

PAGE FOUR

CROCKETT COURIER: APRIL 23, 1953

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PAGE FIVE



Timber Stand in Texas National Forest

## REPORT ON 1952 ACTIVITIES TEXAS NATIONAL FORESTS

The objective of the Texas National Forests is to protect, grow, improve and harvest the timber crop; to protect and improve the watershed; to preserve and develop public recreation areas; to encourage fish and wildlife restoration; and to put every forest acre and resource to the best use of the most people in the long run.

Utilization is the activity that gives these resources value. It is through utilization that the forest is a source of major importance in furthering the well-being of a people. Trees, grass, and wildlife grow, reach maturity, and die. Man might better wisely utilize these resources at the proper time, rather than allow them to go to waste. It is the maintenance of the human resource that makes the conservation of natural resources so important.

To give meaning to this objective and policy, it is necessary to demonstrate to the public on the ground the practical value and importance of good forest management. It is hoped that this report will further call this fact to your attention.

The value of the Texas National Forests to the people of east Texas and the nation at large is continuing to increase. Timber production, recreation use, and wildlife restoration are increasing. Grazing use is remaining more or less static. The management of all resources is becoming more intensified in keeping with their importance and value to the people and economy well being of the state.

One of the most important aspects of our job is the demonstration value of good forest management. For example, the volume of sawtimber still standing in the forest has more than doubled on the forest as a whole in the past 15 years. This has been accomplished along with a continuous increase in the volume cut each year. Much of the increase in volume has occurred on areas which were considered imposable in the past due to the low volume per acre. As more and more of these areas come into production, the yearly cut can be increased until ultimately it will be equivalent to the annual growth.

Cutting to date has been directed primarily toward improving quality of residual stands, reducing mortality, and stimulating growth through thinning.

The present estimated net annual increment on our 468,979 acres is 306,700 MBM valued at \$2,225,945. Of this net growth we plan to harvest about one-third or 100,000 MBM annually and to leave to timber 200,000 MBM. In this manner we will rapidly build our stands up to the average planned volume of 10,000 board feet per acre.

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## RECREATION AND WILDLIFE

It is difficult to put a dollar value on the recreation use and wildlife resources on the Texas National Forests. Yet there is a very definite value to the local people who might be expressed in terms of use. Over 200,000 local people used these forests last year for recreation purposes such as picnicking, swimming, camping, sight-seeing, and so on. Of these 200,000, an estimated 100,000 used the forest areas for hunting and fishing.

Over a year ago Red Hills and Boykin Lakes were drained and the lake beds treated to control underwater vegetation. Both lakes were then restocked and should provide very good fishing this coming season. Ratcliff and Double Lakes were lowered so as to permit better control in the shallow areas. Both these lakes were restocked with additional catfish. According to this treatment of the lakes should improve the fishing for the next several years.

The improvements at Double Lake and Ratcliff and Red Hills Recreation areas are being maintained. The bath house at Boykin Lake was not maintained due to excessive damage and vandalism at this site.

The White Rock Game Preserve in the Davy Crockett is now under management in cooperation with the State Game and Fish Commission. A large number of deer and turkeys have been planted in the area. This area along with the private preserves along the Neches river should within a few years build up a supply of game between the two preserves so that there will be excellent hunting in the Crockett National Forest.

## GRAZING AND SPECIAL USES

Cattle, grazing here, and a few goats, tramping on the open unfenced forest lands seem to be remaining at a more or less constant number. However, there are no fenced areas in a few areas by the local people for grazing allotments. We had 83 grazing permits last year with a total of 1,832 head of cattle as compared to 74 permits with 2,226 cattle in 1951. Sample grazing reconnoissances made last year show that available forage is intensively managed shortleaf-lobolly stands is decreasing rapidly. The present carrying capacity is estimated at 40-45 head of cattle per acre. Carrying capacity in the longleaf plantations varies from 20-30 acres per cow yearling. The desirable level of grazing was determined to be March-October.

The grazing exclusion plots in the Davy Crockett and Sam Houston Forests bottomlands are all showing results of cattle exclusion. There has been a definite increase in the reproduction and growth of the better hardwood species such as oak and live oak.

## FIRE PROTECTION ON FOREST LANDS

Considering the critical burning conditions, brought about by the extended drought last fall, we were very fortunate. We had a total of 319 fires which burned 726 acres of National Forest lands. Comparing this number of fires with the number of fires in 1947 and 1948, which was around 500 under similar conditions, it would appear that the combined prevention efforts of private industry, state and federal agencies are beginning to show results.

Three additional electric and ranger patrol units and two extra patrol planes were added to our mechanized fire equipment. This brings our total heavy units up to 12 plus two extra planes.

A study was initiated last fall to determine the "Mortality of Shortleaf and Loblolly Pine by Fire Damage Classes." The purpose of this study is to develop a workable basis for predicting and judging survival, or conversely, mortality of sawlog size fire damaged pine predicated on percent of crown scorch.

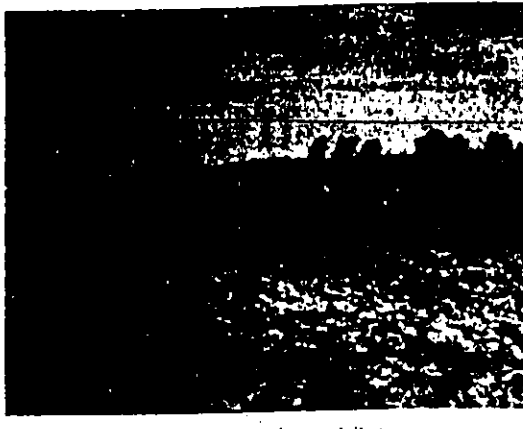
Cooperation. The U. S. Forest Service is continuing to cooperate with the Texas Forest Service under the provisions of the Clark-Murray act. \$126,213 was made available to the state Forest Service for fire control purposes. Approximately \$20,223 was made available to the state for nursery, planting, and the forest management program.

