

*What Is a*

# RANCH CONSERVATION PLAN?



UNITED STATES DEPARTMENT OF AGRICULTURE/SOIL CONSERVATION SERVICE/PA-637

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## RANCH CONSERVATION PLAN?



*By the Soil Conservation Service*

If you are a rancher, chances are good that you ranch within the boundaries of a local soil (and water) conservation district since 93 percent of land in farms and ranches in the United States is now in a district. Districts were created by local people under State laws to form a basis for conserving soil, water, plant, and wildlife resources.

Soil conservation districts have technical help available from the Soil Conservation Service (SCS) to assist you in developing a conservation plan for your ranch. You can get this help and help from other agencies by making an application to the soil conservation district governing body.

You ranch differently from anyone else—because your land and range vegetation and ranching needs are different from those of other people. Most ranchers are alike, however, in that they are constantly making plans for the operation of their ranches or livestock farms. It is equally important to plan for better use of the soil and other natural resources on your ranch. Such a plan is a ranch conservation plan.

A ranch conservation plan, when carried out on the land, will:

1. Keep your land in uses that will conserve and make most efficient use of its soil and water.
2. Stabilize and improve eroded soils.
3. Increase the desirable grasses and other forage plants.
4. Provide for proper application of water on land you irrigate.
5. Insure adequate feed and forage for your livestock at all seasons of the year.
6. Increase the efficiency of your operation and net return from your land and livestock.
7. Develop recreation and wildlife resources if feasible and if you favor such enterprises for additional income.

Planning is decision making. Only you can make the final decision on how to use your land and treat it to reach objectives listed above. The SCS conservationist will furnish information and facts about your soil, plant, water, wildlife, and scenic

resources but you must decide what you want to do and how and when to do it. He can suggest possible changes or new methods for you to consider. The professional knowledge and experience of the conservationist is pooled with the practical knowledge you have of your own ranch. From this knowledge and the facts developed as you go over the land together, you will be able to make sound decisions. This is your ranch conservation plan. There are several essential steps in this planning process.

### ***Appraising soil, water, plant, and animal resources***

The first step is to gain a thorough understanding of the resources on your ranch.

The conservationist will have a soil map of your ranch that shows kinds of soil and degree of erosion.

Each kind of soil shown on the map is classified as to its capability. There are eight broad land-capability classes. As you go from class I to class VIII, choices in land use become fewer and risks of erosion and deterioration, if mismanaged, become greater. Few ranches have all eight classes of land. Land in capability classes I through IV is suitable for cultivation. Land in classes V through VIII is best suited for permanent vegetation. If you need land for hay, tame pasture, silage, or other crops, the capability designation will help you decide which land would be most suitable for them.

The soil map will help differentiate the different range sites on rangeland. Range sites are kinds of rangeland with different potential to produce different kinds or amounts of plants. Range sites are important keys to what you can expect of your range.

The soil, rainfall, topography, and other features that distinguish different range sites are put there by nature. There is little man can do to change the range site itself. You can, however, get the most production possible from every range site by managing the grazing in accordance with its potential to produce forage.

The conservationist will help you grade the native plant cover on each range site into four



range-condition classes—excellent, good, fair, and poor. A range site is in excellent condition when more than three-fourths of the plants are the kinds that originally grew there before livestock was put on the range. When one-half to three-fourths of the plants present are these original kinds, the range is in good condition; one-fourth to one-half, fair condition; and less than one-fourth, poor condition.

Ordinarily, the higher the condition class, the greater the forage production is on a given site. The pattern of range sites and range-condition classes will indicate how much your rangeland can be improved for livestock and wildlife. This information will help you decide what kinds of plants to manage for.

In addition, the conservationist will have information on the use and management of woodland areas or on soils that would be suited to the production of wood crops.

Water resources available for livestock, irrigated crops and pasture, wildlife, and recreation uses are an important part of the resources on each ranch. The amount and type of water resources available will be a big factor in your decision making.

