.

#503 was seen often in 2019. When the jacuzzi was not occupied by more dominant bears, #503 fished and played in that prime fishing spot. #503 returned to Brooks River in 2020. In 2021, #503 grew into one of the largest bears on the river. While he still initiates play-fighting with other bears, he also continues to display more dominance.



July 2021



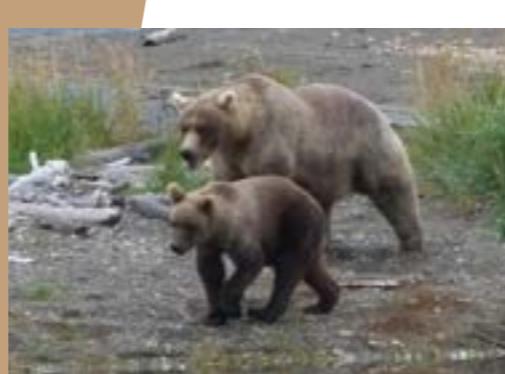
July 2021



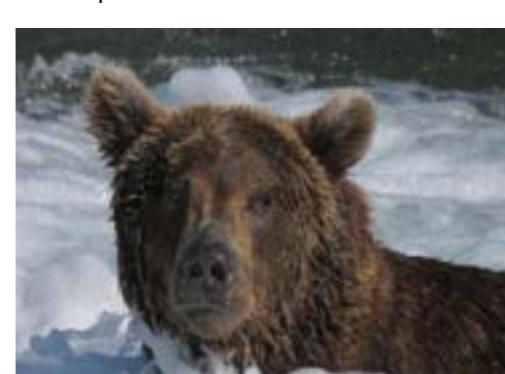
September 2021



September 2021



#503 with his adoptive mother in September 2014



September 2017



September 2020

# 602

# Adult Male

Year First Identified: Subadult in 2015

## Identification

#602 is a medium-sized, compact, and well proportioned adult. He has dark, grizzled fur even in July when most young bears sport blonder coats. His ears are the same color as his body and perched high on his head. He has a round face with a short, upturned snout and closely set eyes. He has a thin scar on the left side of his muzzle.

## Life History

In July 2015, this bear fished throughout the river, often moving quietly as he did so. In the fall, he fished for dead and dying salmon through most of the lower Brooks River.

In 2015 and 2016, his sex was not known. #602 has since been classified as male. This is a good example of the challenges involved in identifying subadult bears, who often move erratically and quickly change appearance as they grow.

#602 was not identified in the summer of 2016 or 2017, but was seen in the fall of both years, fishing throughout the river. He was observed playing with #503 and #719. #602 returned to Brooks River in both 2019 and 2020, but he was not seen in 2021.



July 2015



September 2017



September 2019



September 2016



July 2015



September 2017



September 2016

# 603

# Adult Male

Year First Identified: Adult in 2015

## Identification

#603 is a large adult male. He has a light brown coat that sheds out on his face first. He has many scars on his face and neck including several puncture-like marks on the left side of his face. His ears are light-tipped and his muzzle is dark. He had a distinctive triangular scar behind his right shoulder that may still be visible.

## Life History

#603 was first identified as an adult in 2015 and primarily fished in the lower river. He was not identified in 2016, but returned to Brooks River in 2017. He fished the far side of Brooks Falls and occasionally in the lower river and cutbank.

In 2017, #603 was consistently challenged by #32. He was pushed out of preferred fishing locations and forced to adjust his fishing techniques. Still, #603 continued to use Brooks River frequently during July. Competition between bears over limited space on the Brooks River necessitates flexibility in smaller, less aggressive bears like #603.

There continues to be a controversy as to whether bear #603 and bear #68 are the same bear. It is possible that the bear has been identified as #603 in July and #68 in the fall. From early summer to late summer, it can often be difficult to identify the same individual. Over the course of the summer, a bear's fur grows out and they put on significant weight which causes a significant change in appearance.

#603 returned to Brooks River and was observed in 2019 and July 2020. #603 was not observed in 2021.



