LANDSCAPE
TEACHER'S GUIDE
Designed for use with the 28-minute video tape: Landscape

A new story of possibility in changing the American West

Can visions of the American West come together in some kind of common ground?

Public perceptions of the American West have been molded, in part, by the wilderness images of nineteenth century artist Albert Bierstadt and the cowboy paintings of Charles M. Russell. Although these two views of the West are endlessly appealing, we cannot continue to base our decisions on historic perceptions of the West that have been swept away by the passing of time.

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• Montana Fish, Wildlife and Parks
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whose help, guidance and cooperation
made this Teacher's Guide possible.

May many students and teachers grow in their
understanding and appreciation of
our landscape.
Dear Educator:

Montana's diversity in history, lifestyles and livelihoods revolves around one fundamental element: The Land. Montanans have a collective character which has been shaped by the weather, the rivers, the mountains, the prairies, and open space. Consequently, land use decisions are near and dear to our individual values and emotions. Sometimes, during discussions about how to best utilize the landscape, we lose track of how dependent we are on the land use actions of our neighbors.

Montana Fish, Wildlife & Parks Director Pat Graham and I are pleased to present your school with the video documentary "Landscape" and the accompanying "Landscape Teacher's Guide." This powerful and evocative documentary was produced by the Livestock/Big Game Coordinating committee, a delegation of ranchers, federal and state land managers and wildlife enthusiasts who recognized that forming partnerships is an effective way to provide leadership in our rapidly changing world. Indeed, we believe forming and keeping partnerships is necessary for virtually all kinds of progress.

We thank Lisa Flowers of the Boone and Crockett Club and Jim Sargent representing Agriculture in Montana Schools for their partnership in creation of the teacher guide. We hope you will find the information and activities they have compiled to be useful in your classroom and to your students, the partners of tomorrow.

As Montana prepares for the next millennium, we can only speculate on the changes that will take place. However, we trust the landscape will remain as the common denominator linking us all within our western culture. On behalf of all involved in this effort, we hope these materials will prove beneficial as you continue your important task of developing the leaders of tomorrow.

Sincerely yours,

Marc Racicot  
Governor  
State of Montana

Pat Graham  
Director  
Montana Fish, Wildlife & Parks
The *Landscape* video was produced by a diverse group of agencies and organizations with the goal of providing the public with a balanced view about the complex and often controversial issue of grazing on public lands. After the initial screening of *Landscape*, many teachers felt the video would make an excellent learning tool for the classroom. Therefore, a committee was formed with representatives from *Agriculture in Montana Schools*, the *Boone & Crockett Club*, and *Montana Fish, Wildlife & Parks*. The committee’s charge was to develop a guide for teachers to use with the *Landscape* video.

Members of the committee understand that the video is most appropriate for secondary audiences; however, based on input from primary teachers, activities for elementary grades and a written version of the video’s script have been included. We recommend educators screen the video first to determine age appropriateness and to enhance their own understanding of this complex issue. Also, it is always a good practice to notify a school administrator before dealing with potentially controversial issues in the classroom.

Regardless of whether you decide to use the video with your students, the activities stand alone and are in a sequence which will prepare students to better comprehend these important natural resource issues.
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Dear Teacher:

LANDSCAPE and its accompanying Teacher's Guide are exciting educational tools for classroom use.

In LANDSCAPE, Western images, land-use issues, and thought provoking questions are woven together in an exquisite manner. The video explores the management and use of public lands. It shows how these great natural resources can benefit from successful, collaborative efforts between different interest groups. We think you will find that LANDSCAPE provides a model for natural resource issue discussions, especially among secondary-school students.

As citizens of a democracy, Americans often toil with complex issues that have far reaching effects. LANDSCAPE examines the complexities and controversies long associated with the use of public and private lands by wildlife and livestock. It also demonstrates how divergent points-of-view have resulted in a public divided on how our public lands ought to be used.

But LANDSCAPE suggests that times are changing and, as a story of new possibilities, it shows that common ground solutions can be discovered through an interchange of ideas based on the notion that livestock, wildlife, and people can indeed coexist.

The Teacher's Guide
The LANDSCAPE Teacher's Guide was developed as an instructional tool to compliment the video. The guide seeks to:

1. provide educators with background information about the video prior to its use in the classroom.
2. help educators prepare students for viewing the video.
3. offer classroom activities which reinforce and build upon the concepts introduced in the video.

We feel LANDSCAPE is most appropriate for secondary-school audiences. However, based on comments from elementary teachers, the guide contains activities for students from kindergarten through high school. Furthermore, these activities are interdisciplinary and can be used within many subject areas, including science, social studies, language arts, and mathematics. So, regardless of whether you decide to use the video with your students, the activities stand alone and are in a sequence which will prepare students to better understand the underlying social and political issues that are at the heart of the LANDSCAPE story.

LANDSCAPE offers an enjoyable learning experience that might broaden your students' understanding of natural resource issues. In the end, in Montana, and in places throughout the world, everything is tied to the land.

Lisa Flowers
Conservation Education Program Manager
Boone and Crockett Club

Jim Sargent
Liaison, Agriculture in Montana Schools/ Montana State University
KEY CONCEPTS EXPLORED IN LANDSCAPE

1. Cooperation between people involved in livestock production and wildlife management is critical to the perpetuation of the Western Culture, including recreation and home sites.

2. For many years artists have shown different perceptions of the landscape in the West.

3. The West of today is changing from the myths and historical perceptions of the "Wild West" or the "Untamed West."

4. Both livestock and wildlife are very important parts of the Western Culture.

5. The condition of the land is the most important factor in livestock and wildlife management.

6. Healthy habitat is key to healthy animals.

7. The health of the land is the common foundation for the many lifestyles and livelihoods that exist in today's West.

8. Wildlife and livestock require open space to thrive. (areas with few or no people's homes)

9. Proper livestock and wildlife management can enhance the quality of vegetation.

10. Different species of animals graze on different types of forage at different times of the year.

11. Plants are a renewable resource.

12. Western range plants evolved in response to drought and grazing.

13. Large free-ranging herds of wildlife often spend a large part of the year on private land...usually in fall, winter and spring.

14. In the past, the focus of management has been on the animal; ranchers managed livestock, biologists managed wildlife. Now the major focus of management is for the land itself.

15. In some areas land, both public and private, can be managed on a rest-rotation system.

16. Management of riparian areas is important for both livestock and wildlife.

17. The settlement of the West swallowed up much of our wildlands and now the traditional ranch is being lost-in some cases to hard economic times, urbanization and new economic opportunities.

18. Poor grazing practices have damaged soils, vegetation and wildlife habitat. Similarly, good grazing practices have improved soils, vegetation and wildlife habitat in many instances.

19. Ranchers love the land just as much as the most ardent preservationist.
This video includes many people. Some are referred to by name in the script. Others are individuals who appear in the video. A short biography of each is included below.

Here are two suggestions that can help your students learn more about each of these people:

- Assign a student to "be" that person. Let students read the biographical sketch to the class before the video. Wearing a name tag or costuming helps students take on the role.
- Students could follow up after the video with an expanded story or report about the person they represented.

**NAMES REFERENCED IN THE VIDEO**

**Gary Cooper** (1901-1961) He was born in Helena, Montana. He was one of Hollywood's most consistently popular and beloved stars. He played the leading part in many Western movies. "High Noon" (1952) is considered to be one of his finest performances.

**John Muir** (1838-1914) He was a naturalist and an advocate of forest conservation. He was largely responsible for the establishment of Sequoia and Yosemite National Parks in California. He came from Scotland at age 11. As early as 1876, he urged the federal government to adopt a forest conservation program. He influenced the large-scale conservation program initiated by President Theodore Roosevelt. The two of them once went on a camping trip to Yosemite. Muir Woods National Monument, a stand of virgin redwood trees, is named in his honor.

