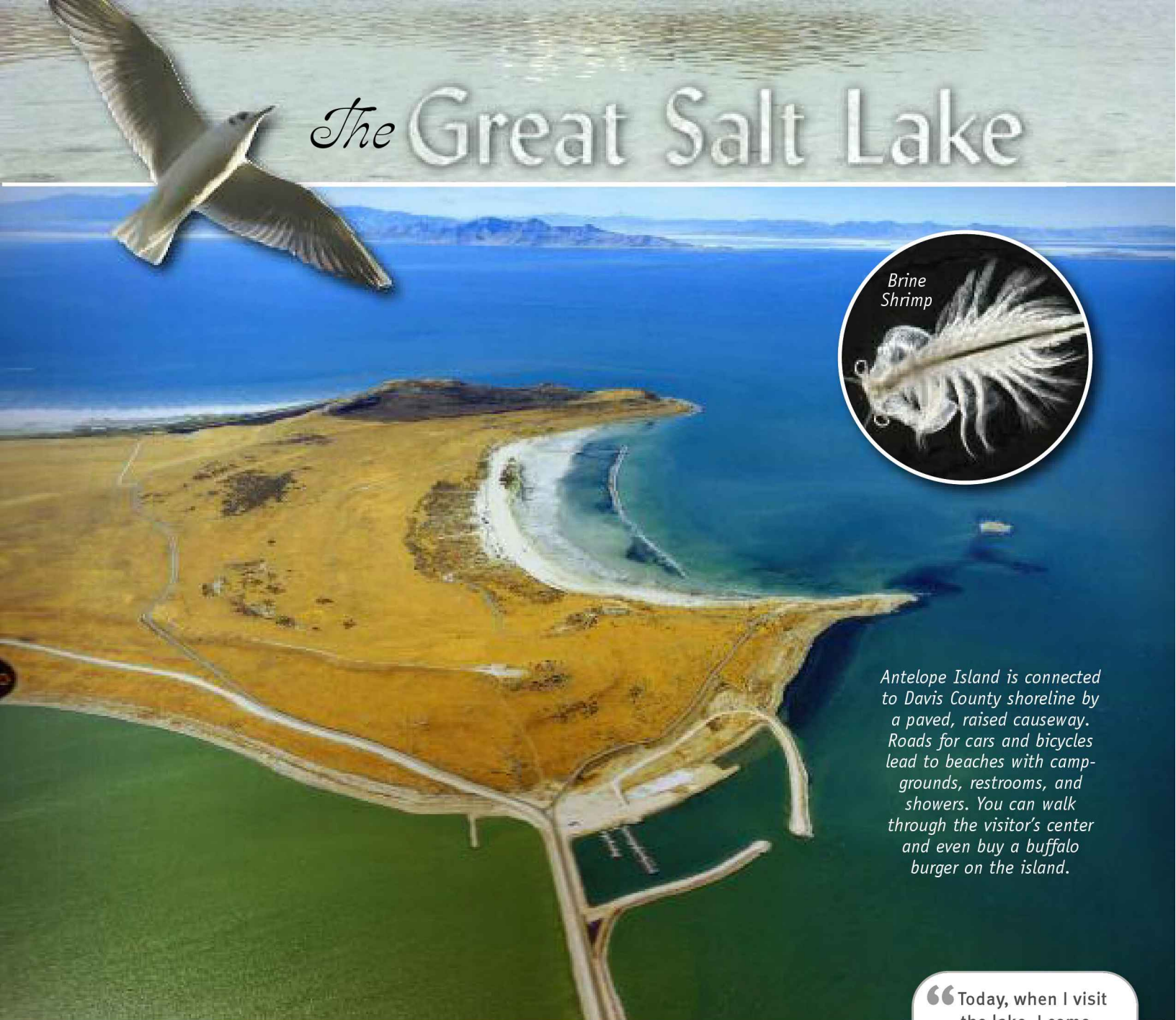


The Great Salt Lake



Brine Shrimp

Antelope Island is connected to Davis County shoreline by a paved, raised causeway. Roads for cars and bicycles lead to beaches with campgrounds, restrooms, and showers. You can walk through the visitor's center and even buy a buffalo burger on the island.

Utah's largest body of water, the Great Salt Lake, is part of the Great Basin Region. It is a very shallow lake. The Weber River (after being joined by the Ogden River) flows directly into the lake. The 500-mile-long Bear River receives water from several **tributaries** before flowing into the lake. The Jordan River flows directly from Utah Lake. It also carries water from many tributaries. These rivers carry in salt and other minerals, but there are no rivers to carry the salt out. That is why the lake is so salty. It is three to six times saltier than

any of the oceans. It is so salty that no fish can live in it—only small brine shrimp.

The Great Salt Lake has always been important to people in Utah. Native Americans lived near the lake to catch the ducks and birds that nested along its shores.

