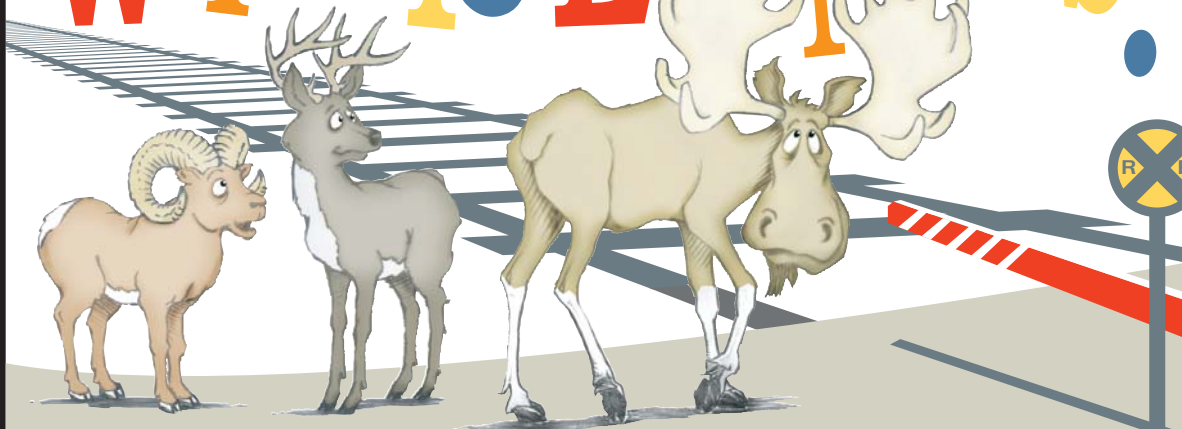


# Wildlife Express!



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**Peregrine  
POWER**



*Photo by William H. Mullins*

**Let's Look  
at....**

# **the Peregrine Falcon**



We have a new state symbol in Idaho - the state **raptor**. This bird is also the fastest flying bird in the world. What is it? It's the **peregrine** (PAIR-uh-grin) **falcon** (*Falco peregrinus*) (FAL-co pair-uh-GRIN-us).

Peregrine falcons are amazing birds. Could you imagine grabbing a bird out of the sky while traveling at over 200 miles per hour? Peregrine falcons can! They fly high in the sky. Once they pick out a tasty bird for lunch, they tuck in their wings and dive head first for the bird and hit it with their feet. Usually, the bird dies instantly and is carried off. Peregrine falcons love to eat birds, but they may sometimes eat bats, other small mammals and insects.

Falcons can fly quickly, because they have long, narrow, pointed wings. They also have a bone in the middle of each of their nostrils. This bone breaks up the wind as it blows across their noses. No matter how fast a falcon flies, it can always breathe! If eagles flew as fast as falcons, they would not be able to breathe. Eagles would probably pass out and slam to the ground.

Peregrine falcons live in many different places. They are found on every continent except Antarctica. They live along the seashore and up in the mountains. You can find them in wet forests and in deserts. You may even see peregrine falcons in downtown Boise, Idaho's capital.

Peregrines don't make nests out of sticks. Normally, they lay their eggs in gravel on the ledges of rocky cliffs. They might even lay their eggs on the ledge of a building. The female lays three to four eggs and incubates them for about 34 days. Both parents bring the young falcons starlings, pigeons and songbirds to eat. In about five to six weeks, the young falcons can fly, but they don't leave home right away. Their parents will still bring them food until they are better at catching food for themselves.

The first year of life is the riskiest for peregrine falcons. Three out of four peregrines die before they turn one year old. Many die in accidents. When peregrines learn to fly, it is sort of like giving a 12-year-old boy the keys to a racecar. Wouldn't you like to see just how fast you could drive the car? You might want to drive the car quickly, but you probably wouldn't have the skills to drive it safely. Racecar drivers have years of experience and even they sometimes crash. Young peregrines crash, too. It takes them some time and practice to learn to fly quickly and safely.

Next time you see a bird diving after a pigeon or starling, grab some binoculars. You might be watching the fastest flying animal on Earth.

# What is a Bird?

Birds are vertebrates. They have backbones, just like mammals, reptiles and amphibians. But only birds have feathers. Birds also have wings for front limbs, no teeth, scales on their feet, warm-blooded bodies and lay hard-shelled eggs.