July 2017



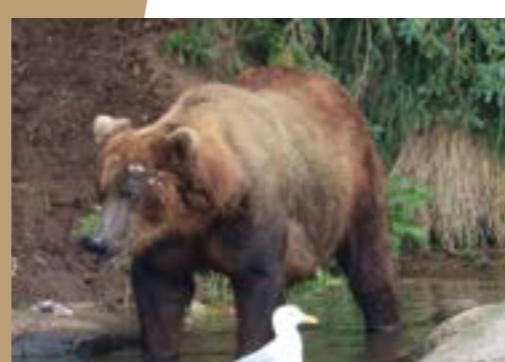
July 2020



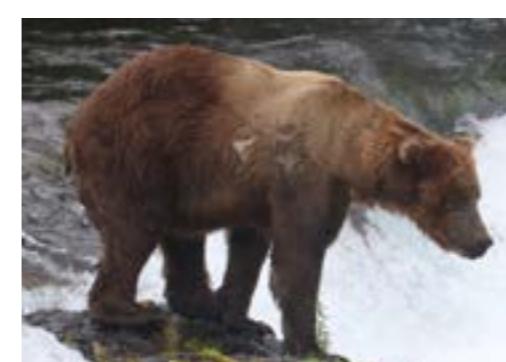
July 2019



July 2019



July 2017



July 2017



July 2017

# 634 Popeye

Year First Identified: Older subadult in 2002

## Identification

#634 is a large adult male. As a young bear, he had large, furry, dark forearms that inspired his nickname. His coat is brown, grizzled, and generally uniform with blondish ears. He has a prominent shoulder hump and round face. #634's muzzle is short and upturned.

## Life History

#634 was classified as a subadult in 2002 and then as an adult in 2003. In May of 2004, he appeared on the beach at Brooks Camp with a severe limp. He would not place any weight on the injured leg, but returned the next year showing no affects of the injury. In 2017, he had another severely injured leg on which he could put little weight, but by fall the leg had healed.



July 2021



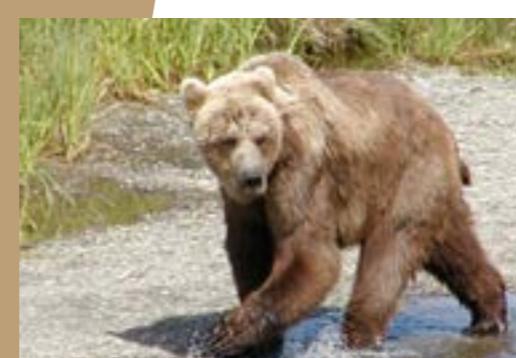
July 2021



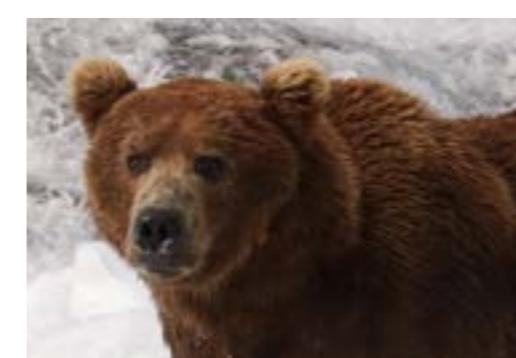
July 2021



September 2021



Subadult #634 in July 2003



July 2017



June 2020

**Year First Identified: Subadult in 2004**

#### Identification

#747 is perhaps the largest bear to use Brooks River. He has a medium-brown coat with reddish shoulders. Early in the summer, his fur regularly sheds out in an erratic pattern and he often has a noticeable shed patch on his forehead. During the fall months, his fur is dark brown. His ears are round and peg-like, and his face has a prominent brow ridge. He has dark claws, a short but blocky muzzle, and a large, stocky, and squat body.

#### Life History

#747 is often seen at Brooks Falls in July and is very successful at fishing in the jacuzzi and far pool. He also fishes the falls in September and October. By sheer size alone, he is able to gain access to his preferred fishing spots.

