

# Living From Livestock

# **Living From Livestock**

**Range Management and Ranch Planning for Navajo Country**

*by*

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## FOREWORD

For decades the problem of rangeland that supports less and less life has cursed Navajo destiny. It drives our young people from the land, divides families, turns neighbor against neighbor, and cheapens the price of the land to outsiders who would use it for their own ends. Until recently, no modern technology could rescue the land from this fate, and the people could not escape it.

It is an economic fact that livestock offers the only way to make a living from most of Navajo land. This is true because the land is too isolated, too dry, and too rough for other uses. It is also true because the erosion from damaged rangeland destroys irrigation projects, roads, and crop land, and causes water tables to fall.

We believe that the methods suggested in this book represent the first real solution to these problems. They form the only technology known today based on scientific research that has proven compatible with traditional Navajo ideas about land and livestock. They were first formulated by Allan Savory, late of Zimbabwe, Africa, and now of Albuquerque, New Mexico. His help in preparing this book and in advising the Navajo Nation deserves our deepest gratitude.

Also instrumental in promoting new ideas in Navajo Country were Bobby Begay of Rock Point School, who first brought together BIA and Tribal officials in the summer of 1980 to hear Savory speak; Leo Beno of the Navajo Tribe, who made Savory's ideas part of Tribal policy; Robert Archuleta of the BIA, who supported them; and Casey Francisco and Joanne Manyoats of the Tribe's Agricultural Resources Division, who have tirelessly promoted them among the people.

This book is designed as a text for schools and training courses in Navajo Country. It does not cover many problems encountered by people operating in other environments. We hope that it will give new hope to the many ranchers and young people who still have faith in our land and have the desire and the energy to make it rich once more.





## THE GIFTS OF THE LAND

She is called Laughing Woman, but she is not laughing. She looks out from her hogan door at her empty land baking in the sun on the mesa above Rock Point, Arizona. Then she looks straight at you and speaks as if she isn't sure you want to listen.

“Who thinks about the sheep? Who thinks of making a living off the sheep? There is no one. They just want to go forward. They just get in their car, and zoom. Off they go. Who cares anymore about the wisdom of the past and the way we survived on the land? I hope there may be one or two young people around who do respect that wisdom, but where are they?”

“Maybe you are one of them?” she says, and then she does laugh a little, and you wonder what she thinks about you. Then she speaks again, and her voice sounds both sad and hopeful at the same time.

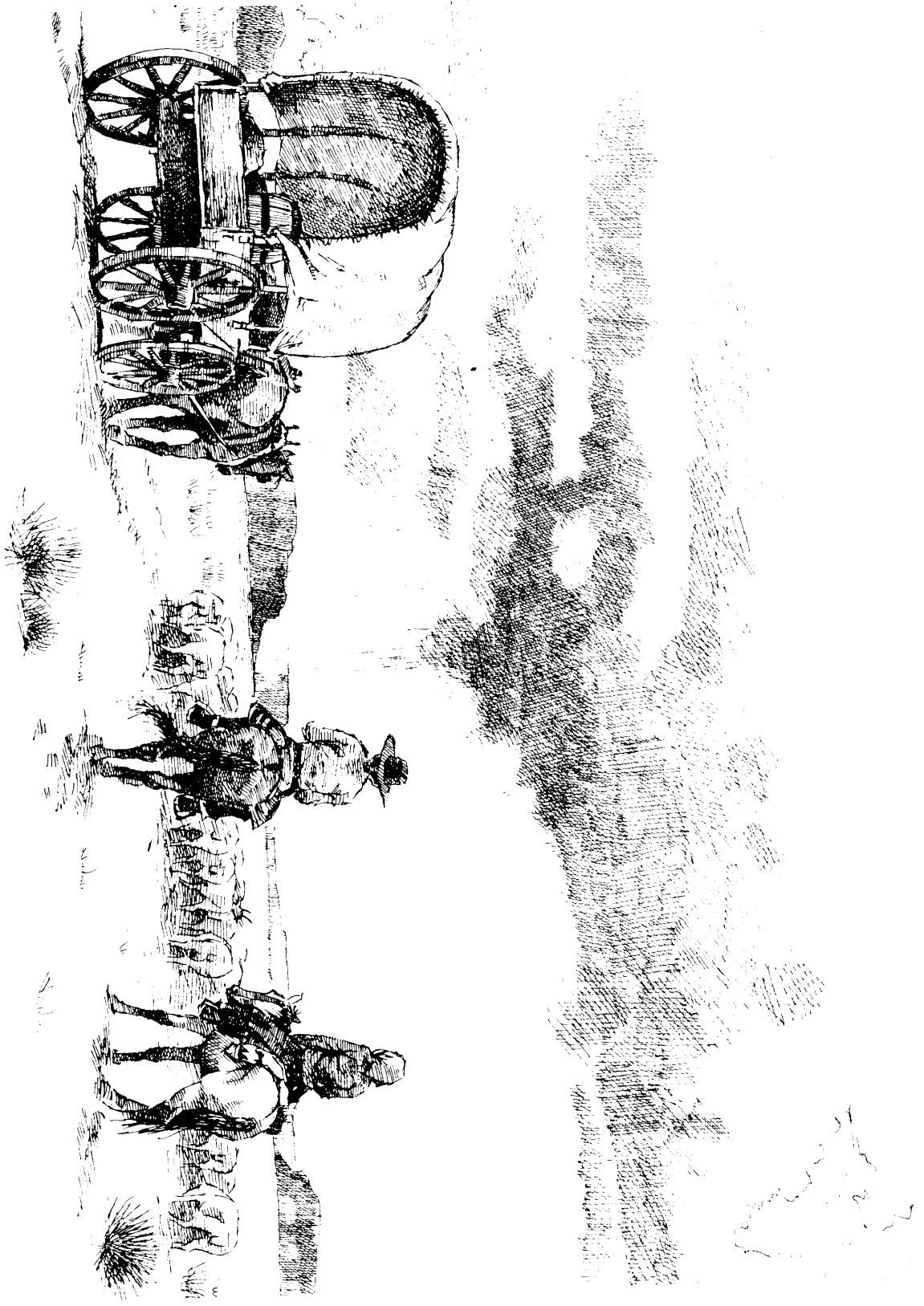
“It will be hard for you,” she says. “So much needs to be done before we can think about livestock again, and we old ones are gradually being taken by old age. What will happen when old age no longer has pity on us?”