Worldwide there are about 9,000 different kinds of birds. Birds are the only living animals with feathers. Feathers are made of keratin, just like your fingernails and hair. They are lightweight, strong and are what gives birds the ability to fly.

Birds' bones are also made for flying. Many bird bones are hollow with struts in them. Struts look a bit like toothpicks inside the bone. Struts are what make bird bones strong and lightweight.

Birds need a lot of oxygen to fly. When a bird breathes in, air doesn't go straight into its lungs. The air first goes to air sacs. Air sacs are even found in the bird's hollow bones. Air flows from the air sacs into the bird's lungs. Even when the bird is breathing out, fresh air is going into their lungs! Birds' lungs are always full of air. Our lungs fill with air and then empty. By having lungs that are always full of air, birds have the oxygen they need to keep their muscles going.

Birds also need powerful hearts that beat quickly to move all that oxygen through their bodies. Birds' hearts beat much faster than your heart. A pigeon's heart beats about 450 times per minute when flying. A hummingbird's heart beats about 1,000 times per minute. Now that's fast!

Birds need strong muscles to fly. Most birds have 175 major muscles. Have you ever wondered why the breast meat on your Thanksgiving turkey is light, and the leg meat is dark? The breast muscles of a turkey do not have as much blood flowing to them. The dark meat on the legs has a greater supply of blood. These muscles can work steadily for a long time without tiring. The dark meat on their legs tells us turkeys are good runners and walkers. The light meat tells us turkeys are not strong fliers and cannot fly for long distances. Do you think peregrine falcons have dark colored muscles on their breasts or legs?



# Regal Raptors

No matter where you live in Idaho, raptors live nearby. Raptors are also called birds of prey. They eat meat. They may hunt their food or eat carrion (dead animals).

Idaho has 31 species of raptors. Worldwide there are about 500 different species. They range in size from the tiny five-inch elf owl to the 20-pound condor with an 11-foot wingspan. Raptors may come in different sizes, but all raptors have some things in common. They all have great vision, a sharp, hooked beak, and powerful feet with curved, sharp talons.

Raptors are important to have around. Many raptors eat mice and other rodents. We would be knee-deep in rodents if raptors disappeared. A healthy environment needs raptors to keep rodent numbers under control.

Scientists divide raptors into five different families: vultures, hawks, falcons, barn owls and true owls. Vultures are nature's garbage disposals. Unlike other birds of prey, vultures have a great sense of smell. They love to eat dead animals. Yum! They have naked heads, so they can stick their face right in their food and not get their feathers dirty. Their large, broad wings help them ride air currents and soar in the sky.

The hawk family has many members, not just hawks. Eagles, kites, osprey and harriers are also in this family. To find their prey, hawks use their eyes. Many have long, broad wings for soaring, but not all. Sharp-shinned and Cooper's hawks have rounded wings and long tails. They dive, twist, zig and zag chasing birds through trees and bushes. Long wings would get in the way and would not allow them to turn as quickly.

Falcons are the fighter jets of the bird world. Their narrow, pointed wings are made for speed. Falcons are different in another way, too. They have a notch on each side of their beaks. This "tooth" is used to break the neck of their prey. Most raptors use their feet to kill their prey.

Barn owls and all other owls are in two different families. Barn owls have heart-shaped faces. All other owls have rounded faces. Owls are raptors that have special adaptations for a nocturnal life. They have excellent hearing, can fly silently and can see at night.

Raptors are magnificent birds. Pick up a book and read more about them. With practice, you will be able to tell different raptors apart just by the way they fly and look in the sky.

# Snake River Birds of Prey Area



Spring greening in the canyon. Photo Larry Ridenhour, BLM



Snake River Canyon above Swan Falls. Photo - Larry Ridenhour, BLM

Idaho is famous for many things such as potatoes, white water rafting, skiing and fishing. But did you know that one of the state's greatest claims to fame has to do with

raptors? Idaho is home to the largest concentration of nesting birds of prey in North America and perhaps the whole world! The Snake River Birds of Prey National Conservation Area is located along 81 miles of the Snake River south of Boise. The 485,000 acres are managed by the Bureau of Land Management. A football field is about an acre. Can you imagine how big 485,000 football fields

