



**US Army Corps
of Engineers®**



Surry Mountain Lake Dam

Junior Ranger Activity Book

How to become a Junior Ranger!

Welcome to Surry Mountain Lake Dam! Would you like to become a Junior Ranger? Junior Rangers explore, protect and learn about the natural world and pass their knowledge on to others. To become an official United States Army Corps of Engineers (USACE) Junior Ranger follow the instructions below for your age group. When completed bring your book to a Park Ranger to receive your official Junior Ranger Badge. Remember, if a task is too tough, ask an adult for help!

Age 6-8: Complete 1 Campground Exploration, 2 Book Activities

Age 9-11: Complete 2 Campground Exploration, 4 Book Activities

Age 11-13: 3 Campground Exploration, 6 Book Activities

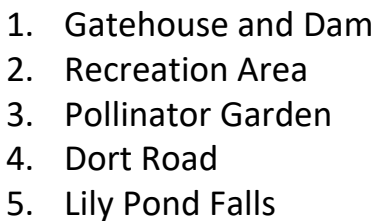
Age 13-15: 4 Campground Exploration, 8 Book Activities

Park and Dam Exploration

- ☐ Gatehouse and Dam
- ☐ Recreation Area
- ☐ Pollinator Garden
- ☐ Dort Road
- ☐ Lily Pond Falls Hike

Book Activities

- ☐ Know Your Fish
- ☐ Leaf Identification
- ☐ Animal Tracks
- ☐ Bald Eagles
- ☐ Wise About Wildlife
- ☐ Surry Word Search
- ☐ NH State Symbols
- ☐ Water Safety
- ☐ Leave No Trace



Gate House and Dam Exploration

Welcome to Surry Dam! Construction of the dam began in August 1939 and was completed in October 1941 at a cost of 2.8 million dollars! The dam is made of many compacted layers of earth, with a stone slope to protect it. The dam is a whopping 1,800 feet long and 86 feet high! The dam helps protect downstream communities on the Ashuelot River, including Keene, Swanzey, Winchester, and Hinsdale from flooding. Surry Mountain Lake can store almost 10.6 billion gallons of water for flood control purposes! Park Rangers control how much water is kept in the lake and released downstream by raising or lowering two 4.5' x 10 gates located inside the granite gatehouse.



























- ◆ Flood Risk Management: The USACE helps control flood risks all over the United States. They take care of over 400 lake and river projects, including hundreds of local flood risk reduction projects now operated and maintained by other agencies.
- ◆ Recreation: The USACE is the leading provider of water-based outdoor recreation in the nation. There are a lot of fun things you can do such as hiking, watching wildlife, swimming, boating, fishing, camping, hunting, and biking.
- ◆ Fish and Wildlife Conservation: By protecting natural resources, the USACE improves our quality of life. They own and manage over four million acres of land that provides critical wildlife habitat. The USACE also helps with the recovery of threatened and endangered species and is a world leader in controlling invasive aquatic plants.

- ◆ How many steps does it take you to walk from the Gatehouse to the end of the dam? _____
- ◆ What is one thing you notice about the dam? _____

Recreation Area Exploration

Welcome to the Surry Dam Recreation Area! Here we have a 600 foot long sandy beach, a boat ramp, a playground, and lots of wildlife to admire! See if you can spot enough of these items to get BINGO.

Bonus points if you can find more! Try going to different locations in the recreation area, like the edges of the beach, the marshy area near the playground, or by the shelters. Remember, be careful and stay with a buddy! Ask your adult for help if you need it.

B	I	N	G	O
 Park Ranger	 Army Corps Castle	 Lady Bug	 Flowers	 Ants
 Frog	 Pine Cone	 Spider Web	 Animal Track Or Scat	 Oak Leaf
 Bee	 Mushroom	Free Space	 Acorn	 Pine Tree
 Life Jacket	 Maple Leaf	 Fishing Pole	 Bald Eagle	 Salamander
 Squirrel Or Chipmunk	 Robin	 Canoe	 Mosquito	 Butterfly

*If you are unable to find some of the items in the recreation area, you may be able to spot them in other areas!