#747 does not appear to be wary of people on the viewing platforms near Brooks Falls and is sometimes seen near the mouth of the Brooks River. In years past, he was rarely seen in areas with high numbers of people.

Since 2007, this bear has noticeably grown in size. He is now one of the most dominant on the river. Even though he is a dominant bear, he is somewhat more tolerant of other bears than most other dominant bears like #856.

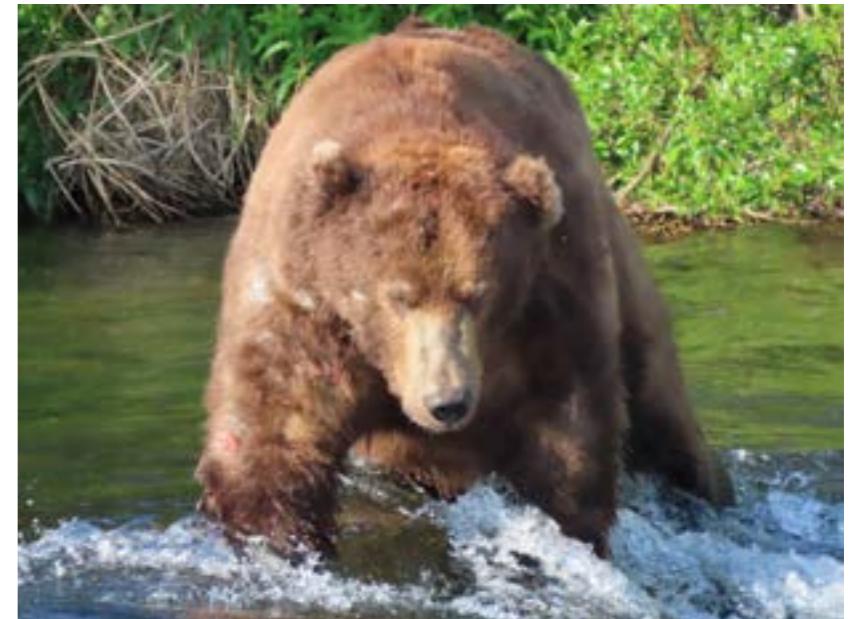
In 2017, #747 was not regularly seen at Brooks Falls until fall. After arriving, he was commonly seen displacing the largest, most dominant bears and yielding to none. In 2018, #747 was regularly seen at Brooks Falls in both July and in the fall. He is usually one of the largest bears by fall.

#747 regularly puts on enough fat to where his belly almost drags along the ground. [In 2019, lidar was used to scan several bears](#). From these scans, the park's survey team was able to an approximation of volume and then extrapolate that to get an estimate of weight. At that time, #747 was estimated to weigh over 1,400 lbs (635 kg).

In early summer, he still appears to have ample fat reserves from the previous year. In 2021, #747 became the most dominant bear along the river after displacing #856.



July 2021



July 2021



September 2021



August 2021



Subadult #747 in July 2004



September 2019



June 2020

# 755 Scare D Bear

Year First Identified: Subadult in 2004

## Identification

#755 is a medium-sized adult male with a golden brown or tan colored coat, a flopped-over right ear, and a tapered muzzle. His dark eye rings can be a distinctive feature early in the summer. In the fall, his coat is a uniform brown with contrasting, light colored ears.

## Life History

#755 was classified as a subadult in 2004 and has fished at Brooks Falls every year until 2019.

This bear has never shown much tolerance towards humans. #755 will fish the falls during daylight hours when the platform is full of people, but rarely leaves the far side of the river at those times. If he does approach the Falls Platform, he moves quickly behind it, never in front. Sometimes, however, he will fish the jacuzzi at night. He has been observed running away from the riffles area when people approach and is not known to use the lower Brooks River, even in the fall. His intolerance of people seems to increase in the fall.

In 2019, #755 was seen in July and fall. However, he was not observed in 2020 or in 2021.

People can easily displace bears like #755 from the river. He might consider humans to be competitors to be avoided. For bears that display this behavior, it is important to [give them space](#) so we don't displace them from the resources they need to survive.