Finally, you will want to appraise the livestock and game animals on your ranch in relation to the present forage and other feeds available for each season of the year. If you have land suitable for wildlife habitat, you may wish to plan for fee hunting or for campground and picnic areas for additional income.

### ***Identifying soil, plant, and water problems and opportunities for improvement***

Once you have completed this appraisal of your resources, conservation needs and opportunities will be easier to identify. You may be realizing only a part of the production potential from your rangeland because of low range condition. Brush encroachment may be cutting down forage production. Perhaps eroded cropland is producing little, if anything, for livestock to eat. Perhaps you are keeping more stock in the winter on hay than your grazing land will support during the warm season. Uneven distribution of livestock grazing may result in overgrazing on some parts of your range and undergrazing on others.

### ***Considering alternative land uses and conservation treatments***

Whatever your problems and opportunities may be, there usually is more than one way of dealing with each.

On ranges in low condition, you will want to consider whether complete deferment or rest for a season or two is necessary. If enough desirable plants are still present, lighter stocking that will leave more grass on the ground to grow and increase, may give the desired improvement. Under extreme conditions, range seeding may prove the

and quickest way to improve your range.

If brush is a problem, various methods of control should be considered. Type of brush, degree of infestation, and range sites on your ranch will give clues as to whether chemical or mechanical control would be more effective.

Shortage of feed during one or more seasons may indicate the need for tame pasture development or for an increase in hay production. Additional water facilities or fences may be desirable to distribute the grazing load evenly over all the range.

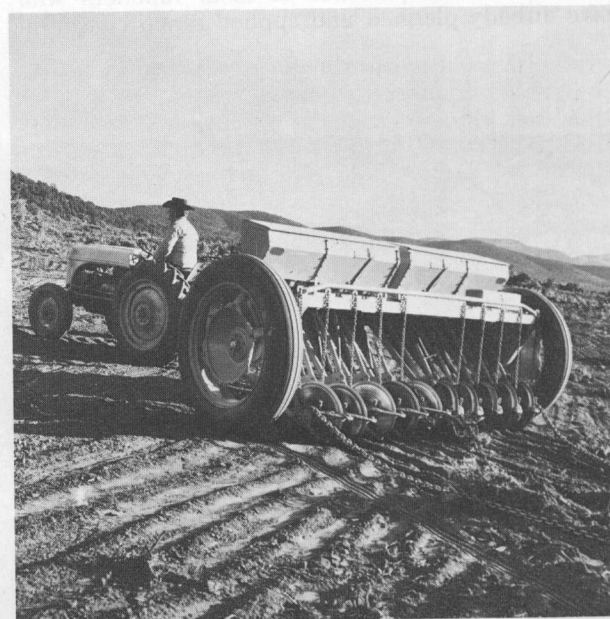
You may want to consider wildlife numbers in relation to domestic livestock and also hunting possibilities for recreation on your ranch. Fishing in ponds, tanks, and reservoirs is another recreation potential. There may be others.

Of all the possible ways of dealing with each problem, one will probably fit your objectives and desires best. It is important, however, that all necessary practices be planned to treat effectively each pasture or field.

