

ANNUAL NARRATIVE REPORT

OF

D. W. ROGERS, COUNTY AGENT
APACHE COUNTY, ST. JOHNS, ARIZONA

DATED: NOVEMBER 30, 1940

MONTHS OF SERVICE: 12

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111. Summary of Activities and Accomplishments

Our range livestock interests are organized into a tri-county organization which takes care of any large livestock interests effectively in Northern Arizona.

The results of planting 20 varieties of grasses under range conditions last year seems to indicate that artificial reseeding of ranges is rather impractical. However, this year we planted under irrigation and dry land conditions 27 different varieties of grasses to see if some new grass could be discovered that would grow on our ranges.

Under the direct supervision of Doctor Pistor, Veterinarian, and J. T. Rigden, Animal Husbandman, work was given in judging of livestock, elimination of cancer eye, lumpy jaw, botflies and warble flies, etc. The quality of our cattle is increasing rapidly in the county due to pure-bred livestock herds.

For the purpose of giving our adult population information on such problems as federal aid for schools and the Argentina beef problem, Mr. A. B. Ballantyne gave lectures in the county this year on these and other subjects, which we consider very timely and very valuable.

Since the dairy business in Apache County is dependent on protein roughage, soybeans and Canadian Field peas were introduced this year. Also we recommended the making of silage out of grasses and alfalfa.

As a result of our club work this year we had ten clubs with a total membership of 93 with 89 completing the work. We also took a trip to the Tucson Roundup with 23 boys and adult leaders.

In Horticulture this year we gave pruning and spraying demonstrations as a result of which 26 farmers sprayed and pruned 321 trees. We made a survey of the fruit trees in this county which totaled 4474. We also found cytospora canker in one community affecting most of the fruit trees. For this we recommended cutting out the dead parts of the fruit trees and cutting down the poplar trees on which this disease grows.

We recommended for vegetable gardens Golden Acre cabbage and Danish Baldhead, seven acres of which were planted on Black River. We recommended Denver Half-long and Emperor carrots and for lettuce No. 152 and 847 and a good start was made of both carrots and lettuce commercially.

Our landscaping consisted of giving two lectures on this subject, helping with some home beautification and landscaping two community houses.

Since the production of field crops is the foundation of practically every other agricultural industry in the county, it was timely that we experimented this year with 11 non-saccharum sorghums to see which would be the best for our county. Those planted are as follows: Kalo, Beaver, Algeria, Wheatland, Hegaria, Sooner, Fargo, Feterita, Atlas, Ajax and Blackhull. Three tests were made on winter wheat, one experiment with velvon barley, one with markton oats, one with hope wheat, and one with soybeans.

In our irrigation practices this year Mr. W. A. Steenbergen, Specialist in Soils and Irrigation, gave five demonstrations to 61 people on how to run a farm level in order to correctly run contours and ditches, and 14 people have changed their systems of irrigation as a result of this work.

In our weed work 7 farmers have applied chlorates according to our recommendations and two have cultivated according to recommendations, but we still have about 63 more farmers who should do this.

Since we ship in 36,000 dozen eggs annually in this county and produce plenty of wheat, oats, barley, rye, and corn for our chickens this project is very important. This year we have recommended rations made of local feeds, elimination of diseases, and management of poultry flocks.

This year our A.A.A. work consisted of working with 82 ranch operators with a total acreage of 16,579,723 acres. There are 230 farmers with a total acreage of farm land of 137,895 acres of which 22,702 acres is crop land and 114,241 acres is non-crop pasture land. There were 43 seed allotments on 621 acres. The estimated payments to Apache County for both farm and ranch is \$90,000, which is an increase of about \$35,000 over last year.

In rodent control we handled 5,300 pounds of bait on 18,000 acres of land. In farm security we worked 10 days, visited 8 farms and had 37 office calls in helping put over the program to 85 clients.

1V. Changes in county extension organization made to meet emergencies

We have set up a regular program of work and have attempted to put that program over as in the past. However, we always put aside regular work to take care of any agricultural emergency such as A.A.A., Farm Security Administration, National Youth Administration, etc.

We do this because these agencies have programs vital to our farmers' needs, and by cooperating with them many times a great deal of work can be done from our point of view, as well as theirs, that could not be done otherwise. In other words, we feel that since we are working for the government, there is no government program which does not merit our cooperation, and therefore, we give every emergency program all the time necessary to put it over.

ANNUAL NARRATIVE REPORT

COUNTY PROGRAM OF WORK:

A. Project Activities and Results:

Our County Program of Work was organized after a limited recent survey and an older survey we had made plus consultations with farmers and specialists. The following are the results of our project activities:

1. Range Livestock:

Our livestock situation here, which is a very important industry to our county, needs to be improved by producing better cattle, better and more grasses for the range, and feeding of more cattle.

Our livestock interests have a tri-county organization which includes Navajo, Apache, and Coconino Counties. This organization takes care of our national and state problems such as dues to the national association and any problems concerning grazing which necessitates joint action. The officers at the present time are: Bill Bourdon of Holbrook, President; Wallace Crawford of Sanders, Vice-President; and Mr. Hutchens of Holbrook, Secretary.

Last year with the cooperation of J. T. Rigden, Extension Animal Husbandman from the University of Arizona, we planted twenty varieties of grasses at Walter Jarvis's six miles north of St. Johns, at C. R. Jarvis's at Water Witch, and Jess Slade's at Round Valley. These grasses on March 19 were all apparently dead except black medico clover, blue stem, big brome, and crested wheatgrass, all of which seemed at that time to give promising results. However, this fall examination shows that nothing has grown of all these grasses that would indicate that they could be planted under general range conditions successfully. Although this is a limited experiment from which to draw conclusions, yet it seems to the Agent that not all years are good grass years and therefore grasses cannot be started under range conditions artificially except in very rainy years and these years cannot be figured out in advance. Therefore, artificial reseeding of ranges seems to be rather impractical.