## Adult Male



July 2017



September 2012



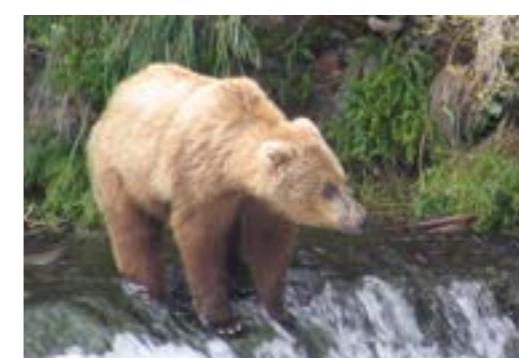
July 2019



August 2019



June 2008



Subadult #755 in 2004



September 2011

# 775 Lefty

Year First Identified: Adult in 2004

## Identification

#775 is a medium-large bear with a tapering, but thick neck. He has a blocky muzzle and lacks a prominent brow ridge. His coat is a uniform brown and he has a sizable scar near his right hip. This bear's most distinctive feature is a short left ear.

## Life History

Until 2015, #775 was only known to use Brooks River in the fall. That changed in July 2015, when he arrived unexpectedly at Brooks Falls and fished for several weeks. When he first arrived, #775 appeared to have no prior experience fishing at Brooks Falls and his behavior indicated that he was very hungry. He challenged nearly every bear at the falls for fish, even very dominant bears like #856, and successfully stole fish from female bears. For several days, the mere sight of salmon caused him to run and pursue them. He even leaped off of the falls into the jacuzzi to try and catch salmon. After a few days, he learned to fish the lip of the falls without resorting to belly flops.

Bears are typically ravenous by early summer, but most bears with experience fishing at Brooks Falls know to bide their time and be patient. #775's frenzied activity showed his need for calories and lack of experience at the falls. He quickly learned to catch fish on the lip, a skill he did not possess when he first arrived. This, combined with his energetic pursuit of salmon, demonstrated his hunger and ability to learn.

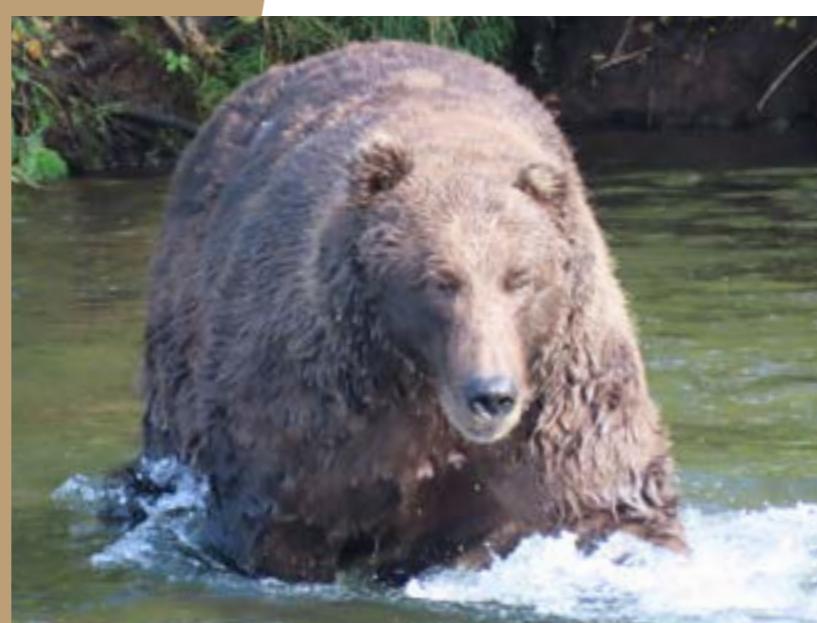
In the fall, he is often seen fishing at the cut bank and sometimes further downstream, but does not typically approach the mouth of the river. Like many of the bears that use the river in the fall, he does not appear to be particularly tolerant of the presence of people. He often moves away from groups of people walking through the river.

