

Preparation for:

Environmental Science MB
Sustainability Merit Badge
Fish & Wildlife Mgmt MB
Soil & Water Conservation MB
Nature Merit Badge
Insect Study Merit Badge
Bird Study Merit Badge
Mammal Study Merit Badge
Reptile & Amphibian Study MB

**Into the Wild****3 Den Meetings to Complete****Takeaways**

- Being knowledgeable, responsible, and comfortable in the outdoors
- A Scout is kind.

Complete 6 of the following Requirements

1. Collect and care for an “insect, amphibian, or reptile zoo.” You might have crickets, ants, grasshoppers, a lizard, or a toad (but be careful not to collect or move endangered species protected by state or federal law). Study them for a while and then let them go. Share your experience with your Webelos den.
2. Set up an aquarium or terrarium. Keep it for at least a month. Share your experience with your Webelos den by showing them photos or drawings of your project or by having them visit to see your project.
3. Watch for birds in your yard, neighborhood, or town for one week. Identify the birds you see, and write down where and when you saw them.
4. Learn about the bird flyways closest to your home. Find out which birds use these flyways.
5. Watch at least four wild creatures (reptiles, amphibians, arachnids, fish, insects, or mammals) in the wild. Describe the kind of place (forest, field, marsh, yard, or park) where you saw them. Tell what they were doing.
6. Identify an insect, reptile, bird, or other wild animal that is found only in your area of the country. Tell why it survives in your area.
7. Give examples of at least two of the following:
 - a. A producer, a consumer, and a decomposer in the food chain of an ecosystem
 - b. One way humans have changed the balance of nature
 - c. How you can help protect the balance of nature
8. Learn about aquatic ecosystems and wetlands in your area. Talk with your Webelos den leader or family about the important role aquatic ecosystems and wetlands play in supporting life cycles of wildlife and humans, and list three ways you can help.
9. Do ONE of the following:
 - a. Visit a museum of natural history, a nature center, or a zoo with your family, Webelos den, or pack. Tell what you saw.
 - b. Create a video of a wild creature doing something interesting, and share it with your family and den.

1: Collect and care for an “insect, amphibian, or reptile zoo.”

If a boy has an ant farm or other insect habitat at home, he can use it to help him complete this requirement. Otherwise, he will need to trap and keep an insect for a short period of time, then release it back into the wild. It is recommended he capture a larger insect like a beetle or grasshopper.

Cubs can work on a craftsman project by building a simple insect cage with the following materials:

2 Tuna Cans (or cans of similar size)

1 square Embroidery Mesh

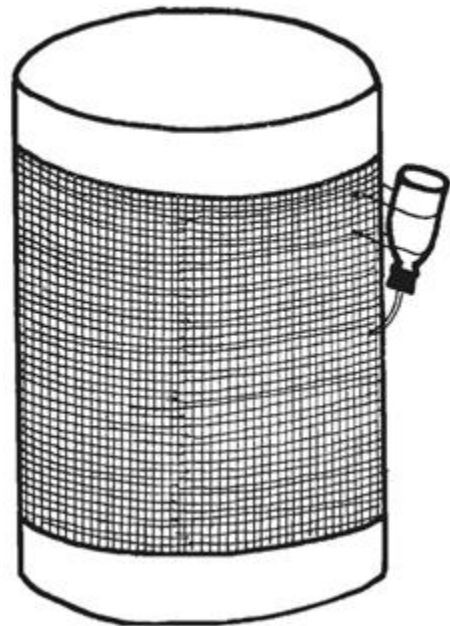
1 plastic bottle cap

3 metal brads

1 green stick with leaves

Instructions:

