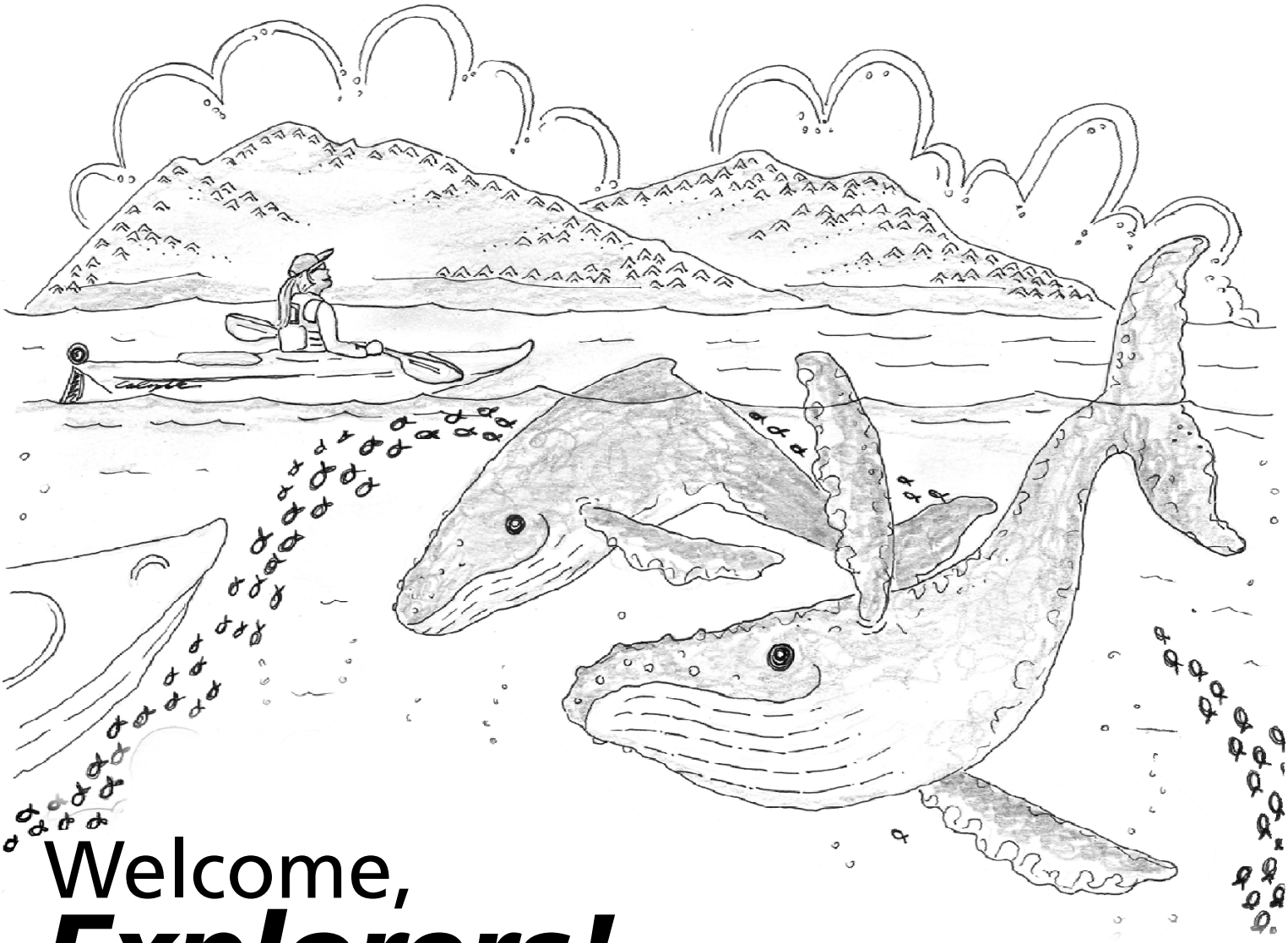
Glacier Bay

National Park and Preserve
National Park Service
U.S. Department of the Interior

Junior Ranger
Adventure Guide

your name: _____



Welcome, ***Explorers!***

We need ***your*** help to protect Glacier Bay National Park and Preserve! Glacier Bay is a wild place, where we can learn about ourselves and nature. *Use this guide to have fun and explore*. What you discover will help you to become a Junior Ranger: someone who learns about and protects national parks and other wild places. The checklist below will help you track your learning adventures. When you think you're finished, ask a park ranger to check your work. Are you ready to be a Junior Ranger?

COMPLETE YOUR ADVENTURE GUIDE

- ◯ ***BEAR CUB LEVEL*:** FIVE BOOK ACTIVITIES
- ◯ ***PUFFIN LEVEL*:** EIGHT BOOK ACTIVITIES
- ◯ ***HUMPBACK LEVEL*:** TEN BOOK ACTIVITIES
- ◯ ***JUNIOR RANGER ALL-STAR*:** THE WHOLE BOOK

COMPLETE AT LEAST ONE ACTIVITY

- ◯ ATTEND A RANGER PROGRAM _____
- ◯ COMPLETE A STEWARDSHIP PROJECT _____
  ASK A RANGER HOW YOU CAN HELP
- ◯ SHARE A GLACIER BAY STORY WITH FRIENDS AND FAMILY

GO ON AT LEAST TWO ADVENTURES

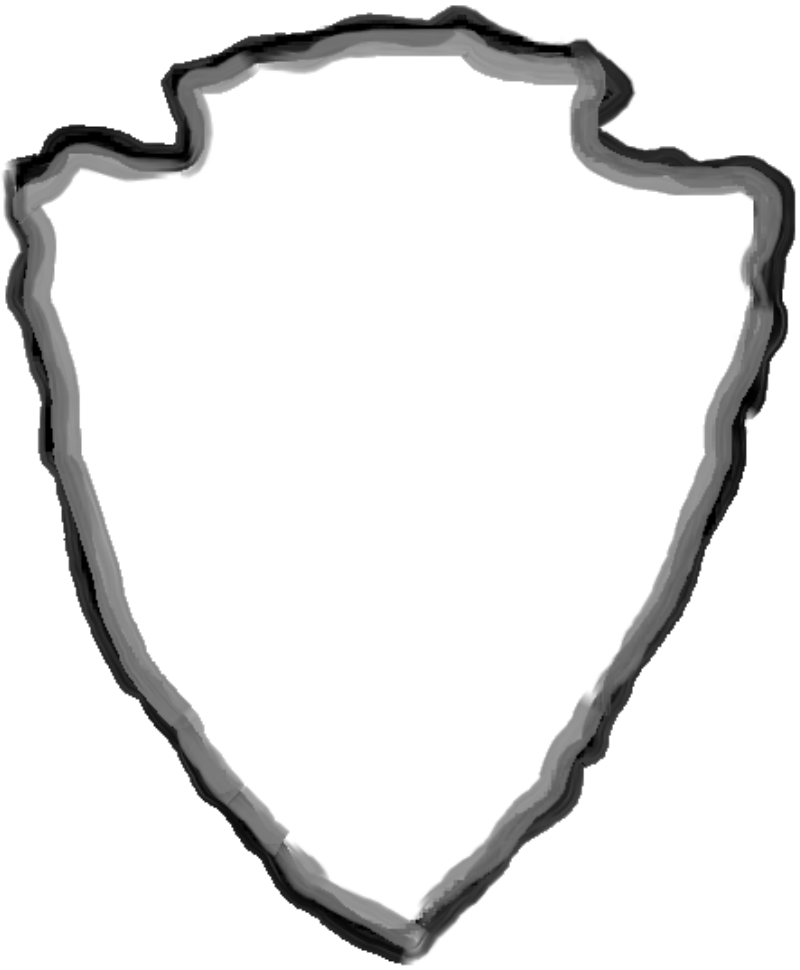
- ◯ TAKE A WALK
- ◯ EXPLORE BY KAYAK
- ◯ SPEND 10 QUIET MINUTES OUTSIDE
- ◯ SPEND THE NIGHT IN GLACIER BAY
- ◯ VISIT THE TRIBAL HOUSE
- ◯ EXPLORE THE SHORE
- ◯ OBSERVE SOMETHING WITH BINOCULARS
- ◯ TRAVEL BY BOAT
- ◯ OTHER _____

1 Your National Park

What do you care about?