From 2016-2020, #775 returned to Brooks Falls in July and consistently fished the lip of the falls. He rarely challenges other bears, save for the occasional early season attempt to steal fish. He spends most of his time fishing the lip of the falls where he has become an adept angler. In 2021, #775 was seen once in July before the salmon started to earnestly run upstream. He was not seen again until he returned in fall. Bears often follow the salmon and there are many places other than Brooks Falls where good fishing can be found.

# Adult Male



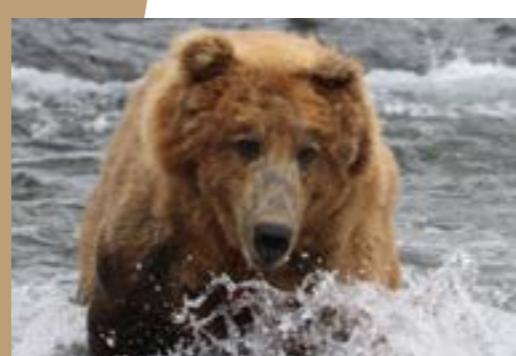
July 2021



September 2021



September 2021



July 2017



October 2019



July 2020

# 801

# Adult Male

Year First Identified: Subadult in 2015

## Identification

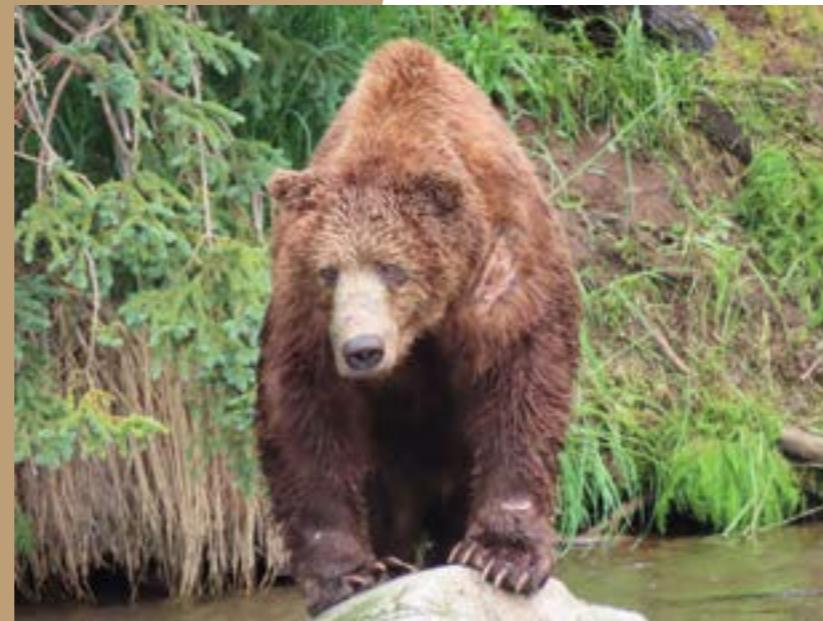
#801 is a medium sized bear with a dark brown coat in July. His ears are the same color as his coat and point out to the side. He has a long blocky muzzle and shed circles around his eyes. His claws are light-tipped. He has a small scar underneath his right eye and scars on both sides of his neck.

## Life History

#801 was first identified in the fall of 2015. He was not seen in 2016, but returned in 2017 and again in 2018. He was seen fishing the far side of the falls and around the cutbank area.

#801 was seen in both 2019 and 2020 but only in July. In 2020, he was also observed playing with #812. In 2021, #801 returned to the river. He tends to be less tolerant of people and may react to their presence on the platform.