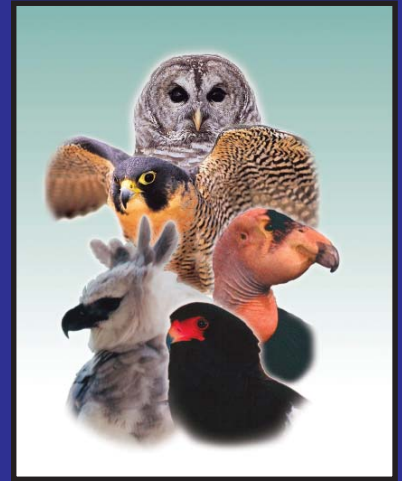
would be? The Snake River Conservation Area is home to approximately 800 pairs of hawks, eagles, falcons, and owls. They nest in the lava cliffs and surrounding desert plateau. A special combination of climate, geology, soils and plants has created an ecosystem where predators and prey occur in very large numbers. Some of these sites have been dated back to 10,000 B.C. The area can best be seen by driving the 56-mile loop. Other ways to view raptors include boating, hiking, horseback riding, and mountain biking. To find out more about this fascination place, visit [www.birdsofprey.blm.gov](http://www.birdsofprey.blm.gov).

We all know Idaho has a lot to offer people who live the outdoors. Don't forget, it has a lot to offer to raptors too.



hack box

# The World Center for Birds of Prey



Did you know being a scientist sometimes means climbing trees or scaling cliff walls? These high places are where raptor nests, and Peregrine Fund scientists, are often found! The Peregrine Fund's headquarters in Boise is called the World Center for Birds of Prey. The Peregrine Fund works to preserve endangered raptors in the United States and around the world by studying little-known species and doing research.

Why is this raptor conservation group called The Peregrine Fund? You guessed it! It all started when the peregrine falcon was in danger of becoming extinct. In 1970, a group of scientists at Cornell University in New York began working to find a solution to this problem. These scientists began breeding peregrines in captivity and then releasing them into the wild. This was the first time captive breeding and release techniques had been so successful.

From 1970-1999 The Peregrine Fund released over 4,000 peregrines. In 1999, it was time to celebrate when the Peregrine Falcon was removed from the Endangered Species list!

Now at the World Center for Birds of Prey, scientists are raising endangered California Condors and Aplomado Falcons. Visitors to the interpretive center can even sneak a peek at these special babies through a live video link to the breeding barns!

Find out what The Peregrine Fund's scientists are up to these days and get info on all kinds of raptors at [www.peregrinefund.org](http://www.peregrinefund.org).

For educator guide:

Learn how birds fly, travel to the rainforest, measure your wingspan, and view live birds of prey at the Velma Morrison Interpretive Center. Free admission for tour groups from all accredited Idaho schools; call 362-8687 to schedule.

Open 9 a.m.-5 p.m. daily March through October; November through February open 10 a.m. - 4 p.m., closed Mondays. \$4.00 general admission, \$3.00 seniors, \$2.00 youth.

## Helping Peregrines

Peregrine falcons were once listed as an endangered species in Idaho. Pesticides, like DDT, were causing the birds to lay eggs with thin shells. Eggs were breaking, and peregrine numbers were dropping.

In 1974, there were less than 40 nesting pairs of peregrine falcons in the whole United States! Peregrine that lived in the eastern part of the United States were already gone. In Idaho, people only knew of one pair that was nesting. Something had to be done or peregrines might have disappeared forever.

A decision was made to raise peregrine falcons in captivity and release them back into the wild. But where should the scientists get the falcons? They took some falcons from the wild, some came from Europe and still others came from falconers. Falconers are people that use raptors for hunting birds and small animals.

The falcons bred, and their eggs were taken and hatched in an incubator. The young falcons were then released into the wild, but there was a problem. Predators, like great horned owls, killed many of the young peregrines. The peregrines needed a safe place to eat and rest while learning about their new surroundings. A hack box was the solution.

A hack box is a large wooden box that has bars on one side, a gravel floor and a pipe in the roof. The box gives the falcons a safe view of their new surroundings. Food is dropped through the pipe, so the young falcons won't think "food" when they see a person. After about two weeks, the bars are removed. The young falcons are still offered food for five to six weeks. By that time, falcons usually can hunt for themselves.

Peregrines have made an amazing comeback. They are no longer endangered. Idaho now has 28 nesting pairs of peregrine falcons. New York has more peregrine falcons than they have ever had before!