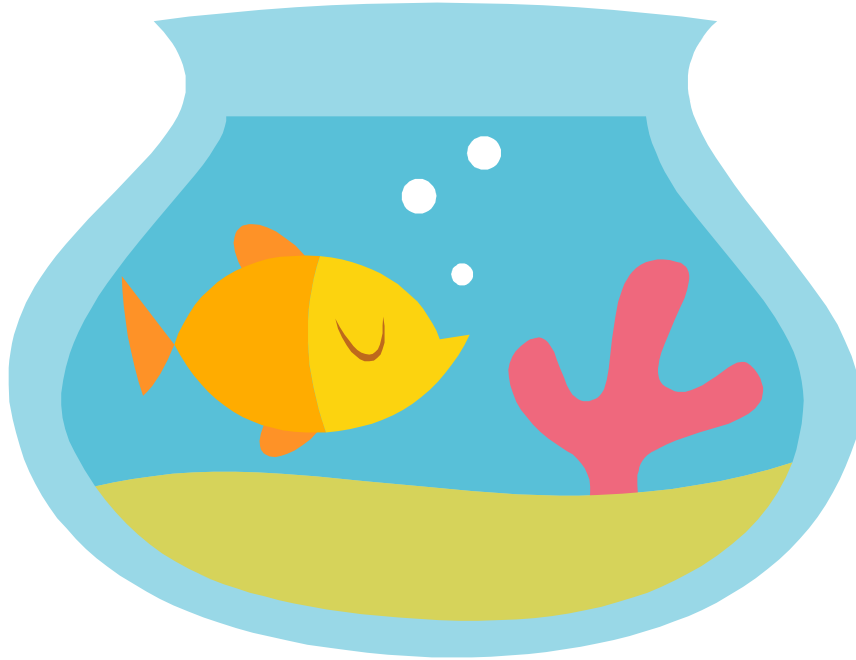
1. Using a drop of hot glue or a glue dot, adhere the bottle cap inside one of the tuna cans on the bottom.
2. Wrap the embroidery mesh around the inside of the second tuna can, allowing $\frac{1}{2}$ inch of overlap. Trim off any excess.
3. Use the metal brads to hold the mesh together at the overlap.
4. Tape or glue the mesh inside the tuna can by taping around the outside of the can.
5. Catch an insect on the green stick with leaves and carefully insert the stick into the mesh. Fill the bottle cap with water, then insert the mesh into the second tuna can, being careful not to spill the water.



The stick and leaves will be the insect's food, and the bottle cap will be its water. This will keep the insect alive for a few days before the stick needs to be replaced or the insect needs to be released.

2. Set up an Aquarium or Terrarium

The Webelos Scout will need to keep this Aquarium or Terrarium for one month. A fish bowl will work for this, but he will likely enjoy a full aquarium. This is obviously something his parents will need to help him put together and complete.



