Nevada

Beef Cattle *(Bos)*

Vocabulary

Breed A group of animals that, through selection and breeding, have come to resemble one another and pass those traits uniformly to their offspring. Selection can occur either naturally or by man.
Bull Male, un-neutered
Calf (*pl.* calves) baby
Calve To have a baby
Color (Somewhat dependent on breed) Any combination of white, black, gray, reddish brown, and tan to dark brown
Cow Female that has given birth to a calf
Cud The portion of food that returns from the first compartment of the stomach to be chewed more thoroughly
Gestation period (Length of pregnancy) approximately nine months and one week
Forb Any non-woody broad-leafed plant
Heifer Female before having a calf
Leppy or **Doggie** Calf that has lost its mother
Ox or **Oxen** (1 or 2) neutered male used for draft (pulling) and meat,, (*pl.* 2 oxes, 3 of more – oxen)
Steer Male, neutered

Lifecycle

Cows usually calve first at two years of age, then once a year. Twins are rare. Birth weight averages between 60 and 90 pounds. Average market weight and age are 1,000 to 1,400 pounds, at 1½ to 2 years.

Species: ***Bos Tarus*** *and* ***Bos Indicus*** or a combination of the two. There are over 250 cattle breeds worldwide. They provide milk, meat, and in many countries, they even provide transportation and farm power by pulling implements such as plows. *Bos Tarus* do not perspire and are more suited to colder climates. *Bos Indicus* cattle perspire, thrive in the tropical heat, are more insect resistant and are apt to have long drooping ears with lots of folds of skin in order to keep cool. Some breeds of cattle, such as Angus, do not have horns. They are called **polled**. In those breeds that have horns, both cows and bulls have them.

Cattle group into herds and will naturally migrate as they feed through the seasons. In Nevada, this may involve wintering in the privately owned lowland meadows where they may be fed hay. Then, in the summer, they move as they graze up to the high mountains. A cow will learn her home territory.

For the first few days after a calf is born, the cow will hide her baby while she goes for water. After a few days, one cow may baby-sit five or six calves while the others graze and water. Calves are ready to be on their own at about seven months.

What Cattle Eat

Cattle are **ruminants**, a type of animal with four compartments to their stomachs. This enables them to eat large amounts of grasses. Later, they bring them back up as a **cud** to chew and digest while resting.

Although they have bottom teeth in front, they have no front teeth on top. Instead, they have a pad made of hard skin much like your heel (especially if you go barefoot a lot). This is called a **dental plate**. Like most ruminants, they must use their tongue to gather the grass and other feed. Ruminants can eat and digest foods that humans cannot. Cattle eat range forage (grasses, **forbs**, and shrubs). Other ruminants include deer, goats, antelope, sheep, camels, llamas, and giraffes.

Cattle eat crop residues and by-products of other food production and agriculture industries such as:

Almond hulls	Corn gluten	Rice hulls
Apple pomace	Corn stubble	Peanut hulls
Bakery waste	Cotton hulls & seeds	Tomato pomace
Beet pulp	Fats	Wheat middlins
Brewers grains	Field crop residues	Other foods rejected for human use
Citrus pulp	Fish meal	
Corn cobs	Fruit processing residue	

Cattle in Nevada

Cattle helped build the West. They pulled our wagons and provided meat, milk, leather for shoes, boots, and saddles. In 1999, beef cattle production was the number one agriculture industry in Nevada. In many Nevada counties, beef is a major contributor to the economy. Elko County is the third largest cow-calf producing county in the nation.

Environment

If properly managed, the grazing of cattle causes little damage to the environment and may improve the habitat for some wildlife. Grazing land management has steadily improved for at least 50 years. This improvement has been primarily due to allocating specific areas to a ranch and requiring a base of privately-owned land. This encourages effective joint stewardship with the rancher and either the U.S. Bureau of Land Management (BLM) or the U.S. Forest Service.

Products

Food Products:

Beef cattle provide us with gelatin, rennet, and all beef meat such as steaks, roasts, hamburger, etc. Approximately one-fourth of our beef comes from dairy cows. A market steer of 1000 pounds will provide about 550 pounds of meat. Most of the balance provides other products.

Other Products

Hide and Hair: glue, gum, insulation, leather goods (luggage, jackets, shoes, belt, paint brushes, sports equipment such as soccer balls, tennis rackets and baseballs).
Bone, Horn, Hooves, Blood, and Gelatin: china, combs, fire extinguishing foam, light filters for cameras, pet food, and photographic paper.
Fats/Fatty Acids: asphalt, candles, cosmetics, soap, crayons, deodorants, detergents, floor wax, hydraulic brake fluid, plastics, rubber, shampoo, and shaving creams.

Suggested Activities

- Have students make jerky in a dehydrator.
- Talk about food preservation before refrigeration and compare to today. Why use salt? Do we still need preservatives? Why would you want to take dehydrated food on a backpacking trip?
- Weight and calculate the percentage of moisture loss.
- Identify foods that a ruminant can eat that a human cannot.
- Place 10 by-products around the room and have students identify what beef cattle provide.

Discussion Topics (Environmental Science classes)

1. If you rented a home, would your family want to spend the money and time to put a new roof on? What would your family do if they owned the home? How does this relate to the fact that ranchers take better care of their allocation of range now than ranchers did in the early 1900s when anyone could move a herd of cattle or sheep anywhere on public lands at any time?

Further References: English economic concept of the *Tragedy of the Commons* – see Garret Hardin, 1968, *Science 112* pp. 1243-48 for more information.)

2. We have a responsibility to take care of cattle and then the cattle provide for us. This ensures the survival of the cattle species. How many of today's cattle breeds would not be here if we did not place an economic value on their products? (The movie *Lion King* and *The Cat Who Walks by Himself* by Rudyard Kipling in his *Just So Stories* addresses this concept.)

Science Project

Grazing management with a lawn mower – Have students observe lawns in their neighborhood. Compare thickness of the number of plants in a lawn that is mowed regularly and a lawn that is not mowed often. With permission of the owner of a property, the student can make a plant count by lightly tossing a small hoop or ring and counting the stems within the hoop. And old picture frame or stiff bracelet works, too.

Other Resources

The web site www.ansi.okstate.edu is an excellent resource to learn about different breeds of cattle and other domestic animals. This site provides pictures and a short history of over 240 breeds of cattle. It also provides the latest research and other information.

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