### ***Evaluating the costs and benefits of alternative treatments***

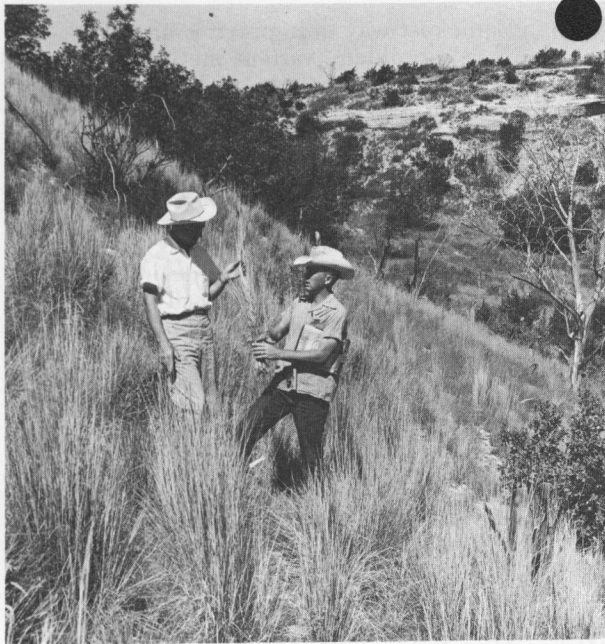
Before you make the final decisions on land use and the conservation treatments needed, you will want to take a close look at what it will cost to do each part of the job. By comparing costs of the different ways of doing each job, you will be able to decide which way fits your situation best and will give you the best results in relation to the costs.

Many conservation practices cost little—particularly proper range use and proper irrigation water management. Such practices may actually



UT-1479

**Converting eroded cropland to range by seeding to adapted grass species is a common practice in many ranch conservation plans.**



TEX-49346

**Rocky and hillside sites often have high potential for production of good native forage under proper range use.**

save money and result in more income with little or no additional outlay required. On the other hand, fencing, water developments, brush control, range or pasture seeding, recreation facilities, and irrigation facilities may involve considerable costs. Such costs must be justified in more efficient overall operation.

The SCS conservationist will have information on costs of doing the various kinds of conservation jobs from the experience of local ranchers who have already planned and applied ranch conserva-

tion plans. He can help you consider what the probable benefits will be.

### ***Deciding what to do***

- Up until now you and the conservationist have—
1. Completed a thorough appraisal of the soil, water, plant, wildlife, and scenic resources of your ranch.
  2. Identified the conservation problems and opportunities.
  3. Explored all practical ways of dealing with the problems and opportunities.
  4. Considered costs and expected benefits of the alternative treatments.

After you have made the final test of the cost-return effect of the various jobs, you are in a position to make your final decisions.

How you will use and treat your land to accomplish your conservation objectives and also to strengthen your ranch operation constitutes your ranch conservation plan.

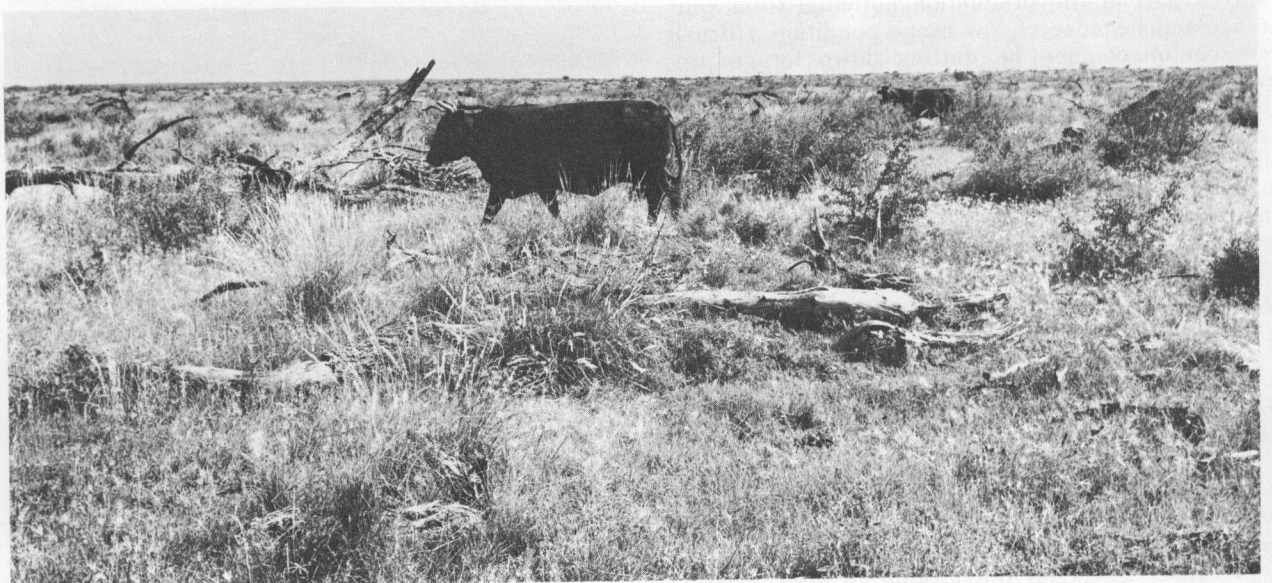
The conservationist will make a record of your decisions to serve as a guide and also to assist in scheduling any future assistance as you apply your plan.