Fig. 1 Well at J. W. Rogers', Hunt, showing the water being pumped in this well which came within two feet of the top and was of high quality.

On May 25 in St. Johns a meeting was held of the Northern Arizona Cattle Growers Association at which time Doctor Pistor gave a lecture on such diseases as sleeping sickness in horses, lumpy jaw, cancer eye and botfly control, hemorrhagic septicemia, black leg, dehorning, liver fluke, and poisonous plants. We had present at this meeting 65 ranchers.

On the 7th of July Jake Neal of St. Johns planted the following grasses:

Hilaria jamesii
Andropogon ischaemum
Agropyron smithii
Muhlenbergia porteri
Oryzopsis miliacea
Agropyron elongatum
Phleum pratense
Festuca merinoi
Agropyron pauciflorum
Dactylis glomerata
Elysus condensatus Michel Grass
X *Triticum sativum*
Eragrostia curvule
Festuca elatior
Aeluropus littoralis
Hordeum bulbosum
Gryzopsis hymenoides
Boutelous gracilis
Panicum antidotale
Bouteloua curtipendula
Elymus junceus
Agropyron trichophorum
Agropyron cristatum
Agrostis alba
Bromus inermis
Phalaris tuberosa
Eragrostis lehmanniana
Panicum virgatum

Half of these grasses were planted under general range conditions and the other half under irrigation conditions. However, due to floods the seeds planted under range conditions were covered up with silt so that they never did germinate, and the seeds which were planted under irrigation conditions are at this time looking very fine and we hope to get some good results from this work.



Fig. 2 Silo at Bill Spence's, Round Valley



Fig. 3 H. F. Tate, Horticulturist, demonstrating to Mrs. John Hall and others plans for landscape gardening.

Through the cooperation of Doctor Pistor, Animal Pathologist, and Mr. J. T. Rigden, Extension Animal Husbandman, from the University of Arizona, and the local people we held a meeting at Bill Spence's ranch in Round Valley, on November 26, at which time we gave demonstrations on the curing of cancer eye and lumpy jaw, treatment of botfly and warble fly, and judging of livestock. We had at this meeting 85 people, all of whom were very much interested in our activities.

We need in this County a great deal of soil conservation work and therefore some good demonstrations on the very best method of improving our range conditions. As a result of a somewhat limited experience and observation we feel that possibly deferred grazing should be encouraged more in the future than it has been in the past in order to improve our range conditions.

Due to several pure-bred herds of herferd cattle in the county, we are securing a better grade of bulls than we have had in the past, and we feel that the quality of our livestock as a result of this is gradually getting better.

Due to rains this summer our range looks better than it has for years, and our livestock industry is much improved over last year.

2. Rural Sociology:

We have a very great need for general adult education in Rural Sociology subjects such as federal aid to grade schools, the Argentine beef problem, and various other subjects which come under this head.

Mr. A. B. Ballantyne gave two lectures on federal aid to grade schools in this county this year for the purpose of informing the people on this subject. We hope in the future to have more along this line.

Apparently it is impossible to measure results of this work but it is evident that education in any form, particularly as it applies to education of rural youth, is very important and something which the people must understand so that all aid can be very effectively administered, and therefore, we sincerely feel that this work is very much worthwhile.

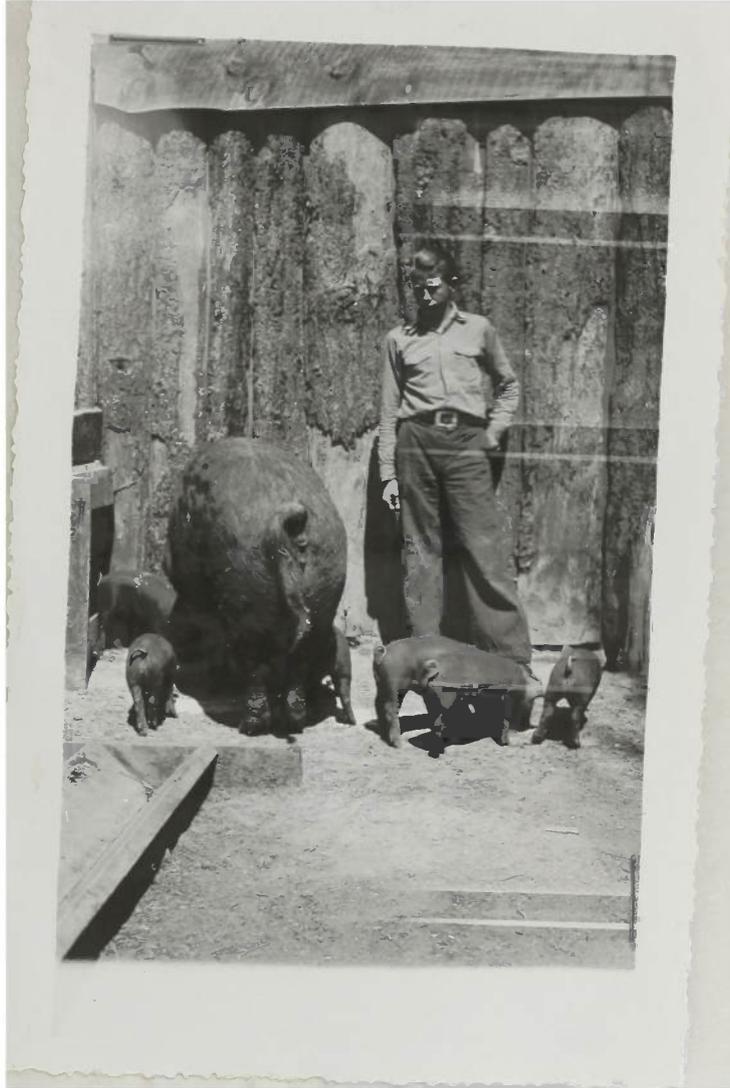


Fig. 4 Gleason Sherwood, 4-H Club Member, with pigs.