She has reasons for what she says. Among the seniors who graduated from Rock Point Community School in 1983, only one or two seriously thought about livestock. Half wanted no part of the ranchers' life. The rest thought about it, but they had no grazing permit or believed the land was too poor.

But Laughing Woman is also wrong. Most of those graduating seniors wanted to stay on their own land. They wanted to believe that the old wisdom could help them make a living, but they could not see how to use it. The land *is* poor. It is so crowded that people argue over land. A miner or a school teacher or a construction worker earns much more in one week in town than most Navajo herders ever see all year.

This book is about making a living from livestock on Navajo land in today's modern world. It can be done, and you may have to try if you want to live in a place like Rock Point. Ranching is almost the only way to make a living on land like ours, if you don't want to depend on Washington, on mines and oil wells, or on welfare. As the old people tell it, Father Sky gives light and rain to Mother Earth and she in return gives life to plants and animals. These gifts of the land are the only things that are truly ours.

The stories of the old people can give us hope for the future because old people have seen what the land can give. They tell us that Navajo Country used to be richer than it is now. They say that the grass used to be better. They say there used to be more rain. There were more sheep, more lambs, and more wool. At least they tell us that. If that was true, then the older generation really did have something that we have lost. Was it true? What have we lost? Can we get it back?





## Changes

Wildlife has changed. West of Rock Point a high rocky hill called "Antelope Lookout" rises out of the plain, but no living person has ever seen an antelope from there. According to the old stories, however, thousands of them did roam nearby, and Navajos hunted them. The old stories are true. Not far away, near Rough Rock Demonstration School, you can still see a line of old juniper branches that once made a corral where riders drove in the wild herds and killed them for buckskin and winter meat.

There are ruins of these old antelope and deer traps in all parts of Navajo Country so the wild herds must have been very large. But nothing like them exists today, and the songs and ceremonies that people once used to call in the game have almost all been forgotten.

Plant life has changed. Laughing Woman points away from her hogan door to the pale green rabbit brush (k'iitsoi) all around and says sadly, "We saw few of these long ago. There was no tumbleweed. There was no snakeweed (ch'il dilyésit). Livestock do not like these plants, but right now they are taking over the land. None of the plants of the past remains today. Once from here on out you could see the land covered with beauty, colored by many flowers of many different plants of green, yellow, red, and purple. But now, which of them has the color to dress the earth in beauty? What is there around for the animals to eat or for us to eat? Everything around now is just plain grey. There are no more sunflowers."



Rose White, Laughing Woman's neighbor, is the age of Laughing Woman's children, but she also has seen changes. "From time to time people from the school ask me to teach the children about wild plants that make traditional Navajo food. I know all of these plants, because I lived on them all my young life, but I say to these people who come, 'You can pay me to teach something, but where are the plants?' These things are only forgotten because the plants have left us. Find me the *thohdeii*, the *wa'*, the *hashcheédâg'*, and I will teach, but those things are not seen now. If we had to live on the wild plants now, we would starve.'"

The way people herded has changed. Rose White remembers moving often with the stock. "We used to herd our sheep to other places from Sweetwater on west to the other side of the Chinle Wash. Often we put our sheep together with sheep from other families. My brother and I used to herd the rams separately all summer. Other people used to bring us their rams and paid us with sheep to look after them.

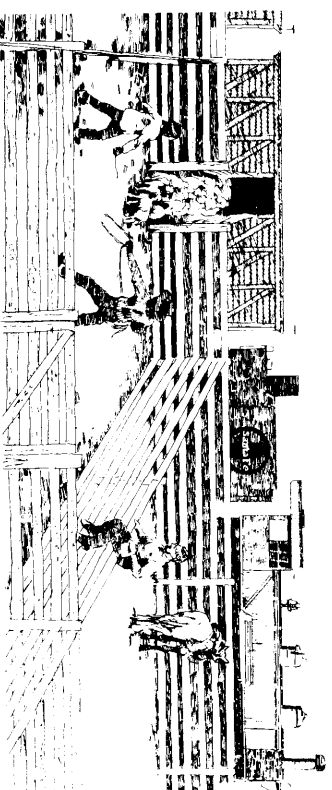
"Now we have no summer and winter camp. We just stay here all year. That is why our grass looks like it has been mowed. You see it bitten off all over, all the time. Today when you let the sheep out of their corral they take off to look for grass and only settle down to graze a long way from here. If you have two or three camps, you move when the grass is short, and you will find it big when you come back. In this way you do not ruin your land."

"Now you can see the bare ground where people live," says Tommy Suen, also from Rock Point. "Where people spend their winters and summers in the same place, there is nothing. When the wind blows, dust covers everything. There are many places like this — corrals close together — so everything goes up in dust."

The way people use their stock has changed. According to Rose White, her family, and many others like them, eating meat was a celebration. "We lived on goat milk all summer. We put cloth bags over the kids' noses in the evening to keep them from sucking. Then in the morning we got buckets full of milk. We also milked the sheep and used that. When someone

came to visit, then we could butcher a sheep, and usually they would take most of it."

Sheep paid for almost everything. "You could get credit at the trading post on sheep," says Tommy Suen. "We used to all sell our lambs on the same day in the fall and pay off our bills. The trader hired men to help drive the lambs to the railroad in Gallup. You could also get credit on wool and mohair and then pay back at shearing time. In that way we lived from year to year. Jobs and welfare were not a part of it at all. Now you can't sell livestock at most trading posts at all. You have to haul them to town, and you don't know what you will get."



The laws have changed. Between 1935 and 1945 the people of Rock Point like everyone else on the reservation were given grazing permits that said how many sheep a family could keep and where they could take them. Says Tommy Suen, "In the past when there was no rain, we went to other people's land. About 40 years ago when all the grass dried up over here we moved over toward Sweetwater to Laughing Woman's land. Now if you tried that, you could be told not even to cross someone else's land."

Says Rose White, "We used to herd our sheep to other places, to Sweetwater, to Bitter Water, to salt bush and greasewood areas, and way across to Sheep Manure Spring not far from Tommy Suen. Since the sheep permits were given out everything has gone wrong. They have ruined the whole process of living. People can no longer move with stock to other places, and neighbors have turned against each other. Everywhere now you hear, 'This is my land, and you cannot walk on it.' That is the voice of the permit. It is not people speaking. You can hear them whenever the grazing committee meets, but no one can ever agree."