**Chief Joseph** (1840?-1904) He became famous for the trip he led through Idaho and Montana in 1877. A fight began after the government ordered his band of Indians to a reservation in Idaho. Chief Joseph and his warriors fought several battles. He then led a retreat of men, women and children for over 1,000 miles, many of them in Montana. He halted just 40 miles short of his goal—Canada. A part of his speech, "I will fight no more..." has endured.

**Theodore Roosevelt** (1858-1919) He was a writer, explorer, soldier and politician. He was born in New York City. He was elected to the New York State Assembly at the age of 23. He was the twenty-sixth president of the United States. When he was about 26 years old he bought a ranch in the Badlands of North Dakota. He organized a Cavalry unit called the "Rough Riders" which was composed mostly of cowboys. As president, he added 194,000,000 acres of federal domain, meaning that they were made off-limits to private ownership.

**Zane Grey** (1872-1939) He wrote over 75 novels about the West. He actually lived the rugged adventurous life made famous in his exciting books. His stories on the glory of the West are packed with color, action and romance. On his material-gathering tours, he would sometimes make notes that went verbatim into his novels. He often wrote two or three books a year.

**Little Joe and Hoss** Character names from the popular television series, "Bonanza." The series depicted life on a cattle ranch in the developing West.
Charles M. Russell (1864-1926) He was an American painter and sculptor famous for his scenes of cowboys and life in the West. His works show action and great detail with authentic background and settings. He came to Montana when he was 16 years old. He was a hunter and a cowboy. A statue of Russell represents Montana in Statuary Hall in the United States Capitol. There are excellent Russell museums in Great Falls and Helena.

Albert Bierstadt (1830-1902) He was one of the greatest American romantic landscape painters. His paintings express the grandeur of the landscape, emphasized by his use of dramatic lighting. His paintings were praised for their detail, as well as their vast scale.

Thomas Moran (1837-1926) Moran, a British-American engraver and landscape painter, was born in England. He made his first trip into the American West under the auspices of the Northern Pacific Railroad with a government-sponsored geological expedition to the Yellowstone. He produced many views of the American West. Many of his favorite sketching sites have since become National Parks.

Gifford Pinchot (1865-1946) He was a pioneer of U.S. forestry and conservation. In 1887 he became a confidential forest agent to the Secretary of Interior. He was the first head of the Forest Service when it was established in 1905. He held that office under Presidents McKinley, Theodore Roosevelt, and Taft. He founded the School of Forestry at Yale University.

PEOPLE FEATURED IN DOCUMENTARY

The following people either speak in the video or are quoted in it. Their home town and vocation is also listed:

Larry Zabel, from McAllister Montana, is one of the nation’s premier Western artists.

Jim Richard, from White Sulphur Springs, a member of the Montana Wildlife Federation.

Chase Hibbard, Helena, a Montana rancher and member of the Montana House of Representatives.

Mike Frisina, Butte, a biologist with Montana Fish, Wildlife and Parks.

Maynard Smith, Glen, a Montana rancher.

Forest Morin, with the Northern Region of the USDA Forest Service.

Marc Racicot, Helena, Governor of Montana.
PICTURE MY LANDSCAPE

SUBJECTS: Art, Language Arts & Science.

KEY CONCEPTS EXPLORED: 1, 2, 3, 4, 7, 17

BACKGROUND: A landscape is a view or vista of scenery on land. It is also the branch of art dealing with the representation of natural scenery. The video “Landscape” shows us that there are many components of a landscape and many different ways to look at a given landscape. The components of a landscape can be viewed and identified within a short period of time but the interwoven connections to the landscape may take a lifetime to understand and fully appreciate.

PROCEDURE:

1. Give each student a copy of the student page to the landscape painting. Brainstorm with the class and compose a list of the components in the landscape scene. Have students label the appropriate numbers with the listed components. (2-3 grades)

2. Check students’ sheets to see if they agree with the key for the painting. (2-3 grades)

3. Have each student write or draw a brief story on the back of the sheet describing what they think is going on in the painting. Students may want to volunteer to read their descriptions to the class. (2-3 grades)

4. Give each student a cardboard frame (12" x 9") with an inside hole (9" x 6"). Go outside and have each student hold up the frame and look at part of the landscape. Have each student describe what they are seeing in their landscape. Make a class list of the things the students see. (K-1 grades)

5. Discuss how the students’ landscape view would change if they were to go out into the country.

6. In the classroom make a wall mural of the landscape the students viewed from the school grounds. Give each student a specific piece of the landscape to draw. If animals and people are not part of the landscape be sure students include them in the picture.
KEY - LANDSCAPE PAINTING "COMMON GROUND"
by Larry Zabel

1  COW ELK/WILDLIFE  9  MOUNTAINS  17  PINE TREE
2  BULL ELK/WILDLIFE 10  COW CALF/LIVESTOCK 18  DECIDUOUS TREES
3  RANCHER  11  BUNCH GRASS 19  SNOW
4  HORSE/LIVESTOCK  12  ROCK OUTCROP 20  RAIN SHOWER
5  COWS/LIVESTOCK  13  RIDGE  21  ELK CALF/WILDLIFE
6  CATTLE TRAIN  14  RAVINE  22  BIG SKY
7  RANGELAND  15  VALLEY
8  Foothills  16  FOREST
WHAT IS A GRASS?

SUBJECTS: Science & Language Arts

KEY CONCEPTS EXPLORED: 11, 12

BACKGROUND: Grasses are undoubtedly the most important flowering plant to humans. They contribute tremendously to the earth's green mantle of vegetation: they are the source of the principal foods of people and wild and domestic grazing animals. Without grasses, agriculture would be virtually impossible, and many items used daily are products of various grasses. Grasses hold acres upon acres of soil in place against the destructive erosive forces of wind and water. Grasses replenish oxygen in the earth's atmosphere. There are over 5,000 "kinds" or species of grasses in the world and 1,400 of these are found in the United States.

PROCEDURE:

1. Discuss with the students places that grass grows where they live. Make a list of those places. (K-1 grades)

2. Ask the students if they help their family mow the lawn or bale grass hay? What happens to the grass plant that is either cut by the lawn mower or the hay swather? Does grass have to be replanted each year or does it continue to grow?

3. Bring a Bluebunch Wheat grass plant into the class room if available (Ask local conservation District office for assistance). Compare grass to other flowering plants.

4. Show the class the picture of the Montana state grass Bluebunch Wheatgrass. Point out the different parts of the grass plant.

5. Give each student a grass activity sheet. Either ask them to label the grass on their own or do it as a class project.

6. Acquire some grass seed and grow the plants in the classroom. Observe the different stages of growth, from the vegetative stage to the flowering stage to the seed dispersal stage. Pull some plants out of the soil at different growth stages and observe the fibrous root growth. Cut the grass at different stages. What happens to the plant when it is cut? What happens to the development of the roots? (K-1 grades)

7. Have students record the daily growth measurements of the grass plants and plot data on a graph. Also describe what is done to the plants to simulate wildlife or cattle grazing (i.e., clipping the grass at different stages). Keep track of how much water is given to the plants. Drought conditions could be simulated by not watering the plants for given periods of time; document how the plant responds. (3rd grade)
DEFINITIONS FOR INSTRUCTORS
BACKGROUND INFORMATION:

Flower Cluster - A group of the reproductive structure of all flowering plants.

Leaf Blade - The expanded part of a leaf, the part above the leaf sheath.

Roots - The descending axis of a plant. Roots absorb moisture and nutrients from the ground.

Spikelet - The basic unit of the inflorescence in grasses, consisting of two glumes and one or more florets.

Stem - The jointed stalk of grasses. Same as culm.
IS THAT FOOT WILD OR DOMESTIC?

SUBJECTS: Science, Art & Language Arts

KEY CONCEPTS EXPLORED: 4, 5, 8, 10, 13

BACKGROUND: The term “Wildlife” refers to animals that are not tamed or domesticated. Wildlife includes animals such as, insects, spiders, birds, amphibians, reptiles, fish and mammals, if they are not domesticated. Domesticated animals are those that humans have tamed, kept in captivity, and bred for special purposes and have evolved over a long period of time. All domesticated animals have their origins in wild ancestors. Domestic animals include cattle, horses, pigs, sheep, cats, dogs, goldfish and chickens.

