

RANGELANDS



The pronghorn (left), found on Colorado's eastern plains, is the fastest land mammal in the western hemisphere.



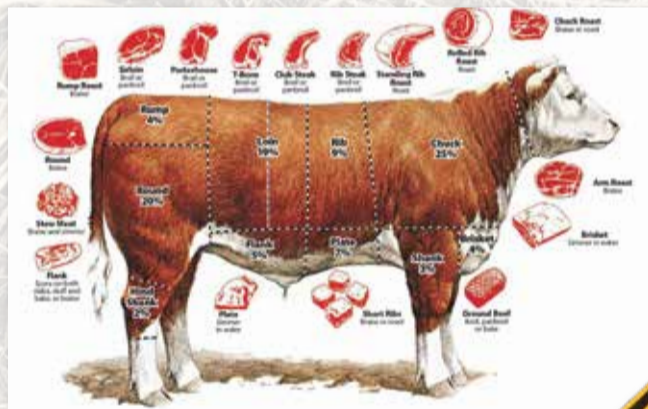
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Rangelands are a type of land on which the natural vegetation is dominated by grasses, forbs and shrubs and the land is managed as a natural ecosystem.

Rangelands play an important role in all of our lives. Rangelands can be found all over the world, in all 50 states and make up about 60 percent of the land in Colorado.

Rangelands are lands managed as a natural ecosystem. These lands provide us important benefits including:

FOOD



Rangelands grow grasses, forbs and shrubs that aren't readily digestible by humans. Livestock convert these plants to high-protein food for human consumption and fiber. Rangelands also benefit from the presence of properly managed livestock.

CLEAN WATER



Healthy rangelands play a vital role in protecting clean water. They filter runoff from storms and prevent the erosion of soils into streams and lakes. Some lakes and ponds only have water during part of the year, but they are still important.



RECREATION



Open space is important. Hiking, horseback riding, photography, riding ATVs, hunting, camping and bird watching are a few examples of the recreational opportunities provided by rangelands.

HABITAT



Many species call the rangelands home. Large animals like deer (above) and elk, migratory birds, small animals and insects are all dependent on and a part of rangeland ecosystems.

GRASSES



Colorado has a state flag, a state bird (the Lark Bunting) and a state grass—blue grama (above). The Lark Bunting is found on grasslands in the state.

FORBS



A forb is a flowering plant that has leaves and stems that die down at the end of the growing season. Prairie cone flower (above) is a forb found on the prairie.

SHRUBS



A shrub is a small to medium-sized plant with woody stems. Some shrubs are grazed by both wildlife and livestock, including fourwing saltbush (above).

Colorado's Rangelands

Colorado has nine different types of rangeland. While they share much in common, differences in altitude, terrain and soil alters which plants and animals will thrive in each area.

Rangelands are not just a matter of geography. Rangeland that is converted to farms or urban use are no longer considered to be rangeland.

Which rangelands are nearest to you?

West Colorado Plateaus

This type of rangeland occurs in the far western part of Colorado. Grand Mesa near Grand Junction and the Uncompahgre Plateau near Montrose are good examples. The plants are a mixture of grasses, forbs & shrubs. Because of the many shrubs that grow here, this type of rangeland provides excellent habitat for wildlife and good forage for livestock. Recreation is an important value to humans on this type.



High Intermountain Parks

There are four high intermountain parks in Colorado. They are from (north to south) North Park in Jackson County, Middle Park in Grand County, South Park in Park County, and the San Luis Valley in Alamosa & Rio Grande Counties. These parks have a cold climate and very short growing season due to the high elevation. Fescue grasses are common. Cattle graze in these parks in the summer.



Mountain Rangelands

These are the high elevation rangelands of Colorado occurring on both the east and west slopes. They are above the foothills. Shrubs are not very common and forest lands are usually found nearby. They are valuable for grazing both cattle and sheep. Elk & mule deer find valuable habitat here. The mountain rangelands provide extremely valuable clean water for Colorado's thirsty cities.