3. Watch for Birds in Your Yard, Neighborhood or Town for One Week

<http://www.utahbirds.org/>



House Finch



House Sparrow



Pine Siskin

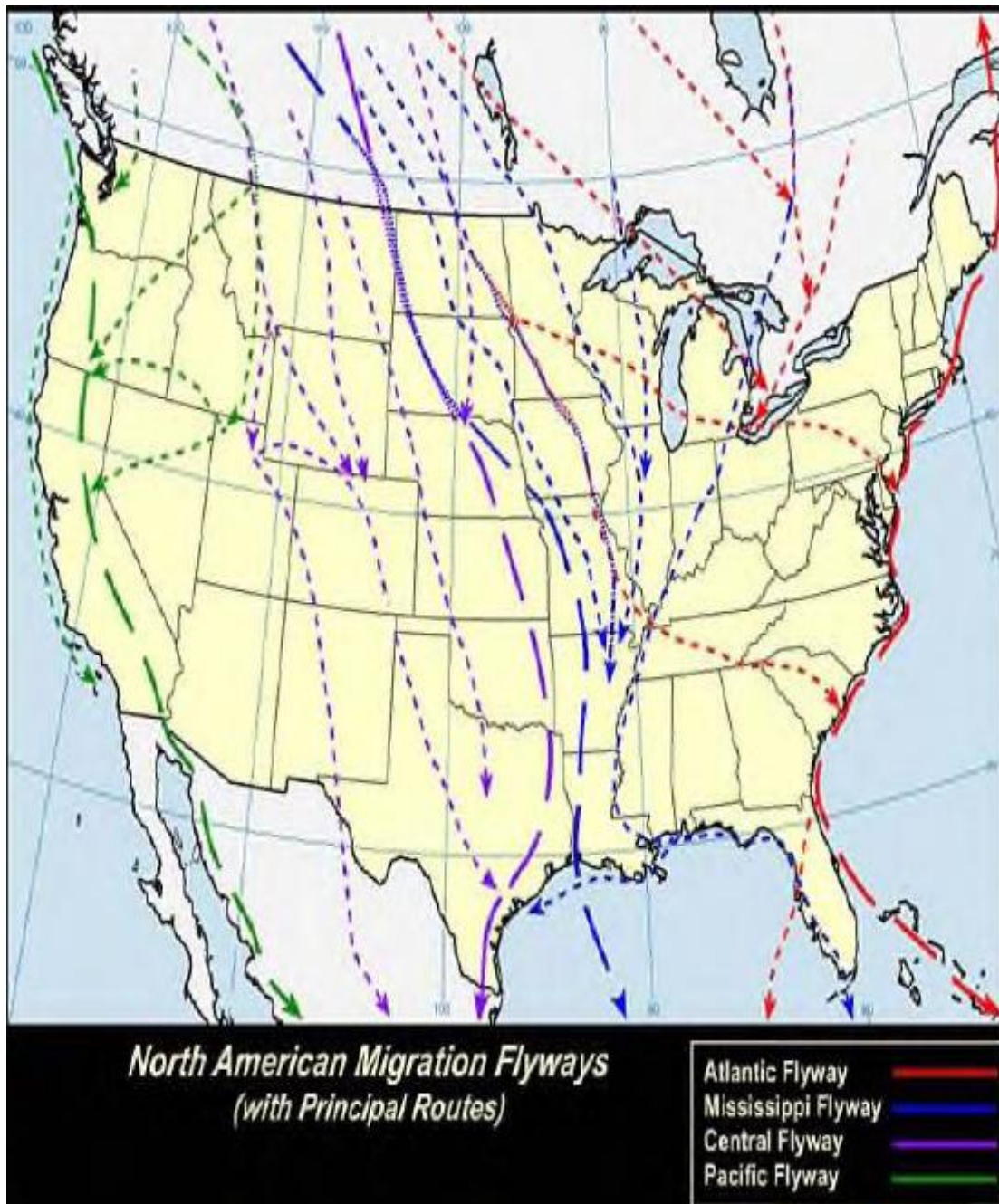


Black-billed Magpie



California Quail

4. Learn About the Bird Flyways Closest to Your Home



Birds and Great Salt Lake

Great Salt Lake supports between 2 and 5 million shorebirds, as many as 1.7 million eared grebes, and hundreds of thousands of waterfowl during spring and fall migration. Because of its importance to migratory birds, the lake was designated a part of the Western Hemisphere Shorebird Reserve Network in 1992. The lake and its marshes provide a resting and staging area for the birds, as well as an abundance of brine shrimp and brine flies that serve as food.

| Species | Population | Remarks |
|-----------------------|------------|---|
| Wilson's Phalarope | 500,000 | Largest staging concentration in the world |
| Red-Necked Phalarope | 280,000 | Single-day estimate |
| American Avocet | 250,000 | Many times higher than any other wetland in the Pacific Flyway |
| Black-Necked Stilt | 65,000 | Many times higher than any other wetland in the Pacific Flyway |
| Marbled Godwit | 30,000 | Single-day count |
| Snowy Plover | 10,000 | The worlds largest assemblage, representing 55% of the entire breeding population west of the Rocky Mts. |
| Western Sandpiper | 17,000 | In one flock |
| Long-Billed Dowitcher | 32,000 | Single-day count |
| White Pelican | 18,000 | Breeding adults, one of the three largest colonies in Western North America |
| White-Faced Ibis | 7,500 | Breeding adults, world's largest breeding population |
| California Gull | 160,000 | Breeding adults, world's largest breeding population |
| Eared Grebe | 400,000 | Second largest staging population in North America |
| Peregrine Falcon | 11 | Active pairs of this endangered species |
| Bald Eagle | >500 | Wintering Eagles associated with Great Salt Lake, one of top 10 winter populations in the lower 48 states |
| Bank Swallow | >10,000 | In one flock. Great Salt Lake represents one of the largest migratory corridors in Western North America |

Source: Utah Division of Wildlife Resources, Don Paul

5. Watch Four Wild Animals in the Wild

Watching animals in the wild with a bunch of noisy Webelos can be difficult. Finding a local wildlife sanctuary can provide you with a more structured way to observe the animals. The following sanctuaries/preserves are in our area:

Great Salt Lake Nature Center

<http://wildlife.utah.gov/gslnc-home.html>

The nature center is located along the southeast shore of the Great Salt Lake, adjacent to the Utah Division of Wildlife Resources' Farmington Bay Waterfowl Management Area (WMA). Up to five million birds of over 200 species visit Farmington Bay each year.

Farmington Bay Waterfowl Management Area

http://wildlife.utah.gov/habitat/farmington_bay.php

Hundreds of thousands of waterbirds, songbirds and raptors visit this area during the migration and nesting seasons. More than 200 different species have been documented on the management area.