3. Dairying:

In the opinion of the Agent there is no subject so important as dairying in our mountain towns in this county. If dairying was properly taken up by our people, as we hope it will be in the future, all grasses, roughage, and excess hay could find a ready market through the production of cheese; rotation of crops could be worked out, and the fertility of the land maintained, which is not the case at the present time.

In the last year with the help of Clyde F. Rowe, Poultry-Dairy Specialist, from the University of Arizona, we introduced soybeans and Canadian Field peas as crops which will increase the protein roughage for our dairy cattle. Mr. Rowe told the people of Apache County that the determining factor in cheese production would be the production of good roughage and recommended that they make silage out of grasses and alfalfa, which could be done by mixing 70 lbs. of sorghum with each ton of silage.

Also in the past we have given cheese making demonstrations, and some of our people are making cheese with a fair degree of profit. We hope that this cheese business will continue to increase because we feel that it is a very important project to this county.

Mr. Glen Hamblin of Alpine has during the last year made 4500 lbs. of cheese, all of which was sold for 20 cents a pound f.o.b. his ranch.

4. Boys and Girls Club Work:

We have in this county eight rural grade schools teaching our rural boys and girls the 3 R's, but there is practically no agency, except the Extension Service, to give these boys and girls any desire for or appreciation of rural life, which is very important if our rural life continues, or rather advances to the high standard of life, both individual living and agricultural production, that America would like to have.

Our plan has been to get as many boys in agricultural 4-H club projects, who are interested in this work, holding meetings, demonstrations and making individual visits to these members with the hope that they will get the appreciation of rural life to the extent that some day they will make their surroundings better.



Fig. 4a 4-H Garden Club members on the Indian Reservation.



This year through the cooperation of Emil Rovey, State Boys and Girls 4^H Club Leader, and the Arizona Bankers Association, we had a pig club and a garden club in St. Johns, calf club in Springerville, garden club at Alpine, and garden and poultry club in Eagar, and a poultry club in Vernon. Besides these clubs, through correspondence and otherwise, we had a considerable lot of club work with the Indian children on the Reservation in the northern part of Apache County.

We took 23 boys and adult leaders to the 4-H club Roundup at Tucson where they participated in live-stock judging and demonstrations and attended all the meetings given at that time.

We had enrolled this year in 4-H club work in Apache County 98 members and 89 of them completed the work. This includes both the work with the white children in the county and the Indian children on the Reservation.

The outlook for our club work in this county is better than ever because this year we had all five club leaders at the Roundup, as a result of which, these club leaders will be better than ever and our club work should go over better than ever before.

5. Horticulture:

We made a survey of the horticultural situation in Apache County this year, the results of which show that we have 120 farmers owning the following number of different fruit trees:

Apple	2527	Peach	677
Apricot	92	Pear	322
Plum	361	Grapes	335
Cherries	40	All Others	120

Indications are at this time that we will have some young orchards next spring.

These trees for the most part have been improperly pruned and otherwise taken care of. Also there is woolly aphids and codlim moth in all the orchards in the county. We naturally are interested in better pruning methods and better treatment for diseases of these fruit trees.

We have an excellent county, so far as soil and climate are concerned, for the production of commercial vegetables such as cabbage, lettuce, carrots, etc., all of which should be developed. As is true in most rural communities, we also could improve and beautify our grounds a great deal by properly landscaping them.

Through the cooperation of Harvey F. Tate, Extension Horticulturist, we plan on giving demonstrations on pruning of trees, spraying for codlim moth, treatment for woolly aphids, landscaping of grounds, and lectures on vegetable production.

We held two meetings with the total attendance of 50 giving fruit tree pruning demonstrations, spraying demonstrations, and the application of paradichloribenzene for the killing of woolly aphids. As a result of this work 26 farmers sprayed and pruned 321 trees.

In August Manfred Gottlieb, Extension Plant Pathologist, and Harvey F. Tate, Horticulturist, discovered that we had cytospora canker on nearly all of the fruit trees in St. Johns. This disease has been in our poplar trees for years and they are now dying as a result of this disease. This disease has been spread from the poplar trees to our fruit trees by birds. The only solution recommended was that all of our present infested parts of trees be destroyed and all poplar trees in town be cut down.

This year in May we sent out a letter to 55 different farmers giving specific instructions as to the best method of putting on tree bands for the control of codlim moth and giving places where these could be secured.

Lectures were given in St. Johns and Eagar on commercial vegetable production by Mr. Harvey F. Tate, Horticulturist. He recommended that Golden Acre cabbage, which would mature in 64 days, and Danish Baldhead, which would mature in 104 days, be planted in the Round Valley district. Carrots which he recommended were Danver Half long and the Imtorita. He recommended that lettuce No. 152 and 847 be grown in Round Valley and stated that this could be secured at the Leafgreen Seed Co., Phoenix. He stated that 100-Fold was a good pea in that district and that Asgrow Wonder was a good beat; a good cauliflower was the Early Snowball.



Fig. 5 H. F. Tate and Manfred Gottlieb examining garden for diseases at Fred Rothlisberger's.



Fig. 6 Cecil Naegle, Vernon, Arizona, experimenting with combine.

As a result of our efforts in commercial vegetable production Irvin Hall planted 10 acres of cabbage and 3 acres of lettuce on Black River and George Hamblin planted 10 acres of lettuce at Alpine. The lettuce at Alpine was planted on June 22 but since he did not have any irrigation until July 2 this lettuce did not start growing until late. However, Mr. Hamblin did ship out about 200 crates of lettuce from the small patch he had irrigated, for which he received \$1.55 a crate.