Research and trial demonstrations show that controlling hardwoods during their dormant season is both practical and profitable.

## ROADS AND IMPROVEMENTS

Our present network of 77 miles supplemented by a limited number of commercial telephone connections is functioning very satisfactorily. Also, intercommunication has been established with the Texas Forest Service on a separate frequency to aid in cooperative fire detection and suppression. Approximately 400 miles of telephone lines have been abandoned, salvaged or sold.

761 miles of roads were maintained. This included 204 treated timber bridges. 14 miles of roads were resurfaced with gravel. While these roads are primarily for access to timber, protection and administration purposes, many of them are heavily used by the public. 10 miles of regular timber access roads were constructed and one bridge 410 feet long across Tenaha Bayou was constructed. This latter project was in cooperation with Shelby county. One new lookout and Care program for a National All Club Center in Washington, D. C. The new from two abandoned dealings center will become the permanent



Cattle Grazing on Improved Pasture

Plans are now being made by a group of National All Club camp and state committee for the purpose of National All Club. It will consist of Texas All Club members, who are available to all members. This latter project was in cooperation with Shelby county. One new lookout and Care program for a National All Club Center in Washington, D. C. The new from two abandoned dealings center will become the permanent

## STOP that leak!

Woody's like the little Dutch Boy, Peter, who tried to stop the leak in the dike. Woody's trying to save the soil lost from our East Texas woodlands that are burned by fire.

Woven together like a huge net, the roots of our Last Texas trees exert a powerful factor to prevent erosion.



THERE'S NO SOIL TO WASTE IN THE STATE. So why burn the woods with wild fire? Our farm and ranch economy is tied in closely with trees. One helps the other - fire hurts them all.

\*At this, modern experts show that we lose about a quarter of an acre from burned woodlands. That's five times the amount lost from protected woodlands.



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## IMPORTANCE OF ROUGHAGE FOR CATTLE

By D. W. C. Banks, Extension Veterinarian, Texas A. & M. College

No matter what the cow thinks about it, hay is more essential than grain in her daily rations. Grain is good, of course, but a cow just can't get along without plenty of roughage. Many cattle feeders, especially the younger ones, do not fully understand the importance of hay to a cow's nourishment and health. Hay, especially good quality hay, is one of the best roughage feeds, but the roughage may also consist of clean straw, or corn fodder, or silage or beet pulp. It may consist of mixed forage, like the animals pick up out on the range or pasture.

Most people know that a cow has four stomachs. These stomachs can be compared with a four-cylinder motor. The cylinders have to work in unison, or there is trouble. In other words, if something goes wrong in one of the stomachs, the whole machine is thrown out of kilter. A lack of roughage is often the thing that upsets the machinery.

Roughage contains indigestible matter, just as grain or any other good feed. But roughage does other things, too. It furnishes bulk to give the digestive system something to work on and keeps it functioning normally. Roughage seems to be essential to bacterial action in the rumen, and the bacteria, in turn, helps the animal to get nourishment from her feed.

If you consider a cow's capacity for feed, with all her four stomachs, then it is easy to see why plenty of roughage is necessary to bulk. The average adult cow will consume about 50 to 60 pounds of roughage a day, including 10 to 12 pounds of hay and 20 to 40 pounds of silage. Besides that, she will drink 10 to 15 gallons of water, and consume about two ounces of salt per day. The more roughage she eats, the more water and salt she will consume, and the added water and salt also aids digestion.

If the feeder doesn't give his cattle enough roughage or if he feeds too much grain, or if he feeds too much high a proportion of grain, and the animal doesn't eat enough hay and silage, then the conditions that often bring on a bad case of impaction are set up. The cow's stomachs don't function normally unless they are about three-fourths full. At least a third of the content should be bulky feed, like hay or fodder. If the animal doesn't get enough of this roughage, then the normal action of the rumen or first stomach is slowed down or stopped. When this happens, fermentation action is checked, fermentation sets in. This forms gas, distending the wall of the rumen and causing the cow to bloat. The congestion causes the body temperature to rise, and this takes the moisture out of the mass of feed. That's the beginning of a typical case of bovine impaction.

When this happens, there are symptoms of danger signs the feeder can watch for. Usually, the animal stands with its back humped up—grunting or groaning, or grinding its teeth. The cow with bloat or impaction is in great discomfort, and she shows it. If the left flank of a bloated cow is stretched like a drum head. An impacted cow seems to have a batch of dough or lump of clay inside her. As the condition becomes more acute, the cow may breathe hard and show nervous symptoms.

When a case of impaction does occur due to inadequate roughage, or over-eating of concentrates, or from some other cause, what should be done depends on the severity of the case. Sometimes, the veterinarian gives a hypodermic injection to stimulate the action of the rumen, and it's usually quite effective. Also, certain medicines may be used to stop the fermentation in the stomach. In some extreme cases, surgery may be necessary.

Some of these cases of impaction can be quite a tough problem and one or several treatments may be necessary. It all depends on the individual case. The main point is: cattle need plenty of roughage, not only to reduce the danger of bloat and impaction, but also to have the digestive system functioning right, but also to give them needed food elements.

