

NORTH DAKOTA

Ag Mag

A Magazine about Agriculture for North Dakota Students

Fall 2016



Livestock and Land Stewardship

Stewardship is the careful and responsible management of our environment and natural resources. It includes the management of animals, land, air and water. North Dakota's farmers and ranchers are committed to properly caring for their land and their livestock. They are responsible stewards of these resources while providing food, fiber, fuel and forestry products for us.

Stewards: Yes or No?

Write YES or NO if it's something farmers and ranchers do to be good stewards.

- Provide the dairy cows with comfortable bedding made of sand, rubber, foam, sawdust or clean straw.
- Sing lullabies to the sheep.
- Provide nutritious feed for their chickens and pigs.
- Get veterinary care for a calf when it's not feeling well.
- Ensure the cattle have plenty of clean water.
- Plant rose bushes to reduce soil erosion.

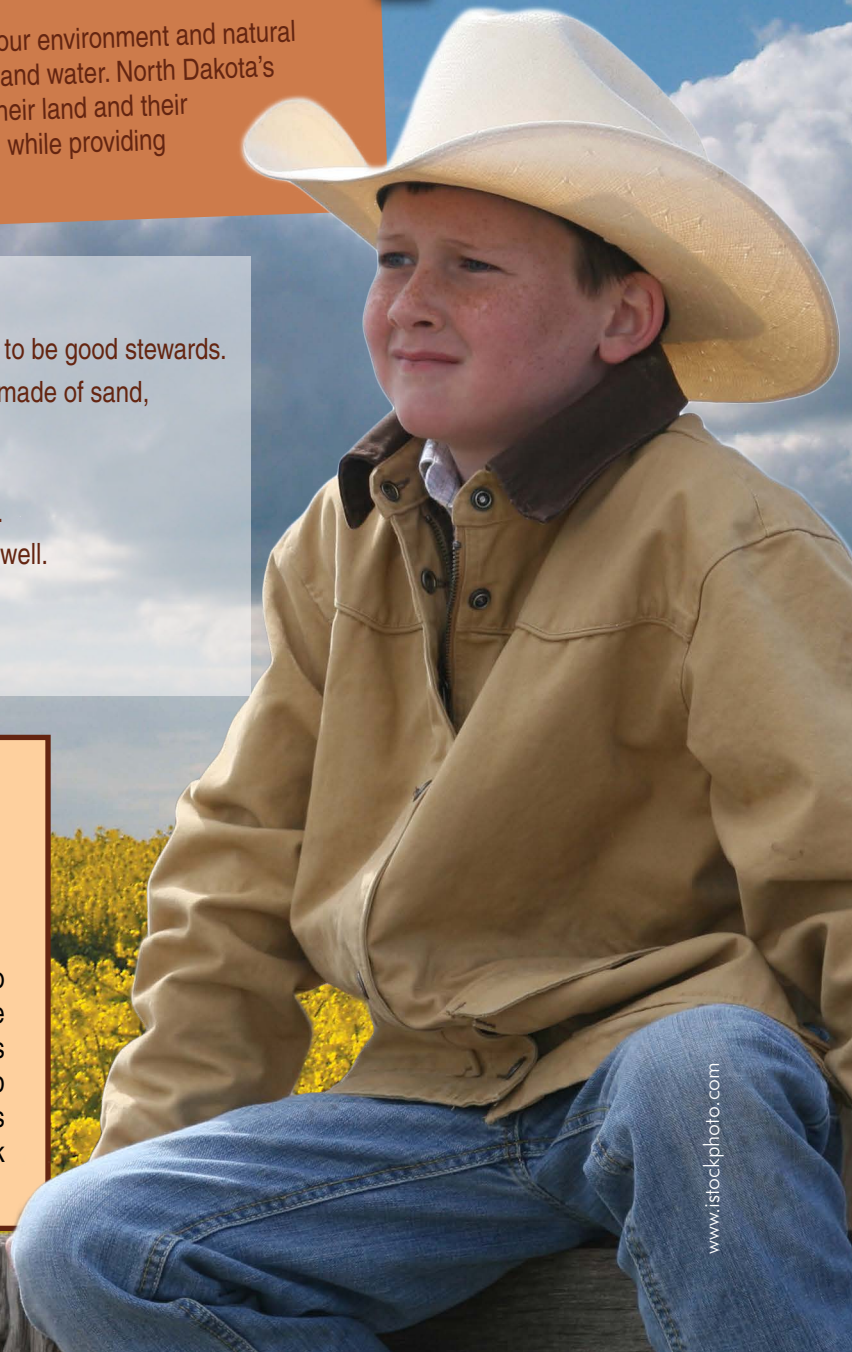
North Dakota's Livestock

Which animals are North Dakota livestock? Put a line from the livestock to our state if they are raised on North Dakota farms and ranches.