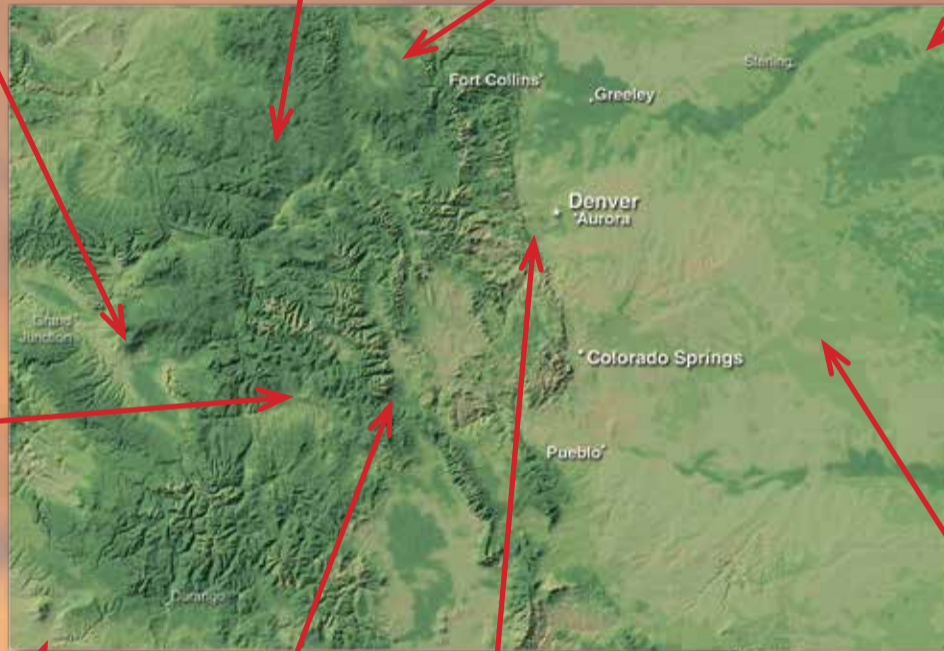
Sandhills Prairie

Occurs in the extreme northeast part of Colorado. The land is rolling and is made of hills and dunes of sandy soil. The plants are mostly tall grasses. Sand sagebrush is an important shrub. This type of rangeland is very productive but at the same time needs a lot of care to prevent wind erosion. It is valued for the habitat provided to prairie chickens and other prairie birds.



West Slope Foothills

This type occurs throughout the western area of the Rocky Mountains. Typical examples can be found in western Routt, Gunnison & Archuleta Counties. The plant community consists of a mixture of grasses and shrubs. Trees such as pinyon pine and Utah juniper are also present. These plants provide habitat for livestock and wildlife. Recreation and open space are important human values in these regions.



60%
of the land in
Colorado is
rangeland



Desert Type

The desert type of rangeland is found in extreme western & southwestern Colorado. It is not a "true" desert, but is considered "semi-desert." This type occurs west of Grand Junction and in the Four Corners Area of Colorado. Summer temperatures are quite hot and it doesn't rain very much so the plant life is very scattered and consists of some grasses and many shrubs such as cactus. This rangeland type provides important habitat to Colorado's wild horses & burros. It is valuable grazing for livestock during the winter months because of the lack of snow. Notable wildlife in this area would include desert bighorn sheep.



East Slope Foothill

This type of rangeland occurs along the eastern foothill of the Rocky Mountains. The foothills are a transition from prairie to the mountain type of rangeland. This type occurs from the Wyoming border to New Mexico with the foothills west of Denver being a good example. This type of rangeland is important for the value of open space for humans in high population cities.



Alpine Rangeland

These are the rangelands found in Colorado above 11,000 feet in elevation. Growing conditions are harsh with constant winds, cold temperatures and a short growing season. Most of the plants that occur in the alpine have "alpine" in their name, such as alpine bluegrass, alpine sunflower, and alpine forget-me-nots. The alpine provides much recreation such as hiking & camping.



