TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

TN RANGE-40

Davis, California
March 1977

DROUGHT TIPS FOR RANGELAND AND PASTURELAND

The following tips are suggested as ways to help modify the adverse effects of drought and prevent irreversible damage to rangeland, pastureland and related resources. Such damages may result in permanently reduced streamflow, springflow and forage production.

Tips are suggested for management of: 1. Forage, 2. Water, 3. Range Improvements, 4. Livestock, 5. Supplemental feeding and 6. Soils.

1. Forage

- Inventory forage reserves and balance livestock numbers with available forage. In May, if there is less than eight months of forage available, supplemental feeding or herd reduction should be considered.

- Determine additional forage needs and arrange for meeting these needs as soon as possible.

- Avoid overgrazing. Overgrazed forage plants lose vigor and perform like sick livestock--they are unable to use nutrients (moisture, fertilizer - natural or applied) for growth. Overgrazing shortens the effective growing season of plants by delaying early season growth and causing early dormancy.

- Develop annual grazing plans which designate where, when and how long livestock will be grazed. Develop for the grazing year and revise as needed. Planning twelve months at a time helps pinpoint forage shortages and other problems in advance. Advance buying or selling of hay and livestock may result in lower feed prices and higher livestock prices.

- Grazing readiness means allowing range forage to grow to a grazable stand of forage before turning in on it. This may occur on annual range as early as December but in drought years it may not occur until late February or March. Allowing rangelands to reach "grazing readiness" before grazing results in 30% to 60% more total forage production. Livestock turned on ranges prior to range readiness frequently lose weight which in drought years will be difficult to recover..

2. Water

- Repair water leaks in pipelines, water storage facilities, water troughs, and float valves.

- Reduce evaporation on ponds, troughs, etc. by use of evaporation retardants, styrofoam covers, etc.

- Spring development should receive high priority.

- Fence springs and ponds and provide water from troughs. This makes more efficient use of water, prevents damage to springs and ponds, and reduces parasite and disease problems. Improperly managed water facilities not only waste water but also result in less gains on livestock.

- Develop water storage facilities. Low producing wells and springs can be better used by piping into large storage facilities.

- Establish watering facilities in far out areas. This results in more efficient use of forage in all parts of the grazing unit. It also reduces water needs by reducing travel of livestock.

- Control excess brush in watersheds of springs and ponds. Brush uses two to three times as much water to produce a pound of dry weight as do grasses and forbs. Some brush species use up to 2,000 pounds of water to produce a pound of dry weight growth.

- Make firm arrangements for hauling water as soon as the need can be anticipated.

3. Range and Pasture Improvements

- Mechanical brush control at this time will stress brush more and get a higher percent of control. It may also increase or revise stream and spring flow.

- Chemical brush control will probably not achieve good results due to brush plants being in stress at the time of spraying.

- Range seeding is not recommended in droughty conditions. If seeding is done, good seedbed preparation, quality seed and good seeding operations are a must.

- Poisonous plants should be controlled or watched closely. Poisonous plants are generally unpalatable but they are usually green and available when other plants are dry and grazed off. Livestock will use these plants when desirable forage plants are grazed off or not available.

- Weedy pasture stands should be cleaned up thoroughly by fallowing and then reseeding in a good year. Irrigation water that would have been used on these marginal stands should be used to obtain greater production by fully watering the best pastures on the best soils.

- Consider use of the three-point range programs in annual range areas.

4. Livestock

- Control internal and external parasites. Animals heavily infested with parasites will do poorly and even starve to death in situations where noninfested animals will maintain themselves satisfactorily. Fly control will keep cows from running and using up energy and water.

- Cull more critically. Use pregnancy testing, fertility testing to determine marginal or nonproducers.

- Heavy milking cows and ewes require 70% to 80% more feed and water than dry animals. Selling lambs and calves early can be a real feed and water saver. Besides, calves and lambs do very poorly on droughty range and pasturelands.

- Sell horses not needed for ranch work.

- Rent bulls or rams during the breeding season. One operator of a five hundred cow-calf unit does not own bulls and rents bulls at breeding time. For nine months he does not have to feed or care for twenty head of mature bulls.