PROCEDURE:

1. Ask students to bring pictures to class of as many animal feet as they can find. They can look in library books, newspapers or magazines. Cut the pictures out if possible or make copies. They should label each foot with the name of the animal. (2-3rd grades)

2. Once the students have gathered pictures of at least 3-4 different animal feet, the class should classify them into domestic and wild animal feet. The domestic feet can be glued on some poster board as a collage and the same can be done with the wild feet.

3. The students can now compile two lists, one listing the similarities that wild and domestic animal feet have and one listing the differences that wild and domestic animal feet have.

4. A field trip could be planned to visit a local cattle ranch where both cattle and wildlife graze. If both cannot be found together in a given area, take the students to an area where wildlife are known to graze. Ask the students why the tracks may or may not be found in the same locations. Show students how tracks are made in the snow or mud. Use their own feet or the feet of animals.

5. Have the students find the tracks of cattle and wildlife on the ground. Make plaster tracks to take back to the classroom, and have students observe the differences and similarities. Discuss the observations as a group.

6. Have the class compose A Tracking Story. The teacher can begin the story..... “Today was a special day. I have been waiting for weeks to be able to saddle my horse and ride with my family and the dogs, of course, to move the cows off the lower pastures up to the National Forest lands where they will graze for the summer.....”

The ideas in the story should incorporate animal tracks that the young boy or girl came across that day. Did they actually get to see the animal(s) or just knew that they had been there? Were the animals wild or domestic and where might they have been going and why?
THE TREES IN OUR LANDSCAPE

SUBJECTS: Science, Art and Math

KEY CONCEPTS EXPLORED: 6, 11, 18

BACKGROUND: There are many different species of trees living on the land around our individual communities. Trees provide many things for livestock and wildlife. In particular, a stand of trees provides shelter from the wind, shade on a hot sunny day, cover from predators and good material for rubbing an itchy back or growing antlers. Trees are either deciduous or coniferous. Trees that lose all their leaves at one time are deciduous and trees that are “evergreen” are coniferous.

PROCEDURE:

1. Discuss the different types of trees found in the local area. Make a list of the different names. (K-1 grades)

2. Discuss what the leaves look like on the different trees. What are the different shapes?

3. Using the list of trees found in the area, categorize the trees as Evergreen (Coniferous) or Not Evergreen (Deciduous).

4. In your area where do these different types of trees grow? By the river, in the foothills, in the valleys or on the mountain slopes?

5. Discuss why trees are important to livestock and wildlife, and why they are important to humans? (K-1 grades)

6. Either bring different types of leaves into the classroom or schedule a field trip for the students to do some collecting as a class. (K-1 grades)
   Note: Make sure to take field trips during late spring and early fall. Help students to understand that they do not want to negatively impact an area where they are collecting plant materials. Only collect enough for the class to use.

7. Have students separate the deciduous tree leaves from the coniferous tree leaves.

8. Have the students arrange the leaves on a flat surface and have them do leaf rubbings using crayons and pencils. Create a leaf mural “Leafscape.”
PROCEDURE: Find the words listed below. They may be up or down in the puzzle.

COW
ELK
SKY
HORSE
CALF
TREE
SNOW
ROCK
GRASS
VALLEY

ANSWER KEY

Q A G Z N L V H J R
C A L F B U A C
T U E L F E R P
W C D M O C L S Y
K W E F S K I V L K Z
E GRASS S N O W
LANDSCAPE WORD FIND

PROCEDURE: Find the words listed below. They may be up or down in the puzzle.

COW
ELK
SKY
HORSE
CALF
TREE
SNOW
ROCK
GRASS
VALLEY

Q A G Z N L V H J R
C A L F B U A O C O
O T U E L K L R P C
W C D M O C L S Y K
S K Y W T R E E E U X
P E F S K I Y L K Z
E G R A S S S S N O W
MEET SOME IMPORTANT RANGE GRASSES

Taken from AMS Teacher’s Guide “Montana Country: Water, Soil, Grass & Trees” by Jim Sargent & Matt Ricketts

SUBJECT: Science

CONCEPTS: 9, 11, 12, 18

BACKGROUND: Because there are hundreds of plants on the range, we’ve selected just a few for you to meet. If these plants are strong and healthy, they provide an indication that the range you are visiting is in good condition. The selected grasses listed below are in order of most to least desirable for grazing animals. If you find more of the most desirable grasses, then the range is probably in good condition.

PROCEDURE: Take some time and visit some native rangeland. You’ll be surprised at all the different plants that grow there. In fact, you better take someone who knows grasses with you so that you will get to know some of the grasses growing on the range. It would take years of college training for most of us to become experts in range plants.

Before you go remember these things:
1. Bluebunch Wheatgrass is the State Grass of Montana.
2. Healthy range grasses have healthy root systems.
3. Healthy range plants can resist invasions by weeds and other less desirable plants in some areas.
4. Rangeland is the base for the livestock industry - so important to all of Montana.

The climate and geography vary throughout Montana so we have divided the state into three areas.

![Map of Montana with areas divided into 1, 2, and 3]

Listed below are some of the common grass species in each area. The grasses listed in each area are in order from most to least desirable for grazing animals.

**Area 1:**
- Rough Fescue
- Bluebunch Wheatgrass
- Western Wheatgrass
- Prairie Junegrass

**Area 2:**
- Bluebunch Wheatgrass
- Western Wheatgrass
- Needle and Thread
- Blue Grama

**Area 3:**
- Bluebunch Wheatgrass
- Little Bluestem
- Western Wheatgrass
- Needle and Thread
PROCEDURE: Find the words listed below. They may be forward, backward, horizontal, vertical or diagonal in the puzzle.
(Note to teachers: You might suggest that fourth grade students find ten words. Increase the number of words to be found for the higher grades.)

**ANSWER KEY**

agriculture artist biologist cattle
change common ground compatible compromise
deer drought elk erosion
forage fish graze habitat
land landscape livelihood livestock
management Muir pasture private
pristine public rancher renewable
rest riparian rotation rural
Russell sheep urban vegetation
water western wilderness wildlife
LANDSCAPE WORD FIND

PROCEDURE: Find the words listed below. They may be forward, backward, horizontal, vertical or diagonal in the puzzle.

- agriculture
- change
- deer
- forage
- land
- management
- pristine
- rest
- Russell
- water
- artist
- common ground
- drought
- fish
- landscape
- Muir
- public
- riparian
- sheep
- western
- biologist
- compatible
- elk
- graze
- livelihood
- pasture
- rancher
- rotation
- urban
- wilderness
- cattle
- compromise
- erosion
- habitat
- livestock
- private
- renewable
- rural
- vegetation
- wildlife

E W R L L E S S U R I T N E M E G A N A M
P R I V A T E R U T S A P E L J G O R R E
D N A L N L N O I T A T O R T C I L B U P
R C G I D P E E H S B I K Y R T N A B R U
O O R V S L B C U E V B G R A Z E P F A X
U M I E C N I H P R D A R T I S T M S L E
G P C S A R O F B Y T H E R O S I O N G L
H R U T P E L H E B E G N A H C V Y H N B
T O L O E T O L I V E L I H O O D N A Y I
D M T C H S G B T V F O R A G E G I E E T
M I U K L E I J S S R E H C N A R F F L A
U S R D G W S P I I R E N E W A B L E T P
I E E E T L T E N I T S I R P F I S H T M
R E I H H S S E N R E D L I W K X I L A O
R E T A W B N N D N U O R G N O M M O C C
SELECT THE BEST DEFINITION

SUBJECTS: English, Art, Science

KEY CONCEPTS EXPLORED: 1, 2, 6, 9

PROCEDURE: Select the best statement from the column on the right and place the letter with the word on the left.