For Bacterial Blight Mr. Tate recommended that we spray with Bordeaux mixture. We found mosaic and plant aphids very pronounced on Irvin Hall's vegetables on Black River. Mr. Tate recommended that the aphids be sprayed with calcium arsenate and when big to use niko dust instead of the liquid spray.

At George Hamblin's at Alpine Mr. Tate recommended that he spray his potatoes for early blight psyllid with sulphur solution, 3 lb. in 100 gal. of water.

For the purpose of establishing demonstrations as a proper method of landscaping, Mr. Tate landscaped the grounds of two churches, one in St. Johns and one in Round Valley, and part of these plans have been executed by the different communities and we hope that both of them will carry them out.

Up to the present time home beautification has not been practiced in Apache County as it should have been. Also commercial vegetable gardening has practically never been attempted and commercial orchards have never been put over to any extent. However, we do have an excellent county for all horticultural crops and we feel that this type of work should be very vigorously put over in the future and be commercialized more than it has been in the past.

6. Field Crops

The production of field crops is the foundation of practically all other projects in this county, since we have lots of range cattle, which if ample feed was produced, we could either fatten or feed them during cold weather or could produce butter fat or anything else. Therefore, this is a very important project.

Our plan this year was to work with sorghums, seed improvement, have field tours to see some better methods of planting field crops and work with the



Fig. 7 Grain planted with Lister Drill at Cecil Naegle's, Vernon, Arizona.



Fig. 8 Results of Hail on soybeans and corn at Eagar, Arizona, July 25, 1940.

diseases on alfalfa known as alfalfa wilt. All of this work was done through the cooperation of Doctor Matlock, Extension Agronomist, and Manfred Gottlieb, Extension Plant Pathologist.

Ove Overson, St. Johns, was given 11 varieties of non-saccharin sorghums to be tested in St. Johns to see which was the best producer at this elevation. These sorghums were planted on the 7th of June and harvested on October 21 with the following results:

Kalo--small brown heads; 4 feet high, and not very mature on October 21.

Beaver--small heads but somewhat larger than Kalo; stalks were $3\frac{1}{2}$ feet high; and not quite mature on October 21.

Algeria--rather large heads; stalks $5\frac{1}{2}$ feet high; and both heads and stalks were green on October 21. This shows that if Algeria is to be planted in St. Johns, some 30 to 45 days more are needed for growing season than was had this year.

Wheatland--good large heads; $2\frac{1}{2}$ to 3 feet high; and practically mature on October 21. This seems to be one of our best possible varieties of this test to date.

Hegaria--small heads; stalks about 4 feet high, and not quite mature on October 21.

Sooner--small heads which were better than Kalo but not as good as Wheatland; stalks were about 4 feet high; and not mature on October 21. This and Wheatland should be our best varieties for a short season.

Fargo--good heads, but stalks and heads which were 5 feet high were still green on October 21.

Feterita--very small, green heads and stalks, both of which were not mature on October 21.

Atlas--not mature on October 21, small heads and stalks. The stalks were about 6 feet high.

Ajax--good heads; stalks 3 feet high, but not mature on October 21.

Blackhull--not mature; small heads; stalks 4 feet high.

These sorghums were planted in a rather poor seed bed and were not cultivated and weeded as they should have been. Because of this fact, it did not seem to be advisable to keep relative production records.

However, this sorghum is now being cut and will be fed separately to see which seems to be the most palatable to the cattle this fall.

Our work with seed improvement consisted of five samples of winter barleys being planted by B. Y. Peterson, St. Johns, A. M. Hall, Eagar, and E. L. Judd, Alpine. The results of this work will not be known until next year. Melvin Crosby planted six varieties of soybeans to see what results we would have from them and due to hail, which destroyed them on the 25th of July, we had no results from this work. Melvin Crosby also planted 100 lbs. of blue tag Hope wheat and due to hail it did not produce anything. W. E. Wiltbank, Eagar, planted 100 lbs. velvon barley, which was beaten down by hail, but after Mr. Wiltbank clipped it, it grew and made a fair crop of 35 bu. per acre.

Ernest Judd at Alpine planted 400 lbs. of Markton oats but only secured about 30 sacks. However, we expect to continue to keep our Markton oats clean and plant them another year to see if we cannot get better production. All in all, our seed improvement work has made fair progress this year.

For the purpose of examining a lister drill and the results of grains being planted by it, a field trip was made from Round Valley to Vernon this year. This lister drill, which plants grain 14" apart and 6" deep seems to show a distinct advantage over the ordinary drill because the drill cleans practically all the weeds at the time of planting, puts all the grain to moisture and leaves the land so that it is impossible to blow. Since Mr. Naegle got 39 bu. over an average of 60 acres we feel that the lister drill has some definite advantages.

For some years our alfalfa has been dying much earlier than we figured it should. From examinations made it was stated by Mr. Gottlieb that it was probably due to crown rot and mis-management in the grazing season. However, this fall we found that our alfalfa had a disease known as alfalfa wilt. No solution for this problem has as yet been arrived at, but work will be continued on this another year.

We therefore feel that this project is very important and that we will render lots of service in developing such projects as non-saccharin sorghums, alfalfa wilt, etc.



Fig. 9 W. A. Steenbergen at Vernon, Arizona, showing how to put up a farm level.



Fig. 10 Results of Hail at Eagar, July 25, 1940.

7. Irrigation Practices:

Because of the fact that we had a great deal of contouring to do and new ditches to run on our irrigation projects, it seemed advisable to help the people with this work. Therefore, W. A. Steenbergen, Specialist in Soils and Irrigation, spent 3 days in the county this year, at which time he gave 5 demonstrations on how to run a farm level for the purpose of running contours and ditches. We had a total attendance of 61.