Welcome to Glacier Bay National Park and Preserve! In the United States of America there are over 400 National Park Sites, from the Statue of Liberty, to Yellowstone, to the White House! Each is a place so important we work together as a nation to protect it. The National Park Service keeps National Parks wild, beautiful, and safe.

- **The National Park Service arrowhead represents everything that we protect:** an arrowhead for history, a sequoia tree for plants, a mountain for landscapes, a bison for animals, and a lake for water. *Design your own patch below by drawing what you care about most in Glacier Bay!*



- **What is your favorite part about Glacier Bay?** _____

_____

2 Bay in Place of the Glacier

Can you reveal the mystery of the bay?

Glacier Bay was made by ice. It was carved by a giant glacier that flowed from the mountains down to the sea. Glaciers continue to shape Glacier Bay. Below, **read about** the people who saw ice shaping the bay. Based on their clues, follow the directions to **complete the Glacier Bay timeline map on the right.**

My Tlingit Family

calls this place Sít' Eeti Geiyí, which means "the bay in place of the glacier." Our people lived here before there was a bay. Our stories tell of the glacier that pushed over the land all the way to the sea and forced us to leave. The land changed, but our connection here remains.

★ **Find the dotted line showing how far the glacier stretched past Bartlett Cove into Icy Strait. Write 1750 next to the line. In 1750, that's where the glacier stopped!**

The HMS Discovery,

an exploring ship captained by George Vancouver, reached the entrance of Glacier Bay in 1794. It only made it as far as present day Bartlett Cove. There, a huge wall of ice rose above them.

★ **Find the dotted line closest to Bartlett Cove. This shows where they saw ice. Write 1794 next to the line.**

Naturalist John Muir

visited Glacier Bay in 1879. He paddled 55 miles past where ice stopped Vancouver. Muir saw the Reid Glacier and then ran into the wall of ice. He camped on a rock that stuck out from the glacier. Today we call that rock Russell Island.

★ **Circle Russell Island and write 1879 by the dotted line that crosses through it.**

What does your story reveal about Glacier Bay?

★ **Circle the glaciers *you* saw on your trip to Glacier Bay.**

★ **Draw your route on the map!**

★ Imagine coming to visit 50 years in the future. **What do *you* think will change?** What could you research to make a clearer prediction?

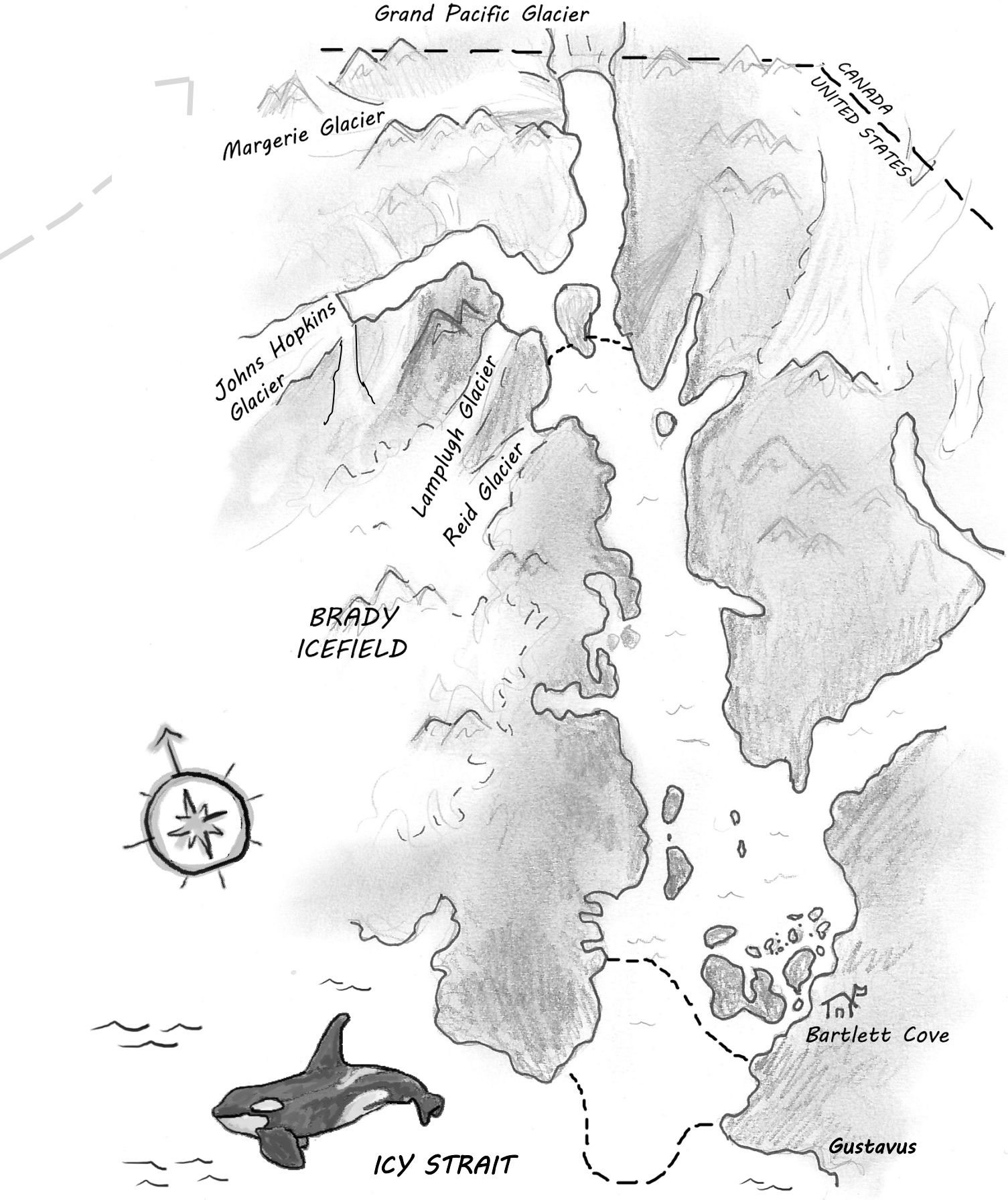
_____

_____

_____

your face

GLACIER BAY NATIONAL PARK

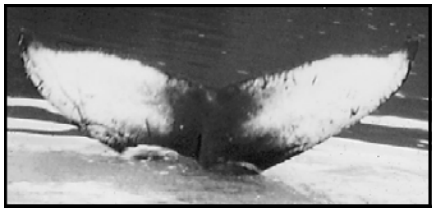


3 Whale Tales

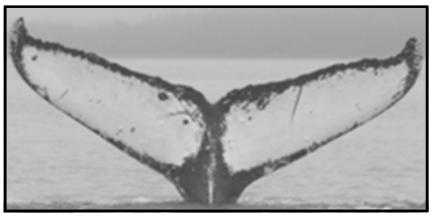
What tales can a whale tail tell you?

Every humpback whale has markings on its flukes, or tail, as unique as a human's fingerprint. Our whale researchers photograph whale tails, so that we can learn more about the whales of Glacier Bay, including where they go, who they're related to, and how old they are.

○ **Match the whale tails!** Below are three pairs of matching whale tails. Draw a line between the matching flukes. Be careful! One is tricky!