No one lives on the lake's islands today, but a raised road now connects Antelope Island to Davis County. One of Utah's two buffalo herds lives on the island. The island is a great place to wade and float in the water, watch seagulls, hike or bike, and admire a sunset.

“Today, when I visit the lake, I come body, soul and mind intact. And off I go, a happy, skipping vagabond, exploring the mysteries and discovering no end of natural wonders found on the Great Salt Lake. ”

—Ella Sorensen



The Colorado Plateau Region

The high, flat lands of the Colorado Plateau cover much of Utah. The land gets little rain. Rivers from the high plateaus flow towards the Green and Colorado Rivers, which then flow into the Gulf of California and then to the Pacific Ocean.

Some of Utah's most famous scenery is found in this region. Wind and rain have carved wonderful formations in the soft *sedimentary rock*. Colorful cliffs rise a thousand feet above the valley floor. All five of Utah's amazing national parks are



Utah's

National Parks



Zion National Park was Utah's first national park, set aside as protected land in 1919. Over thousands of years the Virgin River has flowed through the rock and cut out beautiful canyons. The first people to live there were an American Indian group called the Anasazi. Later, Southern Paiute Indians moved in. They were living there when the early pioneers arrived in Utah.

Canyonlands National Park is the largest of Utah's parks. It has deep gorges and huge rock towers. The state's three major rivers run through it—the Green River, the Colorado River, and the San Juan River. Ancient Fremont Indians hunted in Canyonlands. Later the Anasazi farmed there. Many ruins and rock art from these people are found there.

in this region. They are world-famous tourist destinations.

Coal, oil, and natural gas are valuable underground natural resources in the Plateau Region. Much of it is mined, but other deposits of valuable minerals are so hard to get from the ground that they remain where they were formed millions of years ago. You will learn more about these resources in the next chapter.

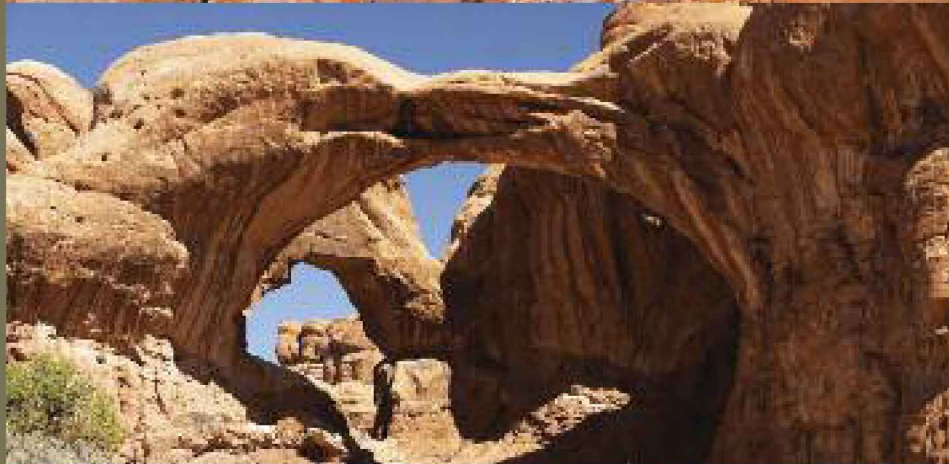


Trace the routes of the Green and Colorado Rivers. How do they connect Utah to the Pacific Ocean? What happens to water that flows from the mountains of northern Utah into the Great Salt Lake? Does it get to the Pacific Ocean?

Bryce Canyon National Park is the most colorful park in the world. White, yellow, red, orange, and purple rocks blend together. Wind, ice, and water carved the rocks in Bryce Canyon into all kinds of shapes. The park was named after Ebenezer Bryce, an early rancher in the area. Once he looked into the deep canyon and said, “This is no place to lose a cow!”



Arches National Park is named for its many stone arches. The rocks are mainly pink sandstone. A stream of water can wear a hole in this kind of soft rock. Blowing sand can also wear a hole through the rock. This happens slowly. It takes thousands and thousands of years, and is still going on. American Indians long ago lived among the arches and painted rock art there.



Capitol Reef National Park has beautiful red sandstone cliffs with strange rock formations. They were made by water cutting into them. Rock art shows us that American Indians lived there for many years. Butch Cassidy and the Sundance Kid used Capitol Reef as a hideout.



Utah's Public and Private Lands

Our country's national government owns more than 60 percent of Utah's land. (In southern Utah, the national government controls more than 80 percent of the land.) The Utah State government also owns a lot of land. This land includes forests, parks and monuments, wilderness and wildlife areas, and reservoirs that are open for use by everyone in the nation. Private individuals also own land.

Private Land

It is part of the American dream to own land. Anyone who can afford to pay for it can buy land, build a house or other building on it, or farm it. People can keep their land or sell it.