Since this work was given, the following is a list of the people who have used the farm level in this county:

Bob Francey	40 acres of land
Cecil Naegle	80 acres of land
Joy Patterson	5 miles of ditches
Virgil Whiting	40 acres of land
Arch Isaacson	4 miles of dtiches
Joy Patterson	40 acres of land
Joy Patterson	1 mile of ditch
Bob Lux	10 miles of ditches
C. L. Crosby	2 miles of ditches
Gene Waite	1 mile of ditch
Ernest Burk	40 acres of land
Hyrum Thompson	80 acres of land
Less Noble	40 acres of land
Levi Udall	1 mile of ditch

8. Bind Weed:

We have a great deal of bind weed in the county and according to a survey made about 70 farms were found to be infested with this weed. Fortunately we have had Dr. Chas. Homer Davis, of the University of Arizona, experimenting on methods of killing this weed for the last few years and he has developed some good methods of eliminating bind weed.

Our plan has been to hold meetings where the University is experimenting with this weed to show them the results of the experiments. We have held 3 such meetings with the total attendance of 40. As a result of these meetings we have 7 people killing weeds with sodium chlorates by putting on 6 lb. per square rod, and two who are killing the weeds with cultivation. The cultivation method consists of cultivation the weeds every 12 days all summer long.



Fig. 11 Result of wind blowing at Vernon, Arizona.

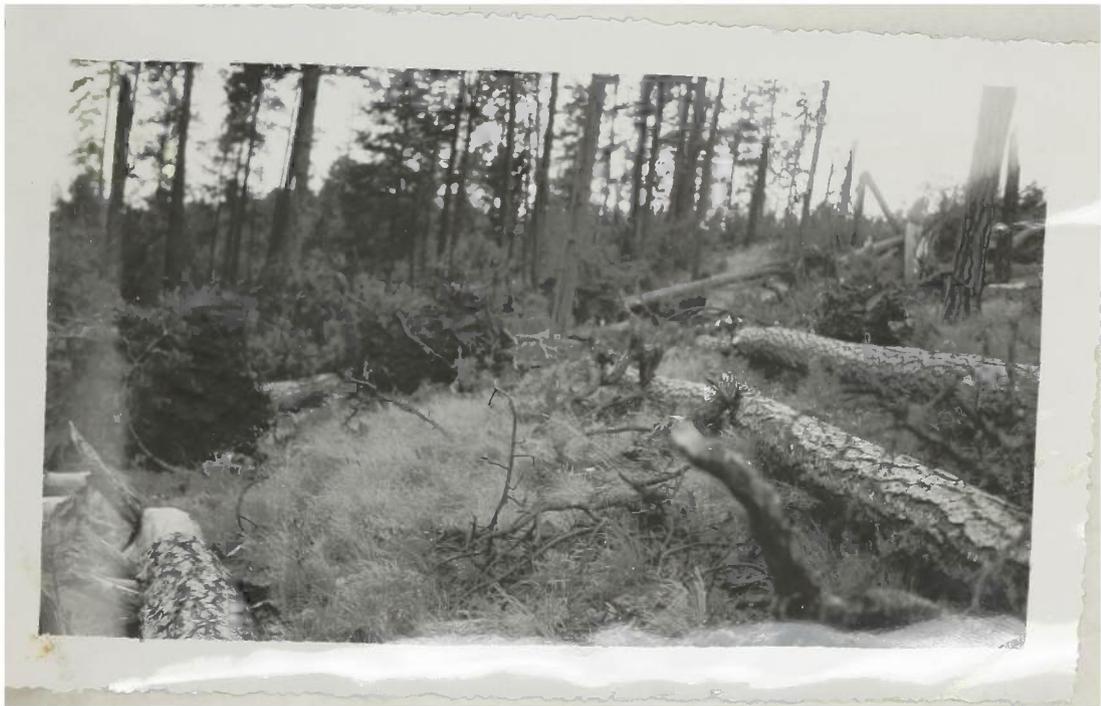


Fig. 12 Result of torenado on Black River.

Since bind weed slowly but surely takes land, and since there is enough in the county now to spread over every farm in the county shortly unless something is done about it, this project is very important. It is up to the people to either fight the bind weed or lose the farm by infestation. However, with the interest down and all, we are sure that this weed will be under control soon.

9. Poultry:

Since in Apache County we ship in about 36,000 dozen eggs annually, we have a fair local market for eggs. Also we produce a great deal of wheat, barley, oats, rye, and corn, which when ground up makes a fair feed for chickens. We recommend, therefore, that where people are producing any amount of grain that they keep 200 hens. This number of chickens will keep them fairly busy and make a way to cash in on some of their produce without taking too much time from their other farm work.

Our plan, therefore, has been to encourage as many farmers as we reasonably can, to have small flocks of chickens, but discourage anyone from going into large, commercial flocks. With the cooperation of C. F. Rowe, Extension Poultryman, from the University of Arizona, we have been able to do this to a certain extent and where they produce their own feed, they save on transportation charges and can generally produce a fair mash for around 2 cents per lb, whereas if this mash is shipped in, it will run about $3\frac{1}{2}$ cents per pound.

The following ration was recommended by Mr. Rowe for Apache County:

- 35 lb. yellow cornmeal
- 10 lb. ground wheat
- 15 lb. meat scrap
- 2 lb. oyster shell
- 5 lb. soybean meal
- 15 lb. wheat bran
- 10 lb. ground barley
- 7 lb. alfalfa meal
- 1 lb. salt

This last year the following records were secured from our poultrymen:

Ben Tenney of Alpine received 81 chicks from the Vogal Hatchery at Tempe and when the chicks were 8 weeks old he had 80 left.

Dan Sherwood received 300 mixed chicks from a hatchery and 100 roosters with only 3 per cent loss, and he figured that his roosters paid for the cost and feed of both the pullets and roosters up to the time they were sold.

Bert Colter received 300 mixed chicks from Albuquerque hatchery and lost about 4 per cent.