beef cattle
 camels
 bison
 rabbits
 pigs
 moose
 llamas



water buffalo
 dairy cattle
 alpacas
 sheep
 goats
 elk





Photographs: NDSU Archives. Dickinson Collection.



The 1930s: Farm Depression

A depression is a period of time when the economy is very poor. During the 1930s, the United States suffered a depression that was so severe it is referred to as the "Great Depression." North Dakota also suffered a major drought during this decade. The lack of rainfall added to the difficulties caused by the poor economy.

The drought and low crop prices of the 1930s caused a farm depression and hardship across North Dakota. Farm foreclosures (where the farmer can't pay the money back that was borrowed from the bank and the bank must sell the farm) forced many farm families to move to cities or leave North Dakota.

North Dakota's population in 1930 was 680,000 people. About 121,000 people moved out of the state during the 1930s. What was the state's population in 1940? _____

In 2016, North Dakota's population was 739,000 people. How many years passed from 1930 to 2016? _____

Are there more or fewer people in 2016 compared with 1930? How many?

In 1933, North Dakota had 86,000 farms. In 1940, there were 73,692 farms in the state. How many North Dakota farms were lost due to the Great Depression and drought from 1933 to 1940? _____



Based on the story above, underline the statements you think are accurate.

Farmers faced low prices.

Farming was fun in the '30s.

The average income in N.D. was \$145 per year.

Teddy Roosevelt was the president in the '30s.

Rotating crops was taught to assist farmers.

Some farmers lost their farms.

Better methods of farming were developed.

Without crops, the land turned to dust.

Drought caused many problems.