Short Grass Prairie

This type occurs throughout eastern Colorado and has the appearance of flat plains. The grasses are nutritious and plentiful. The dominant plants are blue grama, buffalograss and western wheatgrass. Some shrubs are present including: Fourwing saltbush, yucca and cactus. This type of rangeland is very valuable to Colorado's livestock industry because of the grazing provided year-around.



[ēkō-sistəm]

An ecosystem is the community and interactions of all the plants, animals, and organisms in an environment.

Managing the Natural World

Rangelands are natural ecosystems. Unlike farms where the land is cultivated, crops planted and often irrigated, the health of rangelands depends on the complex interactions between plants, animals, soils, weather and human activity. Rangeland management is the wise use of these lands for optimum production of the goods and services needed by society without harming the resource. Rangeland managers often balance multiple objectives for the same land. Examples of multiple objectives include restoration or preservation of habitat, improving food production, and creating sustainable development for people.

Rangeland managers monitor plant and soil health, animal populations and precipitation to make stewardship decisions. Even on the same piece of rangeland, every year is different. The timing and amount of rainfall will impact the growth of the various plant species differently. Grazing by livestock is an important tool for the benefit of rangelands. Rangelands evolved with grazing and well managed livestock grazing can improve soils and plant communities. Removing livestock and people from the rangelands altogether doesn't lead to improved ecosystems—humans are part of the ecosystem. Fire is another natural tool that is sometimes used to achieve management goals.

The application of rangeland science is also an art. Understanding plants, animals and soils along with a knowledge of the history of past use and climate are the foundation for making sound decisions for the future.

"Nature is not a place to visit. It is home."

— Gary Snyder





High school students entered in the FFA Rangeland judging contest receive instructions prior to studying a pasture site near Akron, Colo. Students were asked to determine what plant species

were present and evaluate the health of the rangeland, estimate how much grazing was available for livestock, and make management recommendations for the rancher who owns the property.

Understanding and Evaluating Rangelands with FFA

Editor's Note: Student reporter Ashley, a sophomore at Kim High School in Kim, Colorado, was the high-scoring individual at the FFA State Rangeland Judging Contest held in Akron Colorado in October 2015.



By Ashley, Ag in the Classroom reporter

Rangeland judging is a very enjoyable contest to compete in through FFA (see *related story below*), and the contest is not too difficult if you are passionate about it and are good at memorizing things. You have to memorize and be able to identify a list of sixty-six plants including their growth season, palatability to cattle (how much cattle like to eat the plant), and other characteristics. You also have to evaluate the health of two ecological sites and use some math to determine how much forage is available for cattle to eat. Overall, rangeland judging can definitely be beneficial if you live on a ranch and it can be very fun to learn and compete in.

I competed in rangeland judging my freshmen year, so when this year

came along it only took me a while to refresh on what I learned the year before. Although I received a gold award at a regional, I was very disappointed that I did not do better. I felt like I did not live up to nor compete to my full potential. I was determined to study harder and in preparation for the state rangeland contest.

When the state contest rolled around I felt like I was fully prepared, but I definitely did not go into the contest thinking I would get high individual. This accomplishment was definitely a goal, but I was not expecting to reach that goal. My heart was beating fast through the whole awards ceremony and I was praying that I would get high individual, and I did!

Even if you are not really interested in rangelands right now, I encourage you to learn more about the value rangelands provide—food, wildlife habitat, clean water, recreation, and more. I live on a ranch but I only knew one plant on the list before I joined the rangelands judging team, so do not think that if you live in a city you cannot do this. It is challenging, but it is a fun competition to be a part of and can be very rewarding. If you do live on a ranch, then this would not only be fun, it would be beneficial for you in the future. I have enjoyed learning about rangelands and encourage you to take a shot at!