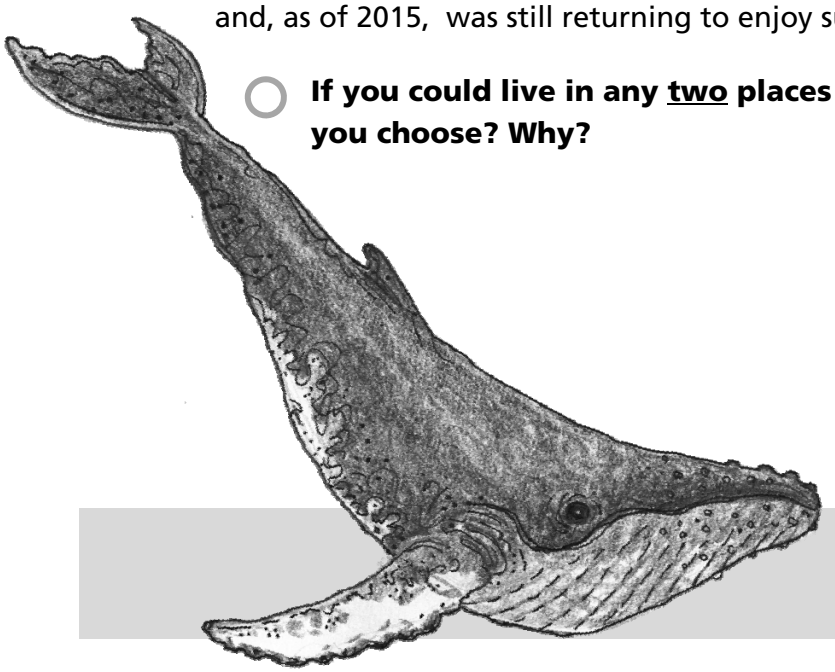


Garfunkle as a calf 1974



Glacier Bay's humpbacks migrate twice a year. Some spend the summers in the cold food-rich waters of Glacier Bay and in the winter swim to warmer places like Hawaii, Mexico, or Japan to mate and give birth. One whale, Garfunkle, was first spotted here as a calf in 1974, and, as of 2015, was still returning to enjoy summers in Glacier Bay.

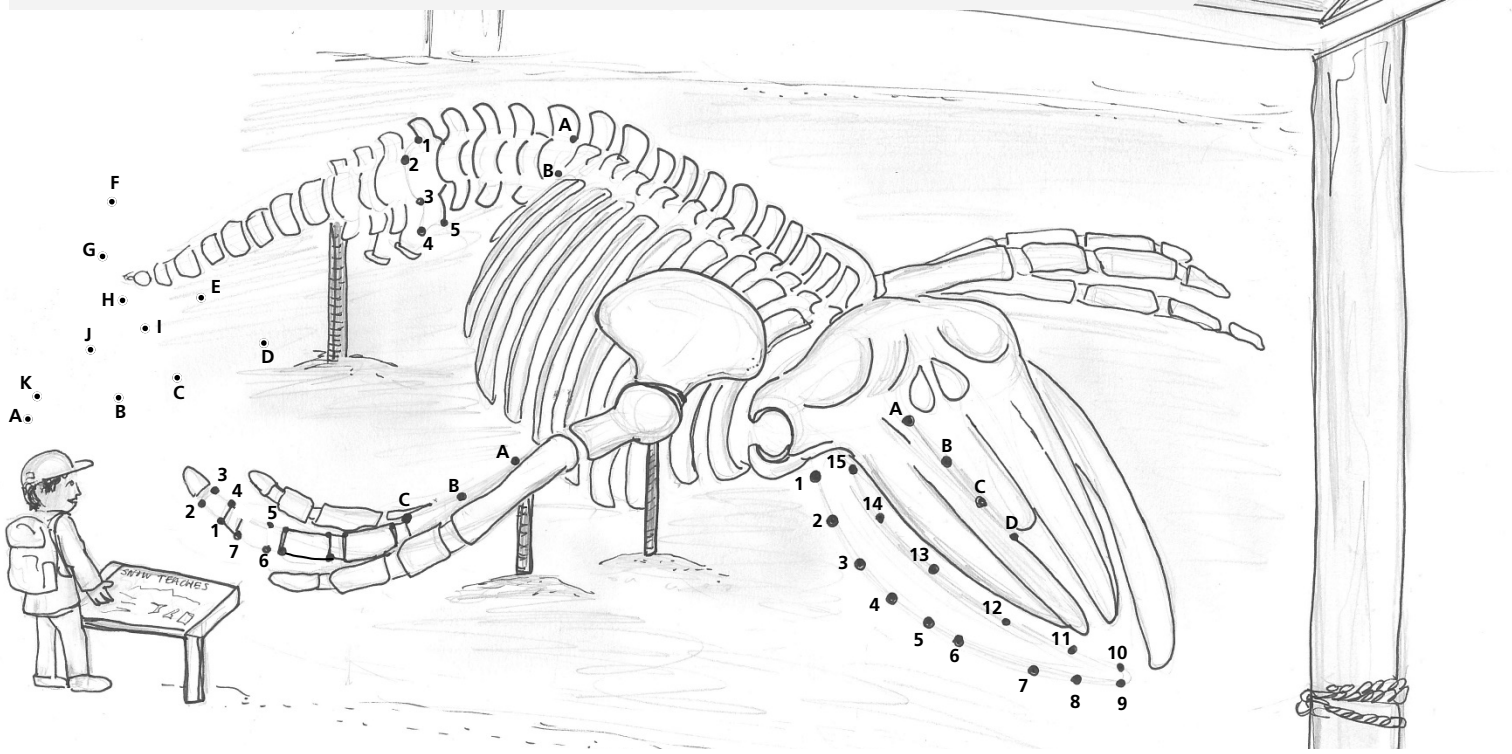
○ **If you could live in any <u>two</u> places in the world, where would you choose? Why?**



Garfunkle calf photo: Charles Jurasz, Sea Search Ltd.
Other photos: NPS Photo taken under National Marine Fisheries Research Permit No. 15844

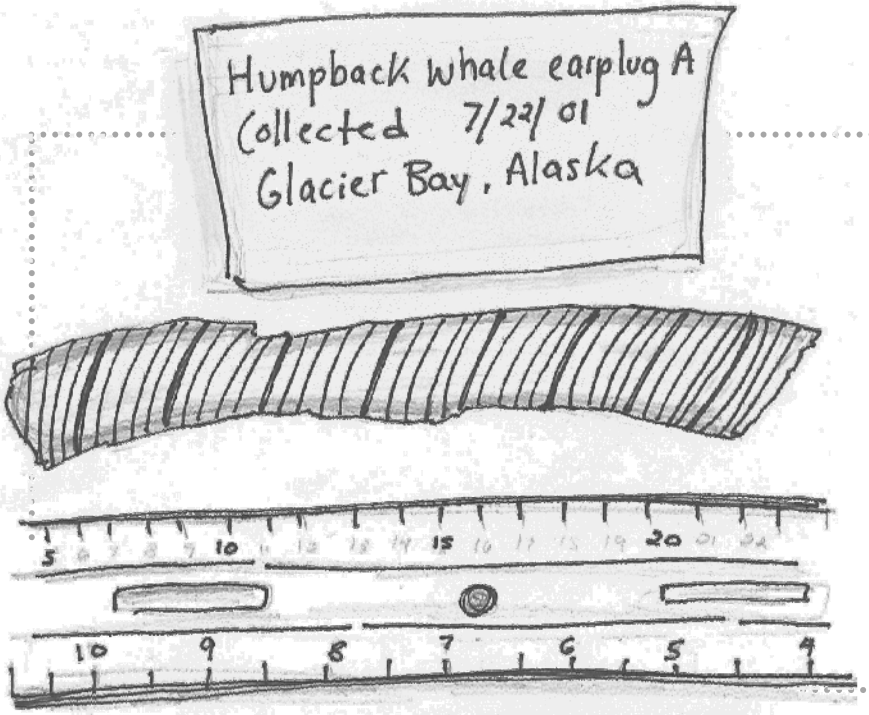
4 "Snow" Teaches

Can you put the puzzle together?