## A Thought About the Future

A meadow or pasture is soil depleted unless as minerals are concerned, it is enriched by the action of vegetation, beef or milk is sold from the land. A ton of hay contains the equivalent of a 100-pound sack of 20-20-20. Milk and beef contain minerals and protein (nitrogen). The meadow or pasture builds organic matter and good structure and otherwise improves the soil.

## GOOD PASTURES DON'T HAPPEN

A good pasture cannot be developed simply by planting the perennial grasses—little bluestem, Indian grass, side-oats grama, dallis, fescue, bermuda or blue panic on the land. Remember the good plants you want, or some other good quality perennial, would be there already. Except on recently cultivated land, if the soil condition and fertility was good enough to grow them.

Here soil tests made to determine the rates and amounts of fertilizer needed. Apply the fertilizer as recommended because more growth of better quality on less water when properly fertilized because they make more efficient use of water.

Secondly, grow an annual grass and legume mixture. Annual plants grow better than perennials under poor soil conditions. Annual plants will make profitable production if properly fertilized and handled. Do not plow under green, but let them grow to maturity or otherwise run their full life cycle. Proper grazing or haying, or producing a seed crop, or otherwise using the top-growth will make profits. Such a program will result in soil improvement, soil conditioning or otherwise preparing the soil for a better crop. The more of the top-growth left on the ground, not removed as hay or otherwise, the more value for soil improvement. But even here, allow the plants to mature. They form a surface cover and decompose slowly, thus saving plant food. Too, the vegetative matter as a growing cover or shade in summer prevents baking of the soil. Mature plants produce a much greater root system which is desirable for soil improvement.

If a start is made with oats-barley, or rye or crimson clover, a cool-season mixture, the land should be disced, fertilized and planted to a warm-season mixture of Sweet sorghum and Chinese Red clover. The land should not be left fallow during the summer any more than necessary. The temperature of bare ground in the summer is so high that organic matter developed by the cool-season mixture is destroyed.

Where soil is subject to wind erosion, the sudden-crop or stable may be left for protection and the perennial pasture grasses and legumes planted in this stubble, being on improved soil, will grow rapidly. There

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## Crockett Courier — April 23, 1953

— Crockett Courier — April 23, 1953 — Page 1 of scan —

Timber Stand in

[illegible or non-text passage omitted — see scan]

## [ACTIVITIES] [uncertain] TEXAS

### NATIONAL FORESTS

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Utilization in [tne] [uncertain] activity that gives these [resources] [uncertain] value. It works through [utilization] [uncertain] that men live. Forests are of major importance in [furthering] [uncertain] the well being of a people. Trees, grass, and wildlife grow, reach maturity and die. Man might better [wisely!] [uncertain] utilize these resources at the proper time, rather than allow them [to] [uncertain] go to waste. It is the [maintenance] [uncertain] of the human resource that makes the conservation of natural [resources] [uncertain] so

important.

To give meaning to this objective and policy, it is necessary to [demon-] [uncertain] state to the public on the ground the, practical value and importance of [good] [uncertain] forest management. It is hoped that this report will further call this [fact!] [uncertain] to your attention.

The value of the Texas National Forests to the people of Texas and the nation at large is continuing to [increase.] [uncertain] Timber production, recreation [uncertain] use, and wildlife restoration are increasing. Grazing use is re- [maining] [uncertain] more or less [static.] [uncertain] The management [uncertain] of all resources is becoming more intensified in keeping with their importance and value to the social and economic well being of the people.

One of the most important aspects of our job is the demonstration value of good forest management. For example, the volume of [sawtimber] [uncertain] still standing in the forest has more [than] [uncertain] doubled on the basis as a whole in the past 15 [years.] [uncertain] This has been [accomplished] [uncertain] with a [percentage increase] [uncertain] in the volume cut each year. Much of the [increase] [uncertain] in volume has occurred on areas which were [con-] [uncertain] inoperable in the past due to, the low volume per acre. As more and more of these sparse areas come [into] [uncertain] production, the yearly cut can be increased [until] [uncertain] ultimately it will be equivalent to the annual growth.

[Cutting] [uncertain] to date has been [directed] [uncertain] primarily toward improving quality [of] [uncertain] residual stands, reducing [mortality,] [uncertain] and [uncertain] stimulating growth through [thin-] [uncertain] rings. The present estimated net annual increment on our [668,079] [uncertain] acres is 306,700 MBM valued at \$6,272,943. Of this net growth we plan to harvest about one-third or 100,000 MIM [an-] [uncertain] annually and we leave two-thirds or [2W,-/ 000° MEM.] [uncertain] In this manner we will rapidly [build] [uncertain] our stands up [to] [uncertain] the average planned volume of [10,000] [uncertain] board [feet] [uncertain] per acre.

### KEEP UP

### DEVELOPMENT

### BENDI

You get the Truest P:

See your Agricultur:

[4] [uncertain] hear them.

### TRAVIS [MOOK] [uncertain]

### ELECTRIC

[Tease] [uncertain] National Forest

The cut for want [fiscally] [uncertain] year on total KLGUS [MF This cut] [uncertain] in broken down as follows:

1. 15,175 [MBF—hardwood] [uncertain] sawtim-

[illegible or non-text passage omitted — see scan]

[illegible or non-text passage omitted — see scan]

[illegible or non-text passage omitted — see scan]

pine pulpwood.