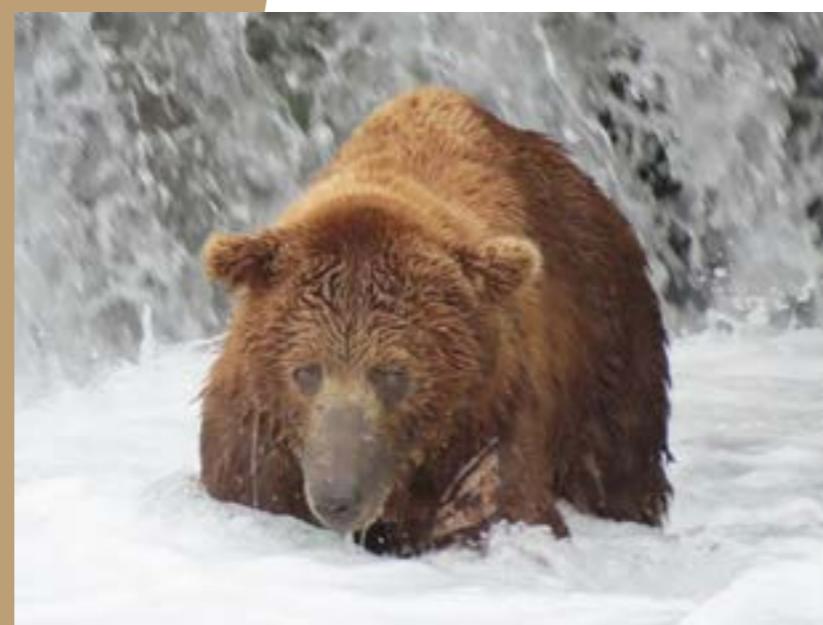
Keep an eye out for bears like #801 that are less frequently seen.



July 2021



July 2021



July 2021



July 2021



July 2017



July 2019



July 2020

# 812

# Adult Male

Year First Identified: 2.5 year-old subadult in 2017

## Identification

#812 is a medium sized bear. In the early summer, he has a long, blonde shaggy coat. The fur on his forehead sheds out in a distinctive “diamond” pattern. In the fall, his coat has a reddish brown color. The fur around his nose stays a lighter shade of brown than the rest of his face. His ears are lighter than his coat and his face has a near straight profile. Behaviorally, #812 has a tendency to lick his lips frequently and use rocks as a platform to eat salmon. He will also extend a front leg forward when fishing on the lip of Brooks Falls.

## Life History

#812 is suspected to be an offspring from #402's 2015 litter. As a yearling cub, the #402 family group (including #812) was being shadowed by newly emancipated subadult #719. As a subadult, he often played with other bears such as #503, #820, #821, #719, #901, and sisters #909 & #910. He continued this behavior as he matured.

#812 sometimes tests the tolerance of more dominant bears by occasionally approaching fishing spots at the falls already occupied by larger bears. In most cases, other bears do not react aggressively toward him, indicating that they do not see him as a potential threat. This can work to #812's advantage as he is able to gain greater access to productive fishing spots at the falls. He prefers to fish the lip and the far side of the falls.

In 2021, he was frequently seen playing with other bears near the falls. #812 still remains mostly tolerant of other bears being near him. It is possible that as #812 ages, he will become one of the more dominant bears in the river due to his size and willingness to approach other bears.

In 2021, #812 was also observed courting and mating with bear #171 near Brooks Falls.



July 2021



July 2021



October 2021



September 2021



June 2019



August 2020



October 2020

**Year First Identified: Subadult, possibly three years old in 2017**

#### Identification

#820 is a medium sized young adult bear. In early summer, his coat is shaggy and medium brown which sheds out into a darker brown by fall. The fur around his face remains a slightly lighter color brown than the rest of his coat. He has oval, blonde tipped ears.

#### Life History

#820 has used Brooks River every year since he was first identified. He often fishes while standing against the far wall of Brooks Falls, although he will also fish in other areas of the river. #820 is another young adult male that is often seen playing with others his age and size. In 2021, #820 was frequently seen playing with bears #812, #821, #602, and #907.



July 2021



July 2021



September 2021



September 2021



June 2019



July 2020



September 2020

# 821

# Adult Male

Year First Identified: 2.5 year-old subadult in 2017

## Identification

#821 is a medium sized adult bear. He has a darker rusty brown coat and lighter rimmed ears. In the summer he has brown fur which sheds into a uniformly dark coat in the fall. He has a narrow, pointed muzzle and tall, oval shaped ears. His ears appear slightly light tipped. His most distinctive feature is a triangular scar on his right hip. It is unknown how he received the wound that resulted in the scar.