### The Present

The winter of 1982-83 was long and wet. In early March horses began dying in the northern part of Rock Point and in the neighboring communities of Sweetwater and Mexican Water. Perhaps as many as 100 died in a few weeks, and some families lost almost all the horses they had.



Meetings were held, and specialists came from Window Rock and from the University of Arizona at Tucson to find out what had gone wrong. Two sophomores from the high school, Theresa Yellowhair and Marjorie Tso, wrote a story for the *Navajo Times*, so the news spread to Albuquerque and the newspaper there sent reporters to the Reservation to photograph dead horses.

Clearly something terrible was happening to the land. Some of the graduating seniors who had thought about becoming ranchers remembered the dead horses and made other plans for the future. Worst of all, no one could agree on the cause of the horses' deaths.

The tribal veterinarian came out from Window Rock, cut open one of Rose White's dead horses, and took blood samples from several sick ones. "They died of starvation," he said, when the high school girls interviewed him on the telephone. "An animal that doesn't get enough to eat, lives on the fat in his body. These horses had no fat left, not even around the heart where even a skinny horse usually has some fat.

"The blood samples showed the same thing. Even some of the living horses had so little blood protein that I don't know how those animals could stand. Blood samples also will show any infection or disease in the body, but I didn't see any sign of that. Without doubt the horses starved. The problem is worse this year, but I hear about it every year, because every year the land gets worse."

Thomas Jones, the grazing committee representative from Rock Point, was doubtful. "We could blame starvation," he said, "but I want to know *why* they are starving. The only reason they kept giving us was that it is all our fault because we overstock the range. We have been told this for years, 'If you Navajos had reduced your livestock, none of this would have happened!'"

The people did not believe that. A lot of the stock did look thin at the end of the winter, but there had been rain the summer before, and the grass was probably better than in past years. Also the horses did not die everywhere. Horses in the southern

half of the community had few problems, even though the grass looked worse.

“The problem is pretty clear to me,” said Kim Nih, a Rock Point man whose horses did not die. “They are poisoned by loco weed. I see it around my home, so I keep my horses in and feed them hay. Horses are like winos about this plant. Once a drunk gets hold of a bottle, each time he gets a hangover he will search for a drink again. A horse does the same thing if he starts eating loco weed.



“He will go crazy. He may go blind and toss his head from side to side, up and down, and start to get thin. But when he is really bad, he will start to dig up the plant with his hooves and nibble the roots, and while he is doing this he will whinny.”

It was true that loco weed and several other plants that people said poisoned horses had started to grow in places where they weren't seen before. Few loco weeds grew in the southern part of Rock Point Community and few horses died there.

Most people in the community agreed with Kim Nih and blamed the loco weed more than they blamed starvation, although that did not explain all the horse deaths. Some horses seemed to thin out and die without going crazy. Some got well when they were put in the corral and fed, but some died anyway. A few sheep also died or lost their lambs. Quite a few cows gave birth to calves that never stood up.

The tribal veterinarian still said the problem was starvation. “Sure, the loco weed might have killed these horses, but horses won't start eating loco until they get pretty hungry. I see horse problems in that area every year. Sometimes it's loco weed. Sometimes it's sore mouths from eating rough bushes. Sometimes worms or disease put them down because they're so weak to begin with.”

Many questions were not answered:

Why did horses suffer more than other stock?

Why were poisonous plants moving into the community?

How could stock be hungry when there was more grass than last year?

Would cutting down the livestock make any difference?

Would the problem get worse or better?

Nobody had answers to these questions. Worst of all, nobody could offer much hope for the future. Families with money bought hay and planned to feed their horses all next winter. Those who had nothing could do nothing. People blamed air pollution and the weather, and witchcraft and religion. Neighbors argued over grazing land. Officials began to talk about enforcing grazing permits and cutting down livestock. There was no reason for a young person to try ranching for a living.

## THE TROUBLE ON THE RANGE

Why did horses die? Why did poisonous plants choose to grow where they did? Why did the grass that our grandparents remembered disappear? Why did the tumbleweed and the snakeweed move in on us?

To answer these questions, you must understand how grass grows, how it is eaten, and what can happen to it. It is true that grass is not the only thing livestock eat. Other plants are very important, and in some seasons more important than grass, but in Navajo Country the grass shows the health of the land. There are very few places in Navajo Country where grass cannot grow, but many places where it *doesn't* grow anymore. Where grass is good, the livestock will also be fat. Where the grass is good, the other weeds and bushes that livestock need will also be good. So in this chapter we will talk mostly about grass.

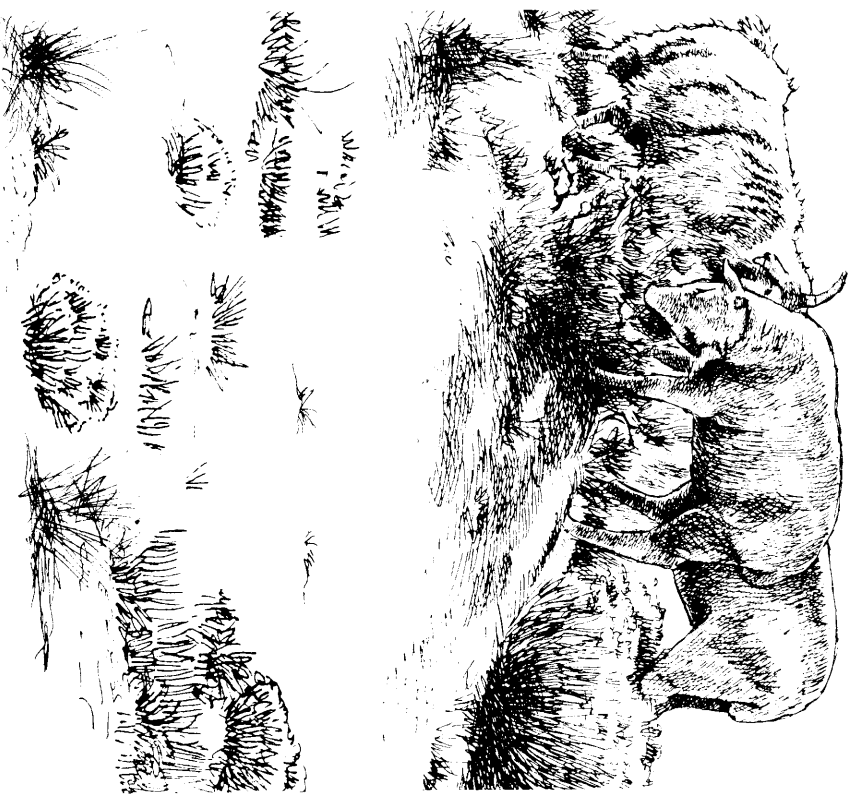
For years and years we have been told that the "overgrazing" in Navajo Country is causing the grass to disappear. There is no special word in the Navajo language for "overgrazing". It means that grass is eaten faster than it can grow. Grass, like all plants, uses the power of the sun to grow. If the leaves are always bitten off, the grass can't catch the sunlight and will stop growing and die like a car that runs out of gas.