[N56] [uncertain] acres of forest land were covered by various kinds of timber [atand] [uncertain] improvement work. This consists primarily of deadening hard:

woods on pine areas. The purpose of [TS] is to [uncertain] hasten natural reproduction:

ton and release [established seedlings,] [uncertain] thus [hrifgang] [uncertain] the forest into full production as planned [porable] [uncertain]

Another type of [TSI] [uncertain] was prescribed burning. Results from [prescribed] [uncertain] burning are becoming more pronounced on the ground. It has proven to be an effective and [economical] [uncertain] in reducing [hardwood] [uncertain] brush. The advantage of fire over other [methods] [uncertain] of brush control in the cost. Cost varies from one per acre for summer burn to six per acre for winter re burn. The average cost of prescribed burning in all types is holding to around [30¢] [uncertain] on the average. [So] [uncertain] far we have been able to secure a [free] [uncertain] notably good burn of approximately 160 acres per [year] [uncertain] day," 22,000 acres were burned last year for the purpose of brush control and seed bed preparation, [1K5,000] [uncertain] seedlings were planted last year, mostly in old fields recently abandoned from agriculture. Many of the plantations established in 1939 and 1940 received their first pulpwood thinning in 1952. The yield varied from 3 to cords per acre, and consisted primarily of trees deformed due to pest alert and ice storms, particularly [early] [uncertain] during the winter of 1944.

Insect damage has been on a decline this past year. At the same time the effects

## Crockett Courier — April 23, 1953

of the continuing drouth are apparent. [Considerable] [uncertain] numbers of young saplings died on the Davy Crockett Forest. Salvage of drouth-killed timber ie continuing fo be w big job on the Crockett. The bumper seed crop of last [yarr] [uncertain] was, with few exceptions, pretty [wel] [uncertain] reduced due to drouth conditions. However, in a number of the areas [orer] [uncertain] the formats we still have a [satiafartory] [uncertain] stocking of young pine which pulled through. [Waterabed] [uncertain] Management.

The importance of the watershed management on walter producing capacity of the forest lands is recognized in the administration of ail resources and activities. Bpecia) studies are now under way on the Davy Crockett to determine the effect of fire and [preacribed] [uncertain] burning on [ervaion] [uncertain] and water [aleorbing] [uncertain] characteristics of the sal! Theac studies are being carried out in cooperation with Stephen F. Austin [Experiment] [uncertain] Station

Theme of the 1953 Texas Bafety [Association] [uncertain] meeting [1s] [uncertain] Your Business, [Safety. " ] [uncertain]

*[illegible or non-text passage omitted — see scan]*

## WITH THE

## NT OF THE

picture in Television e Programs as [wel] [uncertain] as

## RE RADIO

## SERVICE

RECREATION AND  
WILDLIFE

It is difficult to put a dollar value on the recreation use and wildlife re- sources on the Texas National Forests PYet there is a very [defitute] [uncertain] slur to!

the local people [whicn] [uncertain] might be ex! [V] [uncertain] pressed interne of wee) Over [210,000.] [uncertain] local people used these forests [ast] [uncertain] year for recreation

purpose? such ws

*[illegible or non-text passage omitted — see scan]*

scoring, and seen. OF these 250,000, an [ealineated] [uncertain] 60,000 used the forest [utees] [uncertain] for hunting and fishing.

Over year ago [Red Jiilie] [uncertain] and

Beykin Lakes were drained and the lake beds treated to control under- water vegetation. Heth lakes were then restocked and [ahould] [uncertain] provide very soul fishing [thie] [uncertain] coming season. [Rat-}] [uncertain] cliff and Double Lakes were lowered so ge to permit weed control in the shallow arras. Both these lakes were [tratoched] [uncertain] with additional catfish Ac- cording te the [fiab] [uncertain] and wildlife bi- [vlogiate thie] [uncertain] treatment of the lakes should improve the fishing for the next [acveral] [uncertain] years.

The [improvementa] [uncertain] at Double Lake and Ratcliff and Red fill [Keereation] [uncertain] arras ate being maintained. The hath house at [Boykin] [uncertain] Lake [wae] [uncertain] tot main stained due te excessive damage and" vandalism at thin bite i The White Rock Game Preserve [in] [uncertain] j the Dary Crockett [12] [uncertain] now under man-

[arement] [uncertain] In cooperation with the State!

Game and Fish [Conimmansion.] [uncertain] A large number of deer and turkey has been!

Wanted in the area This [sree] [uncertain] along with the private preserves along the,

Neches mover should within s few [yarr] [uncertain] [huild] [uncertain] uj a supply of game between

the two [preecrvrs] [uncertain] so that there will) be excellent hunting in the Crockett

National Forest.

The Moere Piantsven Game Man-;

[agement] [uncertain] area us already beginning to show results. Deer are spreading out from this area toto" the

surrounding [foresta,] [uncertain] and hunting should be greatly

GRAZING AND SPECIAL  
USES

Cattle, trespass hogs, and [few}.] [uncertain]

goats grazing on the open unfenced [forwat] [uncertain] lands seem to be remaining at a [morr] [uncertain] or less constant number. How- ever, there [i»] [uncertain] an increased demand in a few areas by the [loral] [uncertain] people for grazing allotments. We [hed] [uncertain] AJ gras- ing permits last pear with total ef

1822 bead of cattle as compared to

*[illegible or non-text passage omitted — see scan]*

*[illegible or non-text passage omitted — see scan]*

made last year show that [svalabie!] [uncertain]

forage in intensively managed short leaf-loblolly stands 16 depressing tap:

idly. The present carrying capacity averages 40-60 acres per cow yrat- long. Carrying capacity im the long- leaf plantations varies from 20.30 acres per cow yearlong. The [desiratse] [uncertain] season of use was determined to be

The grating exclusion plots in the

[Ibavy] [uncertain] Crockett and Bam Houston Forets bottomlands are already showing [revults] [uncertain] of cattle [excluawn.] [uncertain] There has been a definite increase in the [reproducten] [uncertain] and [gtuwth] [uncertain] of the Letter hardwood species such aa ash and better species uf oak.