Hack boxes gave peregrine falcons the helping hand they needed.



# DDT Dangers

Many modern technologies have made our lives easier and safer. We have lights, dishwashers and even sunscreen. Farmers can raise more food, because man-made chemicals kill pests that may eat crops. Sometimes these chemicals are helpful, but sometimes they prove to be dangerous.

Years ago, an insecticide called DDT was made to kill insects that ate crops. It worked very well, and many farmers liked using it. But there was a problem with DDT. DDT does not dissolve in water. Once DDT was in a lake or stream, it was going to be there for hundreds, even thousands of years. If animals got DDT in their bodies, the chemical was stored in their fat. DDT wasn't completely broken down by their bodies either.

Scientists began to notice that bald eagles, peregrine falcons and other birds were harder to find. People were noticing broken eggs in bird nests. When scientists looked more closely at the eggs, they discovered that the eggshells had DDT in them. They also noticed that the eggshells were much thinner than they should have been. DDT was causing the birds to lay thin-shelled eggs. The eggs either broke when they were laid or broke when the female tried to incubate them.

How did DDT get into the birds? It got there from other animals. Animals, like birds and fish, ate insects that had eaten plants sprayed with DDT. With every insect eaten, the amount of DDT in the animals increased. Birds of prey then ate other animals such as birds or fish with DDT in them. Soon these birds had DDT in their bodies. DDT even started showing up in the blood of people.

In 1972, DDT was banned in the United States. The ban has helped birds like the peregrine falcon, but DDT can still be found in some places in nature.



Renai C. Brogdon 2004

# The Sport and Art of Falconry



photo courtesy of The Peregrine Fund

Raptors have always held a special place in the lives of humans. Long before guns were invented, people used birds of prey to gather fresh meat. This is called falconry. A person that hunts with a raptor is called a falconer.

Some people think falconry may be the world's oldest sport. The first people to use raptors for hunting probably lived in Asia.

Falconers take young raptors from the wild and fit them with jesses. Jesses are thin leather straps fastened to the birds' legs. Jesses allow the falconer to hold raptors on his or her wrist. Falconers also train the raptors to wear a hood. The hood covers the raptors' eyes and keeps them calm. With training and patience, falconer and raptor can become a well-oiled hunting team.

If you want to be a falconer, you cannot just go and take a raptor from the wild. This is against the law! You

need to find a licensed falconer to sponsor you. This person will be your teacher.

For two years, you learn everything about birds of prey. You must know what they need to live, what habitats they live in and how to take care of them in captivity. Since raptors are protected under the law, you also need to learn about the laws you will have to follow.

Birds of prey need a lot of space, and you must build their home, called a mews. Could you imagine building a mews about the size of a one-car garage? That's not some parakeet cage!

The first raptor a falconer is allowed to have is a kestrel or red-tailed hawk, and you must catch your first bird from the wild by yourself. After all this training, you then take a test to become a licensed falconer. You must pass this test to get your state and federal licenses.

It's a lot of hard work to become a falconer, but it's worth it. Your dedication allows you to work closely with some magnificent birds!

## State Symbols

Do you know all of Idaho's state symbols? Many states have state symbols. These symbols represent something special about the state. Just this year, the peregrine falcon was adopted as Idaho's state raptor.

State symbols usually have special meaning or value to the people of the state. It could be economic. Idaho's state vegetable is the potato. Our climate is perfect for growing high-quality potatoes. This crop has made Idaho famous throughout the world. It also brings billions of dollars into our state every year.

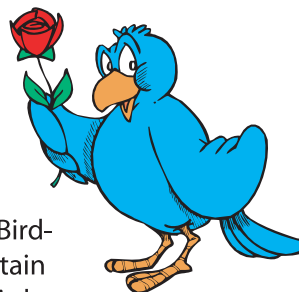
Sometimes a state symbol has historic and scientific importance. We have a state fossil, the Hagerman horse. This fossil came out of a fossil bed that is known as the world's best. Some of the fossils found are 3.5 million years old! People come from all over the world to look at Idaho's horse fossils.

For something to become a state symbol, it first must be proposed to the Idaho legislature. Elementary students have proposed many of Idaho's state symbols. They researched their proposed symbol and collected information on it. They then found a legislator to write a bill proposing the new state symbol. The legislature then votes on the bill. It takes a lot of time and hard work, but it is worth it. That plant, animal or gem will forever be remembered as an important part of Idaho.