Public Land

Who owns the mountains, plateaus, and valleys? The federal government and Utah State government own much of the state. This land is called "public lands." Since the people are the government, the land is owned by the public (that's you) and can be used by the public, with some restrictions. Our state and national parks and monuments are public lands.

What Is the BLM?

The Bureau of Land Management (BLM) is a federal government agency that controls part of the government's land. It manages its lands under the mandate of "multiple use." For example, a BLM region can be used for hiking, fishing, hunting, boating, horseback riding, bird-watching, 4-wheeling, camping, and visiting historical and archaeological sites. The land can also be used for animal grazing, timber cutting, mining, and wilderness.

What Is a Wilderness Area?

Some public land, however, is set aside by Congress to preserve its wild state, including its scenic beauty, solitude, wildlife, geologic features, and features of scientific, educational, or historical value. Wilderness is carved out of public lands.

Walking, hiking, horseback riding, camping, fishing, and hunting are allowed in wilderness regions. Trails may be cleared but not paved.

What activities are not allowed in wilderness regions? Unlike on other public lands, mining, building dams, harvesting trees, paving roads, and constructing buildings are not permitted. Motorized vehicles, including cars and four-wheelers, cannot be used. No one can farm the land. However, if ranch animals were living on the land before it was named as a wilderness region, the animals can continue to graze there.



Activity | Public Lands and You

What do you think about the various ways Utah's public lands are used? By yourself or with a team of classmates, research the topic more, and then take a side. Present your views in one of the following ways: debate, oral report, written report, art project, display, radio interview, newspaper article, or Power Point presentation.

As you prepare your presentation, consider the following topics related to how Utah's land is used and preserved:

PHYSICAL

Land features and natural resources.

SETTLEMENT

Does the land provide enough of what people need to survive if they want to live there?

LAND USE

How can the land be used? Should land be preserved in its natural state?

ECONOMY

How could people make money by using the natural resources?

What Are Utah Trust Lands?

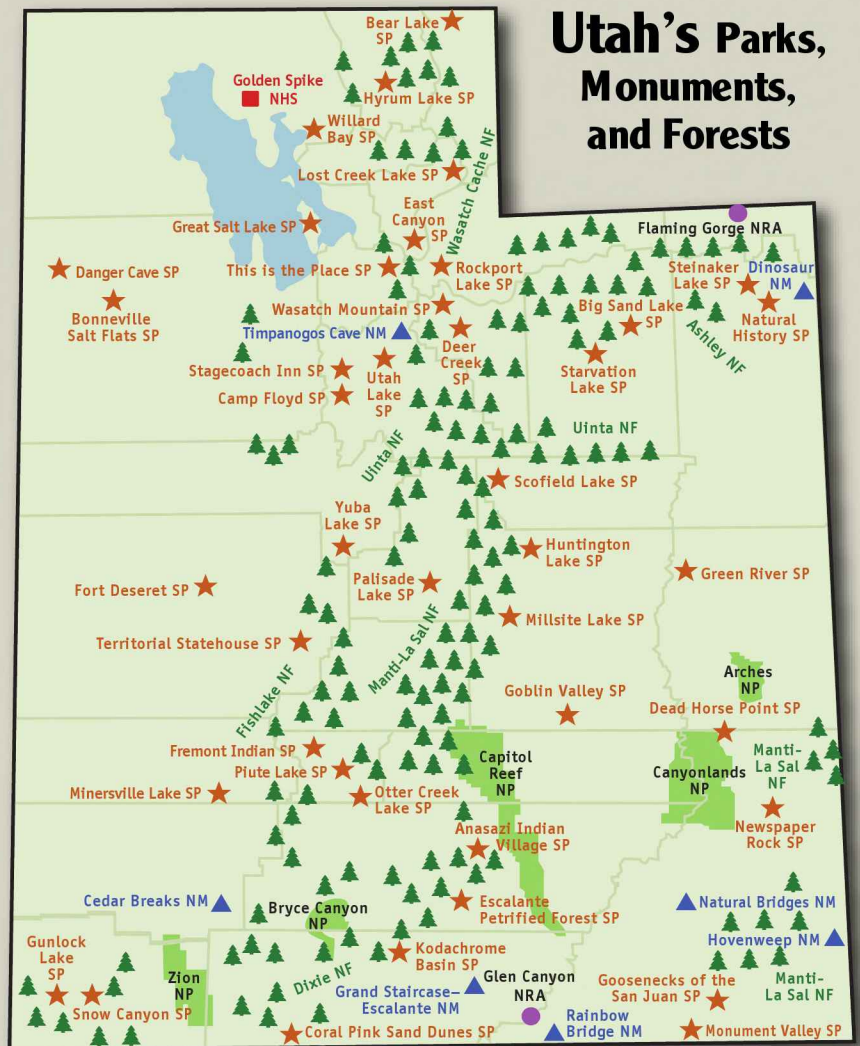
When Utah became a state, the U.S. government gave millions of acres to Utah schools as a resource to make money for education. These lands are called school trust lands. There are almost 4 million acres of school trust land scattered all over Utah. The big tracts of land may be whole mountains, but most are smaller square pieces, one mile on each side. There are trust lands near your town.

