

Colorado Reader

AG in the Classroom

Helping the Next Generation Understand Their Connection to Agriculture

Colorado Foundation for Agriculture ~ www.growingyourfuture.com

Food, Fiber and Natural Resource Literacy



Wildlife and Agriculture

Colorado has a remarkable abundance of wildlife. This translates into great hunting and fishing opportunities. Farmers and ranchers help sustain our abundant wildlife.

Colorado has rich agricultural lands that produce crops and livestock. Agriculture supports many rural communities. It helps feed the world.

The state's 66 million acres of land include 10.6 million acres of cropland. There are 36,000 ranches and farms contributing to agricultural production. This land and its caretakers provide habitat for many species of wildlife.

Some of the most productive farmers and ranchers in the country live in Colorado. Colorado farmers rank in the top

five producers in the nation for barley, potatoes, millet, sorghum and sunflowers. Colorado ranchers are second in the country for market sheep and lambs, fifth for cattle on feed and tenth for growing cattle.



Benefits of Ranching & Farming for Wildlife



About 1/2 the land in Colorado is owned by individuals. This is called private land. The other half of the land in Colorado is owned by the federal government or the state government. This is called public land.

Early pioneers, farmers and ranchers settled in Colorado. They found the best areas for growing crops or raising livestock. These areas were often along streams and rivers. Settlers claimed the right to use the water flowing in the rivers and streams. Irrigation ditches were developed.

The result of early settlement was that the best lands were settled by individuals. It became private land. Areas that no one claimed remained property of the government. These public lands belonged to the state or federal government.

Privately held lands such as ranches and farms and their water rights are important to Colorado's wildlife. Many species, including pronghorn, lesser prairie-chickens and burrowing owls, rely on private land for habitat. Colorado's state bird, the lark bunting, is often found on private land. A number of prairie species such as longspurs, sparrows, ferruginous hawk, prairie falcon, swift fox and others find habitat on private land.

In the western part of Colorado, private lands provide important winter range to mule deer. About half of Colorado's greater sage-grouse and Gunnison sage-grouse rely on private landowners. Thus private landowners have played major roles in the conservation of rare animal species, such as greater prairie-chicken and mountain plover. The management of private water, held in lakes or released into streams, helps feed and shelter many kinds of fish.

Did you know?

- An estimated 95 percent of critical winter range for mule deer is located on private land in Colorado.

- Pronghorn are mostly an Eastern Plains species; 89 percent of the Eastern Plains is privately owned.
- Almost 100 percent of Colorado's greater prairie-chickens and ring-necked pheasants call private lands home.
- The majority of shortgrass prairie species, like burrowing owls, ferruginous hawks, swift fox, badger and black-tailed prairie dogs, are found on private land.



Can you identify the two animals above?

Colorado Parks and Wildlife 101

Colorado Parks and Wildlife's (CPW) goals are:

- to ensure the wildlife resources of the state continue to thrive,
- to provide a quality state parks system and to provide enjoyable outdoor recreation opportunities such as camping, hunting, fishing, hiking and boating,
- to educate and inspire the people of Colorado to care for Colorado's natural resources.

Colorado Parks and Wildlife is a nationally recognized leader in conservation, outdoor recreation and wildlife management. The agency cares for:

- 42 state parks,
- all of Colorado's wildlife,
- more than 300 state wildlife areas and
- a number of outdoor education programs.

The work the Colorado Parks and Wildlife includes:

- issuing hunting and fishing licenses,
- conducting research to improve wildlife management activities,

- protecting wildlife habitat through buying land,
- developing partnerships with landowners to improve wildlife habitat,
- providing help to landowners about wildlife and habitat management,
- creating programs to understand, protect and recover threatened, endangered species of animals.
- overseeing the state's trail program and
- registering boats, snowmobiles, ATVs and river outfitters.

Parks and Wildlife is a division of Colorado Department Natural Resources. Rules for the agency are established by the Colorado Parks and Wildlife Commission.



Can you identify the two animals above?

Glossary

Management – the process of deciding how to use something

Natural Resources – things that are supplied by nature, such as trees, oil, water, land and more

Conservation – the careful use of animals, plants and natural resources

Habitat – the place or type of place where a plant or animal normally lives or grows

Population – the number of people or animals that live in a place

Species – a group of animals or plants that are similar and can produce babies or new plants

Angler – a person who tries to catch fish for fun or food

Recreation – something people do to relax or have fun; activities done for enjoyment

Aquaculture – growing or breeding animals that live in the water

Research – careful study that is done to find and report new findings about something

Technician – someone who has mastered the basic skills for a job

Peace Officer – police officer or similar person

Bachelor's Degree – a degree that is given to a student by a college or university usually after four years of school

Master's Degree – a degree that is given to a student by a college or university usually after six years of school

Ph.D. – the highest degree given by a college or university usually requiring eight or more years of school



Review the list of words and their meaning on the left. Fill in the blanks below with the word that would best complete the sentences.

Yesterday I was walking down by the river.