In addition, he will prepare a conservation plan map of your ranch showing land uses, pastures, fields, approximate acreages, livestock water, roads, and other information.

The soil and range-site information of your ranch, the conservation plan map, and a record of your decisions will be furnished to you.

### ***Keeping your plan up to date***

Your plan will be most useful to you if it is kept up to date. You will probably need to make some



TEX-49170

**Mesquite control and deferred grazing have restored the production of forage on this range.**





WN-90181

**As range condition improves, adjustments should be made in the ranch conservation plan to keep it up to date and most useful.**

changes and adjustments in your original decisions as range conditions improve, and as needs for new land uses or different conservation treatments develop.

The conservationist will help you apply the practices you have planned and help you keep your plan up to date.

### ***Example of a Ranch Conservation Plan***

The following pages show an example of a ranch conservation plan for a 2,235-acre ranch in western United States. This ranch plan is for a cow-calf operation. When surplus feed is available in the fall, some calves are weaned, wintered on the surplus feed, and marketed during the following year. Included with the map of the ranch conservation plan is a soil map and a narrative record of the rancher's decisions on land use and conservation treatment.

Descriptions of range sites and land-capability classes on this ranch follow. See legend on soil map, next page, for soil names.

#### **RANGE SITES ON THIS RANCH**

Valley range site is the most productive range site on the ranch. Soils are deep, fine textured, and nearly level to gently sloping. They are subject to overflow now and then.

Deep upland range site is productive, soils are fine textured, well drained, generally more than 20 inches deep, and gently sloping to steep.

Shallow upland range site is moderately productive; soils are shallow, fine textured, droughty, and undulating to steep.

Very shallow upland range site, occupying ridge tops and steep slopes, is the least productive on the ranch. It consists of very thin clayey soils over marl and limestone bedrock.

#### **LAND-CAPABILITY CLASSES ON THIS RANCH**

Class I is very good land from all points of view. It is nearly level and does not wash or blow readily. It needs only good soil-management practices to keep it productive.

Class II land has a slight erosion hazard and requires some conservation treatment if cultivated. These practices usually are easy to apply and keep up. It can be used for cultivated crops, grassland, and wildlife.

Class III land has more serious or more numerous limitations than class II land. These limitations may be natural ones—such as moderate slope or shallow soil. Or the limitation may be erosion brought on by the way the land has been used. Thus the use of class III land is more restricted than that of class II, and if it is cultivated it needs more conservation treatment.

Class IV land has serious restrictions that call for very careful management if it is plowed. Also, the number of years favorable for cultivated crops are apt to be few.