High school students study the plants in a pasture and calculate how much plant matter is available for livestock to eat. In addition to looking at plants, they evaluated soil types and made suggestions on how the rancher could improve her management.



Students were also asked to identify a number of grasses, forbs and shrubs found on Colorado rangelands.

National FFA Organization Agriculture and Leadership Program

The National FFA Organization is a high school, and in some cases middle school, curriculum and student organization for students interested in agriculture, personal development and leadership. Currently, there are more than 600,000 students in 7,757 chapters in all 50 states, Puerto Rico and the U.S. Virgin Islands.

The letters “FFA” stand for Future Farmers of America, but FFA is not just for students who want to be production farmers; FFA also welcomes members who aspire to careers as teachers, doctors, scientists, business owners and more. For this reason, the name of the organization was updated in 1988 to reflect the growing diversity and new opportunities in the industry of agriculture.

FFA is future farmers and the future biologists, future chemists, future veterinarians, future engineers and future entrepreneurs of America, too.

Classroom activities include math and science, as well as hands-on proj-

ects and the development of life skills, helping members discover their career path and realize success. Study areas include agriscience, biotechnology, mechanics, horticulture, animal science and environment-related fields. In addition to classroom work, students participate in leadership development activities and “in the field” supervised learning experiences. Collectively, FFA members earn more than \$4 billion annually through their individual work experiences.

The most recognizable symbol of the organization is the blue corduroy FFA jacket that is worn by current FFA members. FFA members are required to wear the FFA jacket as part of official dress while participating in official organization activities.

Currently, more than 4,300 students in Colorado are enrolled in FFA.

To find out more about FFA in Colorado, including how to start a chapter in your area, visit <http://ffa.cccs.edu>.



The blue jacket is a symbol of FFA membership.

All Things Great and Small

Editor's Note: Student reporter Garrett, an 8th grader at the Briggsdale School in Briggsdale, Colorado, has studied and collected rangeland insects for several years.



By Garrett, Ag in the Classroom reporter

Entomology is the study of insects. There are more than 950,000 species of insects on the earth. In entomology you find, catch, study, and/or pin insects to figure out their characteristics and if they are a nuisance. One important thing that

entomologists do is try to create pesticides to protect crops, trees, homes, and people from nuisance insects like termites, fleas and grasshoppers. However not all bugs are pests. Ladybugs, for example, help get rid of aphids, an insect pest that eats plants. Honey bees provide us with honey, an important sweetener, and praying mantises are large insects that will catch and eat almost any nuisance insect.

There are many insects that benefit rangeland ecosystems. Bees for example help to pollinate crops and gardens, while ladybugs keep the aphids at bay. Grasshoppers provide a great food source for birds. Even ants help by loosening the soil with their nests and

eating pest insects. There are also quite a few nuisance insects such as grasshoppers, which can destroy entire crop fields, and leaf beetles which eat wheat, rye, and timothy grass.

4-H offers an entomology program if you're interested in the subject. Some things you'll get to do include: collecting more than 200 insects, learning about the different life stages of different insects, and learning which insects are pests or nuisances. I have been doing entomology through the 4-H program for 5 years and have enjoyed it. There are a lot more things you can do in 4-H and anyone can join 4-H.

Insects, including moths and butterflies, play important roles in ecosystems.



Founded in 1902, 4-H is the largest youth development and youth mentoring organization in the United States with more than six million members ages 5 to 18. 4-H clubs can also be found in 80 countries across the globe.



With the slogan "learn by doing," every year members enroll in at least one of the more than 200 different 4-H project activities, covering everything from aerospace to entomology to zoology.

The mission of 4-H is to empower youth to reach their full potential, working and learning in partnership with caring adults.

The name is reflected in the 4-H pledge:

I pledge my **head** to clearer thinking, my **heart** to greater loyalty, my **hands** to larger service, and my **health** to better living, for my club, my community, my country and my world.