- Decrease salt to minimum safe level to reduce water intake of animals.

- Artificial insemination is another way to eliminate feed requirements for bulls.

- Concentration of cows at breeding time has allowed some ranchers to operate with half the number of bulls as when cows are scattered.

- Sell livestock and lease grazing lands to others being careful to specify numbers and grazing dates.

- Sell twice the number of cows, keep twice the number of replacement heifers. This reduces grazing pressure and maintains cash flow.

- Develop annually a drought plan for adjusting numbers as emergencies arise. The plan should define conditions and times at which adjustments will be made. By making these decisions in advance the operator is prepared to take action at the right time instead of after too much money is invested in a nonrecoverable situation.

- Shade in hot weather reduces stress on livestock and need for water. Water needs may double in hot weather if no shade is available.

5. Supplemental Feeding

- Use troughs or mangers to reduce feed waste and reduce exposure to internal parasites by grazing feed from the ground.

- If feeding on the ground, change locations at each feeding.

- Creep feed calves. This helps calves and reduces feed requirements of cows.

- Don't buy high protein feeds (cottonseed meal) when high energy feeds (corn, barley, grains) will meet the needs.

- Grain may be cheaper than hay and roughages. Cows can be carried on all concentrate rations (about 8 to 9 pounds per day). This may be a reasonable choice if hay is unavailable or too high.

- By-products from the food industry, poultry manure and poultry litter, are suitable feed materials. An analysis is needed to be sure animals are getting adequate diets. Farm advisors may be of help with this.

- Team-up with farmers to arrange field grazing of crop residues. These are suitable and may be a good alternative. Irrigation water sources might also provide livestock water while grazing fields.

- Feed three days ration every third day. Cattle will clean up all the feed. This insures enough feed being put out so that timid cows will get to eat.

- Liquid protein supplement should be used only where there is adequate roughage (carbohydrate source) available, otherwise death loss will occur.

- Contact local Agricultural and Conservation Stabilization Service (ASCS) offices for information about emergency drought assistance programs.

- Avoid moldy or spoiled feeds. These are often toxic.

- See attachments for data on livestock nutritional needs and feed types and comparative costs.

6. Soils

- Maintain protective cover (proper grazing use) to avoid loss of topsoil. Topsoil loss can result in permanent reduction of productive ability of the soils.

TN RANGE-40

- Avoid overgrazing along streambank areas to prevent accelerated streambank erosion.

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Attachments

REFERENCES

The Grazier, by Thomas E. Bedell, Cooperative Extension Service, Range Specialist, Oregon

Georgetown Gazzette

SCS-Water Conservation Tips for Stretching Water on Pasture and Range

SCS National Range Handbook-1, 1976

California Cooperative Extension Range Notes - various

EMERGENCY AID FOR LIVESTOCK OWNERS

From the Georgetown Gazette

Federal financial assistance to livestock owners under the Emergency Feed Program will be made available in 23 California counties following the declaration by former President Ford of an emergency due to the extreme drought.

The counties designated for assistance are Amador, Butte, Calaveras, Colusa, El Dorado, Glenn, Lassen, Mariposa, Mendocino, Merced, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Stanislaus, Sutter, Tehama, Trinity, Tuolumne, Yolo and Yuba.

The Agricultural Stabilization and Conservation Service (ASCS) of the U.S. Department of Agriculture, will administer the program for the Federal Disaster Assistance Administration (FDAA) which utilizes appropriations from the President's Disaster Relief Fund.

The Emergency Feed Program provides financial assistance to eligible livestock owners in the designated counties by sharing the cost of feed needed for eligible livestock (cattle, sheep, goats, and swine owned for at least 6 months). The dollar amount of the assistance, for those determined eligible by the county ASC committee, is 50 percent of the cost of the feed purchased not to exceed two cents per pound of feed grain equivalent.

Amoung the conditions of eligibility is that the livestock owner must have suffered a substantial loss in the livestock feed normally produced on his farm for livestock, not have sufficient feed for his livestock for the program period, and be required to make feed purchases in quantities larger than normal.