## Life History

#821 is the suspected offspring of bear 504's 2015 litter. He frequently uses Brooks River in both the summer and the fall. He has been observed fishing in all parts of the lower river, the riffles area, and the lip of Brooks Falls. As a subadult bear, #821 was often observed approaching other bears his age in search of playmates. As #821 has entered early adulthood he has remained an extremely playful bear. He frequently plays with other bears his age and size including #812, #602, #820, and #907.

Young adult bears like #821 often remain playful in these early stages of their adulthood. However, sometimes their behavior changes as they mature and vie for fishing spots, potential mates and dominance in the river. It will be interesting to observe if #821's behavior changes as he ages and continues to use Brooks River.

In 2021, #821 was observed courting bear #901 in the early summer. He remained a consistent presence in the area throughout the summer and into the fall. Like previous years, #821 remained very playful with other bears. In addition to the other bears his age, #821 was also seen play fighting with #151 in 2021.



July 2021



July 2021



October 2021



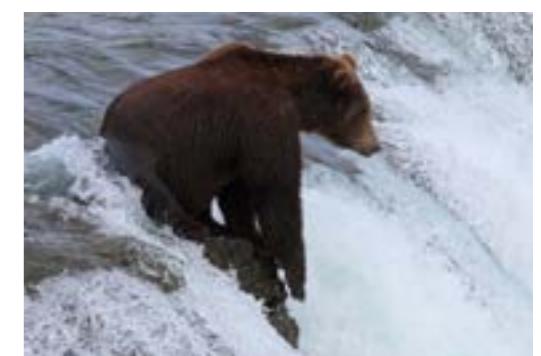
September 2021



September 2019



July 2020



September 2020

# 856

# Adult Male

Year First Identified: Young adult in 2006

## Identification

#856 is a large bear. He has a uniformly brown and grizzled coat, his ears are blond and wide-set, and often pinned back. His forehead is wide and furred. He also has a noticeable dorsal stripe in July. His face and front legs have numerous small scars.

## Life History

Between 2011 and 2020, #856 was Brooks River's most consistently dominant bear. #856's behavior and mere presence often has cascading effects on the behavior of other bears. On his approach, less dominate bears will yield space to him. [Dominance over other bears confers many advantages](#), including mating opportunities and access to preferred fishing locations.

In July 2011, #856 managed to separate #402 from one of her cubs; he later returned and killed the cub. It is unclear why adult males will sometimes kill cubs. #856 and #402 mated again in 2012, and #402 returned with three spring cubs in 2013. In 2014, while #402 was still caring for a cub from her 2013 litter, she went into estrus, separated from the cub, and after an extended courtship period of 11 days, mated with #856. Since #402 had a litter of four cubs in 2015, it is likely #856 is the father.

In 2018, #856 was chasing #634 downriver from the falls when they ran into #132 and her two spring cubs. One of the cubs was killed. In 2019 and 2020, #856 remained one of the most dominant bears. In July 2020, an injury prevented him from putting weight on his rear leg. Even so, he remained relatively dominant. He again courted #402 in 2020.

#856's reign as the river's most dominant bear appears to be waning. In 2021, he consistently yielded to his long time rival, #747.



June 2021



July 2021



September 2021



September 2021



July 2006



July 2019



September 2020

# 879

# Adult Male

Year First Identified: Subadult in 2006

## Identification

#879 has a tall, large body, and a brown coat. His muzzle is long and straight. He has tall ears with the left one flopped over. His ears are the same color as his coat. He has a long neck.

## Life History

#879 is another fall bear who has not been identified in July. He may fish other streams in the summer, choosing to use Brooks River only later in the season. Alternatively, he may use Brooks River in July but is unrecognizable upon returning in late August or September. Like the salmon they depend upon, brown bears go through dramatic physical changes over the course of a few weeks. As they gain hundreds of pounds and shed their fur, it can become difficult to distinguish individuals from one another or match those individuals to bears observed earlier in the season.