**ANSWER KEY:**


(g) 2. Forage b. Grazing plants so much at one time that the health of the plant is weakened.

(i) 3. Charles M. Russell c. Area extending beyond stream bank, usually with lush vegetation.

(a) 4. John Muir d. Artist who painted the picture in the Landscape video.

(b) 5. Overuse e. Working together to agree on a settlement that will benefit all parties.

(h) 6. Habitat f. An American landscape painter who emphasized dramatic lighting effects.

(i) 7. Gifford Pinchot g. Plants that provide food for animals.

(f) 8. Albert Bierstadt h. All things an animal must have to survive: food, water, shelter and space.

(e) 9. Riparian i. An American sculptor and painter of cowboys and life in the West.

(d) 10. Larry Zabel j. A pioneer in forestry and conservation; first Chief of the Forest Service.
SELECT THE BEST DEFINITION

PROCEDURE: Select the best statement from the column on the right and place the letter with the word on the left.


____ 2. Forage  b. Grazing plants so much at one time that the health of the plant is weakened.


____ 5. Overuse  e. Working together to agree on a settlement that will benefit all groups.

____ 6. Habitat  f. An American landscape painter who emphasized dramatic lighting effects.

____ 7. Gifford Pinchot  g. Plants that provide food for animals.

____ 8. Albert Bierstadt  h. All things an animal must have to survive: food, water, shelter and space.


____ 10. Larry Zabel  j. A pioneer in forestry and conservation; first Chief of the Forest Service.
LOOKING AT GRASSES

SUBJECTS: Science

KEY CONCEPTS EXPLORED: 11, 12

BACKGROUND: Grass is such an important part of our state. Over 70% of the land is covered by grasslands that grow there naturally. Many of the grasses are perennials, plants that live for several years. These rangelands provide food for wildlife and make it possible for many ranchers to make a living by providing food for all of us.

From the time new little green spears start to poke out of the ground until cold weather begins to return in the fall, grass grows through many stages. There is another important part of the plant that we normally don't see. Of course, that is the roots. In order to grow, the plant must get food and water from the roots. The plant has a better chance to be strong and healthy if the roots are strong and healthy. When grasses are flowering and the seeds are ripening the plants use nutrients that have been stored in the roots. During the initial stages of growth grasses are using the nutrients stored in the roots. It is important that plants have a chance to store food. That is one reason the rest-rotation system of grazing works well in some conditions.

PROCEDURE: Look at the drawing of grass development and then read the numbered descriptions of the stages of grass development. Match the individual descriptions with the selected stage of grass growth. Place the description number in the circle.

ANSWER KEY:

1. Flowers turn into seeds just as they do on many other plants that are more familiar to many people.
2. A bundle of parts begins to develop and emerge up through the leaves. The plant is growing rapidly.
3. The plant becomes dormant. Seeds drop to the ground and may grow into another plant in the future.
4. Buds open into flowers—not large and colorful, but tiny and inconspicuous.
5. Little green leaf spears begin to come out of the ground.
6. Seeds dry out and become hard; the rest of the plant begins to turn brown.
PROCEDURE: Look at the drawing of grass development and then read the numbered descriptions of the stages of grass development. Match the individual descriptions with the selected stage of grass growth. Place the description number in the circle.

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6. Seeds dry out and become hard; the rest of the plant begins to turn brown.
WHAT IS RIPARIAN HABITAT?

SUBJECTS: Science, Art, Language Arts
KEY CONCEPTS EXPLORED: 16 & 18

BACKGROUND: Riparian habitat is the land around lakes, rivers, and streams where plants and trees grow well because they have plenty of water. It is the area where water and dry land meet, and it could be a few feet wide or hundreds of yards across. It might be in the forest or on the plains. Riparian areas provide space, shelter and food for the plant and animal communities that are associated with this habitat. Livestock and wildlife use riparian areas as corridors when moving from place to place, to escape the heat of the sun during hot weather or to find protection from the wind and winter storms. Overuse in a riparian area can cause damage to the vegetation, increase erosion and harm aquatic life. Fish and other aquatic life can be harmed if too much sediment is being carried by a stream, spring, creek or river. Careful management of riparian areas will prevent this.

PROCEDURE:

1. Describe riparian habitat to the students. Ask students to name riparian areas that they have visited or know about. Make a list.

2. Ask students to describe some of the specific things they remember about the riparian habitat: smells, plants, temperature, types of rocks, wildlife, etc.

3. Ask students to bring pictures of as many animals, plants, streams, lakes, springs, or rivers that they can find in magazines or newspapers at home (use magazines and newspapers from school if available). Once the students have a good collection of pictures have them classify them into three groups: rivers, streams, springs and lakes. Discuss the differences and similarities between these three riparian habitats.

4. Divide the class into four groups (River group, Stream group, Spring group and Lake group).

5. Each group will design a poster describing its particular group’s theme: river, stream, spring or lake using the magazine and newspaper pictures, construction paper, markers, crayons and paint.

6. Once the students have created their riparian habitat, have groups share their posters with the class. After each group has described its riparian habitat poster to the class, ask the students questions concerning human-caused and naturally occurring changes in the riparian habitats. What would happen to stream and river banks or springs, if large herds of elk, deer, cattle or sheep used a specific area frequently? What would happen if many of the big trees and shrubs along the water’s edge were cut down? What would happen to the level of the water in the river, stream, spring or lake in the spring time if there were a lot of snow in the mountains?

7. Extension: Willow shrub and tree species grow quite readily in many riparian areas. New willow plants can be propagated by clipping the end of a branch (approx. 24 inches long) and placing it in a bucket of water until new roots develop from the stem. When new root shoots develop, take branch from bucket and plant the branch in a large pot or directly into the ground in a wet (riparian) area. Compare this type of (asexual) vegetative reproduction with the (sexual) reproduction of Bluebunch Wheatgrass from seed.
LAND OWNERSHIP

SUBJECT: Math, Science, Geography and History

KEY CONCEPTS EXPLORED: 1,4,7,15,16,19

BACKGROUND: The lands in Montana are either publicly or privately owned. The public lands are either federal or state. Federal lands are owned by the people of the United States and state lands are owned by the citizens of the state of Montana. Private lands are owned by individuals. Montana's land area is 145,392 square miles or 93,050,800 acres. Sixty-seven percent of the lands in Montana are private, 30 percent are federal lands, and 3 percent are state lands.

Many livestock operations are conducted solely on private lands. There are, however, some ranches (primarily those adjacent to public lands) that move their cattle to public land leases. These cattle graze public lands primarily in the summer and the cattle grazing is regulated by the administering agency (e.g., Bureau of Land Management, Forest Service etc.)

Wildlife are owned by the public but range wherever they find palatable forage. Approximately 20% of the elk harvest during hunting seasons each year are harvested on private lands. As elk herds increase in size they tend to utilize private lands on a continual basis. The vast percentage of elk in Montana occupy private lands at some time during the year, usually during the winter months.

PROCEDURE:

1. Divide the class into groups of four. Give each group a map depicting public and private landownership.

2. Each group should find where its town or city is located on the map. Instruct the students to mark off an area of 100 miles in each direction from their town or city.

3. Using a paper overlay, the students should trace and color code private and public lands.

4. How many acres of the area are private lands and how many are public lands? What is the percentage of public land to private land?

5. Who are the major holders of the private lands in this area? Who are the major holders of public lands in this area?

6. Invite major landowners, both private and public, to the classroom to discuss how they may or may not be cooperatively managing the land and its resources. And discuss how landownership and management have changed in the last 100 years.
RANCHER, RANGE MANAGER OR WILDLIFE BIOLOGIST?