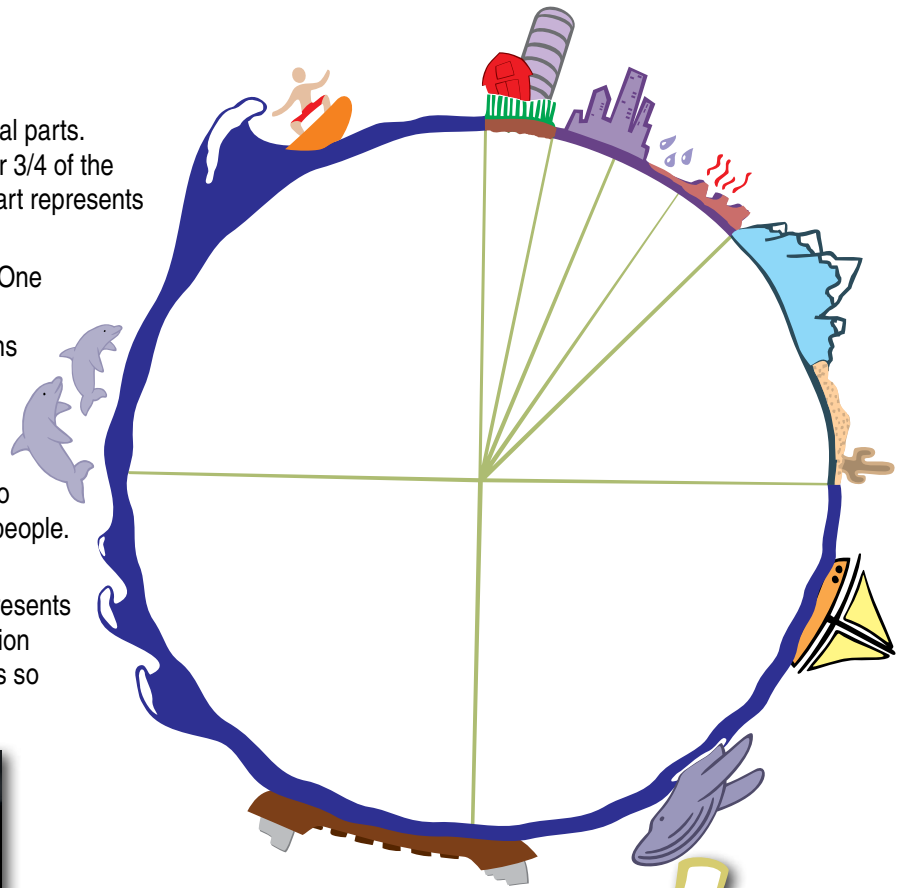
A Slice of Soil

Imagine the Earth as a pie. Cut the pie into four equal parts. Three parts represent the oceans of the world. Color $\frac{3}{4}$ of the pie chart blue to represent the oceans. The fourth part represents the land area.

Cut the land section in half to make two $\frac{1}{8}$ pieces. One section represents land such as deserts, swamps, Antarctic, Arctic and mountain regions. These regions are not suitable for people to live. Color this $\frac{1}{8}$ red.

Cut the remaining $\frac{1}{8}$ section into four equal parts. Three of these $\frac{1}{32}$ sections represent the areas of the world that are too rocky, too wet, too hot or too poor for production, as well as areas developed by people. Color this $\frac{3}{32}$ orange.

Color the last $\frac{1}{32}$ section brown. This small bit represents the soil of our Earth that the world's more than 7 billion people depend on for food production. That's why it's so important for farmers to be good stewards of soil.



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Tossing Around What Stewards Do

Read this paragraph, then fill in the who, what, where, when and why of some of the story's main ideas.

Stewardship is the careful and responsible management of our environment and natural resources. It includes the management of animals, land, air and water. Everyone is a stakeholder, as we are all inhabitants of this Earth. Protecting the environment is what we strive for as stewards of the Earth. It means caring for ourselves and ensuring a sustainable future for generations to come. Every action or inaction of any person in regard to his/her surroundings has an effect, be it good, neutral or bad for the environment. By becoming aware and doing the right action, we choose to be a part of the solution.

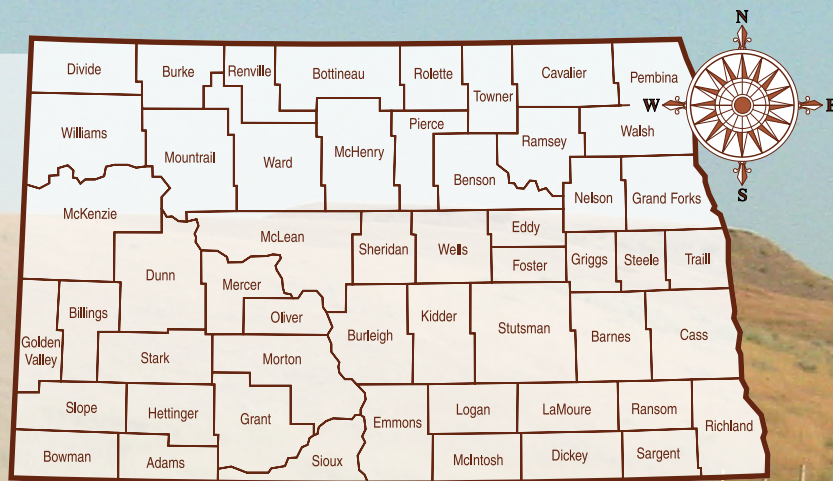
Write a summary of what you learned.



North Dakota's Beef Cattle

Color in these North Dakota top beef cattle producing counties. Do you live in one of these counties?

In what part of North Dakota is each county? Use the compass rose to determine NW, NE, SW, SE or C (Central ND).