How do the lands make money for schools? People pay to use the land in three main ways:

- **Surface.** People pay rent to use the lands for farms, movie sets, industrial sites, and ski resorts. They also pay to graze cattle, cut Christmas trees, and dig sand and gravel on the land.
- **Mineral.** Trust lands may have oil, gas, coal, uranium, and other mineral resources in the ground. Companies pay the trust for the minerals they remove from the land.
- **Sales.** Sometimes trust lands are sold for houses, farms, and ranches. If valuable minerals are discovered on the land, Utah schools will still be paid mineral royalties.

What happens to all that money? The money made from trust lands is never spent. It is put in a savings account to earn interest. Each year millions of dollars of interest money are given to Utah public schools.

Monument Valley State Park, a public land, is located in southern Utah.

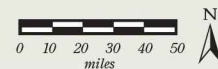


State and national parks and monuments are public land. So are national forests. From studying the map and the map legend, do you think Utah State or the national government own most of our parks, monuments, and forests?

How might this affect Utah's people?

LEGEND

- ★ State Park (SP)
- National Park (NP)
- National Recreation Area (NRA)
- ▲ National Monument (NM)
- National Historic Site (NHS)
- 🌲 National Forest (NF)



A New Monument

When President Bill Clinton established the Grand Staircase-Escalante National Monument in southern Utah in 1996, some Utah citizens were furious that they would be prevented from mining, grazing, and doing other activities on the huge tract of land. Others were happy that their goals for more protected land were being met. The following quotes show different views about the issue:



At the entrance of the BLM [Bureau of Land Management] lands in Southern Utah there is a sign that greets visitors: "Entering . . . your Public Lands." It reminds people that it's their land. They can camp in the national forests. But when the federal government designates land as a national park or monument, we are forced to pay fees and follow strict rules on what you can and can't do there. . . . For the people who live in the regions who depend on the use of the land to make a living, this makes life harder. They can't develop businesses there, for instance. More important is the limitation of "rights;" using the land as they had for years is important to the local people.

—Kai Olsen, U.S. Forest Service employee, Kanab, 1996

What do you think?

Do you agree with the decisions to make the large land region a protected national monument. Why or why not?

"President Clinton and the Department of the Interior seem [determined] on taking lands in southeastern Utah."

"The federal government pays no attention to the Constitution."

These are a few of the statements of San Juan County commissioners, who are [amazed] at the announcement of a possible 1.8 million-acre national monument just across from Lake Powell.

—The San Juan Record, September 11, 1996

In this state, it seems that every time a new park is created, some people have to be dragged into it kicking and screaming. The fact is that tourism is the basis of Utah's economy, and this is a landscape that is globally unique. We see the new monument as a down payment for protecting the rest of the state's wild lands.

—Ken Sleight, the Southern Utah Wilderness Alliance



Caring for the Environment

If people and industries are not careful, they can harm the environment. Many years ago, people often did not take care of the land very well. They thought people could never use up all the grass, trees, animals, and other resources. They thought there would always be plenty of forests, rich farmland, minerals, fresh air, and clean water.

Then, about the time Utah became a state, people began to think about using natural resources wisely. They passed laws to make it illegal for people or factories to pollute the soil, air, and water. Within twenty-five years they were setting aside land for state and national parks, national forests, and wildlife refuges.

Later, wilderness regions were set aside so the land would remain in a natural state forever. Visitors must hike in, ride horses, or drive on narrow dirt roads. People must be careful to leave no trace that they have been there. Trees cannot be cut. The land cannot be farmed or changed by humans.

Today, people are working together to keep our state a great place to live. They are working to develop responsible methods of transportation, such as commuter trains and expanded bus service. They are working to balance the need for jobs, fuel, products, and recreational opportunities people want with preserving the natural beauty of the land for future generations.

Grand Staircase-Escalante National Monument is protected. Only one paved road goes through the land. Other small roads are dirt or gravel. Hiking trails cross parts of the majestic scenery.

Utah's Climate

Weather is the condition of the air for a brief time. The weather can change throughout the day.

Climate is the weather pattern over a period of many years.

Three Climates

Utah has three distinct climates:

Desert climates occur in the Great Basin Region and in the Plateau Region. Very little rain falls in the desert.

Steppe climates are semi-desert; land is covered with grasses and shrubs. Most of Utah's people live in this climate.

Mountain climates are cooler due to the higher elevation. There is enough rain to support forests.