Pollinator Garden Exploration



images & info via University of New Hampshire

Love apples, blueberries, chocolate, cranberries, or coffee? Thank a pollinator. One out of every three bites of food we eat is possible because of an animal pollinator. But pollinators are not just bees! Here in New England, we have bees, butterflies, moths, wasps, beetles, flies, and some special kinds of birds like the ruby-throated hummingbird.

Walk around the pollinator garden and take observations about three pollinators you find. Enter your data and sketch the pollinator in the spaces provided. Remember, do not disturb them!

Date: _____ Time: _____ Weather: _____

Description and Behavior:

Species: _____

Date: _____ Time: _____ Weather: _____

Description and Behavior:

Species: _____

Date: _____ Time: _____ Weather: _____

Description and Behavior:

Species: _____

Dort Road Exploration



image by Adam Natal

Welcome to Dort Road! This is a multi use area preserved by the USACE. The fields here provide habitat for animals like cottontail rabbits, wood turtles, and lots of different birds like the bobolink.



As you walk through the field towards Dort Bridge, notice the bird boxes throughout the field. These bird boxes provide homes for cavity nesting birds. The birds commonly found in the boxes here are wrens, bluebirds, and swallows.

How many bird boxes can you count? _____

How many different kinds of bird can you see? _____

Lots of cool, important animals that are threatened by human activity live here at Surry Mountain. Park Rangers and Junior Park Rangers do our best to keep them protected by preserving their habitats.



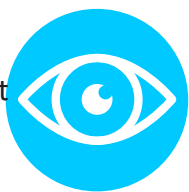
This is a nighthawk! They are just one of the endangered species that feel safe enough at Surry to make it a home. Other endangered species found at Surry include the Northern long-eared bat and Eastern small-footed bat.

Lily Pond Falls Hike Exploration

Welcome to the hike from Dort Road to Lily Falls! If you choose not to go up the mountain towards Lily Falls, the trail will lead you back to the dam. Make sure to go with a buddy or an adult. Happy exploring!

Taste

only the things that you brought with you, like your lunch or snacks.



Look

for trees, flowers, other plants, animals (including birds and fish) and rocks.

**FIVE
HUMAN
SENSES**



Touch

things around you, like the bark of a tree, a cone, a flower, a leaf or a rock. But remember, "leaves of three, leave them be."



Poison
Ivy



Poison
Oak



Smell

things such as a flower, a leaf, a cone, the bark of a tree, the air, or soil.



Listen

for sounds of the air, trees, animals, or water.

◆ Describe something you saw: _____

◆ Describe something you felt: _____

◆ Describe something you heard: _____

◆ Describe something you smelled: _____

Know Your Fish

Brook Trout: The coloration of the brook trout is very distinct and beautiful. The back of the brook trout is dark olive-green to dark brown, sometimes almost black. Brook trout also have silver and red spots with blueish halos around them along the sides of their body. Brook trout like to live in cold, freshwater rivers, streams and lakes that have cover like rocks and woody debris, for them to hide under.

Largemouth Bass: The color of a largemouth bass varies depending on the type of water they live in. It is generally an olive-green colored fish with a dark horizontal stripe along each side and a whitish belly. The largemouth bass is the most popular fish in the United States with about 30 million people that fish for it.

Bluegill: The body of a bluegill is dark green in color and oval shaped with dark bars running vertically down its sides. Behind each eye is a black ear flap. The belly of a female bluegill is yellow, and the belly of a male is a rusty red color. Bluegill is one of the easiest fish to catch but remember to use a very small hook because its mouth is not very big.