In addition to the Emergency Feed Program, the Presidential declaration automatically authorizes the Farmers Home Administration (FmHA) to make emergency loans to eligible farmers and ranchers for losses, major adjustment, operating expenses, and other essential needs arising from the disaster, Interested farmers and ranchers should contact their local FmHA, ASCS, SCS and Cooperative Extension offices.

Ellis, Extension Animal Scientist, University of California, Davis

COMPARATIVE MINIMAL OR MAINTENANCE SAMPLE RATIONS FOR VARIOUS CLASSES OF CATTLE *

BASIC ROUGHAGE	1000 lb. Nursing Cows	Cost/Day	1000 lb. Dry Cows	Cost/Day	660 lb. Yearling Heifers	Cost/Day	440 lb. Calves	Cost/Day
ALFALFA HAY	100% Alfalfa	$1.03	100% Alfalfa	75¢	100% Alfalfa	69.8¢	100% Alfalfa	55¢
OAT HAY or SUDAN HAY	100% Hay	80¢	100% Hay	58.3¢	100% Hay	54.3¢	80% Hay 20% Molasses -- or -- 90% Hay 10% Cottonseed Meal	44¢ 48.3¢
ALFALFA HAY plus ALMOND HULLS	70% Hay 30% Hulls	99¢	70% Hay 30% Hulls	71.3¢	70% Hay 30% Hulls	66.3¢	80% Hay 20% Hulls	53.2¢
BARLEY or WHEAT STRAW	50% Straw 20% Oat Hay 20% Molasses 10% Cottonseed Meal	66.1¢	50% Straw 30% Oat Hay 20% Molasses	40.8¢	50% Straw 20% Oat Hay 20% Molasses 10% Cottonseed Meal	45¢	40% Straw 40% Oat Hay 10% Molasses 10% Cottonseed Meal	38.2¢
CORN STOVER	82% Stover 10% Molasses 8% Cottonseed Meal	78.8¢	85% Stover 15% Molasses	43.6¢	82% Stover 10% Molasses 8% Cottonseed Meal	53.6¢	80% Stover 10% Molasses 10% Cottonseed Meal	38.2¢
BLACKEYE BEAN STRAW	70% Straw 30% Alfalfa Hay	70.6¢	50% Straw 50% Oat Hay	50¢	70% Straw 30% Alfalfa Hay	48.1¢	50% Straw 50% Alfalfa Hay	42.8¢
CORN SILAGE	100% Silage	61.5¢	100% Silage	45¢	100% Silage	42¢	100% Silage	33¢
IRRIGATED PASTURE	100% Pasture	34.7¢	100% Pasture	34.7¢	100% Pasture	23.1¢	100% Pasture	17.4¢

*P[illegible]ed by William Van Riet - Stanislaus County - San [illegible]n County Livestock Farm Advisor

Prices Assumed:

Alfalfa Hay	$90/ton
Oat Hay	$70/ton
Sudan Hay	$70/ton
Corn Stover	$50/ton
Blackeye Bean Straw	$50/ton
Barley Straw	$30/ton
Almond Hulls	$75/ton
Corn Silage	$20/ton
Molasses	$65/ton
Cottonseed Meal	$160/ton
Liquid Supplement (20% Crude Protein)	$80/ton
Irrigated Pasture	$125/acre

Consumption Assumed:

Nursing cows	20.5 lbs. dry matter/day
Dry Cows	15 lbs. dry matter/day
Heifers	14 lbs. dry matter/day
Calves	11 lbs. dry matter/day

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MAINTENANCE REQUIREMENTS OF SOME CLASSES OF BEEF CATTLE

*Digestible Protein, TDN, and Dry Matter Required for Selected Classes of Beef Cattle (Pounds Per Head Per Day)

Body Weight	Dry Matter	TDN	Digestible Protein
Steers or heifers - no weight gain			
330	6.2	3.5	0.28
440	7.7	4.2	0.37
660	10.4	5.7	0.44
880	13.0	7.3	0.64
Dry pregnant cows, middle third of pregnancy			
990	15.0	7.5	0.42
Cows nursing calves, first 3-4 months after calving			
990	20.5	11.0	1.10

*Information from tables 1a and b "Nutrient Requirements of Beef Cattle" N.R.C. Fifth Revised Edition, 1976