Like its landforms, Utah's climate varies greatly from place to place around the state. Climate refers to the five most important conditions of the air. They are temperature, wind, sunshine, humidity, and precipitation (rain, snow, sleet, hail). Three important factors affect our climate:

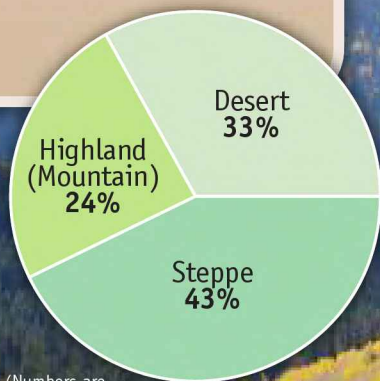
- **Latitude**, or how far north of the equator the state is located, affects climate in two ways. It determines (1) the height of the noonday sun and (2) the length of the day. These factors determine the amount of heat received from the sun. They vary throughout the year. Places nearer the equator are hotter than places farther north.
- **Elevation**, or how high the land is above sea level, affects climate because air usually becomes colder at higher elevations. This means that high mountain valleys are cooler than low desert valleys.
- **Distance from an ocean**. Large bodies of water hold their temperature longer than land does. The warm air above a warm ocean drifts over the nearby land, warming that air as well.

Oceans are also a source of rainfall. Winds passing over the oceans pick up moisture in the form of clouds. When the same winds move over the land, they bring clouds and rain. California, Oregon, and Washington, for example, are next to the ocean, so they have a milder, wetter, climate all year long. Utah, far away from an ocean, is much more likely to have extreme changes in temperature. Utah has four very different seasons—summer, fall, winter, and spring.

Latitude and Elevation

How does climate affect Utah's people? Both summer and winter temperatures vary a lot from the northern to the southern part of the state. Why? St. George, for instance, is usually warmer than Logan because St. George is farther south (closer to the equator) and also has a lower elevation. Cedar City, although still in the southern part of the state, has a much higher elevation than St. George, so it is much cooler.

What evidence of mountain climate can you find in this photograph?



(Numbers are percent of total land)



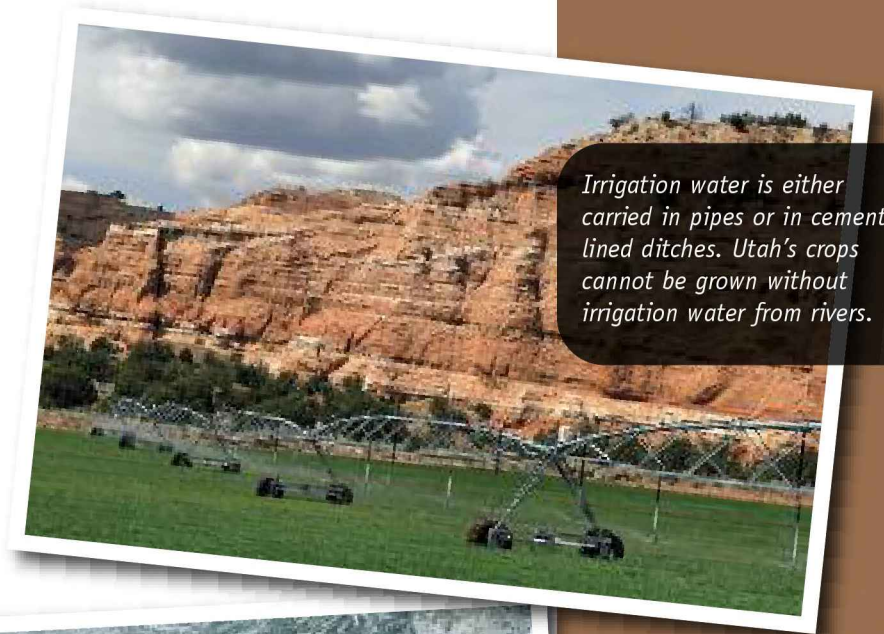
Water and You

All living things need water, but nowhere is water so important as in a desert. Here many natural plants survive, but farmers must use **irrigation** to water crops. People must bring water from rivers and reservoirs to water their lawns and gardens. In other places in the country, natural rainfall waters crops, lawns, and home gardens.

Water has always been a factor in settlement patterns. Today, more than 85 percent of the people live near the mountains. Why? One reason is water. Snow collects in the high mountains, melts in the spring, and runs downhill in tiny streams that join larger streams. Runoff water flows into the valleys and becomes part of the state's rivers and lakes.

Is your town or city next to a river or lake? Are there farms that use irrigation? How do industries in your town or city use water? How does Utah's climate affect what you do for recreation?

High mountains hold winter snow until it melts in the spring.



Utah's Annual Precipitation:

Highest: Alta ski resort, 56 inches

Lowest: Salt flats near Wendover, 4.81 inches

The Rain Shadow Effect: Why Utah Is So Dry

Utah is an **arid** state, meaning it receives little rain. Most of Utah's water is brought to the mountains by clouds moving eastward from the Pacific Ocean. Far out over the ocean, winds pick up moisture from evaporating ocean water. The moist air blows over the coast and continues east.