SUBJECTS: Science, Vo-Ag, and Life Skills

CONCEPTS: 1, 5, 9, 10, 11, 14, 18, 19

BACKGROUND: Environmental quality and economic growth go together. As we look to the future, we need to continually balance demands on agricultural resources for food production with ecological concerns for surface and ground water quality, wildlife, and wetlands, as well as human health. The challenge facing world agriculture today is to provide food, fiber, and industrial raw materials for billions of people without jeopardizing the future productivity of our natural resources.

PROCEDURE:

1. Have students research what a rancher does, what a range manager does and what a wildlife biologist does. Each student will write a paper describing each profession.

2. Invite a rancher, range manager and a wildlife biologist into the classroom to give presentations to the class describing their chosen profession.

3. Students will then design poster-size job descriptions and a list of duties for a rancher, range manager and a wildlife biologist to be displayed in the classroom.

4. Students will decide what profession they would choose based on what has been learned. Once they have chosen their profession, give students the following scenario:

   You are now in charge of managing an 8,000-acre parcel of land in Montana. Choose the geographic region in Montana where this land is located. If you are a rancher you are managing a piece of private land that may be yours or you may be managing it for the landowner. If you are a range manager or wildlife biologist you are managing public land. (The time period of management should be for at least one year.) Describe the management strategies you would practice on this parcel of land.

5. Students will prepare a presentation and paper.
ACTIVITY
9 - 12TH GRADE

STATE GRASS OF MONTANA

SUBJECTS: Science, English, History

KEY CONCEPTS EXPLORED: 4, 9, 10, 11, 12, 14, 18, 19

BACKGROUND: Bluebunch Wheatgrass is the state grass of Montana. It is found on plains and dry slopes throughout the western United States and Canada. It is found in the 9 - 16 inch precipitation zone throughout Montana, but is dominant in foothills and mountains. It grows on a variety of non-alkaline soils. Bluebunch wheatgrass is a key species on many ranges. Although it is rated as only fair to good in palatability, it produces considerable forage for both wildlife and livestock. Bluebunch wheatgrass should not be continuously grazed. Plant health on these ranges can usually be enhanced with rest rotation grazing. Seed viability is usually low. Several varieties have been developed and released for rangeland seeding. Bluebunch wheatgrass is a perennial native bunchgrass, that produces most of its growth early in the growing season.

PROCEDURE:

1. Bring a Bluebunch Wheatgrass plant into the classroom to show the students. Discuss where the plant grows and its other general characteristics.

2. Ask students if they know of places where this grass grows in the local landscape. List locations. Have students interview older ranchers and other members of their community to find out how long domestic livestock have been grazing the bunchgrass communities in their area. Perhaps through the interview process the students might be able to discover areas that had bunchgrass communities at one time but, are no longer existence.

3. Discuss native plants versus non-native plants in Montana. Discuss perennial plants versus annual and biennial plants. Discuss the differences between monocotyledonous and dicotyledonous plants. Show the class the picture of the Montana state grass Bluebunch Wheatgrass. Point out the different parts of the grass plant.

4. Give each student a grass activity sheet. Ask them to label the grass on their own or as a class project.

5. Acquire some grass seed and grow the plants in the classroom. Observe the different stages of growth, from the vegetative stage to the flowering stage to the seed dispersal stage. Pull some plants out of the soil at different growth stages and observe the fibrous root growth. Cut the grass at different stages, and at different heights. What happens to the plant when it is cut? What happens to the development of the roots?

6. Have students keep a journal describing the growth of the grass plants. Also describe what is done to the plants to simulate wildlife or cattle grazing (i.e. clipping the grass at different stages). Keep track of how much water is given to the plants and measure the height of the plants at different stages. Drought conditions could be simulated by not watering the plants for given periods of time; document the plant’s response.
BLUEBUNCH
WHEATGRASS
*Agropyron spicatum*

Identifying Characteristics
Bluebunch Wheatgrass varies from 1-3 feet in height. It has a spike inflorescence. Each seed has an awn (about 5/8 inch long) that bends as it matures.

Site and Habitat
Bluebunch Wheatgrass is found on plains and dry slopes throughout the western United States and Canada. It is found in the 9 - 16-inch precipitation zone throughout Montana, but is dominant in foothills and mountains. It grows on a variety of non-alkaline soils.

Management Considerations
Bluebunch Wheatgrass is a key species on many ranges. Although it is rated as only fair to good in palatability, it produces considerable forage. Bluebunch Wheatgrass ranges should not be continuously grazed. Plant succession on these ranges can usually be enhanced with rest rotation grazing.

Response to Grazing
Bluebunch Wheatgrass decreases with overuse.

Other Comments
Bluebunch Wheatgrass is the state grass of Montana. Seed viability is usually low. Several varieties have been developed and released for rangeland seeding.
Bluebunch Wheatgrass
*Agrípyron spicatum*
State Grass of Montana
DEFINITIONS FOR NSTRUCTORS
ACKGROUND INFORMATION:

awn - Slender bristle frequently attached to the florets or glumes of grasses.

culm - The jointed stem of grasses.

cot - A plant that has two embryonic seed leaves that appear at germination.

oret - The flowering parts or suit of grasses.

lower Cluster - A group of the productive structure of all flowering plants.

Glumes - The pair of bracts or scales at the base of a grass spikelet.

Inflorescence - The flowering part of a plant. The inflorescence of a grass can be either a spike or a panicle.

Leaf Blade - The expanded part of a leaf, the part above the leaf sheath.

Leaf Sheath - The lower part of a grass leaf that encloses the stem.

Monocot - A plant that has one embryonic seed leaf that appears at germination.

Node - The place on a stem where branches or leaves arise (also the joint of a grass stem).

Rachis - The central axis of a spike or other inflorescence.

Roots - The descending axis of a plant. Roots absorb moisture and nutrients from the ground.

Spikelet - The basic unit of the inflorescence in grasses, consisting of two glumes and one or more florets.

Stem - The jointed stalk of grasses. Same as culm.
WHERE ARE YOU GOING TO GRAZE YOUR CATTLE?

SUBJECT: Agriculture Education, Science, History

KEY CONCEPTS EXPLORED: 5, 6, 9, 10, 12, 14, 15, 18

BACKGROUND:
Where are you going to graze your cattle during certain times of the year? In LANDSCAPE, one system of grazing livestock is discussed. It is called rest-rotation. What does "rest" mean? What does "rotation" mean? In any given year, one pasture is grazed by cattle during the growing period, one pasture is grazed by cattle during the post-seed ripe period, and the third set is rested. Over a three-year period, a pasture will be grazed during the growing season in year one, grazed post-seed ripe in year two, and totally rested in year three. Under this system, seeds produced in year two give rise to seedlings in year three, which is the year that the pasture is rested from grazing.

PROCEDURE:
Imagine that you are a rancher with a herd of cattle. Can you develop a three-year grazing plan?

1. You have three pastures where your cattle can graze from May 1 to September 30 each year.
2. All of your cattle stay together and graze only one pasture at a time.
3. Pastures used at one time one year cannot be used at that time for two more years.
4. From September 30 to May 1 you will move your cattle to other parts of your ranch. Of course, wildlife may use these pastures at any time, most likely during the fall and winter.

Put the letters (A, B or R) in the pasture to show where you would graze your cattle during the three-year time period.

A = During the growing season for the grass, that is, when the grass is green, probably about May 1 to mid-July.
B = During the time when the grass is in the mature/dormant stage when the grass has turned brown, mid-July to the end of September.
R = Rest during the entire growing season. No livestock grazing at all from about May 1 until the end of September.

Over the three year period, how much rest did each pasture get? Remember, everyone can gain: the rancher, the wildlife, the range and the soil! This is a simplified example of rest-rotation grazing that might be adapted by many ranchers.

If you would like to know more about this system, ask a rancher, range scientist or a wildlife biologist for more information.
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<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th>SECOND YEAR</th>
<th>THIRD YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasture #1</td>
<td>Pasture #1</td>
<td>Pasture #1</td>
</tr>
<tr>
<td>Pasture #2</td>
<td>Pasture #2</td>
<td>Pasture #2</td>
</tr>
<tr>
<td>Pasture #3</td>
<td>Pasture #3</td>
<td>Pasture #3</td>
</tr>
</tbody>
</table>

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If you would like to know more about this system, ask a rancher, range scientist or a wildlife biologist for more information.
HOW MANY CATTLE & ELK CAN GRAZE ON THE RANGE?