A. W. Crosby received 125 chicks from the Petaluma Hatchery and lost 35. This loss was due mainly to the fact that they stayed in the Holbrook Express Office over night at which time they must have been chilled and therefore, were not able to survive after he received them.

Ross Eagar received 200 chicks from the Colonial Hatchery and lost 35.

The following egg records were received:

Dan Sherwood received 90 eggs from 120 hens. He fed corn and wheat with 10 per cent meat scrap and milk.

Bert Colter received 200 eggs from 300 hens and was feeding a commercial mash.

A. W. Crosby received 80 eggs from 100 hens and he fed wheat, milk, and alfalfa hay.

Clarence Jepson of Alpine received 290 eggs daily from 400 hens. He fed a Purina commercial mash.

Our poultrymen are having disease, feed and brood troubles and it seems we should continue with this project, and it does have a reasonable bright future since we import eggs and produce a lot of local feed from which eggs can be made. Therefore, we expect to continue this project another year.



Fig. 13 Drilling of water Facilities Well
under the Lyman Dam.

B. Miscellaneous Activities:

Besides our regular projects we did work on the following subjects:

Water Facilities
Hoppers
Food Stamp Plan
A. A. A.
Rodent Control
Swine Diseases
Farm Security Administration

1. Water Facilities:

a. Harkey Well

With the water facilities organization we have worked on the Harkey Well, Lyman Dam, and Vernon projects, besides other work. The Harkey Well only developed 125 gallons of water per minute on a 24-hour test with a 116 foot drawdown. Therefore, the water-facilities organization could not OK this well, but Mr. Harkey expects to develop it further in the future.

b. Lyman Dam Project

Under the Lyman Dam Project we have always had a shortage of water, particularly this year. For the purpose of developing more water the water facilities organization agreed to make test wells and if sufficient water were developed, the Lyman Dam Company was to pay for the wells, otherwise, the water facilities would pay for them. Therefore, two holes were drilled and tests made without satisfactory results and the water facilities pulled out of the picture and left the Lyman Dam practically as they started.

Relation of Draw Down in Three Wells and Spring Near Lyman Dam, St. Johns, Arizona:

	Test Well #1	Test Well #2	White Well	Spring Dischg. a.p.m.
Elevation Top of Casing	97.87	97.72	97.04	
Elevation Water Surface				
Prior to all Tests	86.67	86.07	86.19	378
After 18 Hr Run on Well 2	80.07	33.7	83.85	378
After 22 hr Run on Well 2				270
After 4 Hr run on Well 1	-12.1	86.07	86.19	301
After 24 Hr Run on White Well	81.17	81.47	60.0	126

5'	Surface Soil
12'	Broken Shell Rock
37'	Yellow Sandstone Soft and Hard Streaks
6'	Yellow and Blue Mixture
64'	Blue Clay and Shale Sealed and Tight
8'	Water Bearing Sand
4'	Sand Stone
111'	Dakota Sand stone
4'	Blue Clay and Gravel
52'	Bad Land and Clay
3'	Sand stone over Conglomerate

303 ft.

Log of Harkey Well at Plenty, Arizona

Dug by Earl White

Water came up to 64 ft.
from the top.

Well produced 125 gal. per
minute on 24-hour Test,
with a 116 ft. Draw Down.



Fig. 14 Water at Harkey Well, Plenty, being measured by Weir, which produced 125 gallons per minute.

The attached is a map of the discharge and recharge curves of the wells drilled under the Lyman Dam and also a Location Sketch for the Lyman Test Well.

2. Hoppers

We had quite an outbreak in hoppers in Round Valley, Nutrioso, and Alpine this year and distributed about 30 sacks of bran, and enough poison to treat this bran, to the farmers in that locality. As a result of this our hopper problem was amply taken care of.

3. Food Stamp Plan

The Food Stamp Plan was inaugurated in this county on the latter part of October and went into effect November 1. Since this is a government-tried subject and one the farmers are vitally interested in, we think it has merit and should do good in this County. We are expecting to help with this project.