American Eel: American eels are slender with snake-like bodies that are covered with a mucus layer, which makes the eel appear really slimy! The eel can be olive green, brown, to greenish-yellow with a light gray or white belly. American eels hunt predominantly at night, and during the day they hide in mud, sand, or gravel very close to shore, at depths of roughly 5 to 6 feet.

Bullhead Catfish: Catfish are smooth with no scales and their entire body is covered with taste buds. The bullhead catfish can be yellow to olive, brown, mottled gray, or black. The belly is usually a yellow color. The caudal (tail) fin is rounded and unforked and they have whisker-like organs around the mouth to help them find food. Bait for catfishing includes night crawlers, chicken liver, grasshoppers, minnows, cut bait, stink bait, cheese, and hot dogs!

Now that you know a little bit about a few of the fish found around the United States and in Surry Lake, can you identify them? Write the name of the fish under each picture.



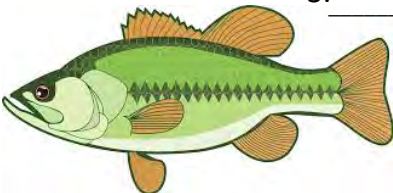
1. _____



2. _____



3. _____



4. _____



5. _____

Leaf Identification

Identify the leaves by writing the number of the leaf next to the name of the tree the leaf belongs to. See how many of these trees you can find in the different areas of the park!

___ Aspen

___ American Elm

___ White Ash

___ Red Maple

___ Sycamore

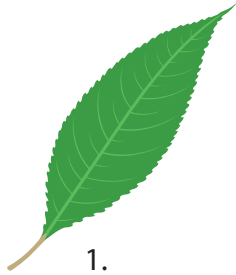
___ Willow

___ Flowering Dogwood

___ Red Oak

___ White Oak

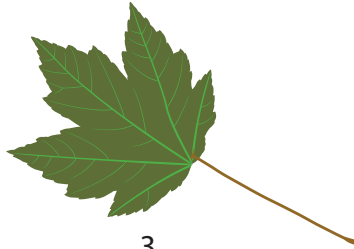
___ Black Cherry



1.



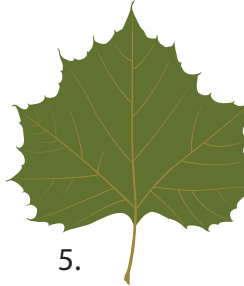
2.



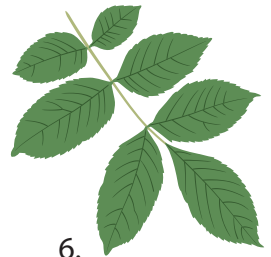
3.



4.



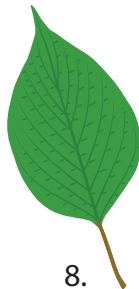
5.



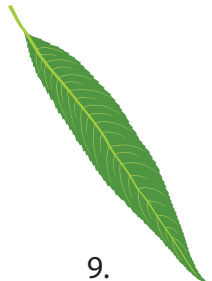
6.



7.



8.



9.



10.

Animal Tracks

Animal tracks are evidence of wildlife that live in the area. Match the animal's picture to its name, then match the name to the animal's track. The first one is done for you as an example. Good luck!



White-tailed Deer: 1-E

Raccoon:

Muskrat:

Mink:

Bobcat:

Mallard Duck:

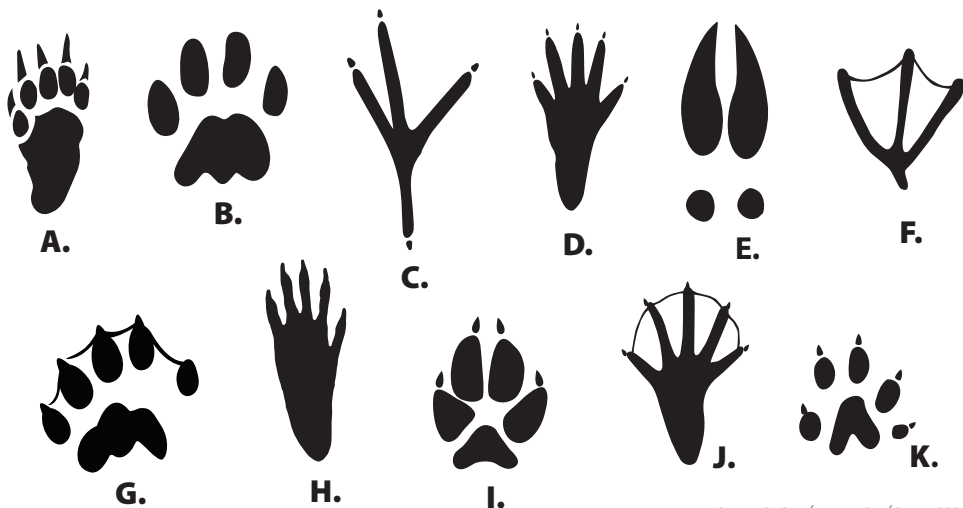
Striped Skunk:

Beaver:

River Otter:

Red Fox:

Great Blue Heron:



ANSWERS: Deer 1-E, Bobcat 6-B, Raccoon 4-H, Muskrat 3-D, Skunk 10-A, Mink 9-K, Duck 5-F, Beaver 8-J, Otter 2-G, Fox 11-I, Heron 7-C

Bald Eagles

The bald eagle is the national symbol of the United States. They have made an amazing recovery from the brink of extinction. There is even a pair nesting at Surry Lake! For this activity, complete the problems in the eggs, then fill in the "Amazing Eagle Facts" blanks by matching the egg number with the fact number.



Amazing Eagle Facts

1. After _____ years, their head and tail turn white.
2. Adult bald eagles may weigh about _____ pounds.
3. On average, they stand _____ inches tall.
4. An adult eagle's wingspan may be up to _____ feet!
5. Eagles live to be about _____ years old.
6. Eagles have up to _____ feathers.
7. They can reach diving speeds (flying downward) of up to _____ miles per hour!
8. Their nest may be up to _____ feet in diameter
9. Their nest can weigh _____ pounds or more.

1
 23
 -18

9
 $20 \times$
 $50 =$

2
 $9 \overline{)126}$

8
 $91 - y = 81$

3
 $x \div 4 = 8$

7
 $12.5 \times 8 =$

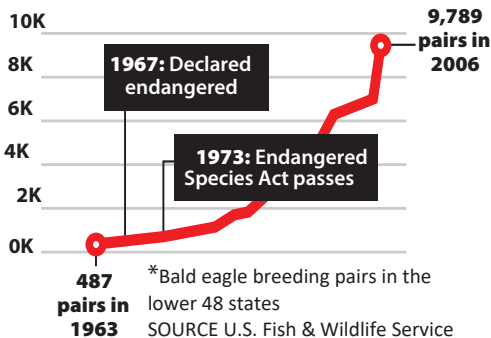
4
 4.50
 0.63
 $+2.87$

5
 $2+6+9+13=$

6
 $1400 \times 5 =$

American Success Story

Bald eagles were delisted as endangered in 2007.



Wise About Wildlife

Surry Mountain Lake is home to many different kinds of animals. Lots of people go out in to nature hoping to see wildlife. It's important to remember that these animals are wild. They need lots of space and healthy habitat to find natural food. We need to be respectful of animals and their needs while visiting their home. We are just visitors.

Directions: Circle the Grey words that best complete the sentences.

If an animal changes its behavior because of your presence, you are too close / goofy looking / smelly.

While in nature it is never / always / sometimes okay to feed human food to wild animals.

Bears look under rocks in hopes of finding potato chips / insects / peanuts.