- | | |
|----------------|---------------|
| Morton _____ | Grant _____ |
| Dunn _____ | McHenry _____ |
| McKenzie _____ | Kidder _____ |
| Burleigh _____ | Emmons _____ |
| Stutsman _____ | Logan _____ |
| Sioux _____ | Stark _____ |



Radu Carcoana, NDSU

It All Adds Up

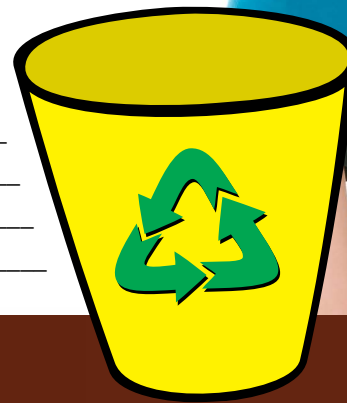
- Beef calves weigh about 80 pounds at birth. When they reach one year, they weigh about 800 pounds. To be a good steward, farmers and ranchers care for their cattle to help them grow. About how much weight will they gain in that one year?
650 lbs. 720 lbs. 850 lbs.
- North Dakota has about 1.64 million beef cattle. What does the number 1.64 million look like?
1,000,640 1,064,000 1,640,000
- Dairy cows get lots of feed and water to produce milk, and they're milked two or three times per day. Ten cups of milk are needed to make 1 pound of cheese. How many cups of milk does it take to make 5 pounds of cheese?
22 cups 33 cups 50 cups
- If 1 quart of milk weighs 2.15 pounds, how much does a gallon of milk weigh?
4.3 pounds
8.6 pounds
17.2 pounds
- With improved breeding, better nutrition and good care, more milk is produced today with only 9 million dairy cows in the U.S. than with 26 million cows in 1944. How many fewer cows are there today than in 1944?
17 million 19 million 20 million
- A farmer provides about 30 gallons of water every day for each dairy cow. If there are 90 milking cows in the herd, how many gallons of water does the herd get?
270 gallons 2,700 gallons 27,000 gallons
- In a comfortable environment, a chicken can gain 1 pound for every 3 pounds of feed it eats. How many pounds of feed would the chicken have to eat to gain 5 pounds?
5 pounds 10 pounds 15 pounds
- Mother pigs called sows often are in stalls so they won't lie down on their baby piglets. If 50 sows in the pig house have an average of 9 piglets each, how many piglets are in the house?
450 piglets 500 piglets 540 piglets



Are You a Steward?

You may not farm the land or raise livestock, but check the ways you can be a steward – and write more ways.

- Feed the birds.
- Buy birthday presents for your neighbors.
- Don't pour motor oil down the street drain.
- Take short showers.
- Reuse old paper for scratch paper.
- If you see trash, pick it up and put it in a trash can.
- Reuse items rather than throwing them away.
- Watch TV until you have red eyes.
- Recycle cans, bottles and paper.
- Walk to school and to your activities.
- Turn the water off while you're brushing your teeth.
- Don't hold the refrigerator door open.
- Turn the lights and TV off when you're done in the room.
- _____
- _____
- _____
- _____



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9. By keeping their pigs indoors, farmers can keep them cool in the summer and warm in the winter. In part of North Dakota, the average January temperature is 17 F and the average July temperature is 73 F. What is the difference between the high and low averages?

46 degrees F 56 degrees F 66 degrees F

10. A sow's gestation (pregnancy) lasts for about three months, three weeks and three days. If the sow got pregnant on Jan. 1, about when would the piglets be born?

March 25 April 25 May 25

11. A piglet weighs about 3 pounds when it's born. With good nutrition and proper care, the pig can increase its weight by 20 times in eight weeks. About how much would the pig weigh in eight weeks?

40 pounds 50 pounds 60 pounds

12. Samantha's flock has 300 ewes (female sheep). Half of the ewes give birth to single lambs and half of them have twins. How many lambs does she have?

450 lambs 600 lambs 900 lambs

13. If the average sheared sheep has 8 pounds of wool and a compressed wool bale weighs 380 pounds, how many sheep's fleeces does it take to make a bale?

45.7 sheep's fleeces
47.5 sheep's fleeces
75.4 sheep's fleeces

14. Nature requires about 500 years to produce 1 inch of top soil. How many years are needed to develop 1/2" of top soil?

100 years 250 years 750 years

15. In North Dakota, about 2/3 of soil erosion is caused by wind, and the rest is caused by water. What fraction is caused by water?

1/4 1/3 2/3



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Career Corner

Carl Dahlen, NDSU

Lisa Pederson

Beef Quality Specialist, NDSU Extension Service

Lisa Pederson teaches North Dakota producers how to raise cattle for safe, wholesome, high-quality beef. When people buy steaks, roasts or ground beef at the grocery store or at a restaurant, they want to know that the meat is safe and wholesome – and that begins on the ranch, she says.