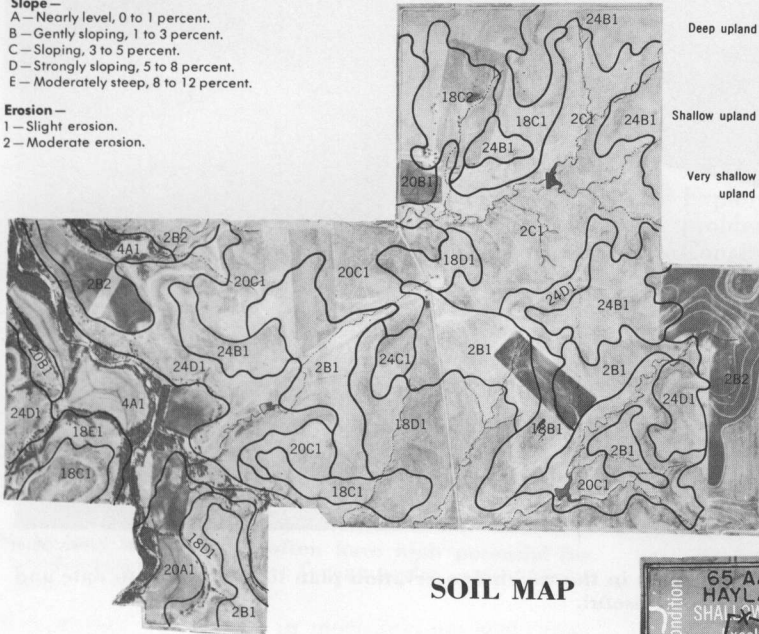
Class VI land has severe limitations—shallow soil or steep slopes—that make it better suited to range than to cropland. Reseeding if needed and pitting and water spreading can improve pastures and ranges on class VI land.

Class VII land has soils so very shallow and gravelly that any disturbance of the soil is not practical.

**Slope—**  
 A—Nearly level, 0 to 1 percent.  
 B—Gently sloping, 1 to 3 percent.  
 C—Sloping, 3 to 5 percent.  
 D—Strongly sloping, 5 to 8 percent.  
 E—Moderately steep, 8 to 12 percent.

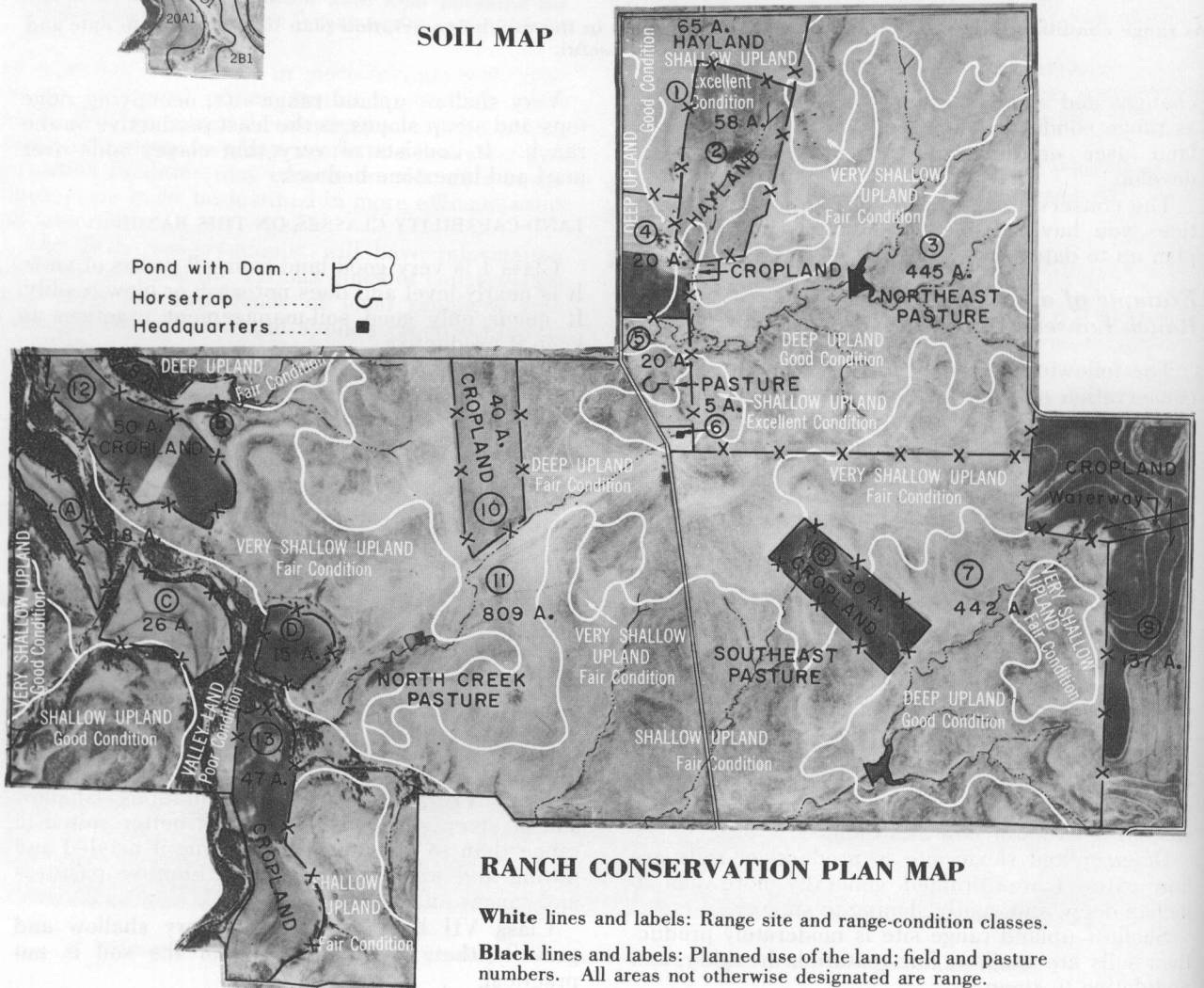
**Erosion—**  
 1—Slight erosion.  
 2—Moderate erosion.