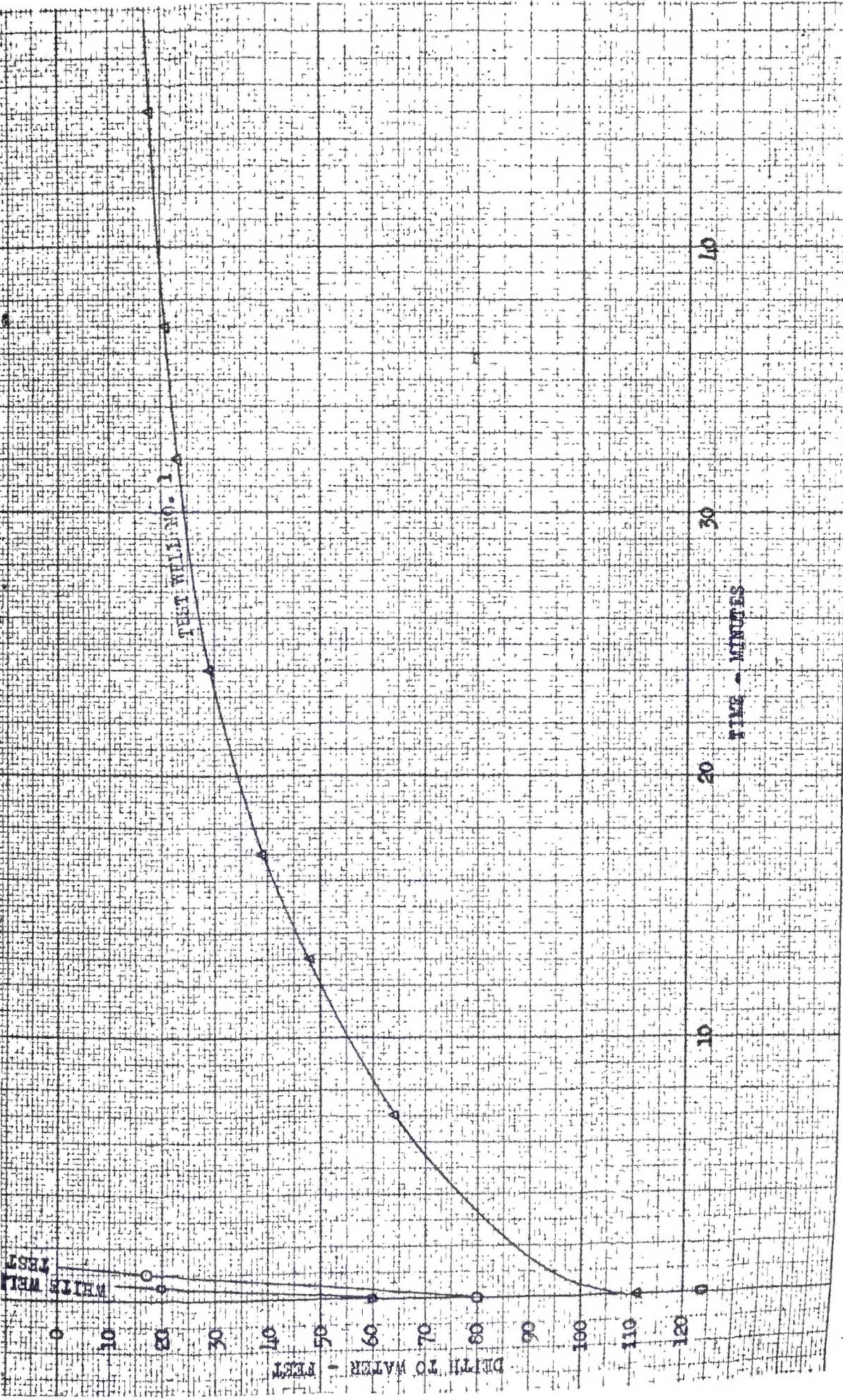
4. A.A.A.

This year we have worked very closely and cooperatively with the A.A.A. committee in holding meetings and in helping out every way possible to promote this project. The following are the statistics on this work:

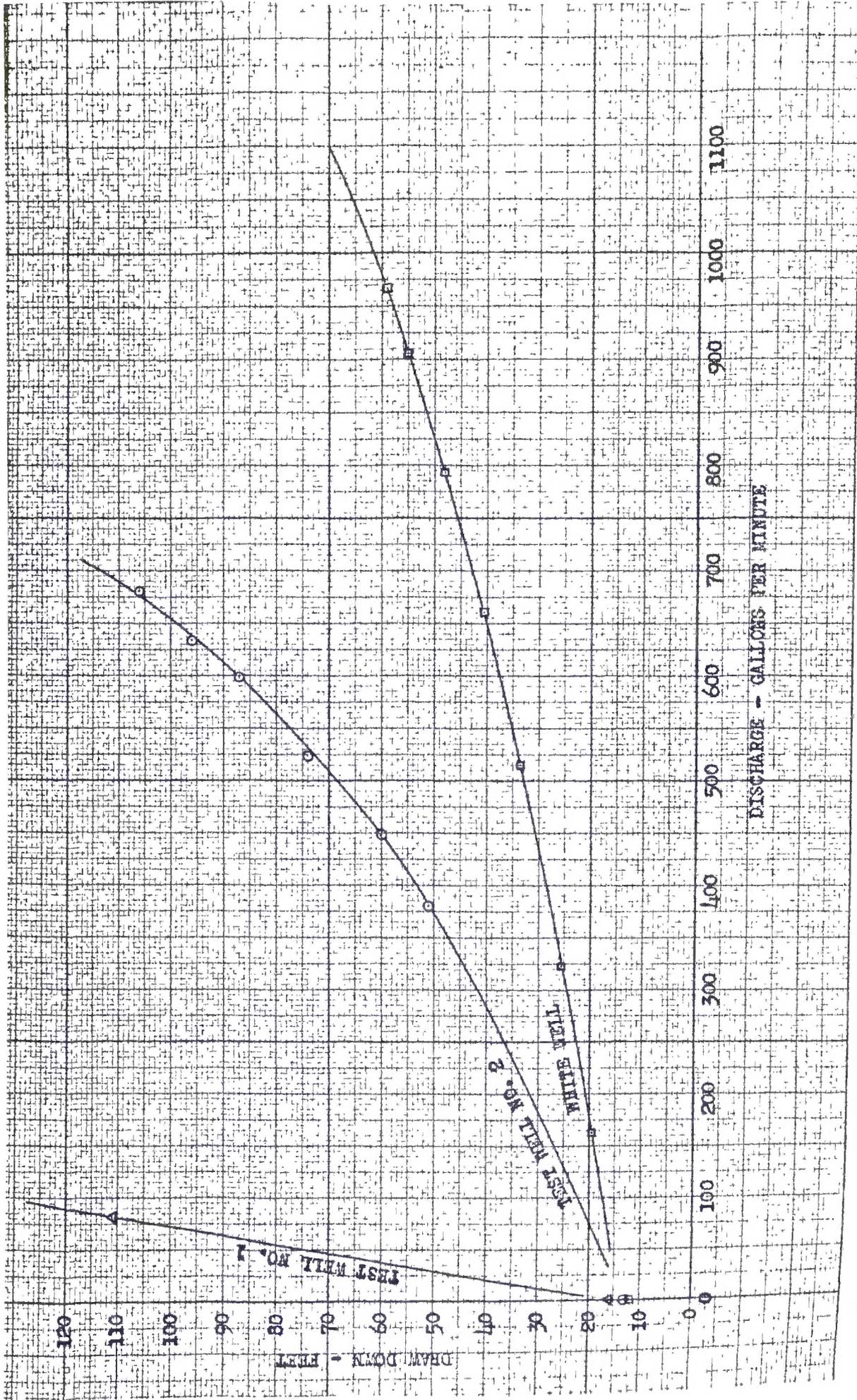
Ranch operators	82
Total acreage	16,579,723 acres
Total farmers	230
Total farm land acreage	137,895 acres
crop land	22,702 acres
pasture land	114,241 acres
43 seed allotments on	621 acres
Estimated payments to Apache	
County for farm and ranch land	\$90,000.00
And increased over last year of	35,000.00