Around windmills and camps all over Navajo Country you will find land where livestock passes by every day and bites off every tasty green leaf the minute it comes up. If the lands get bare or only bad-tasting or poisonous plants keep growing there, someone will say the land is "overgrazed".

However, you will find many people, especially older people,

who will tell you that there is no such thing as "overgrazing". They will say, "Our creator made both the animals and the grass, and they have belonged together since the beginning of time. It is not possible that the animals are suddenly killing off the plants they must live by. If the grass disappears, it is our fault for changing our way of life."

We who wrote this book believe that the older people are right. We believe that *people*, *not animals* cause the grass to die away. However, we will use the word "overgrazing" because it helps explain what people may be doing wrong.



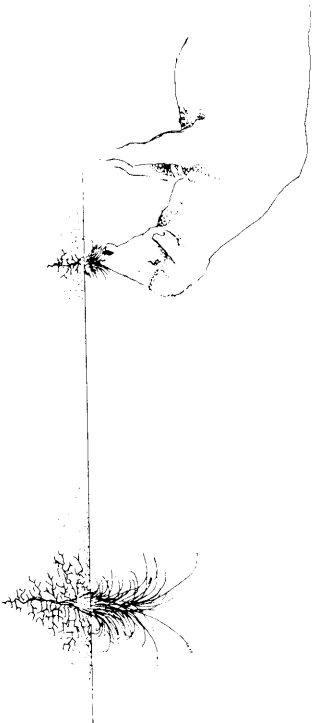
## Overgrazing

These drawings show what "overgrazing" means.

1

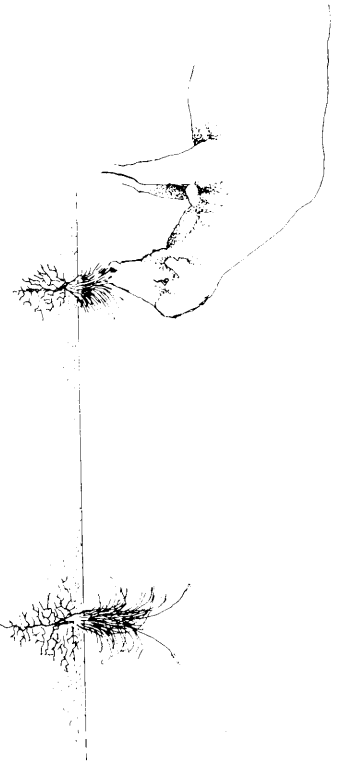


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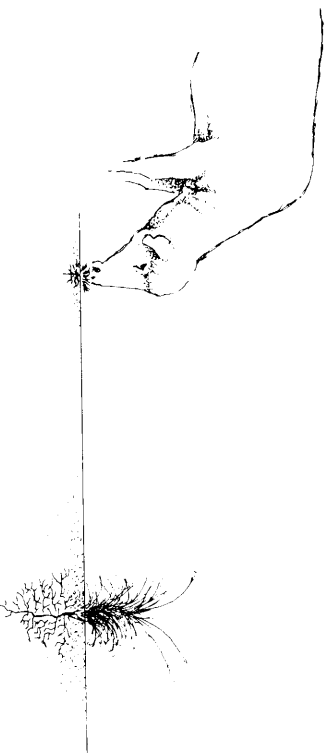
When grass is bitten off...

2



If the NEW leaves are bitten off right away...  
... it must borrow more food from its roots...

4



... it uses food stored in its roots to grow new leaves.

... and after a while it will die.

**Experiment**

You can easily prove this to yourself by growing grass in two pots or tin cans.

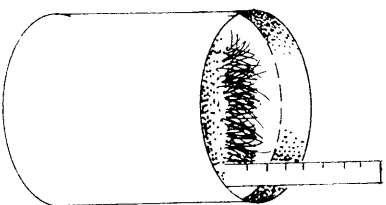
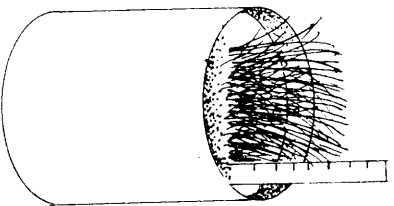
Give them both plenty of water and sun.

Once a week cut the grass in the first pot down to six inches.

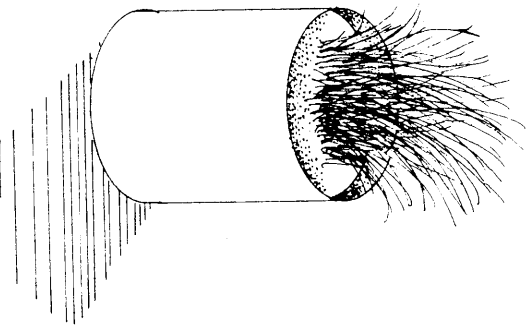
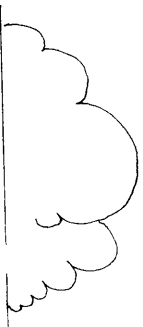
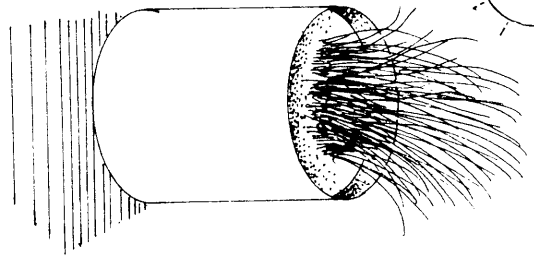
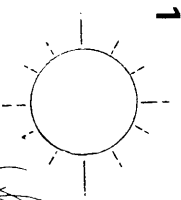
Every day cut the grass in the second pot down to 1 inch.

Save the leaves you cut off. Perhaps you can guess which plant will provide the most cut leaves, and which one will be the strongest.