"Snow" the whale was a grandmother and a part of the Glacier Bay family. When she died in 2001, a team of rangers, scientists and volunteers worked for thousands of hours to clean her bones and put her back together. Today, she is on display in Bartlett Cove. Visit her, study her skeleton, and see what you can learn!

○ **Connect the dots** to reconstruct Snow's skeleton and show where her tail would go.



Mind your own earwax! How long can a humpback whale live? Ask their ear wax plugs! Snow's waxy earplug helped scientists realize that one wax layer was equal to one year of a hump-

○ **Count the layers of earwax** to find out how old Snow was. Focus on the *spaces between* the lines.

_____ **years**

5 A Story of Homecoming

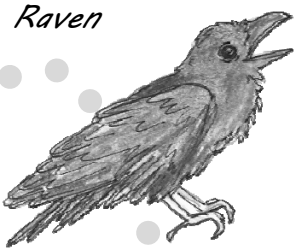
How do you tell your story?

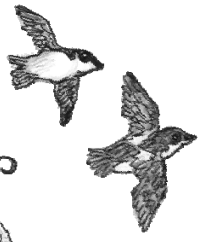
You are in the homeland of the Huna Tlingit. They have many, many stories of adventures and events that occurred here. If you visit the Huna Tribal House and look carefully, you can find clues to the characters, creatures, and clans that are part of the Tlingit's history in Glacier Bay. Their story lives on the walls, panels, posts, and totem poles of the House.

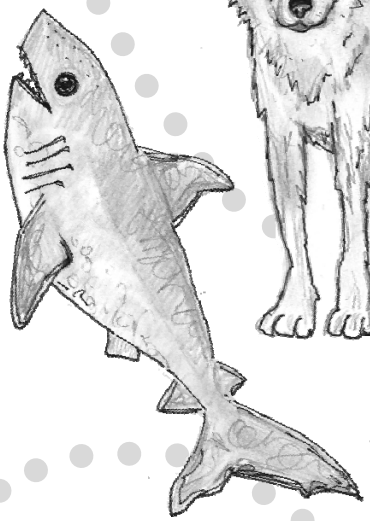
- **If you are in Bartlett Cove, you can visit the Huna Tribal House.** Below are just a few of the animals shown in the artwork there. As you explore the Tribal house, mark off the animals as you find them. Some may be found in the screen design on the next page.

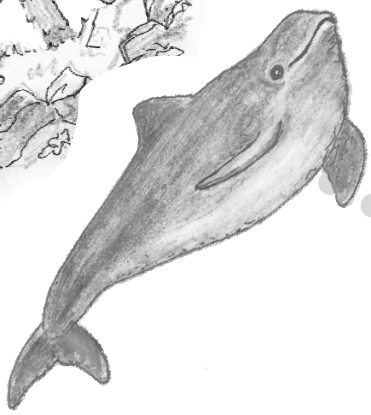
Raven

Eagle









- **What animal represents you?** Why is that animal important to you? _____

_____

Huna Tlingit Tribal House Screen

- **The design above isn't only a work of art.** It's an illustrated history of the Huna Tlingit. It shows symbols that represent the four main clans of Glacier Bay, their history, and hopes for the future. What kinds of people, animals, or places do you think might be important in this story? Share your ideas with a friend or family member.

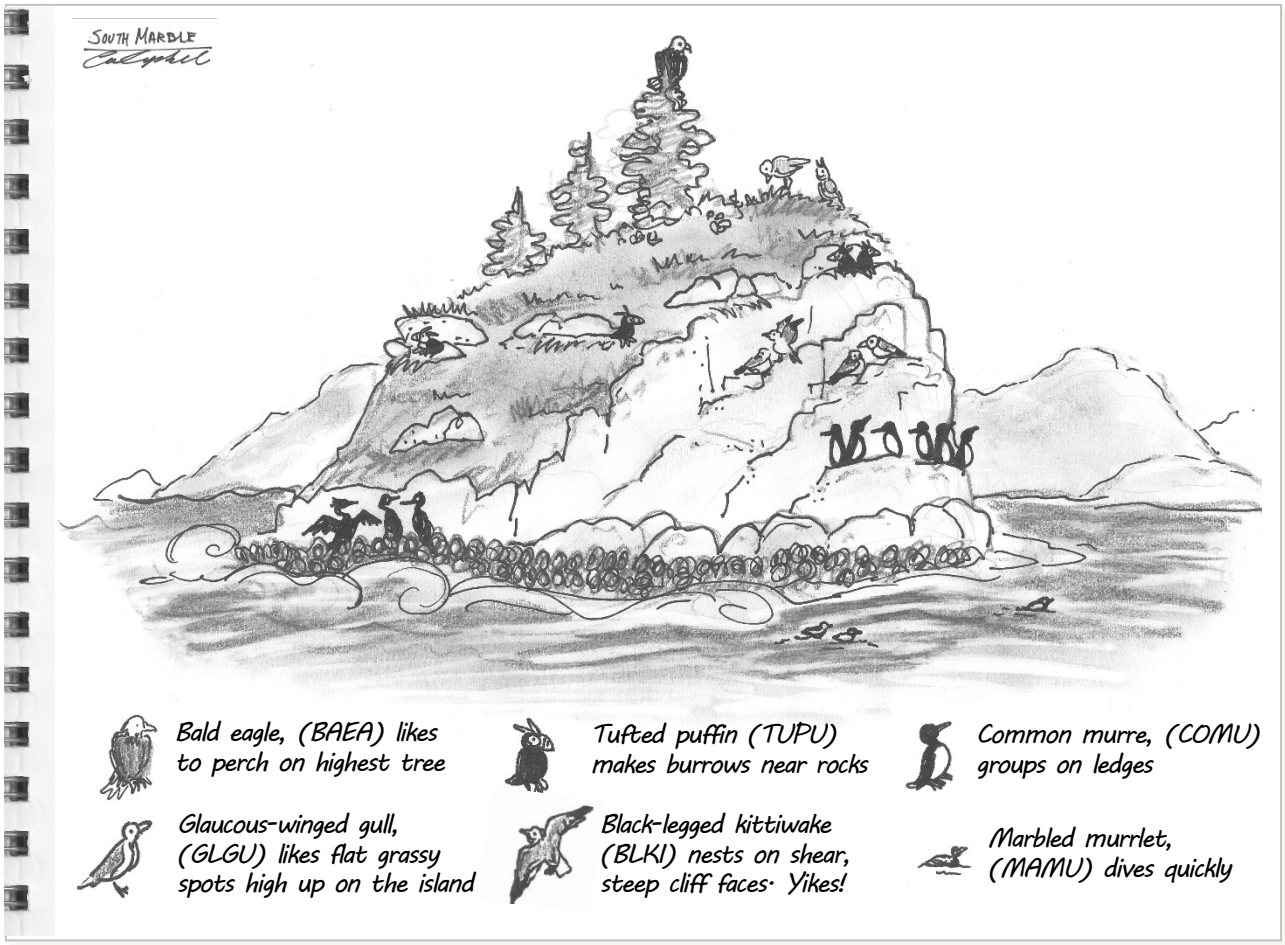
- **What's your family story?** What major events are important in your family's history? Who or what would you draw to represent who you are, where you come from, and where you are going? Draw your own design below!

6 For the Birds

Who's who on South Marble Island?

Glacier Bay provides habitat, or homes, for many different birds. With so many birds, it can be hard to tell who's who! One birding trick is to know where different birds hang out.

Can you identify the birds on South Marble Island? Below is a ranger's sketch of what she saw at South Marble Island. Use her notes to identify the birds in the sketch. *Next to the birds in her drawing, write the four letter birder shorthand name.'*



Did you observe any of these birds? *Circle the birds you saw in Glacier Bay.*

Glacier Bay is home for many different birds. What do *you* need to survive? Do you and birds need any of the same things? *Write your answer*.