—For more information about 4-H in Colorado, visit <http://www.colorado4h.org>.

Camp Rocky—An Outdoor Natural Resources Adventure

Editor's Note: Student reporter Walter, a 9th grader at the Prairie School in New Raymer, Colorado, attended Camp Rocky in the summer of 2015.



By Walter, Ag in the Classroom reporter

In the small town of Divide, Colorado, on the west slope of Pikes Peak there is a fun, adventure filled summer camp. This camp is known as Camp Rocky. It is open to high school students who want to learn about the environment. The

attendees can choose to learn about forest management, rangeland science, soil and water conservation, and fish and wildlife management.

The kids who attend this camp are very down-to-earth and are quick to make new friends. At Camp Rocky, the very qualified instructors lead

you through exhilarating activities such as electro-fishing and telemetry.

Electro-fishing is the process of temporarily knocking fish unconscious to count them and telemetry is the process of finding wildlife using various radio signals. During my stay, the fish and wildlife management group was able to dye the pond blue with Aquashade to help reduce aquatic plant growth. Preventing excess aquatic plant growth helps to improve the habitat for fish.

Camp Rocky is not all educational, during lunch there are plenty of new kids with interesting backgrounds to socialize with. There is a volleyball court and two basketball courts where campers can let out energy. During down time, there are fun activities such as archery and shotgun to choose from. To sum it all up, there is no such thing as boring at Camp Rocky.

All in all, Camp Rocky is a great camp with great instructors and great campers. I would highly recommend going to this camp to, if nothing else, clear your mind and embrace nature.

More about Camp Rocky...

Hosted by the Colorado Association of Conservation Districts, Camp Rocky is a week long, residential camp for 14- through 19-year olds who enjoy the outdoors and are interested in natural resources. Camp Rocky's professional staff helps participants learn about their environment through hands-on experiences. The students work in teams, making new friends from across Colorado. Each year, new and returning students choose one of the following resource fields for their area of focus: rangeland science, soil and water conservation, fish and wildlife management, and forest management. Additional activities include volleyball, hiking, a campfire, group challenges, talent show and a dance!

For more information, visit <http://www.coloradoacd.org/camp-rocky.html>.

Next Steps: Careers on the Rangelands



By Ben Berlinger

Editor's Note: Ben Berlinger, a Rangeland Resource Specialist and Society for Range Management Certified Professional in Rangeland Management with the Natural Resources Conservation Service in La Junta, Colorado, offered extensive guidance during the development of this issue of Colorado Kids. We also asked him to tell us about careers in rangeland management.

You don't have to own a ranch to find a career on the rangelands. Careers in rangeland management are many. In fact there are several career opportunities because of the many fields of study that are included in rangeland management. Some of these careers are listed below.

- Rangeland Management Specialist
- Ranch Business Manager
- Rangeland Ecologist
- Rangeland Research Scientist
- Rangeland Livestock Specialist
- University Rangeland Extension Specialist
- Wildlife Biologist
- Ecological Restoration Specialist
- Rangeland Plant Ecologist
- Rangeland Invasive Plant Specialist

All of these careers have in common working in the outdoors and investigating how all the different pieces of Mother Nature fit together. Rangeland ecosystems are complex and sometimes hard to understand. This requires knowledge in many different disciplines. So good observation and thinking skills are a big part of any job in the field of rangeland management.

A typical day at work would involve driving to the ranch to meet with the ranching family. The rancher will tell you about the history of the ranch and how the livestock are grazed. Once out on the rangeland it is important to work with the rancher to gather information about the rangeland conditions. This involves determining the kind of plants and their health. Soil erosion and improving habitat for wildlife would be talked about. If problems with the rangeland are found solutions are discussed and then a plan is written to fix the problems. Finally you would help the rancher put the rangeland management plan into action.

Working in the field of rangeland management is a very rewarding career. Helping people understand what the land is saying is challenging but brings with it much satisfaction!

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ColoradoKids

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