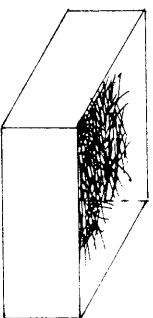
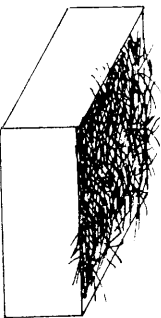
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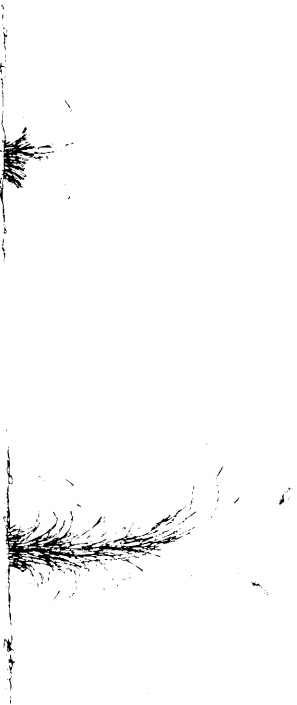


### Does Overgrazing Really Happen?

You must decide this for you own land, but here are some things to look for:



Try to find some grass. If you can't find any, "overgrazing" is *probably* the reason, but you can't be sure. Usually, however, you will find some grass growing under bushes, in the middle of tumbleweeds or in the cracks in rocks. Then you know that grass can grow there.



At a time when plants are growing, look at grass leaves. Are they all bitten down, or do they have a chance to grow?

Also check good-tasting bushes like greasewood and salt bush.



Overgrazed bushes show dead wood, and the leaves are hidden in thick, stickery bunches where the branches have been bitten off many times.



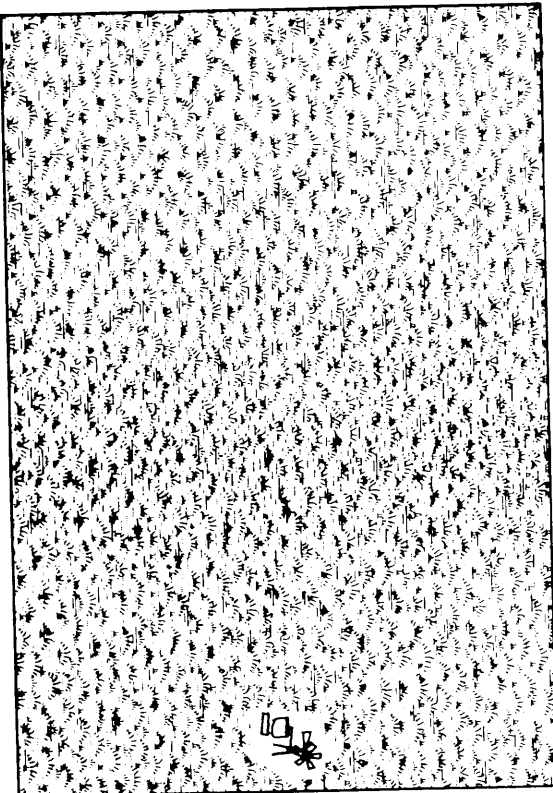
Normal bushes have longer, softer, straighter branches and show little dead wood.



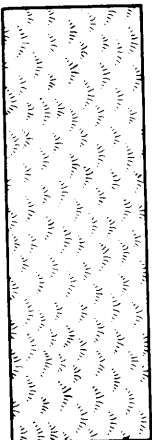
## Stock Reduction

For a long time some people said you could only stop overgrazing by getting rid of stock. Now we know that cutting stock *doesn't* stop it. It just slows it down.

This picture shows three kinds of plants near a windmill:



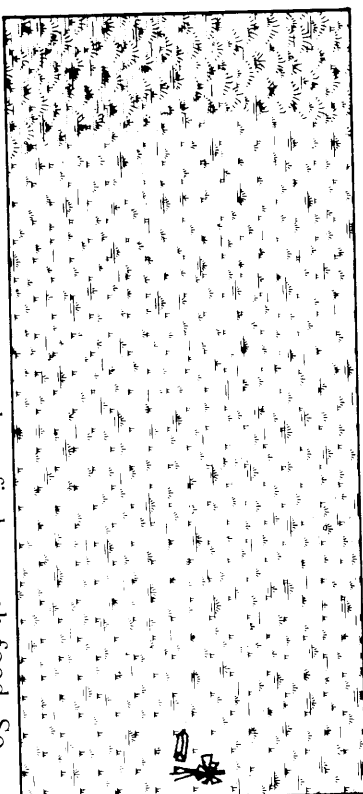
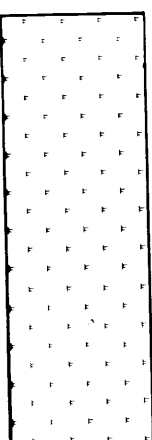
Good grass such as gramma, wheat grass, sacaton.



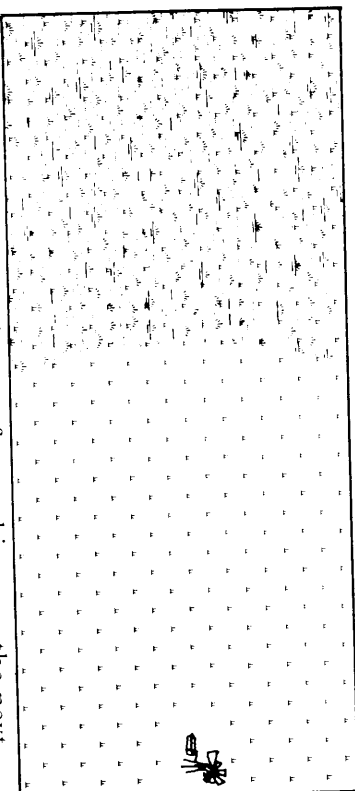
Lower succession plants - salt bush, sage, broom grass, rice grass, etc.



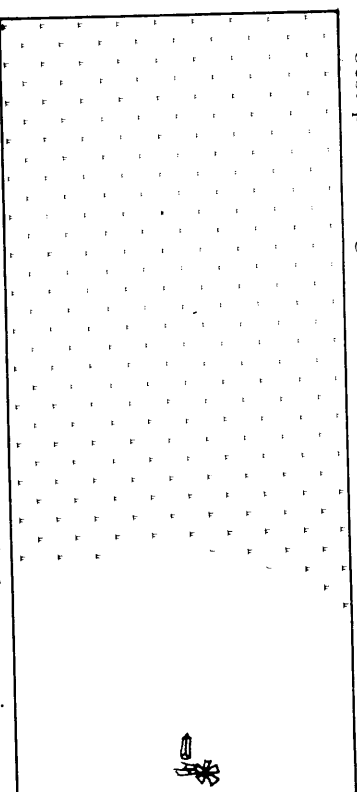
Very low succession plants - cheat grass, tumbleweed, snake weed, etc.