FIRE PROTECTION [ON  
FOREST] [uncertain] LANDS

Conaidering the critical burning conditions, brought [Ktout] [uncertain] by the extended drouth last fall, we were very fortunate. We had total of [S219 firva] [uncertain] which burned [7¥4] [uncertain] acres of National Forest hands. Comparing [thie] [uncertain] number of fires with the number of fires in 1947 and [1064,] [uncertain] which was around 400 under similar [conditivne,] [uncertain] it would appear that the Aombined

## Crockett Courier — April 23, 1953

prevention efforts of private industry, state and federal) agencies ate begin sing to show results

Three additional [cletrac] [uncertain] and ranger pal plow units [aod] [uncertain] two extra pal plows were added to [ovr mechanised] [uncertain] fire equipment This brings our total heavy units up to 12 plus two cara plows

A [atudy] [uncertain] was initiated last [fal!] [uncertain] to determine the Mortality of Shortieaf and [Iwbully] [uncertain] Pine by Fire [Damage] [uncertain] Classes." The purpose of [thie] [uncertain] study is to develop a workable basic for predicting and judging survival, of conversely, mortality of [aawlog] [uncertain] sic fire damaged pine predicated on per cent of crown scorch a

Cooperation.

The U. S. [Foren Service] [uncertain] is continuing to cooperate with the Texas Forest Service under the provisions ef the Clark-McNary [ect] [uncertain] \$156,213 was made [availatie] [uncertain] ty the state [Forest] [uncertain] Service for fire control purposes. [Apprustinately 820,220] [uncertain] war made available to the plate for [numery,] [uncertain] planting, and the forest management program

[Resemtvh] [uncertain] md trial [detueanetemtions] [uncertain] show that [ronteuulling.] [uncertain] hardwoods dus-! ing there dormant season is both pr tical and profitable

*[illegible or non-text passage omitted — see scan]*

## ROADS AND

Qu present network of T7 [radive] [uncertain] supplemented by aw limited number of [cominerctial] [uncertain] telephone [cannectioanal] [uncertain] is functioning very [amtiafactomly] [uncertain] Also, inter-communication [bas] [uncertain] been [eetal>] [uncertain] wished with the [Teas] [uncertain] Forest [Sernice] [uncertain] on separate frequency to aid in ce operative fire detection and suppress stun. Approximately 400 miles of telephone lines have been [abangened,] [uncertain] salvaged of avid

741 miles of [ruads] [uncertain] were [maintalne!] [uncertain] This included 204 treated Umber" bridges. 14 miles of roads were resurfaced with grave! While [theer] [uncertain] roads are primarily for access lo timber, protection and [edministratiun] [uncertain] purposes, many of them are heavily used by the public, 10 miles of [reeular] [uncertain] timber access [roade] [uncertain] were constructed and one bridge 410 feet long [acroas] [uncertain] Tenaha Hayou was constructed This latter project was in cooperation, with Shelby county. One new lookout dwelling was constructed at [Yelivw-,] [uncertain] pine from two abandoned [deeilings] [uncertain]

Woodss like the lit stop the leak in the evil lost from our [byrned] [uncertain] by fire.

Waren together like

[Terns] [uncertain] trees [crert 5] [uncertain] F

[TAERES OO] [uncertain]  
SOIL TO WAS

Qur farm and ranch [eex] [uncertain] [Gre] [uncertain] hurts them all.

*[illegible or non-text passage omitted — see scan]*

Southlan

Trinity, Texas

Cattle [(tasing] [uncertain] of

[Plane] [uncertain] re now being mote by statewide committed for the parts patron of Tenas 6-H club members, their leader and friends in the [Khare] [uncertain] and Care program fer e Natronal! [II] [uncertain]

Club Center in [Washington,] [uncertain] D The reenter will become the permanent

P that te Dutch Rov, Peter, [whe] [uncertain] tried p dike. Woodss trying te cave 1

East [Texvse] [uncertain] woodland that 3

2 buzz net, the roots of our [1] [uncertain] powerful factor to prevent [erceir] [uncertain]

TE IN THE STATE So [wby] [uncertain] burn poo ie tied in closely with

tr

*[illegible or non-text passage omitted — see scan]*

d Paper M

Lufkin, Texas

## EWSPRIN

th Grade Container Bo.

[nber] [uncertain] Divis  
Mills At

New mn [imptesed Macture] [uncertain] 2

[Sohegee] [uncertain] ft Nateeras  
[GED] [uncertain] Chut camp and

*[illegible or non-text passage omitted — see scan]*

plan de [ataclatee] [uncertain] te 62 member, [thetr iea@ery,] [uncertain] freebie and others for [ure Uherraighoat] [uncertain] the gear

[Brectee] [uncertain] Sel [Cateervation] [uncertain]

*[illegible or non-text passage omitted — see scan]*

*[illegible or non-text passage omitted — see scan]*

the woods with wild Gre!