For more information on Idaho's state symbols, visit the Idaho state web site at <http://www2.state.id.us/gov/fyi>.



State Flower-  
Syringa



State Bird-  
Mountain  
Bluebird

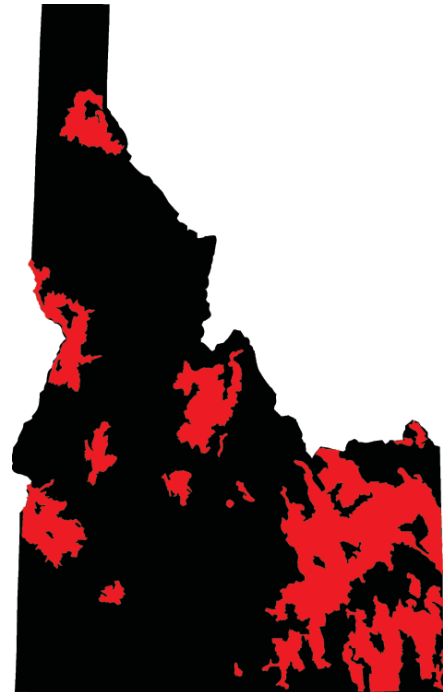
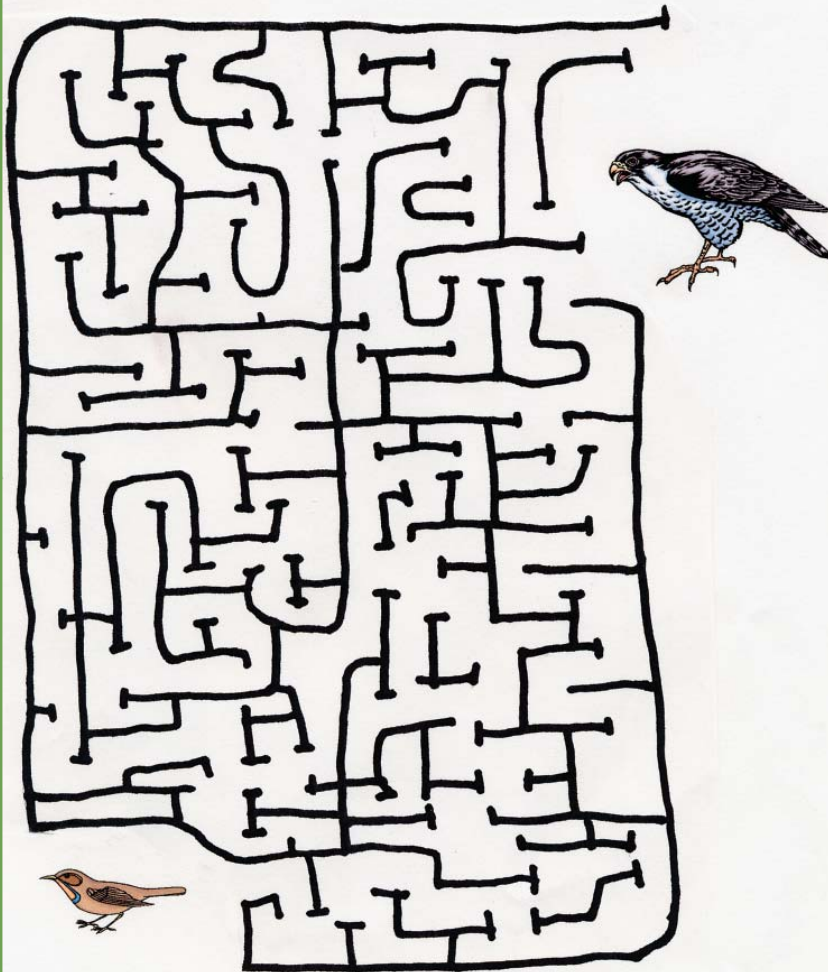


State Horse-  
Appaloosa

# Peregrine Maze

# Peregrine Distribution

Help the falcon find its prey.



## WILDLIFE EXPRESS

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## WE WOULD LIKE TO HEAR FROM YOU !

If you have a letter, poem or question for *Wildlife Express*, it may be included in a future issue! Send it to the address printed above!