_____

_____

_____

_____

7 The Science of Succession

How do you grow a forest?

William Skinner Cooper is a Glacier Bay Hero! In 1916, he came here to research how life returns to a land when a glacier shrinks away. His research on this new science, **succession,** helped people see Glacier Bay as a living laboratory, a classroom without walls!

Below are four field sketches, drawn every ten years in the same spot.

- **Number the sketches below 1 through 4,** with sketch #1 showing the first observation and sketch #4 showing the oldest, fullest forest.

- **Look outside.** Do you see an old forest with tall dark green trees or bare rocks just left by a glacier? Something in between? *Draw or take notes on what you see* and *label your drawing #1 bare, #2 young, #3 middle, or #4 old growth.*

- **What kinds of animals might live in the landscape you drew?** *Hint: Moose* like young forests with leafy trees. *Deer* and *black bears* like old growth forests. *Brown bears* like open habitat, with small berry bushes.

_____

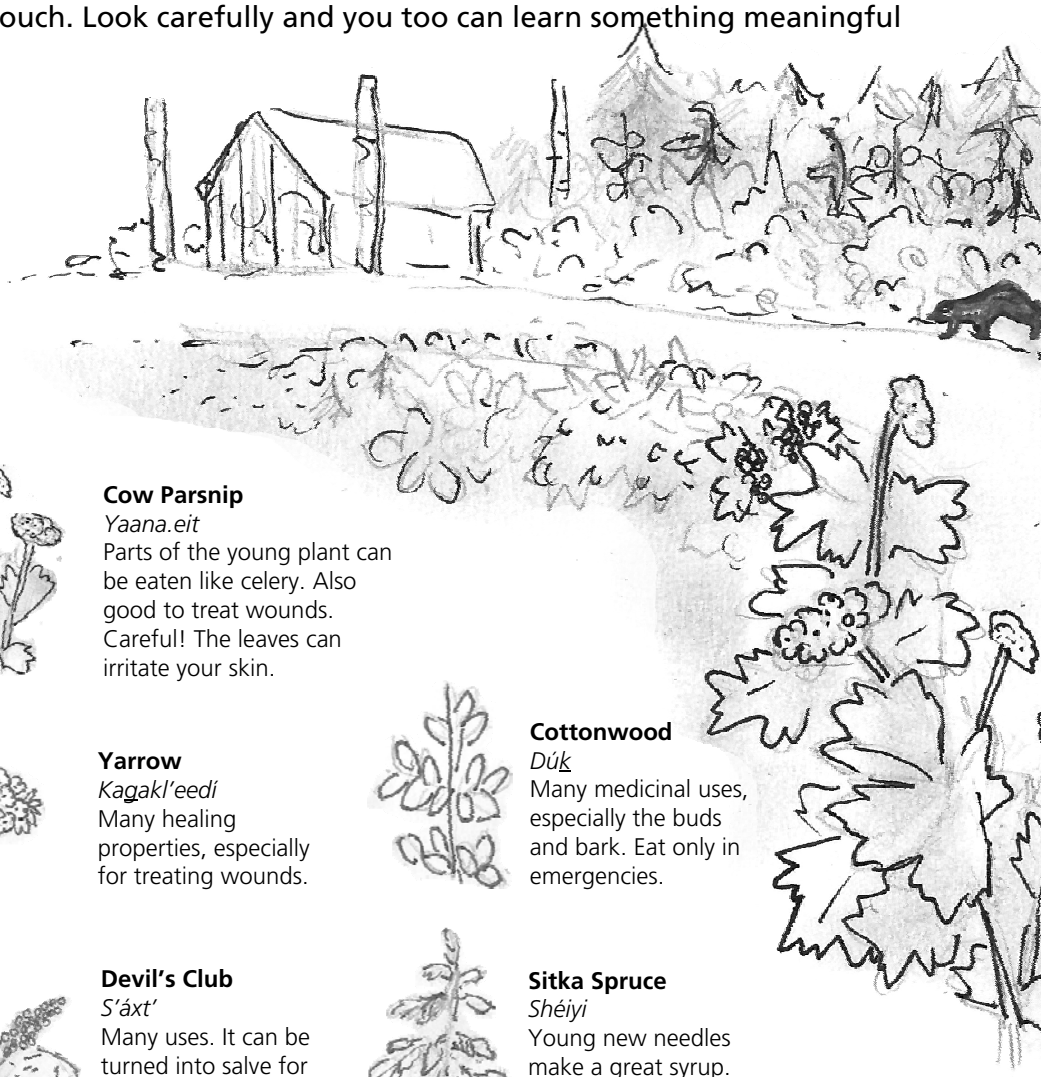
_____

your observation

8 Walk the Tlingit Trail

What will you discover?

The Tlingit respect and understand Glacier Bay, their homeland. Glacier Bay provides what they need. Plants are very important. Some plants are good to eat. Some plants are good medicine. Some plants may be dangerous to eat or touch. Look carefully and you too can learn something meaningful about plants in Glacier Bay.



Baneberry
Kóoshdaa tléikw
Very poisonous!
DO NOT EAT

Beach Strawberry
Shákw
Delicious!

Blueberry
Kanat'á
Great in jams!

Thimbleberry
Ch'eex'
Super yummy.

Salmonberry
Was'x'aan tléigu
Great fresh or preserved for winter.

Chocolate Lily
Kóox
Cooked and eaten with rhubarb to balance bitter taste.

Cow Parsnip
Yaana.eit
Parts of the young plant can be eaten like celery. Also good to treat wounds. Careful! The leaves can irritate your skin.

Yarrow
Kagakl'eedí
Many healing properties, especially for treating wounds.

Devil's Club
S'áxt'
Many uses. It can be turned into salve for healing skin. Careful! Those spines hurt!

Cottonwood
Dúk
Many medicinal uses, especially the buds and bark. Eat only in emergencies.

Sitka Spruce
Shéiyi
Young new needles make a great syrup. Roots can be woven into hats, baskets, and the stays of canoes.

Use the Trail Illustration and notes above to explore and complete the plant scavenger hunt below.

- ○ **Be careful!** Some plants can harm you if you touch or eat them. On the trail illustration, draw a hazard symbol ⚠ next to these plants that you should be extra careful of.
- ○ **Your friend has a scraped knee!** On the trail illustration, circle one plant you could collect as a treatment, and write the name of the plant next to it.
- ○ **Yum!** Glacier Bay has an abundance of delicious berries. Draw a ✓ next to plants you can eat.

Trail Illustration

Walk the Tlingit Trail in Bartlett Cove to look for these same plants and animals!

9 Ice Sculptures

What do you see in the ice?

As glaciers flow and icebergs melt and flip, fantastic shapes form! Find a piece of glacial ice near you to study. *Draw a picture* of the shapes you see, *write a story,* or *guess the size* of ice. Is it as big as a dinosaur?

What you see of floating ice is just "the tip of the iceberg!" Only part about 10%, of the iceberg is above the water. The rest is below!

10 Glacier Recipe

How do glaciers form?

At last count, there are over 1,000 glaciers in the park! Some are huge rivers of ice. Others are much smaller, tucked into shaded valleys.

Although every glacier is different, there's one basic glacier recipe.
Learn about glaciers by organizing the recipe below. Check off the circles as you complete each task.

- ○ Circle the ingredients for a glacier.
- ○ Cross off the salty substance from the ingredients list that melts ice quickly.
- ○ Put the glacier recipe in order by numbering the steps below #1 through #4.