[rea] [uncertain] One helps the [otbes] [uncertain]

## T

vy Willard, Texas

— Crockett Courier — April 23, 1953 — Page 2 of scan —

IMPORTANCE OF  
ROUGHAGE

ty [TP WC] [uncertain] Tanks, [Eatension] [uncertain] Veterinarian, [Teras] [uncertain] A. M College

[Nip] [uncertain] matter what the [cém (Rinks) [uncertain] aleut it, hay ts more [essenia!] [uncertain] than, grain in her daily [ratheos] [uncertain] Grain is cost, of course, bul a cow just cant get along without plenty of roughage Many cattle feeders, especially the plunger ones, da not fully understand the importance of hay to a- cows nourishment and health Hay. [eepe- cially] [uncertain] good quality hay, is one of the best roughage feels,

## Crockett Courier — April 23, 1953

[bot] [uncertain] the roughage may also [conelst] [uncertain] of clean straw, of corn fodder, or silage or beet pulp: Roy may [romalst] [uncertain] of mitra forage, like the animals pork up out on the range or pasture

Meat people know that ew has" four stomachs Theee [etomechs] [uncertain] can be compared with a [fouryzlinder] [uncertain] motor The cylinders have to work [In] [uncertain] unison, er there te trouble In other words, if something gore wrong in! [ote] [uncertain] cf the stomachs, the, whole ma-! chine vt threw out of kilter, A lack, of [rourhege] [uncertain] te often the thing [thet] [uncertain] pets the machinery [F..] [uncertain]

[Re] [uncertain] gage [fertaine] [uncertain] im fat [mus. trete,] [uncertain] feat ee [gratn] [uncertain] er any other gee feed. But roughage docs other things, [ter Et Cueriushes] [uncertain] bulk to give the festive system [eenething] [uncertain] to, work om and beeps il functioning for-' really lh there, teems to be ot. [eertia!] [uncertain] to bacterial [evtem] [uncertain] in the ru teen. [atl] [uncertain] the [berteria,] [uncertain] in sure, help the anin.sl to get [eeranshment] [uncertain] from [ber] [uncertain] few Ru actually, [recgheage] [uncertain] does three jibe [aed] [uncertain] If you commenter o cows [capecuy] [uncertain] fer feet, with all her [fowr etomarhs,] [uncertain] then

*[illegible or non-text passage omitted — see scan]*

age te [receneary] [uncertain] for bulk The aver age dell [rwe wil romegme] [uncertain] about [0.] [uncertain] te 10 pounds of roughage day, [tpclefting] [uncertain] 10 te [12] [uncertain] pounds of hay and 30 tm [jseruris] [uncertain] of silage Hesides that, she [wil] [uncertain] drink 10 of tS gallons of welder, and consume sheet tue ounces ef oak per day The reese. [preschege] [uncertain] the cats, the ere water pad salt she will [comegme, amd] [uncertain] the, added water ort colt aloe" aids [dige.] [uncertain] then [aaa] [uncertain]

If the feeder torment give his rattle [areegt trugtage o¢] [uncertain] if be feeds leo high ao [peo qertar] [uncertain] f greta, and the [etims] 4-crr.t] [uncertain] cat

rouge hay [apd] [uncertain] silage Uhre the [ceetithons] [uncertain] that [ote,] [uncertain]

## GOOD FENCES [PRC] [uncertain]

### ENABLE STOCKME

### TO GET MAXIMUM

### STALK FIELDS, SM

### TURES AND OTHE!

An. [extr#] [uncertain] supply place helps fit the crop a together.

Smiths Har

J. Smith [S] [uncertain] bring on a bad case of impaction are set up. The cows [stmoache dont] [uncertain] function normally [unleas] [uncertain] they are about three-fourths full At Irmst a third of [thie] [uncertain] content should be bulky feed, [Uke] [uncertain] hay or fodder. [If] [uncertain] the ani-i [mal doesnt] [uncertain] get enough of this rough- age, then the normal action of the!

rumen of first stomach ja slowed down jor stopped. When this rocking, churn-

Ing action la [chechal,] [uncertain] fermentation" acts in. Thie forme gee, distinding:

the wall of the rumen and causing the cow to, bloat. The congestion [cauecs] [uncertain] the buy temperature rise, and the takes the [moisturefou] [uncertain] of the mass of feed. Thats the begin-!

[ning] [uncertain] of a [typkal] [uncertain] case of bovine impaction. When this happens, there are symp- toms of danger signs the feeder can watch for. Usualjy, the animal [etands] [uncertain] wRh [ite] [uncertain] hack humped [up—grunting O7] [uncertain] groaning, or grinding [ite] [uncertain] teeth. [The] [uncertain] cow with bloat or impaction in steal discomfot, and she shows j If the left Mania of a bloated cow fs felt, it [fee] [uncertain] an If the akin were stretched like a drum head. An im- [pected] [uncertain] cow seems to have a batch ef dough or lump of clay [(inside] [uncertain] her. As the condition becomes more acute, the cow may breathe hard and

show nez-, Yous symptoms.