When you're hiking in bear country, you should hike quietly / make noise / wear perfume to warn bears that you are entering their space.

The place where an animal lives is called its habitat / house / castle.

Park rangers care for wild animals by putting them back into their cages / picking up trash in their habitat / giving them sweaters.

The best thing we can do to help wild animals survive is teach them to dance / protect their habitat / take them to dinner.



Your yummys are not good for our tummies!!

Surry Mountain Dam Word Search

You have learned lots of different words having to do with the dam and park. Find some of these words in the word search below. If you need help, ask a friend or an adult! Use your new ranger knowledge to explain to them what the word means.

Birdbox

Preserve

Pollinator

Downstream

Upstream

Gatehouse

Army Corps

Habitat

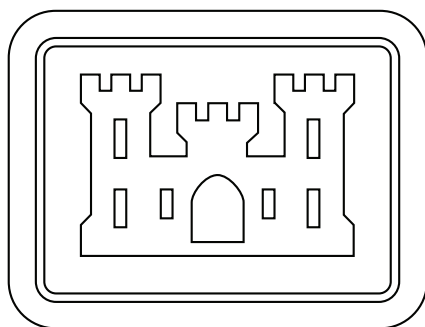
Flood Control

Endangered

Water Safety

Junior Ranger

T	X	B	E	J	C	P	O	H	S	H	R	H	O	G	P	M	O	Q	F
U	Z	I	R	S	O	A	A	P	W	E	V	E	A	Q	G	A	G	X	L
K	N	R	C	E	T	R	R	J	S	B	N	Q	M	B	D	E	Q	Y	O
O	R	D	X	T	G	E	A	U	F	D	S	Z	Y	R	I	R	M	Z	O
U	G	B	Q	N	S	R	O	T	A	N	I	L	L	O	P	T	H	K	D
E	H	O	S	E	E	H	W	N	Y	A	L	X	A	X	R	S	A	N	C
M	X	X	R	H	E	L	G	X	I	R	T	A	R	A	K	P	X	T	O
I	M	V	R	T	M	E	E	O	F	J	C	W	L	D	R	U	I	Y	N
K	E	A	A	E	R	Y	T	E	F	A	S	R	E	T	A	W	V	U	T
Z	T	G	E	E	G	W	M	S	S	R	X	N	R	N	C	M	S	R	R
A	Y	E	D	R	G	N	N	V	A	F	T	L	X	L	P	C	M	J	O
Q	H	H	C	D	T	H	A	D	K	V	F	F	E	C	C	S	A	N	L
O	Q	O	S	B	G	S	O	R	J	A	R	M	Y	C	O	R	P	S	B
A	U	C	U	B	X	Y	N	V	R	A	E	W	C	J	H	V	O	G	H
T	R	E	W	I	O	O	C	W	S	O	P	F	F	K	Q	T	C	U	A
M	W	G	A	Z	V	K	F	D	O	N	I	A	U	B	X	U	I	K	U
L	Y	Q	T	T	L	U	N	W	G	D	W	N	J	O	A	D	R	A	Z
T	U	E	J	V	R	T	A	W	C	W	Y	F	U	Z	A	Q	Y	U	Q
Y	M	O	X	V	Q	R	K	J	Q	G	C	I	D	J	X	S	T	G	H
N	R	T	R	M	H	P	B	M	F	A	Y	N	T	D	U	T	M	D	N
W	O	I	E	X	M	U	L	N	X	L	Z	Z	K	S	A	S	B	H	F
P	M	X	M	K	M	G	N	O	R	E	Q	P	S	Y	A	D	D	Z	D
G	S	E	L	V	J	U	D	U	P	R	V	P	Y	G	N	I	E	I	K
R	M	Z	N	V	K	Y	B	K	R	I	O	P	S	O	B	Q	K	S	Z
F	L	R	I	S	I	Y	X	H	L	B	P	G	O	F	D	J	V	F	P



New Hampshire State Symbols

New Hampshire has some pretty cool state symbols. Below is a list of some of NH's state symbols with the vowels removed. Fill in the missing vowels and then write the number of the symbol next to the picture of that symbol on the right.