INGREDIENTS

Rain
Mountains
Sea water
Time
Rock
Meltwater
Chocolate
Snow
Gravity

*Start with lots of snow, piled high on a mountainside.*

*Add more snow until the snow at the bottom starts to pack down into glacial ice.*

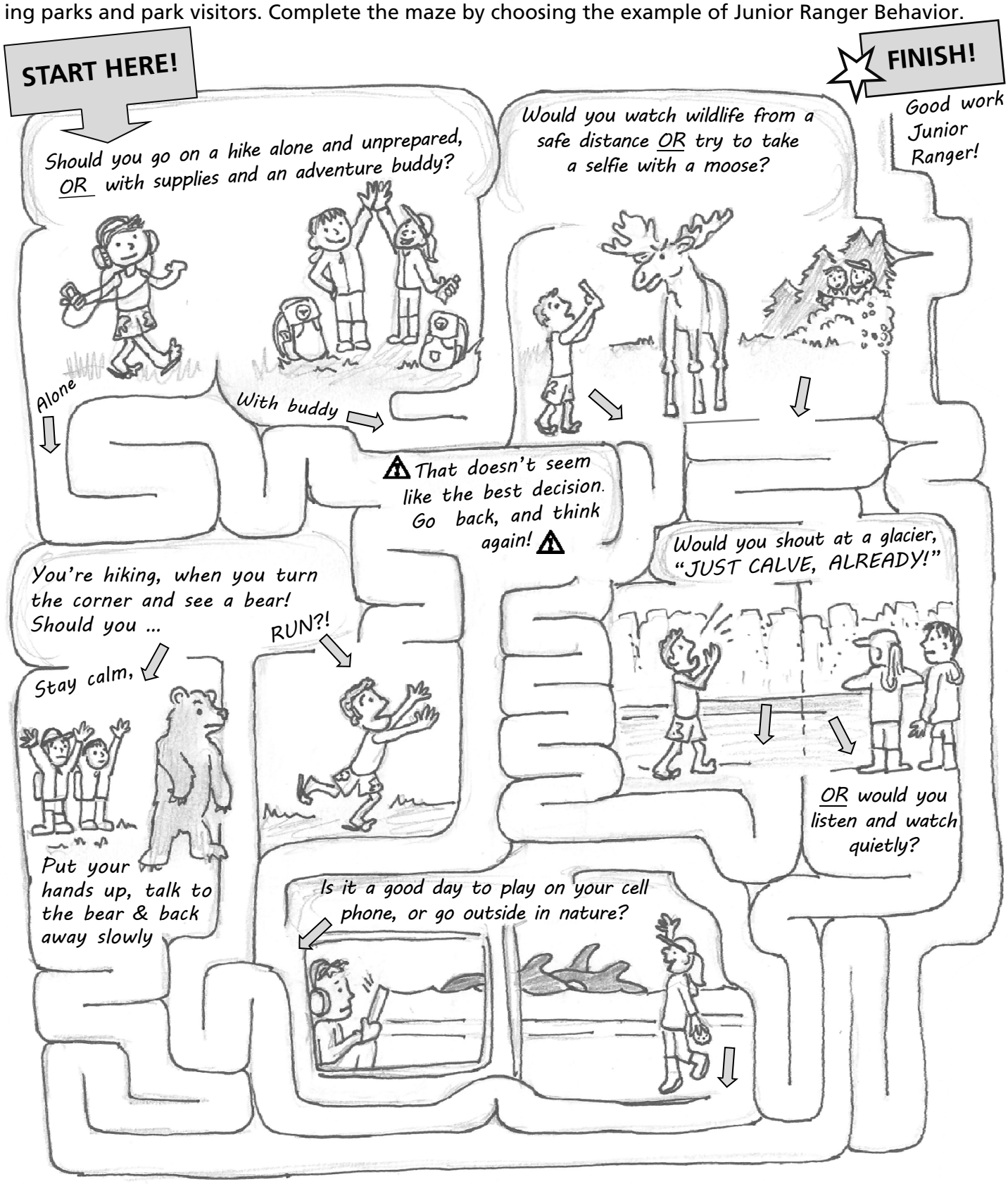
*Finally, use meltwater and gravity to pull the ice downhill, and turn it into a river of ice, a glacier!*

*Next, add a heaping dose of more snow, be careful to keep cold.*

11 Amazing Role Models

Can you make the right decision?

Junior Rangers are role models. They set a good example for others by staying safe and respecting parks and park visitors. Complete the maze by choosing the example of Junior Ranger Behavior.



12

Ranger Report

What kind of ranger would you be?

It takes teamwork to protect a park! All parks have a team of rangers, with a variety of jobs that help the park. Take the quiz below and use the chart on the right to discover the kind of ranger you might be!

1. What kind of books do you like to read?

A. "How to" books
B. Mysteries
C. Historical fiction
D. Choose your own adventure
E. Nature and guide books

2. If you were an animal you would be a:

A. Beaver. You love to build and often create new habitats around your home.
B. Brown bear. You are decisive and resourceful.
C. Humpback whale. You communicate well and prefer the scenery to change with the seasons.
D. Hummingbird. You're always busy and quickly move on to the next task.
E. Raven. You have an independent, curious mind.

3. When you go for a hike you're the one who:

A. Improves the trail. Clearing branches from the path, setting stones in a stream or diverting water is helpful to everyone.
B. Makes sure everyone does their best for conservation. It might not seem like a big deal to step off the trail or drop a gum wrapper, but those little things add up!
C. Starts conversations about nature. There's so much to learn and it's fun to learn together.
D. Plans all of the details. You know the route and packed food, water and emergency gear for everyone.
E. Listens quietly. You can lose track of time wondering about one mushroom or the birds in the sky.

4. The best part about visiting Glacier Bay is:

A. Putting on boots and getting outside
B. Discovering how humans work together to protect people and places
C. Discovering the hidden stories of the plants, animals, and people of the park
D. Sharing the experience with friends and family
E. Recording your wildlife observations

MAINTENANCE. *MOSTLY A'S.*
Who keeps the park safe *and* beautiful? The maintenance division! They fix and maintain the trails, buildings, and other areas we need to enjoy the park.

PROTECTION. *MOSTLY B'S.*
From patrolling Glacier Bay to issuing backcountry permits and responding to emergencies, these rangers protect the park and keep the people who visit safe.

INTERPRETATION. *MOSTLY C'S.*
Interpretation doesn't mean speaking another language; in Glacier Bay it means speaking the language of nature. These rangers tell the stories of the park and help you understand what you see.

ADMINISTRATION. *MOSTLY D'S.*
How do you keep a team of over 100 rangers organized? Park administrators are the behind-the-scenes rangers making sure the park runs as smooth as the waters of the bay on a windless day.

RESOURCES. *MOSTLY E'S.*
How do we know where the whales are, which glaciers are shrinking, or what halibut do in the winter? These research rangers study the park so that we can better understand and protect its natural and cultural resources.

Were your answers all over? There are plenty more careers in the Park Service, from exhibit designers to architects and engineers!