When the air reaches the tall Sierra Nevada on the California-Nevada border, it must rise to get over the mountains. As air rises, it cools. Cool air cannot hold as much moisture as warm air does, so the moisture falls to the earth as rain or snow on the mountains. There is little moisture left in the clouds to fall on Nevada and Utah.



Sagebrush is common in Utah's hot, dry regions.



Raising sheep is Utah's third-largest animal industry. Dairy cows are second, and beef cattle are first.



Quaking aspens grow in the mountains where the air is cool. A 106-acre stand of quaking aspen in Utah is actually 47,000 connected trees that came from the root of a single tree.

Utah's oldest living tree is the Jardine Juniper, about 3,000 years old. You can see it 11 miles up Logan Canyon.

Utah's Plants and Wildlife

Plant life is just as diverse as Utah's land. Some plants are **indigenous**, or natural to the state, while others have been brought in from other places. When the first white settlers viewed the Salt Lake Valley, they saw sagebrush, grasses, dwarf oak, and willows on the valley floors and forests of pine trees and aspens in the mountains.

Sagebrush still grows in the high valleys and low foothills all over the state. It covers more land area than any other plant. In the southern deserts, the creosote bush is the major form of plant life, but Joshua trees also grow there. Plant life changes with the elevation, as this chart shows.

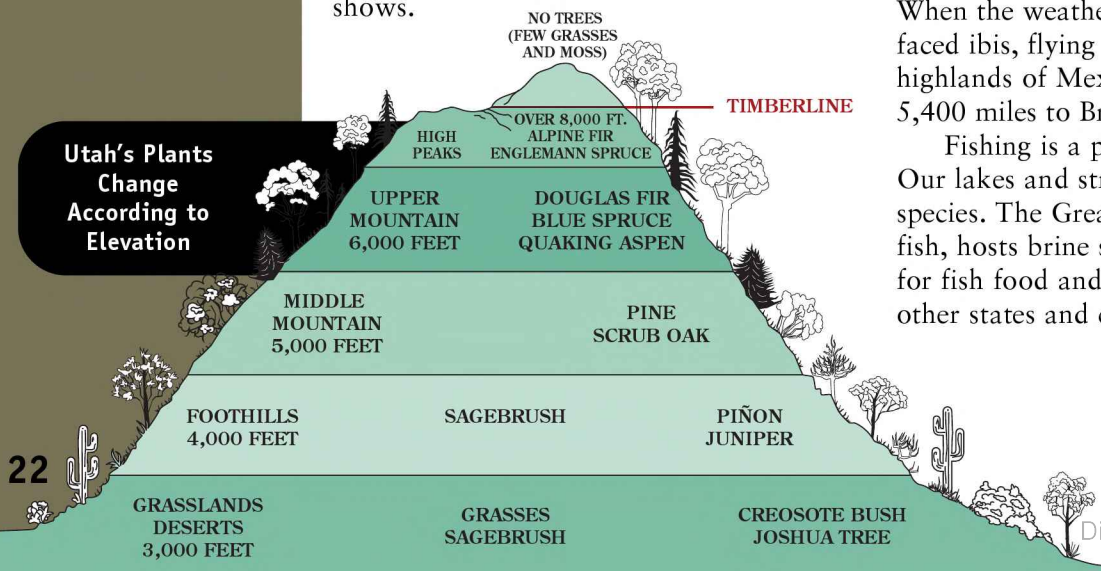
Animals Everywhere

Utah's mountains, plateaus, and valleys shelter wildlife such as elk, mule deer, antelope, mountain sheep, moose, bears, bobcats, coyotes, wolves, and cougars (mountain lions). **Domestic** animals (those raised by people) include large herds of cattle and sheep and flocks of turkeys.

Small animals such as squirrels, chipmunks, prairie dogs, gophers, and mice are found throughout the state. Rabbits, snakes, and lizards are not hard to find once you get out of town.

Where do all of our cliff swallows, avocets, ibis, and other birds go in the winter? These birds, and many others, spend the summers at our wetlands at the Bear River Migratory Bird Refuge near Brigham City. They feed and breed there. When the weather gets cold, the white-faced ibis, flying at 30 mph, return to the highlands of Mexico. Cliff swallows fly 5,400 miles to Brazil.

Fishing is a popular sport in Utah. Our lakes and streams contain many fish species. The Great Salt Lake, too salty for fish, hosts brine shrimp that are harvested for fish food and sold to pet stores in other states and countries.