Unlike many bears, #879 never swam underneath the floating bridge at the mouth of Brooks River. Since the elevated bridge has been constructed though, #879 will walk and swim under it. He is known to make a lot of noise (groans and heavy breathing) when he eats salmon.



September 2021



September 2021



September 2020



September 2019



Subadult #879 in September 2006



September 2017



September 2019

# 907

# Adult Male

Year First Identified: 3.5 year-old subadult in 2018

## Identification

#907 is a medium-sized bear. He has a prominent shoulder hump and light-tipped claws.

## Life History

#907 is the suspected offspring of #708 and sibling of #908. He separated from his mother in 2018 at a three year old. His mother, #708, has consistently separated from her litters at the beginning of her cubs' fourth summer. He was considered an adult in 2020.

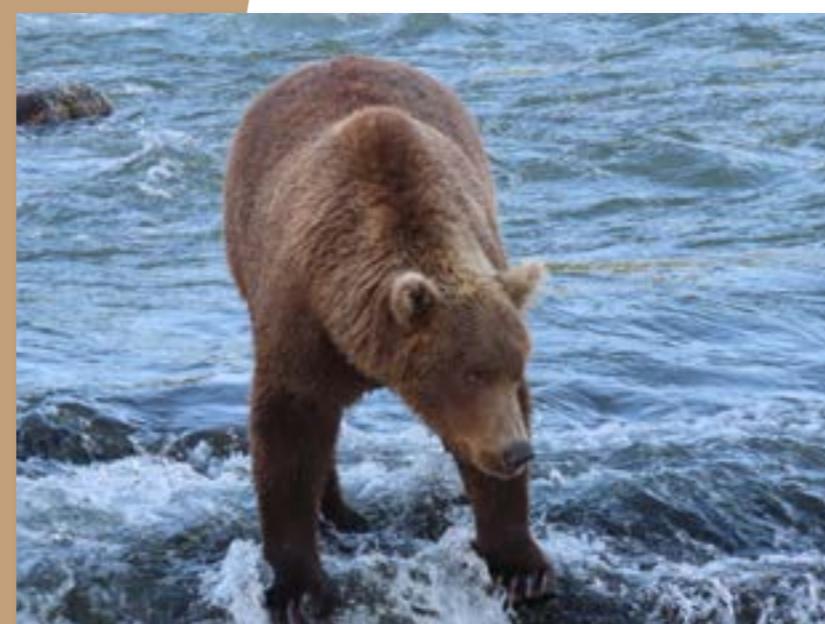
In previous years, he appeared skittish around other bears. In 2021 however, he seemed to be more confident. He was observed playing with other bears and fishing in similar spots that #708 typically fishes at such as the cutbank.



August 2021



July 2021



September 2021



September 2021



July 2018



August 2019



September 2018

# Learn More About the Brooks River Bears

There are many resources available to those who wish to learn more about Brooks River, the brown bears who inhabit it, and Katmai National Park and Preserve.

**Katmai Terrane Blog**— Learn about Katmai through the eyes of a National Park Ranger. Blog posts range in topic from bears to bugs and everything in between.

**Katmai Park Webpage**— Get info on trip planning to Katmai,

learn about bear safety, download a free copy of the park's official guide, and more.

**Explore.org Bear Cams and Chat**— During summer and fall, watch live wild brown bears fish for salmon, compete for mates, and struggle to survive. During winter months, watch highlights from the previous season. Scroll down and discuss what's happening on the bear cams with other viewers in the chat section. During summer, engage with live ranger programs that cover a wide variety of Katmai topics.

**Explore Bears YouTube Channel** (explore.org)— The best place to find live ranger chat replays and hours of “play-by-play” re-runs.

**Katmai Social Media**— Facebook, Twitter, Instagram, Flickr, YouTube—Stay up to date with what's happening in the park and learn more about Katmai's abundant natural and cultural resources.



A bear swimming at sunrise in Brooks River.  
Photo courtesy of A. Willingham.