13 Pack Your Kayak

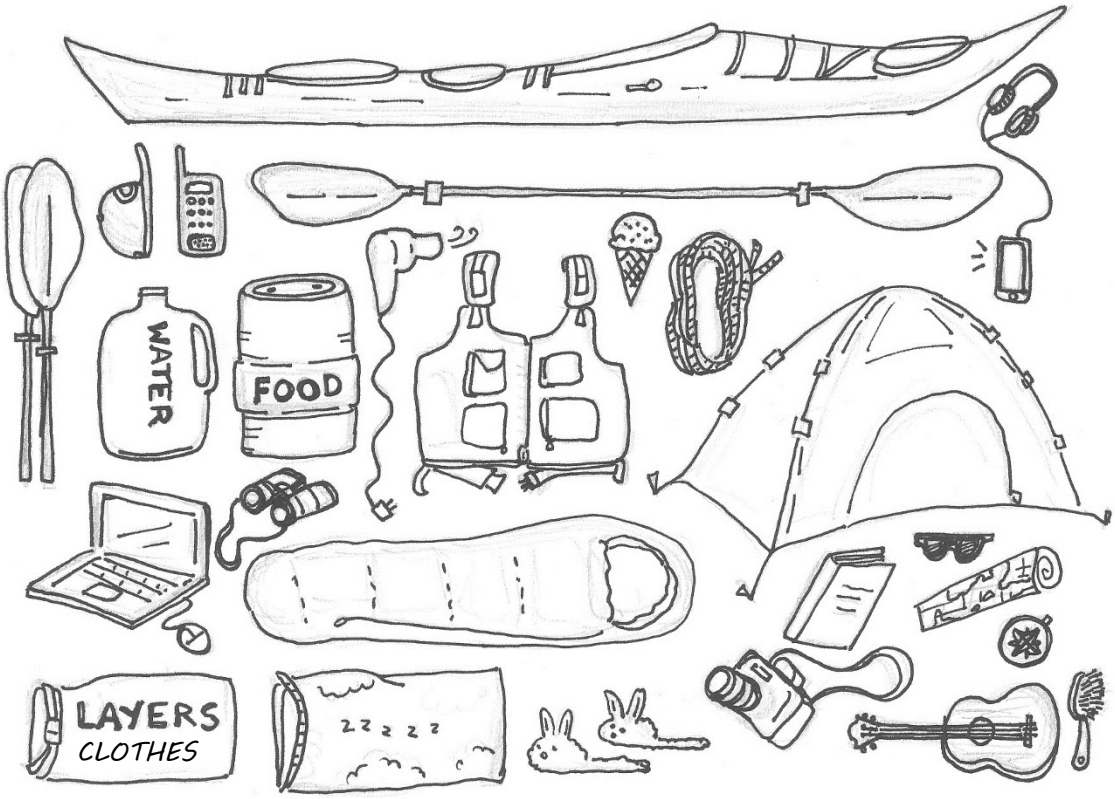
Are you ready for a wilderness adventure?

Glacier Bay National Park has 3.3 million acres of wilderness. In wilderness, human impacts are minimal. There are no buildings, roads, or cars. Bears can freely roam the beaches and puffins can safely nest on the islands.

Kayaking is a great way to experience this wilderness. Whether for a few hours or a few weeks, all kayak adventures require careful planning. Why? Because in wilderness, you will depend upon yourself and your gear...and wildlife depend on you to keep their home safe and clean.

Imagine you're planning for a kayak trip into Glacier Bay wilderness.

- Circle 12 items you will need for a successful wilderness kayak adventure.



- **What tough choices did you have to make?** Was there something you wanted to bring but decided not to? Is there anything not shown above that you think you should bring?

_____

_____

_____

14 Wish You Were Here!

How wild is your wilderness imagination?

When you go into wilderness, you leave behind the lights, noise, and other marks of humans. One reason to go into wild places is to find a quiet place to dream about all that is possible.

○ Imagine a wild trip into the wilderness of Glacier Bay! Ask a friend or family member to help you complete the postcard below.

Ask him or her to think of a word for each blank spot on the post card. Write in each word to complete the story.

— OR —

Hand over your book, and have your friend ask you to think of the words while he or she fills in the blanks. Don't peek at the story before you play!

Dear _____ (name of a friend or relative),

I just finished a _____ (number) day kayak trip into the wilderness of Glacier Bay with _____ (person).

It was _____ (adjective)! Every day, we _____ (past tense verb) our kayaks and slept in a _____ (noun) on the beach.

One day, we saw a _____ (Glacier Bay animal) _____ (verb ending in ing). On the whole trip, we never saw a single _____ (something in a city). The quiet made me feel _____ (feeling word). I can't wait to explore another wild place.

Your friend, _____ (your name)

_____
date

GLACIER BAY NATIONAL PARK ALASKA

_____

_____

_____

_____

*Hints: An **adjective** describes something or somebody. Examples are hot, silly, bumpy, and icy.*

*A **verb** is an action word. Examples are walk, write, and cook. These verbs in the **past tense** are walked, wrote, and cooked.*

15 What's in a Name?

How does language reflect culture?

Many places in Glacier Bay have two names: the one found on the park map, and the name given by the Tlingit. Early explorers often named places after famous people. The Tlingit named places after the things they found (wood, food, etc.), or events that once happened there (celebrations, battles, etc.).

A few examples are below.

GLACIER BAY: Sít' Eeti Geiyí (Sit-ee-tea-gay-YEE) "The bay in place of the glacier"
GEIKIE INLET: Wudzidugu Yé (Woodsy-dook-oh-Yeh) "Place heavily wooded with cottonwood trees"
GLOOMY KNOB: Jánwu Aaní (Juhn-woo-on-NEE) "Mountain Goat's Land"

Pick a place in Glacier Bay that is important to you.

Write its name here.

What would *you* call it, based on your experience?

your drawing or explanation

Pick a place that's important to you, near your home, or somewhere you've visited.

Write its name here.

What special name would *you* give it, based on your experience?

your drawing or explanation

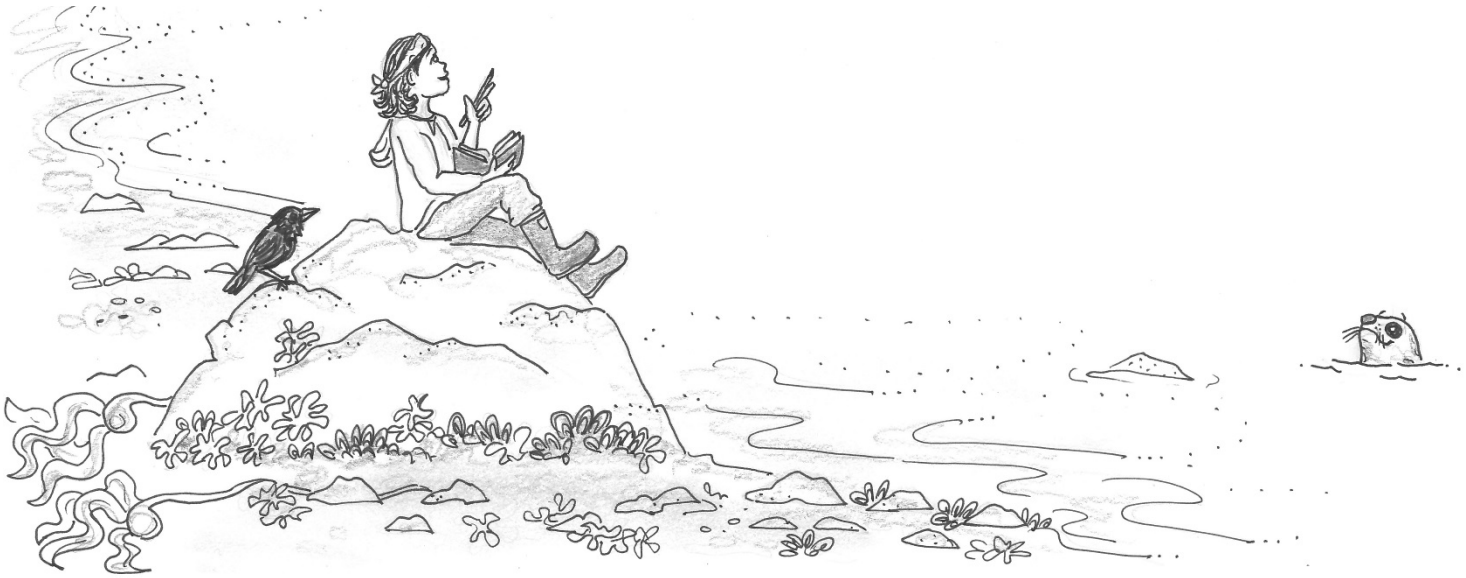
16 My Day in Glacier Bay

What did you experience?

"There was something, too, in the consciousness that so few had ever gazed upon the scene before us, and there were neither guides nor guidebooks to tell us which way to go, and what emotions to feel."
-Eliza Scidmore

Eliza Scidmore was an explorer. As one of the first tourists to visit Glacier Bay, she used her writing to inspire others to seek beauty and adventure. She was the first woman to write for and edit *National Geographic*.