Utah's State Symbols

TREE:
Colorado blue spruce



FLOWER:
sego lily



FRUIT:
cherry



GRASS:
Indian ricegrass



ANIMAL:
Rocky Mountain elk



FISH:
Bonneville cutthroat trout



BIRD:
California gull



INSECT:
honey bee

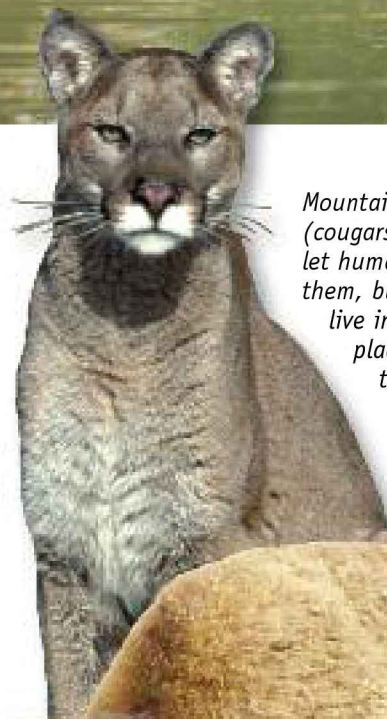


Bull moose live in our mountain valleys.

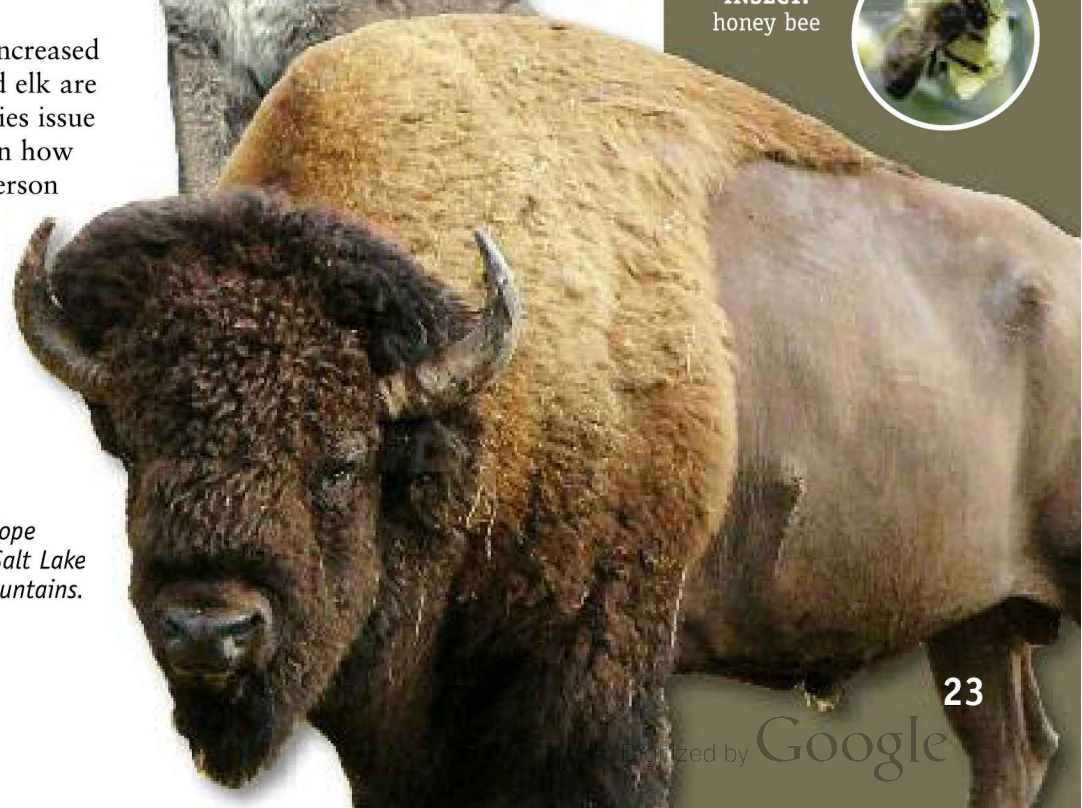
Protecting Wildlife

Our wildlife population changes from both natural and human causes. Bison (buffalo), for example, once roamed all over the Great Plains and Utah. American Indians hunted the great herds for food and fur. Settlers also hunted buffalo, often slaughtering them for sport. Now Utah has only two herds of bison. Animals such as beaver were also once very numerous, but fur traders almost wiped out the species to get their valuable fur.

Other wildlife, however, have increased in number. The number of deer and elk are controlled when government agencies issue hunting licenses. There are limits on how many fish can be caught by each person holding a fishing license. During harsh winters, agencies distribute food to elk and other animals in the foothills. Some animals, like the desert tortoise and bald eagle, are protected. It is against the law to capture, sell, or kill them.



Mountain lions (cougars) rarely let humans see them, but they live in many places around the state.



Bison roam on Antelope Island in the Great Salt Lake and in the Henry Mountains.