Stock only walks far enough to find enough food. So near the windmill, the best grass gets no rest and soon dies.



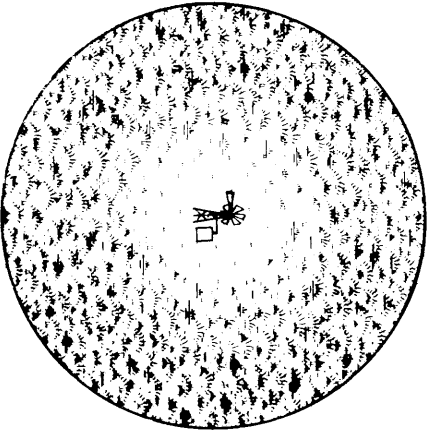
When the best grass is gone from a big area, the next best plant will go.



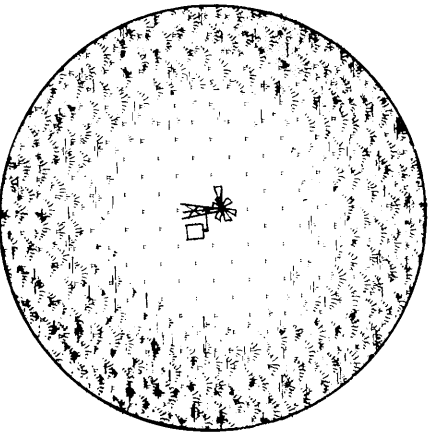
Finally only bare ground and very bad plants survive. When you drive toward a sheep camp, you may see grass change to tumbleweed and bushes before you see the camp.

Here is what would happen around the same windmill if you cut the livestock in half:

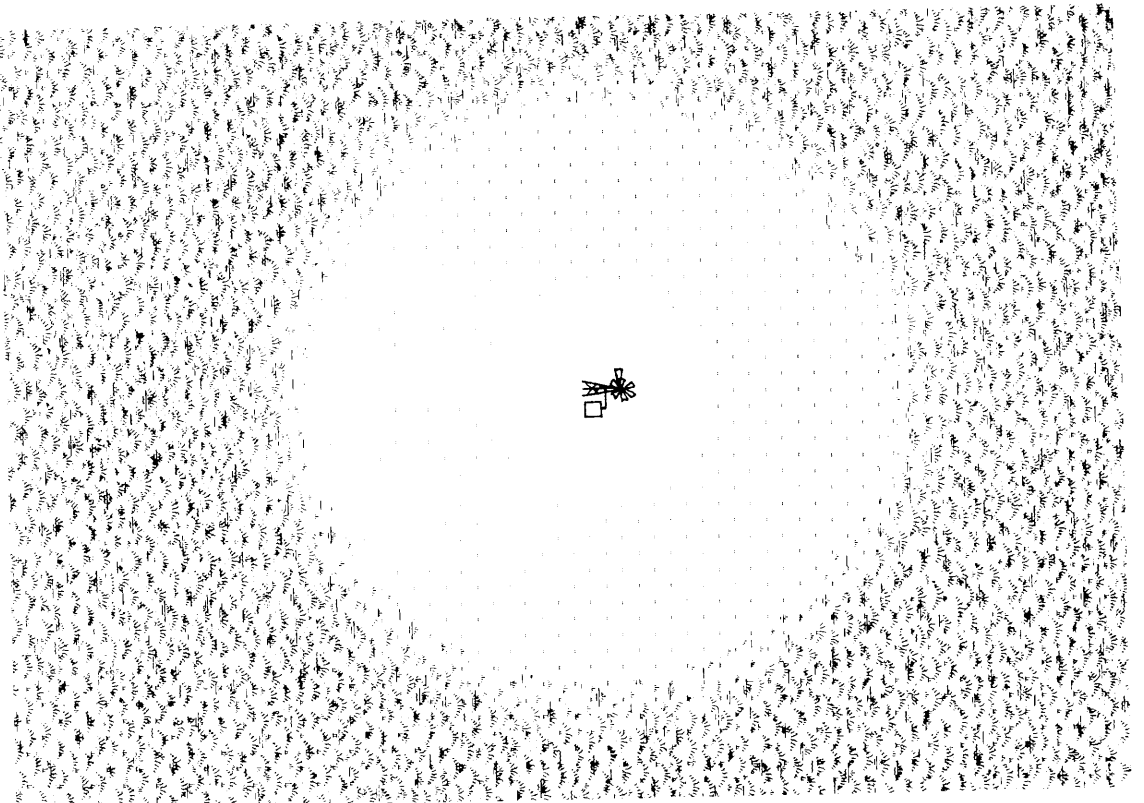
The small herd will take twice as long to overgraze the same area, but it *will* overgraze it in time.



A small herd will not have to walk so far to find enough grass, but they will still bite off the grass near the windmill every time it grows.



The sheep may not ever get to some of the land at first.



But the circle of bare ground around the windmill will keep growing and in time may become very large.

### Experiment

Here's an easy experiment that shows why cutting down the livestock does not stop overgrazing. You will need:

- a. 3 bowls
- b. 15 cookies
- c. 20 Ritz crackers
- d. 20 small pieces of bread
- e. 15 people to use instead of animals. (Children are best because they have no manners.)

Give each of the people a chance to pick three things from the bowls, and be sure to tell them that they can take three from the same bowl if they wish.

Note how many cookies, Ritzes and pieces of bread are in each bowl after everyone has taken what he wants.

Now try the same experiment with only seven people and note what is left in each bowl.

*Did 7 people eat fewer cookies than 15?*

*Did 7 people eat fewer Ritz crackers than 15?*

*Did 7 people eat fewer pieces of bread than 15?*

How far would you have to cut your guest list to make sure that there would be some cookies left after the party?

If the people in your experiment happen to like cookies, you will have to get rid of most of the people before you will make any difference to the cookie bowl.



The same thing is true for animals and good grass. The grass doesn't care whether there are 50 sheep or 150. They may eat almost the same amount of grass. Just cutting down the livestock doesn't stop "overgrazing".