When s care of impaction does [o¢-] [uncertain] cur due to Inadequate [rogghage,] [uncertain] or) ovet-ealing of concentrates, or from some other cause, what [ehoald] [uncertain] be done tepermie.on the severity of the [ase..] [uncertain]

Rometimes, the veterinarian gives hypodermic injection to stimulate the action of the rumen, and its wrens quite effective Aleo, certain [medicimee] [uncertain] may be used to stop the fermentation in the stomach. In some) extreme canes, surgery may be necks:

Some of these case of impaction ran be guile [toaggh] [uncertain] problem and one re several treatments may be necoe-/ say [It] [uncertain] all depends [onthe individus!] [uncertain] take" The main point is cattle need plenty of yp were feed to [reduce]} [uncertain]

the danger of beat and impaction

net only le heep the digestive system functioning right, bat also to give them needed fond elements. [7] [uncertain]

A Thought About the [Fature] [uncertain]

A meadow er pastures is soil [depletung tmaofar] [uncertain] as minerals are concerned if vegetation, beef or milk is sold from the want. A ton of hay contains the equivalent ef 100-pound sack of [30.10-3D..] [uncertain] Milk and beef [rentain] [uncertain] talp- eels and protein [(nitregen,)] [uncertain] The meadow of pasture builds organic [mattet] [uncertain] ant good structure and otherwise Improves the soil

## [SPERLY] [uncertain] LOCATED

### N AND FARMERS

### [4] [uncertain] RETURNS FROM

### [ALL] [uncertain] GRAIN [PAS.] [uncertain]

### R CROPS.

of fencing around the ind livestock operations" [dware] [uncertain] Store

## Crockett Courier — April 23, 1953

Murchison

CROCKETT COURIER: AI

**GOOD PASTURES [DONT]  
[uncertain] HAPPEN**

A good pasture cannot be developed simply by planting the perennial grasses little [bluestem,] [uncertain] Indian guess, gide-cata [grama,] [uncertain] callie, fescue, ber- [muda] [uncertain] or Lluë panic on the land. Re- member the good plants you want, of some other good [qualjly] [uncertain] perennials, would be there already, except on recently cultivated land, if the [sojl] [uncertain] condition and [fertililty] [uncertain] was good enough to grow them.

Mave [soll teste] [uncertain] made to determine the [ratlos] [uncertain] and [amvuunts] [uncertain] of fertilizer needed. Apply the fertilizer as [Tee:] [uncertain]

[ommeded becEUte.] [uncertain] more growth of better quality on less water. When properly fertilized because they make more efficient use of water, Secondly, grow an annual grass and annual legume mixture, Annual plants grow better than perennials under poor sell, conditions, [Annual] [uncertain] plants [wil}] [uncertain] make profitable production

If properly [fertilized] [uncertain] and handled. Do not plow under green, but let them grow to maturity or otherwise run their full [dife] [uncertain] cycle. Proper grazing or haying, of producing a [beed] [uncertain] crop, or otherwise using the top-growth will make profile. Such program will result in soil improvement, [soll] [uncertain] con- [ditioning] [uncertain] er otherwise preparing the soil for a [deter] [uncertain] crop. The more of the top-growth left on the ground, [not,] [uncertain] removed as hay or otherwise, the more value for sell improvement. But even here, allow the plants to mature. [They,] [uncertain] form a surface cover and decompose slowly, thus saving plant food. Too, the [vegrtalive] [uncertain] matter as a growing cover of shade in summer [prevdhts] [uncertain] baking of the [soll.] [uncertain] Mature plants produce a much [grealer] [uncertain] root system which ba

desirable for soil improvement [If] [uncertain] ao start [ie'] [uncertain] made with [oate-hubam,}] [uncertain] vetch rye of erimson-oats of other cool-season mixtures, the land should be [disced,] [uncertain] fertilized and planted to a [Warm-seanton] [uncertain] mixture of Sweet sudan and Chinese Red cowpeas. The land shoeld-not be left fallow during the summer any more than necessary. [Tha.temperature] [uncertain] of bare ground in the summer is so high that organic matter developed by the cool-senso mixture is destroyed.

Where [soll] [uncertain] is subject te wisd erosion, the sudan-cowpeaa crop or stub [ble] [uncertain] may be left for protection and the perennial pasture grasses and legumes planted in this stubble. [Ti] [uncertain] may be [deatroysd inlate] [uncertain] summer to pre-

AI

**COMM**

[illegible or non-text passage omitted —  
see scan]

[illegible or non-text passage omitted —  
see scan]

pare a seedbed for early fall planting of cool-seaon [grasa auth] [uncertain] aa fescue In centra or east Texas, t would apply also to early fall planting of blue panic or little [bluestem,] [uncertain] An appropriate legume would be used with the preferred grass.

Cool-season [perennials] [uncertain] must be established in the fall, while warm-ecaaon perennials may be planted in early fail or in the [apring,] [uncertain]

On the Joamy and zanily [soll] [uncertain] of cast, central ard south Texas the planting of bermuda grass seed normally is not necessary. This le the beat, moat [protluctive] [uncertain] and useful [grasa] [uncertain] for the areas [mentloned,] [uncertain] Aa soon aa the sell le conditioned or [janproved] [uncertain] with organic matter and plant food, a good stand of [Bermuda] [uncertain] will be there. Planting bermuda send or setting out sprigs before [bullding] [uncertain] up organic matter and fertility is waste of time, labor [and}.]

[uncertain] money.

Johnson grass land s best [utilised] [uncertain] by applying nitrogen and phosphate fertilizer according to need and planting [madrador hubam] [uncertain] sweet clover. Use [osts] [uncertain] or barley with the sweet clover. This will provide winter and [epting] [uncertain] grazing on the oats or barley and clover. Also in the summer, the Johnson grass ls much better because it hae legume growing with [St.] [uncertain] The planting of any perennial grass on badly [ifT@ited] [uncertain] Johnson grass land js not recommended. The Johnson grass being [catablished] [uncertain] has first choice for [nutrienta] [uncertain] and moisture. Do not expect [evedings] [uncertain] of warm-season peren- nile to compete with the Johnson grass, Cool-season perennials can be established, and they will grow the first winter and spring, but the [coolseason] [uncertain] perennials are dormant during the summer. At that time, the Johnson grass will eliminate the cool-season perennial by using all the soil [molature] [uncertain] and nutrients.