Range site	Map symbol	Kind of soil	Land-capability class
Valley land	4A1	Catalpa clay, nearly level	I
	20A1	Denton clay loam, nearly level	
	2B1	San Saba clay, gently sloping, slightly eroded	
Deep upland	2B2	San Saba clay, gently sloping, moderately eroded	II
	20B1	Denton clay loam, gently sloping, slightly eroded	
	2C1	San Saba clay, sloping, slightly eroded	
Shallow upland	20C1	Denton clay loam, sloping, slightly eroded	III
	18B1	Denton clay, shallow, gently sloping, slightly eroded	
	18C1	Denton clay, shallow, sloping, slightly eroded	
Very shallow upland	18C2	Denton clay, shallow, sloping, moderately eroded	IV
	18D1	Denton clay, shallow, strongly sloping, slightly eroded	
	18E1	Denton clay, shallow, moderately steep, slightly eroded	
Very shallow upland	24B1	Brackett gravelly clay, gently sloping, slightly eroded	VI
	24C1	Brackett gravelly clay, sloping, slightly eroded	
	24D1	Brackett gravelly clay, strongly sloping, slightly eroded	
			VII



**SOIL MAP**

Pond with Dam .....  
 Horsetrail .....  
 Headquarters ..... ■



**RANCH CONSERVATION PLAN MAP**

**White lines and labels:** Range site and range-condition classes.  
**Black lines and labels:** Planned use of the land; field and pasture numbers. All areas not otherwise designated are range.



# RANCHER'S DECISIONS ON LAND USE AND CONSERVATION TREATMENT

## HEADQUARTERS

Field 6, 5 acres

Existing grass cover will be maintained.

## TAME PASTURE

Pasture 5, 20 acres

*Pasture planting.* Pasture 5 will be seeded to bermudagrass. Weeds will be mowed and fertilizer applied to maintain heavy grass cover for horse pasture and holding trap.

## HAYLAND

Fields 1 and 2, 123 acres

*Hayland planting.* Field 2, 58 acres, will be converted from cropland and seeded to native bluestem mixture. It will be mowed first year to control weeds.