In your experiment you could stop offering cookies and just put out bowls of crackers and bread. Probably your guests would "overgraze" the crackers. If you took those away, you would certainly "overgraze" the bread.

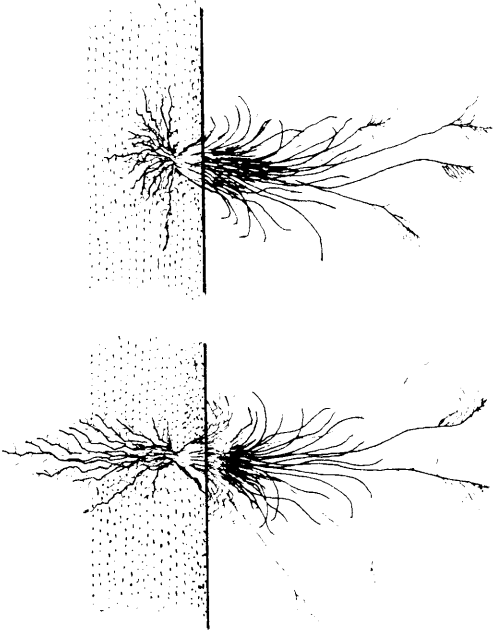
"Overgrazing" doesn't happen to an area all at once. It happens to one kind of plant at a time. The best plants go first.

Since the best plants usually grow where the water and soil are best, those places get overgrazed first, so places that once were the best for livestock are often now the worst.

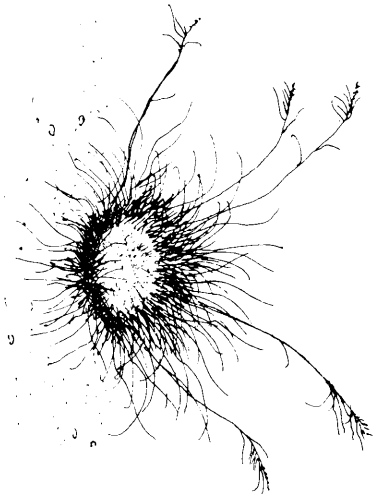
### Undergrazing (Also known as "over-resting")

Cutting down the livestock does not stop overgrazing in the places where the animals roam. Cutting down the stock *does* mean that animals don't get to some other places for a long time. You might think that these places would get better and better without the stock. But in fact they often look about the same as the places where the stock goes every day. Grass that is never eaten at all will become "over-rested". It can actually die of old age.

These drawings show what happens when grass is over-rested:



1. The grass grows tall and makes seed early.
2. The next summer the old dry grass gets in the way of new leaves and block the sunlight.
3. Roots may become longer, but do not spread out under the soil.



4. In time the heart of the plant begins to die from lack of sunlight because the old leaves shade it.

5. You may find these old plants growing in the shape of a doughnut. The old dead grass still stands in the center. Green leaves grow only weakly around the outside.

The old dead grass is not only bad for the plant. It is wasted food. Again you can show how this happens with your cookies, crackers, and bread.

### **Experiment**

You will need:

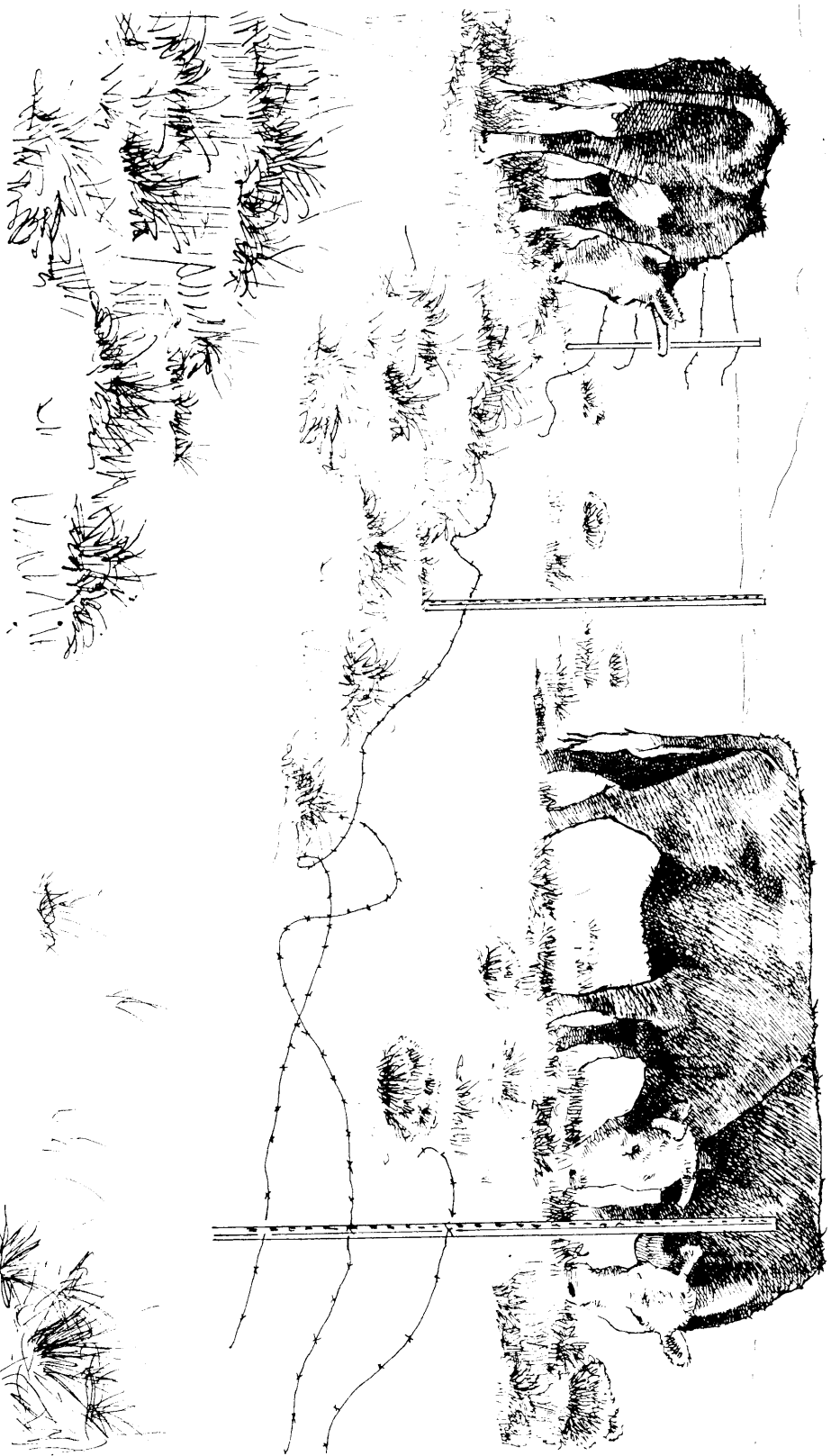
- a. 3 bowls
- b. 15 cookies
- c. 15 crackers
- d. 15 pieces of bread
- e. 15 people

If you put out the cookies, crackers, and bread and told the fifteen people they could each take three things, of course they would eat all of everything. If you put out the bowls and fresh goodies every day, the fifteen people would probably eat everything every day. Everything would be fresh for them.