Antelope Island State Park

<http://stateparks.utah.gov/park/antelope-island-state-park>

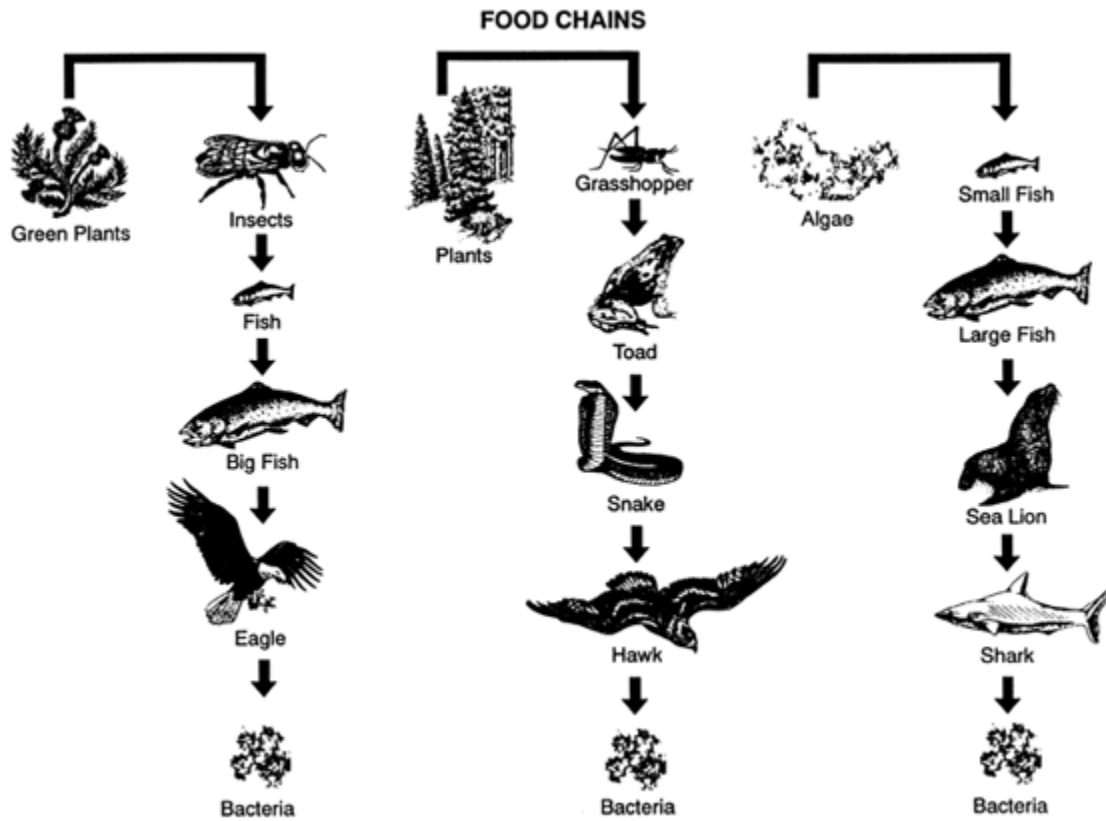
Antelope Island is home to free-ranging bison, mule deer, bighorn sheep, pronghorn antelope, and many other desert animals.

6. Identify an insect, reptile, bird, or other wild animal that is found only in your area of the country.

Hogle Zoo: http://www.hoglezoo.org/meet_our_animals/animal_finder/animals-native-to-utah/

Utah Conservation Data Center: <http://dwrcdc.nr.utah.gov/ucdc/>

7a. A producer, a consumer, and a decomposer in the food chain of an ecosystem



8. Learn about aquatic ecosystems and wetlands in your area.



We might look at swamps, marshes, or other wetlands and think they look really dirty and maybe even gross. Wetlands are an important habitat for Utah because they help during flooding (plants absorb water and slow the movement of flood waters), and the plants and animals also act as a filter in keeping out silt (a type of sediment) as well as pollution. How does this help us? Well, it means that things that might get into our water we use are kept out and keep us safe!

Fun Facts about Wetlands:

- They are an important part of keeping temperatures at a good level
- -75% of Utah's wetlands are a part of the Great Salt Lake ecosystem
- -The Great Salt Lake is a very important habitat for birds to live.

Wetland habitats

http://wildlife.utah.gov/habitat/farmington_bay.php

Farmington Bay hosts an array of wetland habitats including fresh water ponds, marshes, expansive flats and open salt water. These diverse wetland types are vital habitats for a diversity of wildlife along the Great Salt lake.

Fresh-water and brackish marshes support vegetation such as cattail, hardstem and alkali bulrush, saltgrass and pondweed. These are important because of the food and protective cover they provide for wildlife. An abundance of protein-rich invertebrates such as insect larvae provide important food for very young birds. Several species of fish also live in the ponds and provide food for fish-eating birds such as great blue herons and American white pelicans.