*Hayland management.* Hay will be cut once each year. A stubble height of 4 inches will be left. Hayland will be protected from all grazing and fire.

## CROPLAND

Fields 4, 8, 9, 10, 12, 13, 317 acres

*Conservation cropping system.* A conservation cropping system of 3 years, oats-hubam sweetclover, 1 year corn, and 1 year cane for hay will be followed. About half of the oats-hubam sweetclover will be used for temporary grazing, half harvested for grain and seed. Sweetclover will be fertilized with 100 to 200 pounds 20 percent phosphate fertilizer per acre. Field 4 will be used primarily for oats or sudangrass for temporary grazing for animals kept at headquarters.

*Crop residue use.* All residue from crops will be left on the surface or worked into the topsoil.

*Grassed waterway.* The waterway (7 acres) in field 9 will be shaped and seeded to bermudagrass for a terrace outlet. Mow to control weeds.

*Terraces.* Fields 8, 9, and 10 will be terraced. Terraces in field 9 will be rebuilt and graded to drain into waterway and into southeast pasture. Terraces in other fields will drain onto grassland. Maintain terraces each year.

*Diversion.* Diversion along east side of field 13 will be constructed and graded to drain north into creek.

*Contour farming.* All crops will be planted on the approximate contour or with terraces.

## RANGELAND

Pastures 3, 7, and 11, 1,763 acres

*Proper use.* Grazing will be managed by regulating cattle numbers and periods of use to remove not more than 50 percent of the current year's growth of the following grasses on the key range site for each pasture:

Northeast pasture—deep upland site—little bluestem.

Southeast pasture—deep upland site—little bluestem.

North Creek pasture—deep upland site—sideoats grama.

A feed reserve of about 1,500 pounds of hay per animal unit will be provided for bad weather and early spring calving.

Salt will be fed all year. A salt-meal mix will be fed on the range during February and March. Feeders will be moved periodically to help distribute grazing.

Fall-planted small grain will be grazed lightly in winter in conjunction with native range.

*Deferred grazing.* One of the three large range pastures will be deferred each year from July 1 until frost. The deferred pasture will be grazed in conjunction with small grain during winter months. Newly seeded range areas will be deferred first full year following seeding.

*Pond.* A stock pond will be constructed in pasture 7 just south of field 8 on the big draw.

*Brush control.* Scattered mesquite on deep upland site in pasture 3 will be controlled with kerosene basal treatment.

*Fishponds.* After the pond in pasture 7 has been completed and filled, it and the pond in pasture 3 will be stocked with bluegill and bass, the water fertilized, and proper fish harvest practiced.

*Range seeding.* Fields A, B, C, and D in pasture 11 will be converted from cropland and seeded to bluestem mixture. Fences will be removed after stands are well established.

*Wildlife habitat preservation.* Oak and hickory trees along streams and all brushy areas except mesquite will be preserved for use by deer and squirrels.

*Deer hunting.* A cabin for hunters will be built in pasture 11. Harvest of deer will be planned by scheduling hunters so as to take about one-third of the stock annually.



KY-670

Tame pasture on former cropland furnishes high-quality forage to take part of the grazing load on this ranch.

## RANCHERS REPORT THESE BENEFITS

*from following a ranch conservation plan*

1. Reduction of soil loss and better use of water resources.
2. Increased grass production and improved quality of forage and feeds.
3. More dependable forage and feed supply for each season of the year.
4. More use of native grass in livestock production; less use of more expensive feed.
5. More calves weaned each year, with heavier calves at weaning age.
6. More flexibility in operation to permit balancing livestock numbers with available feed when weather or other conditions make changes necessary.
7. Supplemental income from fee hunting, campgrounds, picnic areas, and other outdoor recreation enterprises.
8. More dependable income.
9. Greater net return to land, labor, and management.

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