SUBJECT: Math & Science

KEY CONCEPTS EXPLORED: 1, 4, 6, 8, 11, 13, 18

BACKGROUND: Rangeland is land on which the native vegetation is predominantly grasses, wildflowers, or shrubs. Rangelands include prairies, savannas, shrub lands, most deserts, tundra, alpine plant communities, coastal marshes, and meadows. How much of the earth’s land surface is rangeland? Forest 25%, Cropland 10%, Urban 3%, Ice/Barren Deserts 15%, Rangeland 47%. Two thirds of Montana is rangeland.

Rangelands are characterized by annual precipitation varying from very low (4-8 inches) to very high (50-60 inches). Temperature averages range from tropical to near freezing. Soils and vegetation vary greatly and management problems are complex. Consequently, solutions to management problems also vary greatly. Range Management is the art and science of manipulating rangeland to provide an optimum sustained yield of forage, water, wildlife, wood, recreation, aesthetic beauty, and other uses, without damaging the resource. How important is range livestock production in Montana? Livestock grazing occurs in every county throughout the state. Range livestock production is Montana’s single largest industry in terms of land use and cash receipts.

PROCEDURE: Calculate the sustainable stocking rate for cattle and elk on 10,000 acres for 12 months. See DIRECTIONS section on Student Activity Sheet: Explore with students how these calculations can assist a ranch manager who manages for both cattle and elk (question 3). Invite area experts into the classroom to assist students with this question (see Rancher, Range Manager, or Wildlife Biologist activity on page 25).

Using numbers from the Given Information section on the Student Activity Sheet, make the following calculations:

a) Palatable forage/acre: total palatable forage columns in table 1 = ________ lbs/acre
b) Usable forage/acre: palatable forage x .5 (50% from given info.) = ________ lbs/acre
c) Total usable forage: 10,000 acres x usable forage= ________ lbs
d) Animal demand/year: (given info.) lbs forage/mnth x 12 mtnths = ________ lbs
e) Number of animals/10,000 acres total useable forage = ________ # of animals on 10,000 acres
animal demand/yr

Note: Contact your local Natural Resources Conservation Service (NRCS) office for grazing/forage data specific to your local rangelands.
HOW MANY CATTLE & ELK CAN GRAZE ON THE RANGE?

DIRECTIONS:
Using Table 1 and the Given Information section, determine the sustainable carrying capacity of a 10,000 acre range for cattle and elk. Answer these questions: 1) How many cattle could live on this range if elk were not present? 2) How many elk could live on this range if cattle were not present? 3) How would a landowner use this information to manage a ranch with both cattle and elk?

Given Information:
* Land Area = 10,000 acres
* Grazing Period = 12 months
* Grazing Merit:  
  - Good = include all weight (lbs/acre)
  - Fair = include 50% of the weight (lbs/acre)
  - Poor = include none of the weight (lbs/acre)
* Consider 50% of the palatable forage to be usable forage for cattle or elk
* 1 domestic cow requires 780 lbs forage/month
* 1 elk requires 546 lbs forage/month

TABLE 1

<table>
<thead>
<tr>
<th>Plant Species</th>
<th>Lbs/Acre</th>
<th>Grazing Merit</th>
<th>Palatable Forage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cattle</td>
<td>Elk</td>
</tr>
<tr>
<td>Bluebunch Wheatgrass</td>
<td>300</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Western Wheatgrass</td>
<td>300</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Needle and Thread Grass</td>
<td>80</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Western Yarrow</td>
<td>80</td>
<td>Poor</td>
<td>Fair</td>
</tr>
<tr>
<td>Lupine</td>
<td>40</td>
<td>Fair</td>
<td>Good</td>
</tr>
<tr>
<td>Penstemon</td>
<td>50</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>40</td>
<td>Poor</td>
<td>Fair</td>
</tr>
<tr>
<td>Cinquefoil</td>
<td>40</td>
<td>Fair</td>
<td>Fair</td>
</tr>
<tr>
<td>Snowberry</td>
<td>60</td>
<td>Poor</td>
<td>Fair</td>
</tr>
<tr>
<td>Willow</td>
<td>90</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>TOTAL:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Palatable Forage/Acre</td>
</tr>
</tbody>
</table>

Now using the information above calculate the following:

CATTLE
a.) Palatable forage/acre: ______________________
b.) Usable forage/acre: ______________________
c.) Total usable forage: ______________________
d.) Animal demand/year: ______________________
e.) Number animals on 10,000 acres: ____________

ELK
a.) Palatable forage/acre: ______________________
b.) Usable forage/acre: ______________________
c.) Total usable forage: ______________________
d.) Animal demand/year: ______________________
e.) Number of animals on 10,000 acres: ____________
How Many Cattle & Elk Can Graze on the Range?

Directions:
Using Table 1 and the Given Information section, determine the sustainable carrying capacity of a 10,000 acre range for cattle and elk. Answer these questions: 1) How many cattle could live on this range if elk were not present? 2) How many elk could live on this range if cattle were not present? 3) How would a landowner use this information to manage a ranch with both cattle and elk?

Given Information:
* Land Area = 10,000 acres
* Grazing Period = 12 months
* Grazing Merit:  
  - Good = include all weight (lbs/acre)
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* Consider 50% of the palatable forage to be usable forage for cattle or elk
* 1 domestic cow requires 780 lbs forage/month
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Table 1

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<th>Lbs/Acre</th>
<th>Grazing Merit</th>
<th>Palatable Forage/Cattle</th>
<th>Palatable Forage/Elk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bluebunch Wheatgrass</td>
<td>300</td>
<td>Good</td>
<td>300</td>
<td>300</td>
</tr>
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<tr>
<td>Willow</td>
<td>90</td>
<td>Good</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

Total:

| Palatable Forage/Acre | 860 | 930 |

Now using the information above calculate the following:

Cattle

a.) Palatable forage/acre: 860 lbs/acre

b.) Usable forage/acre: 430 lbs/acre

c.) Total usable forage: 4,300,000 lbs

d.) Animal demand/year: 9,360 lbs

e.) Number animals on 10,000 acres: 459.4

Elk

a.) Palatable forage/acre: 930 lbs/acre

b.) Usable forage/acre: 465 lbs/acre

c.) Total usable forage: 4,650,000 lbs

d.) Animal demand/year: 6,552 lbs

e.) Number of animals on 10,000 acres: 709.7
NARRATOR: His name is Larry Zabel. An artist in search of a vision. For years now he has tried to reflect on his canvases the fundamental reality of the American West. Although he is one of America’s foremost western artists, if you ask him about his task he will probably say he has failed. He hasn’t found what he’s been searching for. So he’s come to the Bitterroot Country, once again, looking for the heart of the land.

There was a time when Gary Cooper came this way. And naturalist John Muir. Chief Joseph dragged his sorrows over that mountain to the north. Theodore Roosevelt had a ranch just up the way. Along this road Zane Grey pursued his muscular stories. Little Joe and Hoss journeyed from here into our living rooms. Each has shaped our perception of this beautiful elusive land. Each has helped create a mythology that masks what the land has meant and can mean in our lives.

Larry Zabel:

ZABEL (PARAPHRASED): I think if you sift it all out, there are two basic views of the west. One is reflected in the works of the great landscape artists. Like Thomas Moran and Albert Bierstadt. They focused on the land itself. The beauty, the vast open spaces, the aesthetic qualities of the land. Then there were the cowboy artists like Charley Russell. They were more fascinated by what was happening on the land.