5. Rodent Control

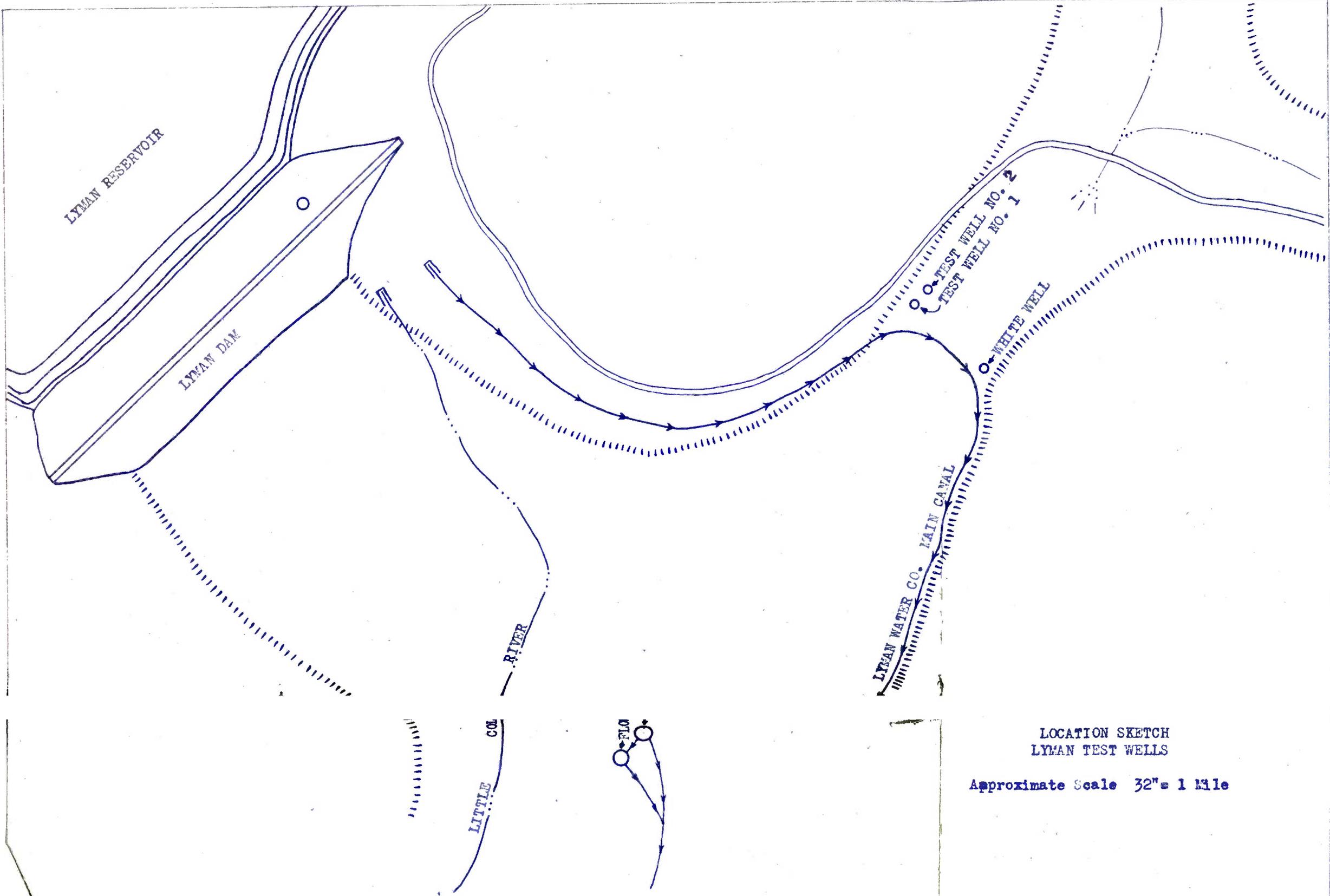
We have had a very good biological survey foreman in the person of Isaac Rogers, who spent 60 days working in this county. During this time with his cooperation and what we could do to help this work, 5,300 pounds of bait was distributed on 18,000 acres of land.



RECHARGE CURVES
 LYMAN TEST WELLS
 LYMAN IRRIGATION PROJECT ST. JOHNS, ARIZONA
 WATER FACILITY PROJECT LC-WF-4



DRAW DOWN - DISCHARGE CURVES
 LYMAN TEST WELLS
 LYMAN IRRIGATION PROJECT ST. JOHNS, ARIZONA
 WATER FACILITY PROJECT LC-WF-4



LOCATION SKETCH
 LYMAN TEST WELLS

Approximate Scale 32" = 1 Mile



Fig. 15 Results of recent erosion at Plenty, Arizona.



Fig. 16 L. P. Sherwood home in St. Johns taken for the purpose of using with 4-H Club members.

6. Farm Security Administration

The Agent this year spent 10 days helping the Farm Security Administration put over its program in this county. He has visited 3 farms and had 37 office calls on this work.

At this time we have in this county 85 farm security clients, and in one way and another the Agent has helped with practically all of them. We are working, therefore, as closely as possible with this organization, as we think it is one of the most worthwhile federal organizations and should be successfully put over, and in order to do this, we feel that our full cooperation is needed.