Saline mud flats support a range of salt tolerant plants known as halophytes. Salicornia, commonly called pickle weed, is a plant found commonly on these flats. This halophyte produces seeds that are consumed by migrating waterfowl as well as other species. The sensitive western snowy plover nests on the saline flats at Farmington Bay.

The open salt water habitat is too salty for fish but is teeming with two invertebrates; brine shrimp and brine flies. Eared grebes and Wilson's phalaropes are two of the many species that consume large quantities of these invertebrates during migration.

9a. Visit a museum of natural history, a nature center, or a zoo

NATURAL HISTORY MUSEUM of UTAH WALK PATCH

Requirements:

With your den, pack or family, visit the Natural History Museum of Utah. Start on Level 5 and work your way down to complete 10 of the following requirements to earn this patch. Patches may be purchased at the local Scout Shop.



Native Voices Gallery

1. Look for stories of urban Indians on the north wall of the gallery. Ceceilia Tso is a Navajo educator who lives in Salt Lake City and works at the University of Utah. How many different tribes does she say are represented in urban areas along the Wasatch Front?

Sky Gallery

2. We usually see lightning in the sky, but can you find its “petrified” remains in this gallery? What is the scientific name of the fused glass tubes created by lightning strikes?

Life Gallery

3. All living organisms are made up of one or more cells. Using the interactive plant and animal cells, name one part that is similar and one that is different between the two cells.
4. Using one of the dioramas that depict five of Utah’s ecosystems, create a food chain with at least four organisms.

Land Gallery

5. Visit the sand dune interactive. Describe what happens when you change the direction of the wind.
6. Try your hand at building an earthquake proof structure at the Earthquake Table. Did your structure stand up to the test? If not, redesign and try again.

First Peoples Gallery

7. Visit the Median Village excavation site and explore the artifacts and photos on the rail around it. Why is mapping a site so important to archaeological work?
8. Making pottery in prehistoric Utah required skill and knowledge. Find a case that explains the process of making pottery. What was one technique potters used to decorate their work?

Lake Gallery

9. The north arm of the Great Salt Lake is separated from the south arm by a causeway built in 1959. What extremophile thrives in the ultra-salty water of the north arm in such numbers that they can turn the water pink?

10. Investigate the wetlands exhibit and describe what you observe when you pull the lever in the 'Filter Flow' interactive. How do wetlands help to clean the water?

Past Worlds Gallery

11. Find the four video screens behind the giant long-necked Barosaurus. Listen to the paleontologists' different ideas about why there are so many fossils buried together at the Cleveland Lloyd Dinosaur quarry in eastern Utah. Which hypothesis is most convincing to you and why?
12. Visit the skeleton of a single dinosaur under glass in the floor. Find the fossilized dinosaur skin imprint you can touch on the wall nearby. You've just connected with the largest dinosaur that lived in Utah in the Late Cretaceous period about 76 million years ago. What is its name?

Earth Lab and Paleontology Lab

13. Visit the Earth Lab and locate the mineral drawers. Gently take out a few of the Utah-specific mineral drawers. Describe your favorite mineral and explain why it's your favorite.
14. When dinosaur bones are found in the field, they are removed from the matrix and transported back to the Museum wrapped in a plaster jacket. What do these jackets remind you of?

Visit www.nhmu.utah.edu to plan your visit!

Open Daily 10:00 a.m. to 5:00 p.m.

Wednesdays 10:00 a.m. to 9:00 p.m.

Located at 301 Wakara Way, Salt Lake City

CUB ZOO TRAIL PATCH

With your den, pack, or family go to the Hogle Zoo and complete the following requirements to earn this patch:

1. Identify 20 different animals
2. Determine which parts of the world these animals originated. (Notice the signs at each exhibit for this information.)
3. Tour and observe Hogle Zoo with your family or den.
4. WEAR YOUR UNIFORM.



Open year-round except on Christmas and New Year's Day

Hours: 9:00 a.m. to 5:00 p.m.

Plan Ahead - You must call Hogle Zoo, (801) 584-1785, two weeks before you plan to attend in order to receive the group discount and the Hogle Zoo brochure. When you call be prepared to leave a message with the following information: Your name, mailing address, phone number, date of visit, and approximate number of people attending.

Group must have at least 20 individuals to qualify for discount.

Location: 2600 E Sunnyside Ave, Salt Lake City

Admission:

Without Discount - \$8.00 per Adult, \$6.00 per Boy

With Discount - \$7.00 per Adult, \$5.00 per Boy

This patch may be purchased at a local Scout Shop.