Vowels: A E I O U sometimes Y

1. State Amphibian:

R_d-sp_tt_d N_wt

2. State Animal:

Wh_t-t__l_d D__r

3. State Bird:

P_rpl_F_nch

4. State Insect:

L_d_B__tl__

5. State Butterfly:

K_rn_r Bl__B_tt_rfl__

6. State Flower:

P_rpl_L_l_c

7. State Wildflower:

P_nk L_d_'s Sl_pp_r

8. State Tree:

Wh_t_B_rch

9. State Fresh Water Fish:

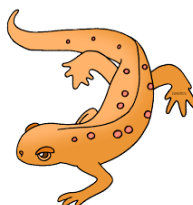
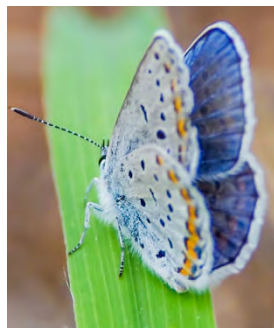
Br__k Tr__t

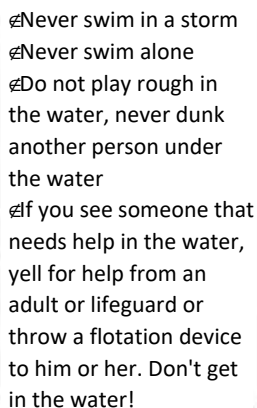
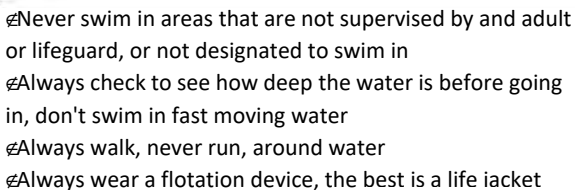
10. State Saltwater Fish:

Str_p_d B_ss

11. State Wildcat

B_bc_t





Circle the seven items that are needed for a safe trip and put X's through the nine items not needed

Leave No Trace

One of the best ways Junior Rangers can help the environment is by helping keep it the way it is meant to be. This means no taking, leaving, or creating anything that should not be there. This also means helping get rid of things that do not belong there, like trash left behind by other people!



- ◆ Taking things like plants, animals, or even rocks can be harmful to an ecosystem. You may be taking an animals food source or home.
- ◆ Leaving trash pollutes an area and can put animals at risk if they try to eat it.
- ◆ Building structures that are not meant to be there can kill animals and plants, and can also be pretty ugly!

Draw a healthy habitat you would like to visit in the space below:

U.S. ARMY CORPS OF ENGINEERS

CERTIFICATE OF ACHIEVEMENT



HONORARY JUNIOR RANGER

Principles of Membership

I, _____ pledge that as a Junior Ranger
I will do my part to keep the parks and waters safe and clean.
I will always remember to put safety first whenever I play
outdoors and not take risks that put me or others in danger.
I will care for the environment and keep it clean for us all.

Date _____

_____ Park Ranger, U.S. Army Corps of Engineers

Go Forth and Explore!

This is your lake or river, so protect it, share it, and enjoy it! We are counting on you to set a good example for others by respecting and learning more about the national waterways you visit. Find out where more U.S. Army Corps of Engineers lakes and rivers are located by visiting **www.CorpsLakes.us**.



**US Army Corps
of Engineers®**



www.Bobber.info



If you would like to volunteer at a U.S. Army Corps of Engineers lake or river, visit www.volunteer.gov.

Created by Kelsi Lord for Surry Mountain Lake and Otter Brook Lake using Winhall Brook Junior Ranger book and USACE Junior Ranger Activity Book. For use by USACE.