NARRATOR: Today, these two views of the American West have come into conflict... Especially as they relate to livestock grazing on public lands. If art really does mirror life, the issue of public land grazing should be clear and decisive...for those who choose to see the West through Bierstadt... livestock have no place on public lands.

And for those who see the West through Russell...there are few problems on public land and too many restrictions.

The problem is, both beliefs are based on historical interpretations of the West that have been swept away by the passing of time. Although few actually see themselves as identifying with either extreme, the images are dangerously convenient when trying to categorize someone else’s point of view.

The fact is, the “untouched” or “untamed” West has developed into a mosaic of private and public lands inhabited both by domestic livestock and free ranging wildlife.

For years, through lease agreements in Montana and the other 10 Western states, stockmen have been permitted to graze their livestock on State and Federal lands. Places that are important to a great diversity of wildlife. Elk, deer, antelope, moose, mountain sheep, badger, coyote and fox, as well as upland game birds, waterfowl, even grizzly bears use these lands.

Lands that have been, and are becoming increasingly important for hunting, fishing and other recreation uses by the public. Places which provide the freedom that is such a part of the face of the west.

Many of the elk sought by wildlife enthusiasts spend part of the year on private lands in Montana. Lands that are very important to livestock producers. Places reserved for winter pasture or for the production of forage which is harvested, stored and fed to their livestock throughout the critical winter months.

With such diverse interests and demands, the true image of today’s West is understandably difficult to capture. But one thing is for sure. The health of the land is the common foundation for the many lifestyles and livelihoods that exist in today’s West.

BREAK ONE

While not opposed to grazing, some conservation groups point to poor grazing practices that have damaged rangeland, vegetation and wildlife habitat. And along streams cause erosion, degrade water quality and diminish fisheries.

Montana Wildlife Federation Spokesman: Jim Richard. (Richard interview)
Many, including ranchers, point to studies that indicate grazing can be compatible with the goals of wildlife management, and that western range plants evolved in response to drought and grazing.

Rancher: Chase Hibbard: (Hibbard interview)

NARRATOR: Chase Hibbard runs a large cattle and sheep ranching operation in Montana. He could survive without his Federal grazing permits. But for some ranches, public land is critical to their operation.

Without access to and careful stewardship of the forage on public lands, some ranches that have been in operation for three or four generations would be out of business. No longer could they feed their animals year-round.

During the homestead era, failed ranches were often times abandoned...forgotten...left to nature. Aside from the lives of the people directly involved in the failed ranch...little changed. But today, market value of Western ranch land often dictates a new use for the landscape.

More and more people want to own the western experience...a slice of the Montana dream. However, the dream of open space, rural sense of community and the western lifestyle are largely made possible by working ranches.

When large ranches, with their open landscape and critical wildlife habitat are eliminated, everything changes. Land stewardship becomes a moot point.

NARRATOR: There is a need most of us have to see the American West through the eyes of Albert Bierstadt and Thomas Moran. We wish the West to be what it was on the morning of the eighth day of creation. We would have our pristine forests and great expanses of grass and the mountains rising pure as John Muir’s dream from the earth. In the meadows and high country would be elk and eagle and bear. There would be wilderness and solitude as deep as a holy mind.

There is also in most of us a need to see the world of the American West through the eyes of Charley Russell. To feel the energy and promise and simplicity of a life lived close to the earth. His world was filled with passion and struggle and possibility. The land was essential to his art. But it was the human struggle and triumph that energized his canvases.

Again, Larry Zabel:
ZABEL (SYNC): Trouble is, we’re never gonna find either one of those worlds. They’re both gone. The pristine West of Bierstadt and Muir. The Gold Rush ended all that. The settlement of the West swallowed up much of the wilderness. And the traditional family ranch of Charley Russell is being swallowed up just the same. If not by hard economic times...by urbanization and new economic opportunities...People are buying their share of the Ponderosa Dream. I’m not saying I like it, or want it. I don’t. I’m just saying it’s real. So I’ve got to decide. I either paint a myth or what’s real. And there’s no reason in my mind what’s real can’t be just as beautiful as the myth.

BREAK TWO

NARRATOR: From the very beginning of the Conservation movement, grazing on public lands has been an issue. Gifford Pinchot, who headed the early years of the Forest Service, wrote that grazing was the toughest and most controversial issue he confronted. When the forest reserves were first established, grazing was specifically prohibited. Then, limited grazing was permitted on a few ranges. In July of 1905, Pinchot issued 7,981 grazing permits, an action that would infuriate his friend, naturalist John Muir, and cause a rift between conservationists that would last for nearly a century.

Grazing on public land is nothing new. Whether the practice is right or wrong, just or unjust, destructive of enhancing, livestock grazing has been with us since long before Muir and Pinchot ended their friendship over the issue a century ago.

How, then, can there be any common ground between the vision of Charley Russell and the dream of Thomas Moran?
Larry Zabel.

ZABEL (SYNC): When I begin thinking about a painting, I always start with land. Everything begins with the land. Then I begin to think about what might have happened on the land. I think one of the things about the grazing issue is that both sides agree on the most important thing. They share a love of the land. The rancher, if he’s a good one and is successful, loves the land just as much as the most ardent preservationist. If his land is not healthy, his operation will fail. If he isn’t a good steward of the land, what he passes on to his children will have little value.

BREAK THREE

NARRATOR: For the first time in a hundred years, it appears Bierstadt and Russell are finding common ground. It is common ground largely based on concern for the land.

This is the Fleeceer Wildlife Management Area in Southwestern Montana. Six thousand acres of prime elk winter range purchased by the Montana Department of Fish, Wildlife & Parks in 1962.

Wildlife Biologist: Mike Frisina. (Frisina interview)

NARRATOR: Adjacent to the Fleeceer Mountain Wildlife Management Area is the Smith Six-Bar-S ranch. For years Maynard Smith had grazed his pastures using a rest-rotation system.

Maynard Smith. (Smith interview)

NARRATOR: As a wildlife biologist, Frisina agonized over the implications. Instead of keeping wildlife and livestock apart, as had been the practice for years, it seemed the logical solution was to put some cattle back on the game range under careful management.

Adjacent to the north of Smith’s land was large portion of public land managed by the Forest Service. Frisina, Smith and Forrest Morin, a representative of the Forest Service, decided to ignore ownership boundaries at Fleeceer.

(Frisina interview)

(Smith interview)

By 1990, it became clear the grasses for both elk and livestock had increased on Fleeceer and some wildlife people began to be a little more positive about carefully-managed livestock grazing in wildlife areas.

Following the success at Fleeceer, several more coordinated public-private management programs were initiated. Again, results suggested that with careful management, grazing cattle actually improved the vigor and palatability of the range plants. A program coordinating grazing of National Forest and BLM lands, private range, and Montana’s Wall Creek Wildlife Management area was initiated. The objective was to reduce elk-cattle competition on privately and publically owned critical elk winter range and to maintain fertile soils and healthy grasslands.

NARRATOR: In the past, the focus has been on the animal. Ranchers have managed for livestock. Biologists have managed for wildlife. It is clear the focus must change. Now management is for the land itself.

(Frisina interview)

BREAK #4

NARRATOR: But the conflict hasn’t just gone away. Although Fleeceer and Wall Creek show that in well-designed and controlled management systems, grazing need not degrade public lands, problems still exist. Not all ranchers are willing to be involved in a public grazing system that demands such careful management ... Some people refuse to accept that cows have any place on public lands.
Again, Rancher: Chase Hibbard (Hibbard interview)

And Again, Montana Wildlife Spokesman: Jim Richard (Richard interview)

NARRATOR: The larger issue seems clear. Livestock grazing on public lands may be in the rancher's best interest, but it can be in the public's best interest as well. While there are still serious differences, there is more and more common ground. And the common ground is Love of the Land, Love of the Lifestyle the Land Makes Possible.