**BUT**, try putting out the same goodies in the three bowls for only 7 people. The next day replace **ONLY** the things that were eaten the day before. Just leave anything that wasn't eaten.

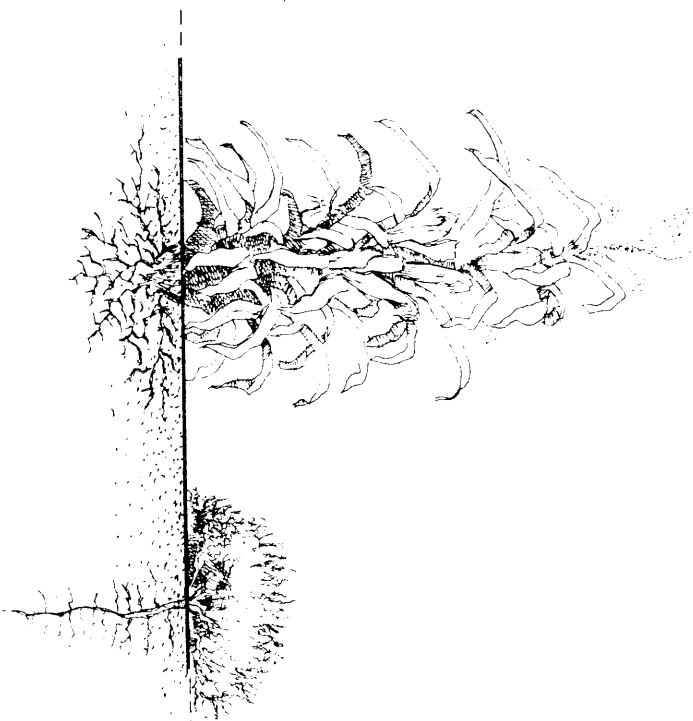
Do this every day for a week. Then look at the bread you are putting out. You may find it is too dried out and stale for anybody to eat it at all. The bread is "over-rested".

The same thing happens to grass and many other plants that are not eaten. They get dry, tough, and stale. Along roadsides and in other places where livestock seldom wander, you will see over-rested grass. It is yellow or even gray, and only starving animals will eat it.



## Wind, Rain, and Soil

Besides sunlight, plants need both water and food to grow. They get what they need by their roots. The roots of wild plants, however, are not all alike. Different kinds of plants look for their food and water in different places.



Grass, like corn, sends out many roots right from the seed that spread out just under the soil. They are very good at catching water quickly when it rains, but they do not reach deeply for food.

Tumbleweed and most “woody” plants send down one main root that may reach very deep. It can find water deep in the ground, and good topsoil is not so important.



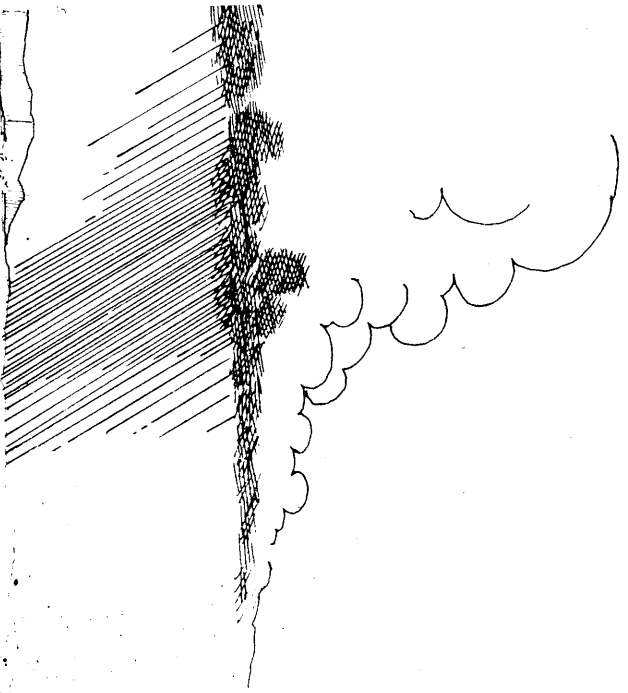
### **Observation**

Find a bunch of grass and dig around it. Look at the roots.

Look along the bank of a wash for the roots of tumbleweed, greasewood, and other woody plants.

Good grass cannot grow if there is no food for it in the "topsoil". Unfortunately both overgrazing AND over-resting (especially in dry areas) may destroy topsoil.

Over-rested land will also have too much bare ground and most of the same problems. Without livestock dead grass is left standing. It does not go back to the soil in the manure of animals and is not stamped back into the ground by the feet of animals.



*Overgrazing destroys grass so that wind can blow away the best soil.*

*Without grass roots to slow it down, water carries topsoil down to the washes. The water that does soak into the ground carries plant food too deep for grass roots to reach it.*



### **Observation**

Signs of lost topsoil are nearly everywhere in Navajo Country. Here are some of them:

Many plants, especially older bushes, are up on small hills because their roots have held soil, while it has blown away everywhere else.

Where grass is growing, you can see roots

where the soil has blown away, and bushes like snakeweed that usually grow close to the ground stand up on short stems.

Small washes and ditches have very sharp straight edges because they are cut more each time it rains.

You can find very few pieces of manure or dead plants in a shovelful of soil.

### **Conclusion**

There are troubles on the Navajo rangelands for two main reasons. These are *overgrazing* and *over-resting*. Both of these things allow wind and water to destroy topsoil, and grass needs topsoil. Weather does make a difference. Things are better when rains come and worse when they don't, but most of the problems come from the way people handle their livestock.

This chapter has covered the problems. Luckily, however, Mother Earth and Father Sky are kind, and will make the land rich once more, if we only know how to let them. The next chapter will explain.