Memory Master

1. How are geography and history related?
2. Give at least five examples of Utah's physical features and natural resources.
3. Give two examples of how Utahns have used or changed the land.
4. Describe each of Utah's three major land regions.
5. Describe some unique features of Utah's largest lake.
6. Name two natural features of one of Utah's national parks.
7. Who is the largest owner of Utah land?
8. Compare the use of public land and private land.
9. How do Utah's trust lands affect schools?
10. What three main factors affect Utah's climate?
11. Why is irrigation so important to Utah's farmers?
12. How is plant life related to elevation?



Activity | The Land and the Economy

Some people use the land and natural resources to earn a living. If you were going to grow vegetables and grain, raise cattle, or start a new industry in Utah, what kind of place would you look for? Where would you locate it?

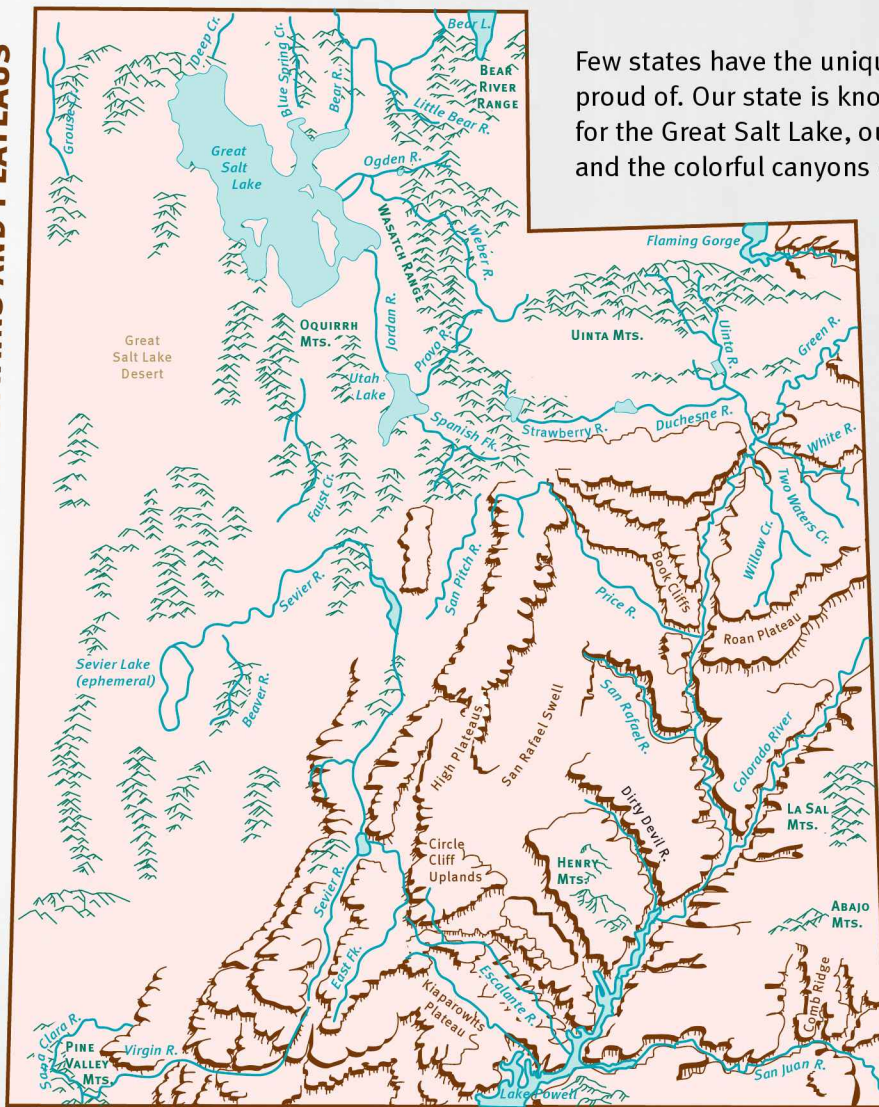
- Would you need water, building stone, brick, or wood?
- Would you need power from coal, gas, or electricity?
- What natural resources would you need? Must they be located nearby, or can they be shipped from another place?
- What forms of transportation would you need? Good roads? Railroad lines? Waterways? Airports?
- How many workers would you need? What skills and education would they need?

Write and illustrate a summary of your business. Include its location and answers to the questions above.

Go to the Source

Study a Physical Map

MOUNTAINS AND PLATEAUS



Few states have the unique landforms Utah is proud of. Our state is known around the world for the Great Salt Lake, our tall mountains, and the colorful canyons of our plateaus.

Study the map and answer the questions that follow.

1. In which direction do most of Utah's mountain ranges run?
2. Which mountain range is the only one that runs east to west?
3. What mountain ranges are located next to the Great Salt Lake?
4. Which three mountain ranges are located in plateau lands?
5. Which long river empties into Lake Powell?

Go to the Source