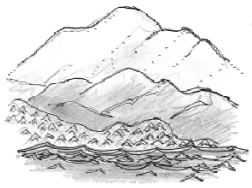
- **Create your own Glacier Bay Journal Entry.** Describe your favorite part of your trip, create a poem, write a story, or draw a picture! Be creative and have fun!



17 Glacier Bay Bingo

What have you experienced here?

Cross off what you've seen or experienced in Glacier Bay. Can you get a Glacier Bay Bingo?


the Fairweathers

devils' club

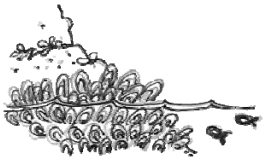
iceberg

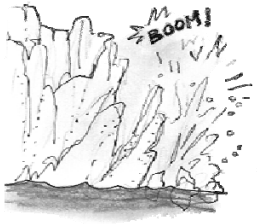
mountain goat

black-legged kittiwake

pigeon guillemot

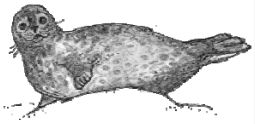
killer whale


mussels



I heard a glacier!

I felt kelp!

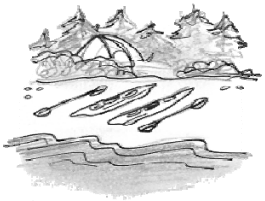

harbor seal

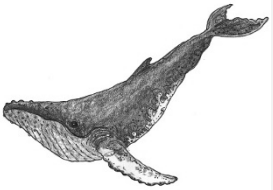
Huna Tribal House

ranger

"Snow" Whale 68's Skeleton

puffin


backcountry campers

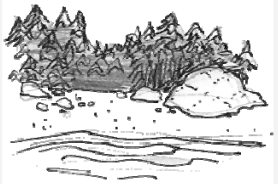

humpback whale

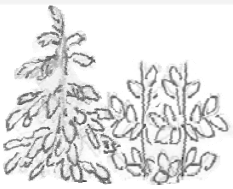
I felt katabatic wind!

I smelled sea lions!

brown bear

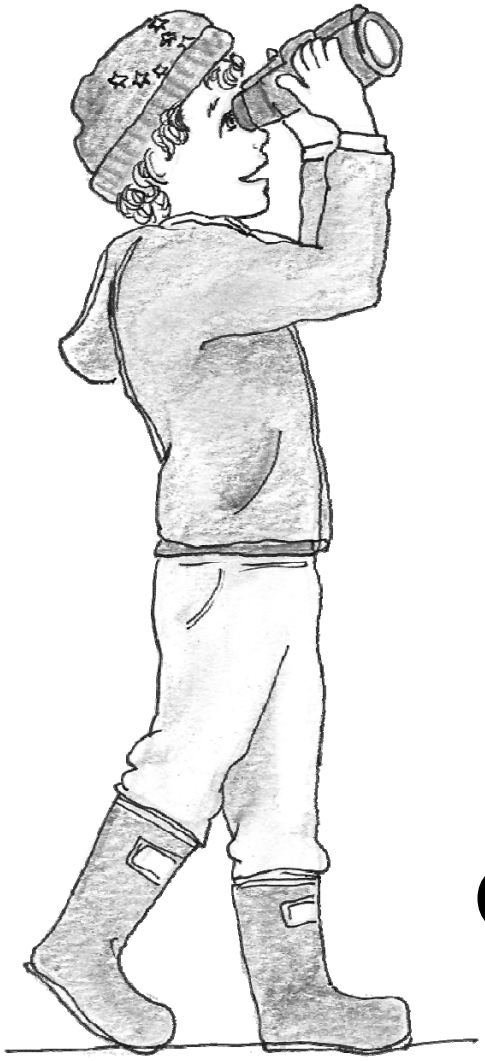
I used binoculars!


glacial erratic


spruce and cottonwoods

I felt rain!

sea otter



Go forth, ***Explorers!***

What's next? After a ranger has checked your adventure guide, you will take the Junior Ranger Oath and receive your Junior Ranger badge! We're counting on you to set an example for others by respecting and learning more about each wild place you visit. Here are a few ideas:

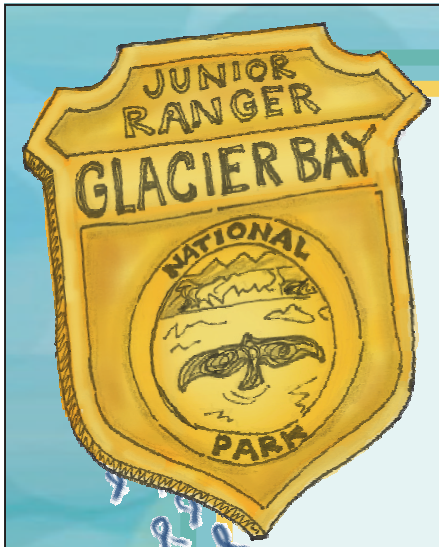
- Learn more about Glacier Bay by checking out our park website: www.nps.gov/glba
- Visit other parks in Alaska, like Denali, Kenai Fjords, Lake Clark, Katmai, Sitka, and Klondike Goldrush
- Discover the National Park Service site or other public land closest to your home
- Become a Web Ranger at nps.gov/webrangers

Developed and illustrated by
Park Ranger Caitlin Campbell.

Thanks to Glacier Bay National Park and Hoonah Indian Association for input and editing.

For more information about Glacier Bay National Park and Preserve contact:

Division of Interpretation and Education
Glacier Bay National Park
PO Box 140
Gustavus, AK 99826
907-697-2230 *www.nps.gov/glba*



Glacier Bay National Park

Junior Ranger

AS A JUNIOR RANGER,

I promise to appreciate, respect, and protect national parks, my community, and the earth.

I will explore and discover the natural world and other cultures wherever I go.

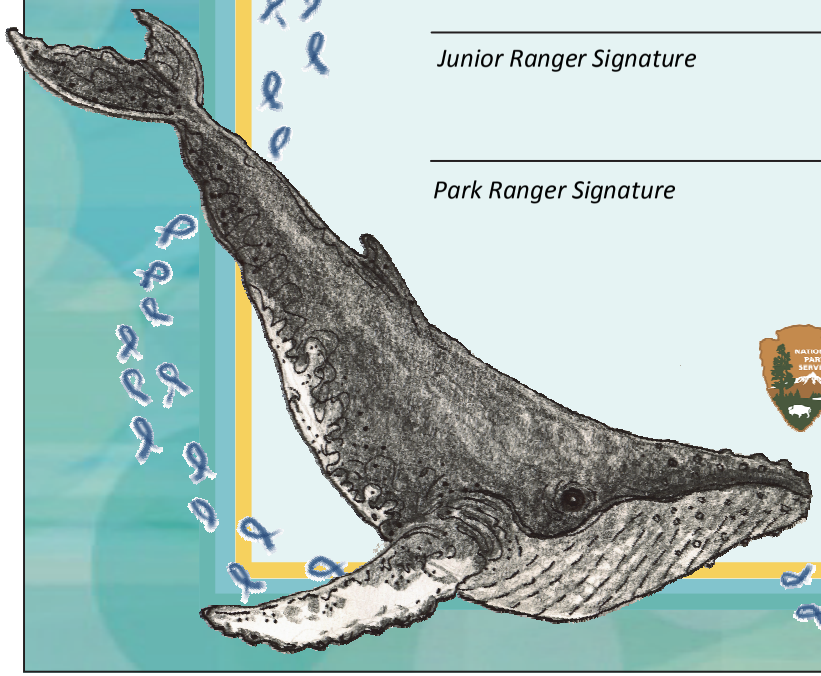
I promise to be safe and be a good example to others.

_____

Junior Ranger Signature

_____ _____

Park Ranger Signature *Date Awarded*



CONGRATULATIONS!

Now we're counting on you to protect your wild lands!