Beef Quality Assurance (BQA) programs include keeping good records and protecting the animals' health. For example, Lisa teaches North Dakota adult and youth ranchers how to give vaccinations and medications to cattle the correct way. She demonstrates this by using a syringe to shoot mustard into a cupcake. You wouldn't want to bite into mustard when you're eating a cupcake, and beef consumers don't want to bite into anything except for tasty beef.

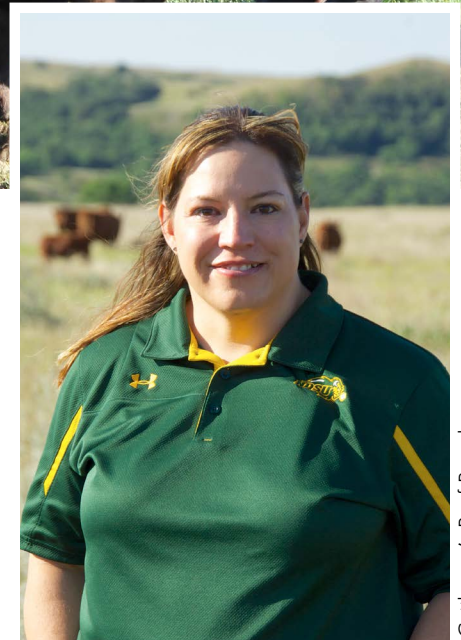
Good cattle management also leads to high-quality byproducts, which are things we use from cattle besides meat. Leather, soap, gelatin, adhesives and medicines are a few examples of beef byproducts.

"Beef Quality Assurance shows U.S. and international customers that we are doing everything we know how to do to produce the safest, most wholesome, highest quality beef – from the farm to the customer's plate," Pederson said.

Pederson's life experiences and education prepared her for her career. "I was raised on a diversified livestock operation in southwestern Colorado. Now my husband and I ranch with his family in north central South Dakota. 4-H gave me a lot of hands-on experience with livestock and leadership skills that have helped me in my career and in my life.

"I took a variety of classes in college that helped me prepare for my career. Animal science, agricultural business and education classes have probably been the most impactful. I was on the Colorado State University livestock, wool and horse judging teams. Judging helped me speak in front of people I don't know, explain reasons for doing things and make good decisions."

To prepare for a career, Pederson recommends students take as many classes and engage in as many opportunities as they can. "The variety of skill sets you learn from doing different things makes you more well-rounded and will make you more successful."



Cattlemen's Beef Board

Pederson shares several suggestions for success and happiness in a career and in life.

- Start every day with a smile on your face.
- Always treat people respectfully. Learn good manners, and get in the habit of saying please and thank you.
- Do more than what is required. Arrive early and be the last to leave.
- Be willing to learn. I am continuously learning and incorporating the things I learn in my work and in my life.
- Don't get down when a door in your path closes. Another door will open.
- Be flexible.
- Stand for what you believe in, but do it respectfully.
- Do what you say.
- Be a team player.



An **Acrostic Poem** about Stewards

An acrostic poem uses the letters in a word to begin each line of the poem. All lines of the poem relate to or describe the main topic word. Write an acrostic poem about stewards.

S

Share the responsibility.

T

E

W

A

R

D

S

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Farmers and Ranchers Know Best

Circle the best answer to fit the sentence.

1. To avoid overgrazing, farmers and ranchers practice wise land and (heard or herd) management.
2. To improve (their or there) knowledge and practice, farmers work closely with soil conservationists.
3. Farmers must (now or know) how to rotate crops for best results.
4. Ranchers (choose or chose) to work closely with veterinarians to ensure that their livestock remain healthy.
5. Farmers learn to manage (obnoxious or noxious) weeds to have greater crop yields.
6. A ewe can recognize the “baa” of (it’s or its) own lamb.
7. Farmers and ranchers care for their livestock because it’s the right thing to do (ethically or ethnically).
8. Caring for their livestock also makes good business (cents or sense).
9. (Conversation or Conservation) means taking care of something to prevent loss – the same as stewardship.
10. Soil conservation can improve water (quantity or quality).



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with others
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learned
about
stewardship.**

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