There was an _____ releasing a fish back into the river. She said she had caught the fish and was going to release it

back into the river. She showed me the fish. It had beautiful colors on its sides. I asked her, "What type of fish is it?" She said, "This _____ of fish is trout."

I asked her, "Where was the fish in the river?" She said the deep pools of water by the stream bank provided good _____ for the fish. She said fishing was one of

her favorite forms of _____.

As we stood there

talking, a man in a

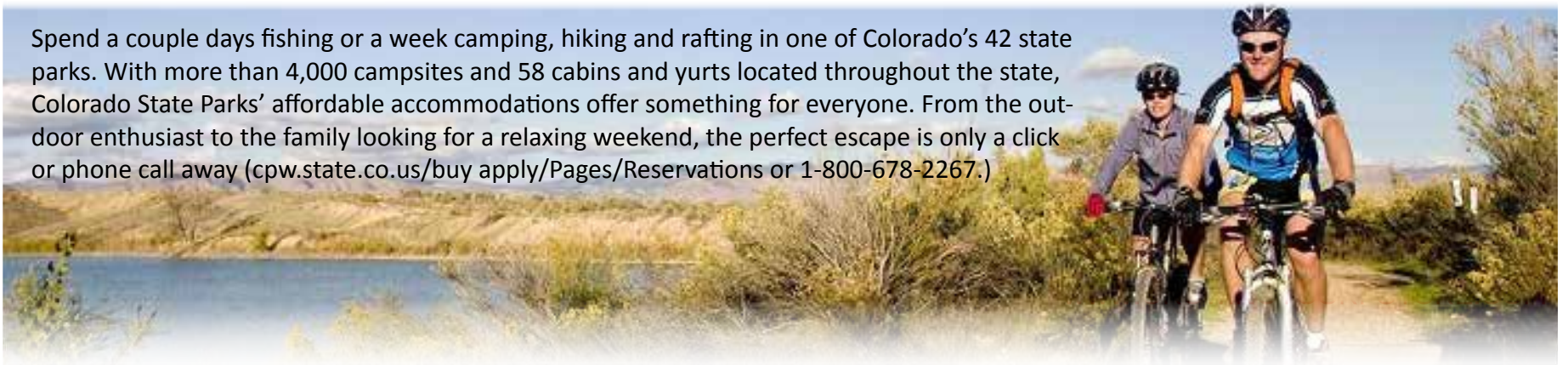
uniform walked up to us. He was the district wildlife manager who is also a _____.

After he had checked the angler's fishing license, I asked him, "How much education do you need to be a wildlife manager?"



He said he attended the university for six years and had his _____ in wildlife biology.



Spend a couple days fishing or a week camping, hiking and rafting in one of Colorado's 42 state parks. With more than 4,000 campsites and 58 cabins and yurts located throughout the state, Colorado State Parks' affordable accommodations offer something for everyone. From the outdoor enthusiast to the family looking for a relaxing weekend, the perfect escape is only a click or phone call away ([cpw.state.co.us/buy apply/Pages/Reservations](http://cpw.state.co.us/buy_apply/Pages/Reservations) or 1-800-678-2267.)






Let's Explore Parks and Wildlife Careers




| CAREER | Primary duties | Education | Fields of study | Experience needed | Odds & Ends |
|--|--|---|--|--|--|
|  <p><i>Biologist Raquel Wertsbaugh</i></p> | Collect and study data; track wildlife numbers; make plans for wildlife management | Minimum: bachelor's degree; Preferred: master's degree | Wildlife ecology, wildlife biology, fisheries biology, conservation biology, wildlife management, zoology, related field | Two years experience in the fields of study. Demonstrate good skills working with the public and interacting with people of all ages, interests, viewpoints and backgrounds. | Often a lot of outdoor work is involved. Three kinds of biologists are Aquatic Biologist, Conservation Biologist, Terrestrial Biologist. There are more! |
|  <p><i>Park Ranger Lisa Gill</i></p> | Act as a peace officer; enforce park rules; educate public on proper use of park resources; check permits; warn or ticket for violations; investigate reported incidents; supervise and train workers, oversee work projects, keep records | Bachelor's degree; state certification as peace officer | Biology, ecology, environmental science, forestry, natural resource management, outdoor recreation, parks management, wildlife biology, wildlife management or zoology | Demonstrate good skills working with public and interacting with people of all ages, interests, viewpoints and backgrounds. | Work schedule varies: day, night, weekend, and holiday hours will be necessary. |

ACTIVITY: Look up the word "terrestrial" in a dictionary. Describe what you think a terrestrial biologist studies on the lines below:

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| CAREER | Primary duties | Education | Fields of study | Experience needed | Odds & Ends |
|--|--|---|--|---|---|
|  <p data-bbox="96 701 368 758"><i>District Wildlife Manager Aaron Bartleson</i></p> | <p>Formerly the Game Warden: Check licenses; Enforce hunting regulations; Handle human-wildlife conflicts; Educate public</p> | <p>Bachelor's degree</p> | <p>Agronomy, animal science, biology, environmental science, fisheries/wildlife biology, conservation biology, forestry, forest management, natural resource management or closely related field</p> | <p>Demonstrate good skills working with the public and interacting with people of all ages, interests, viewpoints and backgrounds.</p> | <p>The “public face” of Colorado Parks and Wildlife. Work schedule varies. Dawn, dusk, weekdays, weekends, holidays.</p> |
|  <p data-bbox="96 1149 419 1205"><i>Intern, Celsey Duritsa, helping with bat research</i></p> | <p>Assists any or all positions; receives necessary training to perform requirements of job; gain experience in lieu of pay</p> | <p>High School</p> | <p>Science and math</p> | <p>This is an opportunity to develop good skills that can be applied to future occupations.</p> | <p>Internships exist throughout Colorado. Flexibility and willingness to learn new skills are required.</p> |
|  <p data-bbox="96 1790 455 1818"><i>Wildlife Researcher Eric Bergman</i></p> | <p>Design and conduct experiments and scientific investigations to gather information about wildlife; Areas of research are Avian, Aquatic, Mammal and Wildlife Health</p> | <p>Bachelor's degree; People most likely to be hired will have a Master's degree or Ph.D.</p> | <p>Ecology, fishery and wildlife biology, natural resources, or related field</p> | <p>Four years experience in an area of wildlife management. Demonstrate good skills working with the public and interacting with people of all ages, interests, viewpoints and backgrounds.</p> | <p>Public speaking will be needed. Colorado's main research programs include Avian (Bird), Aquatic (Water), Mammal (Animal), and Wildlife Health.</p> |

| | CAREER | Primary duties | Education | Fields of study | Experience needed |
|--|--------------------------|---|--|--|---|
| Property Technician <i>Melody Miller</i>  | Property Technician | Manage habitat, use special equipment and oversee day-to-day operation at one of over 200 state wild-life areas; coordinate volunteers and temporary employees; design trails and signs | Four years of work experience or bachelor's degree | | Four years of work related to habitat management such as farming, timber and weed control, property and equipment management, construction, landscaping, etc. Demonstrate good skills working with the public and interacting with people of all ages, interests, viewpoints and backgrounds. |
| Fish Hatchery Technician <i>Jessica Mascarenas</i>  | Fish Hatchery Technician | Raise fish from eggs; distribute grown fish to lakes and streams; Drive and operate heavy equipment as needed; maintain records; educate visitors | Three years of work experience or bachelor's degree. | Aquaculture, biology, fisheries research or biology or related field | Three years doing work involving aquaculture, breeding and/or rearing fish, fish culture, collecting and recording of fish data, research or aquatic biology. Demonstrate good skills working with the public and interacting with people of all ages, interests, viewpoints and backgrounds. |
| Park Resource Technician <i>Joe Marquez</i>  | Park Resource Technician | Work to maintain and improve visitor facilities, park roads and natural resources in the 42 state parks | Four years of work experience or bachelor's degree | Biology, ecology, environmental science, forestry, natural resource management, outdoor recreation, range management | A wide variety of skills are used to many tasks like electrical, plumbing, landscaping, construction, natural resource management, running large equipment and park management |

Use a dictionary or the Internet to write a description of each of these sciences. Write your description on the lines below.

wildlife biology

animal science

agronomy

ecology

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Case Study - Wineinger-Davis Ranch

Cows and calves share Horse Creek with swift fox, pronghorn antelope, black-tailed prairie dogs, western burrowing owls, mountain plovers, plains leopard frogs, bald eagles, hawks, Arkansas darters and various other animals on the Wineinger-Davis Ranch outside Karval, Colorado. Located on the eastern plains, this 12,000+ acre ranch is home to 500 black and red Angus cows and the Davis family.



Tricia and Russell have always enjoyed seeing the wildlife on their ranch. This family successfully mixes the needs of a beef cattle operation with the habitat needs of shortgrass prairie wildlife. In 2004, Russell and Tricia placed a conservation easement on the ranch through the Colorado Division of Wildlife's Colorado Species Conservation Partnership Program. The easement protects 12,245 acres of native shortgrass prairie and wetland ecosystems. This agreement focuses on managing livestock to benefit shortgrass prairie wildlife.

As a result of this easement, the Wineinger-Davis family became the first private landowners in Colorado to protect habitat for mountain plovers. The research being done on the ranch is leading to a better understanding of how the mountain plover uses and nests on native shortgrass prairies while they are in Colorado. Research has shown that some animals prefer thick dense vegetation and little grazing while other animals like the mountain plover prefers grasslands that have been grazed by livestock and prairie dogs.

Russell believes that private landowners play a key role in conserving habitat areas for wildlife. He has shown by his example that ranchers provide habitat for wildlife while earning a living from the land by raising cattle. He works with the Colorado Division of Wildlife, U.S. Fish and Wildlife Service and Rocky Mountain Bird Observatory in partnerships that benefit present and future generations. These working landscapes benefit us all.



You have read about several careers in this issue. On the lines below, describe the one skill that was similar in each job. Explain why you think this skill is important.

Write a letter to one of the people in this reader. Tell the person why their job is interesting to you. Ask questions you would like to have answered.

On the lines below explain which job you would like to do.