NARRATOR: And so Larry Zabel works upon his canvas. He has heard the voices of the West, has seen the changes that have swept across the land. He has felt the passions that have bound the people of the land together and that have divided them so severely. At last the image begins to form. And we wonder what this new vision will be. Will it be Bierstadt or Charley Russell? Could it be possible that this new vision of the West will weave harmonic patterns from elements of both? For all our differences - for all the differences between Bierstadt and Russell - we all share the same fundamental values: A love of the land a concern for the life forms upon the land. This shared respect is surely a very powerful beginning.

In the words of Montana Governor Marc Racicot: "Let us each vow quietly in our hearts to shun the tired old games and the worn out labels. Let us stress too, in our hearts and our words, not the small differences that might divide us at times. Instead let us treasure the immense similarities that unite us."

Western Artist Larry Zabel
The following resources are available to assist you with this video program.

**Agriculture in Montana Schools (AMS)** is an organization working to bring factual, unbiased agricultural materials to students in Montana—kindergarten through high school. Some AMS materials that relate to the Landscape video are:

- "Treasure Chest" A large box full of materials on a wide variety of agricultural topics.
- "Resource Guides" Three-ring notebooks of hand-outs, puzzles, projects, quizzes, and activities. There are notebooks for K-3, 4-6, 7-8 and high school.

A Library of videotapes are available for loan. For information write or call: AMS Library, c/o Marie Hovland, 389 Airport Rd., Great Falls, MT 59404 (406-727-5045)

**Boone and Crockett Club**
Old Milwaukee Depot
250 Station Drive
Missoula, MT 59807
406-542-1888

**Montana Dept. Of Agriculture**
303 N. Roberts
P. O. Box 200201
Helena, MT 59620-0201
406-444-3144

**Montana Fish, Wildlife and Parks**
1420 E. 6th Ave.
Helena, MT 59620
406-444-2535

**Montana Stockgrowers Association**
P. O. Box 1679
Helena, MT 59624
406-442-3420

**Montana Wildlife Federation**
32 South Ewing
Helena, MT 59601
406-449-7604

**Montana Woolgrowers Association**
P. O. Box 1693
Helena, MT 59624
406-442-1330

**MSU Extension Service**
PO Box 172820
Bozeman, MT 59717
(406) 994-3415

**Rocky Mountain Elk Foundation**
2291 W. Broadway
P. O. Box 8249
Missoula, MT 59807-8249
1-800-CALL-ELK

**U. S. Bureau of Land Management**
P. O. Box 36800
Billings, MT 59107
406-255-2731

**U.S.D.A. Forest Service-Northern Region**
Federal Building, P. O. Box 7669
Missoula, MT 59807
406-329-3316
INTERNET WEBSITES

Agriculture Home Page
http://www.montana.edu/wwwcp/agri.html

Agriculture Online
http://www.agriculture.com/index.html

Boone and Crockett Club
http://www2.boone-crockett.org/b&cclub/

Boone & Crockett Wildlife Conservation Program
http://www.forestry.umt.edu/BCWCP/

Cattleman’s WEB site
http://www.ncanet.org/cattleman.html

Dept. of Natural Resources and Conservation
http://www.montana.edu:80/wwwcx/
http://fwp.mt.gov

Montana Extension Service
http://www.nris.mt.gov/mtnhp/
http://www.montana.edu
http://www.maes.msu.montana.edu
http://www.nalusda.gov/

Montana Fish, Wildlife & Parks
http://www.ncg.nrcs.usda.gov

Montana Natural Heritage Program
http://www.nwf.org

Montana State University
http://www.montana.edu/~aircj/facts/quick.html
http://www.rmef.org

MSU - College of Agriculture
http://travel.mt.gov/

National Agricultural Library
http://www.umt.edu

Natural Resources Conservation Services
http://www.usda.gov/

National Wildlife Federation
http://web.fie.com/web/fed/agr

Quick Facts (about Montana)
http://www.xmission.com/~int

Rocky Mountain Elk Foundation
http://www.fws.gov

Travel Montana
http://www.fs.fed.us

University of Montana

USDA Home Page

USDA - Intermountain Research Station

U.S. Fish & Wildlife Service
Agriculture - the science, art and business of cultivating the soil, producing crops, and raising livestock.

Biologist - a person who studies the science of living organisms and life processes.

Compromise - a settlement of differences in which each side makes concessions.

Conservation - the controlled use and systematic protection of natural resources.

Decadent - In a state or condition of decline or decay.

Demography - The study of the characteristics of human populations, as size, growth, density, distribution, and vital statistics.

Domesticated - animals which humans have tamed over many years, to be kept in captivity, bred and used for their own special purposes, i.e. Dogs, cats, cows, horses etc.

Diversity - used in the context, "biotic diversity", referring to a variety of plants and animals; the diversity of plant life and habitat is indicative of the variety of animals to be found in a given area.

Free-ranging - the act of wandering or roaming over a large area.

Forage - herbaceous vegetation: grasses, forbs, shrubs, and the leaves and twigs of trees consumed by herbivores (cows, sheep, elk, deer, bison); to forage means to eat herbaceous plants.

Graze - to feed on growing grasses and other palatable plants.

Habitat - the home or place where an animal lives; the requirements of a habitat include all things every animal must have to survive: food, water, shelter or cover, and space to move about and carry on necessary activities for survival, and the proper arrangement of these features.

Industry - The commercial production and sale of goods and services.

Landscape - a view or vista of scenery on land; a branch of art dealing with the representation of natural scenery.

Lifestyle - a way of life or style of living that reflects the attitudes and values of an individual or a group.

Livelihood - means of support; subsistence.

Livestock - domestic animals, such as cattle or horses, raised for home use or for profit.

Management - the act of directing or controlling the use of something.
Mythology - A collection of myths about the origin and history of a people and their deities, ancestors, and heroes.

Natural Resource - a material source of wealth, such as land, timber, wildlife, fresh water or a mineral deposit, that occurs in a natural state.

Naturalist - a person who is knowledgeable about natural history, especially in botany or zoology.

Over-use - to use to excess.

Over-graze - to graze to excess.

Palatable - acceptable to the taste; sufficiently agreeable in flavor to be eaten.

Preservationist - One who advocates preservation.

Pristine - remaining in a pure state; uncorrupted.

Private Land - land owned and controlled by a particular person or persons, as opposed to the public or government.

Producer - One that produces, esp. A person or organization that grows or manufactures goods or services for sale.

Public Land - land owned and controlled by the state or federal government.

Rancher - a person who owns or manages a ranch.

Rangeland - an extensive area of open land on which livestock and wildlife wander and graze.

Resource - something that can be turned to for support or help; an available supply that can be drawn upon when needed.

Rest Rotation System - the practice of moving livestock to new locations to graze while allowing previously grazed areas to revegetate.

Riparian - of, on, or pertaining to the bank of a natural course of water.

Rural - of or pertaining to the country and people who live in there.

Stewardship - an individual’s responsibility to manage his or her decisions and actions in such a way as to have a beneficial influence upon the environment.

Sustainable - To keep in existence; maintain.
Tourism - The business of providing tours and services for tourists.

Urban - of or located in a city.

Vegetation - the plants of an area or region.

Vigor - the capacity for natural growth and survival, as of plants or animals.

Water Quality - the chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

Wildlife - wild animals.

wilderness - refers to any wildlands other than Congressionally designated Wilderness.

Wilderness - only refers to Congressionally designated Wilderness - those areas are where the earth and its community of life are not controlled by people, where natural forces prevail, and people may visit but not permanently live.
LANDSCAPE VIDEO

Produced by
Montana Fish, Wildlife and Parks
in cooperation with:

USDA Forest Service
USDI Bureau of Land Management
Montana Stockgrowers Association
Montana Woolgrowers Association
Montana Wildlife Federation
Montana Association of Grazing Districts
Montana Public Lands Council
Rocky Mountain Elk Foundation

THE LIVESTOCK/BIG GAME COORDINATING COMMITTEE

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USDI Bureau of Land Management: John Moorhouse
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Montana Woolgrowers Association: John Bancal
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