[Resalta] [uncertain] of Anausl Plant Approach

This approach [Is almlar] [uncertain] to the [nattra!] [uncertain] process of nature annual plants to [perentiale,] [uncertain] low fertility [requiring]] [uncertain] plants to high, as [pli] [uncertain] as growing [a>] [uncertain] legume with grasses. [Grassland] [uncertain] prairies have grasses dominating, but Jexumes have existed with the grasses.

[Annus!] [uncertain] plants respond quickly to [fertiliser] [uncertain] and moisture. Thus, a profit ia made from land while the soil s being improved. Most recommendations for [perennia]] [uncertain] or permanent pasture plants also call for one or more years of deferred or not grazing after planting. Following the above described procedure, the perennials can be utilized for a profit the first season because the [planta,] [uncertain] being on improved oil, will grow rapidly. There

**JILDING**

## Crockett Courier — April 23, 1953

**[Oo] [uncertain] BUILD****OWN****INTY****ND****UNITY****ATIONS ALL!**

have been no two or three years [waling] [uncertain] because each annual crop has! [mado] [uncertain] a profit and the [perkonia] [uncertain] pasture plants will also make a profit the first season. The number of annual grass-legume [crope] [uncertain] necessary to use previous to planting perennials will depend on the productivity of the [partleular] [uncertain] field.

The Quickest Wey

If a bermuda [sed] [uncertain] or some other perennial feature plant is desired, the quickest way [poasible,] [uncertain] then leave out the annual [grass—just] [uncertain] grow vetch, [criméon] [uncertain] or [hubam] [uncertain] clover then cowpeas with fertilizer an needed. In this case, do not plow under green, but allow the legume to mature. This results In root penetration and vegetative matter decomposing slowly.

New Soll Condit

Sprouling [colton] [uncertain] need plant g [lanted] [uncertain] in [rowa] [uncertain] treated with Men

quid. Pheto shows both treated mark untreated row which exhibits ins hazardous [envirement] [uncertain] te spread through checks. Treated row is at bol

[5ST. LOUIS—A] [uncertain] new formula- [tton] [uncertain] of Krilium [soll] [uncertain] conditioner which may be used for prevention [Ne] [uncertain] of soil crusting in lure at a cost as low as \$4 per acre has been announced here by Monsanto

Chemical Company.

The new product, which Is a liquid, has been [teated] [uncertain] in surface applications tq various row crops by scientists of North Carolina

[State College,] [uncertain] Ohio State Univer- sit and Monsanto. [It waa] [uncertain] ape- civically formulated for crust con- [trol] [uncertain] as a result of these field and laboratory studies.

The one of Kritium Li- quid stabilizes many types of soils against slaking, sealing and crust- ing. Important secondary benefits from thea stabilization include im- proved germination and emer-

For the Le

Agricultural [limest:] [uncertain]

PMA Government [cepted.] [uncertain]

Phon

[illegible or non-text passage omitted — see scan]

[illegible or non-text passage omitted — see scan]

PAGE FINE pet.

Every acre of [coltivated] [uncertain] land in Texas caught to be in grasses and legumes three to five of each ten to twenty years, to hold the [soll,] [uncertain] to keep active organic matter available, to produce profitable crops or [other~] [uncertain] wise to make It pay. After a few years in good pasture, there will be more organic matter than a needed to grow the grasses. [Therefore,] [uncertain] put

It back in corn of cotton, sorghum or vegetables, then back to pasture. Jast three years of grasses and legumes in central Texas and In the Panhandle [haa bullt] [uncertain] the sell organic matter back comparable to the organic matter content of undisturbed native prairie. This all amounts to what is known as [Ornassland] [uncertain] Agriculture," Balanced

Varming," Farming Systems" of oth- er such [soll] [uncertain] management [programa.] [uncertain]

[6m Po ret] [uncertain] aw better chance in life when [wanios] [uncertain] Krillum Sell Conditioner [snd] [uncertain] untreated rows, Broken lines flaking, sealing and crusting [offersta] [uncertain] indicated y arrows emerging tom. [gence] [uncertain] of [secdlings] [uncertain] and improved water penetration in treated areas, [Nay] [uncertain] coed and [aoe] [uncertain] p [Ry vei] [uncertain] [gence] [uncertain] been [repo] [uncertain] tests

with cotton, beets, bear, peas, carrots, peppers, lettuce to- males,

Krilium Liquid is applied with conventional spray equipment which can be y on tractors or other mobile units used in tin, denim. [ooesicide] [uncertain] ot be [cide] [uncertain] rigs can be ada at little expense for this application,

Before the development of

Knilium Liquid, synthetic chem- leal soil conditioners had been consider" 0 costly for large- scale commercial agricul- [ture.] [uncertain]

[inds] [uncertain] Sake [eit] [uncertain] one hauled and spread

Purchase orders ac-

**PPPLICATION****PER ACRE**

[illegible or non-text passage omitted — see scan]

\$2.15 [ervice] [uncertain]

[illegible or non-text passage omitted — see scan]

[illegible or non-text passage omitted — see scan]