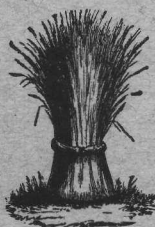


Wm. Horton 1172

Report and Recommendations
of
**GILLIAM COUNTY
ECONOMIC OUTLOOK
CONFERENCE**



February 25, 1938

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Foreword

This report is the result of study and careful analysis by committees of farmers and homemakers representing all of Gilliam County, of many of the factors affecting the present and future well being of citizens, landowners and business men of the county. The deliberations of these committees extended over a period of two months during January and February, 1938, and their reports were read and discussed at a general conference to which all the people of the county were invited on February 25, 1938. The reports are printed in this booklet as they were ammended and adopted at the general meeting.

Organization for the committee work and conference was carried on under the direction of the Extension Service of Oregon State College. The facts and conclusions in the report were arrived at only after exhaustive study and discussion, both by committees and in the general conference meeting. They represent the best judgement of those participating in the conference as the steps necessary, in the light of present knowledge, for the development of a permanent and prosperous agriculture in Gilliam County and the realization of fuller and happier life on the farm homes of the county.

This report is intended to serve as a working basis for discussion and action. To obtain the fullest benefits further study and analysis of the recommendations herein contained, both by residents of the county and those landowners who live outside the county, is urgently requested.

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REPORT AND RECOMMENDATIONS OF LAND USE COMMITTEE

PRESENT LAND USE SITUATION

Importance of Agriculture: Citizens of Gilliam County derive practically their entire income from agriculture, the only major industry of the county. The best use of the land to provide maximum returns over a long time period as well as for the present, is of paramount importance, not only to the farmers themselves, but to those engaged in other lines of endeavor.

General Information: Gilliam County is located in the north central portion of Oregon, nearly in the middle of that part of the Columbia Basin located in the state. Elevation above sea level varies from about 200 feet on the Columbia River to 4000 feet on the southern boundary of the county. Topography is that of a long plateau rising rapidly southward from the Columbia River and cut up by numerous deep and rough canyons. Rainfall varies on the average from around seven inches near the river to 14 inches on the southern end of the county. Native vegetation was largely bunch grass, other native grasses and small sage brush. The level and rolling lands are almost entirely used for the production of cereal grains, principally wheat, while the canyons and steep, rocky soil are used only for pasture and range. Irrigated farming is carried on to some extent on the creek bottoms.

Gilliam County ranks fourth among Oregon counties in average acreage and production of wheat. No other cash crop has ever been grown to any extent on dry land of the county. Soil types vary from a very fine sandy to a heavy clay loam. The entire area is underlaid with basalt, outcroppings of which appear in all canyons and where soil is shallow. Depth of soil varies from as much as ten or twelve feet in the northern end of the county, to only two or three feet in the southern end where the heavier soils are found.

Agricultural Income: Approximately 65% of the agricultural income of the county is obtained from field crops and 35% from animal products. Of the total income, at least 62% comes from the production of one crop, wheat. The following table sets forth the approximate annual agricultural income of the county based on figures of the past two years:

TABLE 1—GILLIAM COUNTY AGRICULTURAL INCOME, 1936-37

Enterprise	Average Income	Percent
1. Wheat	\$1,100,000.00	62.0
2. Sheep	325,000.00	18.0
3. Cattle	264,000.00	15.0
4. Hogs	36,000.00	2.0
5. Dairy Products	22,000.00	1.2
6. Other Products	35,000.00	1.8
Totals	\$1,782,000.00	100.0

Land Ownership: The ownership of the land has considerable influence on land use. More than 88% of the land in Gilliam County is deeded and practically all of the tillable land is privately owned. Approximately 34% of the total area of the county is under cultivation at the present time. The following table sets forth the ownership of the land in the county:

TABLE II—LAND USE IN GILLIAM COUNTY—1937

1. Total acres all land.....	768,640	100.0%
2. Acres privately owned.....	677,791	88.1
3. Acres publicly owned.....	90,849	11.9
4. Acres tillable land.....	280,703	36.8
5. Acres non-tillable land.....	487,937	63.2
6. Acres cultivated in 1937, approx.....	260,000	34.0
7. Acres irrigable land.....	1,977	0.2

Almost all of the land not deeded is used for agricultural purposes as grazing land.

A study of the tenancy and ownership of the tillable land in the county reveals the following facts:

TABLE III—TENANCY AND OWNERSHIP OF GILLIAM COUNTY
TILLABLE LAND—1937 (Taken from A. A. A. Listing Sheet)

	Percent of Total Tillable
Total Tillable	100 %
Owner Operated	48
Tenant Operated	52
Absentee Landlords	40
Individuals	23
Corporations	17
Landlords in County	12

Tenant operated wheat farms are almost invariably rented on a share-rent basis. The better yielding lands are rented for one-third of crop while lower yielding lands are rented for one-fourth of the crop. There are many variations of the rental basis depending on the amount of pasture land involved, who receives the livestock feed produced, whether the landlord furnishes sacks and twine or not for his share of the crop, and whether the landlord's share of the wheat crop is delivered to the warehouse or received in the field. Irrigated farms and livestock ranches are generally owned by the operator and when rented are ordinarily rented on a cash basis.

Soil Erosion: The erosion situation in Gilliam County is one which requires much consideration when outlining the use of the land over a long time period. Just how much of the top soil has been lost from wind and water erosion on the average in the 45 to 50 years during which most of the land in the county has been cultivated is a debatable subject. There is no question in the minds of the committee, however, but that erosion losses must be given increasing attention in the future if at least 50 % of the present tillable land is to be profitably used for wheat production over a long time period. Wind erosion has caused severe loss in the north end of the county and has been readily recognized because it is spectacular and easy to see. However, the committee calls attention to the fact that total loss of soil has been far greater from water erosion than from wind erosion.

In the summer of 1936, representatives of the Soil Conservation Service made erosion surveys on 71 farms in three Columbia Basin counties. Twenty-eight of these farms were in Gilliam County. The following table shows their results:

TABLE IV—EXTENT OF EROSION ON WHEAT LANDS IN UMATILLA,
GILLIAM AND SHERMAN COUNTIES

(Based on a study of 71 farms made by Clarence Waldo and Howard Magness of the Soil Conservation Service, U. S. D. A.)

County	Percentage of Crop Land where			
	Less than 25 % of sur- face soil removed	25 % to 75 % of surface soil removed	Over 75 % of surface soil removed	All of surface soil removed & subsoil now being eroded
Umatilla	45 %	50 %	4 %	1 %
Sherman	58	42	0	0
Gilliam	31	60	9	0
Total for study area ..	45 %	52 %	3 %	*

* Less than 1 %.

The facts brought out in the above table, which the committee believes to be reasonably accurate, establish the erosion situation in Gilliam County as indeed serious. Probably there has been no more erosion in Gilliam County than in other Columbia Basin counties, but because much of the soil is shallower in this county than in Sherman or Umatilla counties, a larger percentage has been lost.

Fertility: Soil fertility is not yet a problem in Gilliam County. Rainfall and weather conditions are so far the limiting factor to production of wheat. In years of favorable precipitation and temperature, the land produces as well as it ever did except where there have been heavy losses of top soil from

erosion. The fields plowed from native sod first, were generally the leveler and deeper soils and these fields are still producing the best yields even though they have been cultivated much longer than some other areas which show a decided tendency to produce lower yields. The only explanation for this is that the steeper, shallower soils, which were taken from sod after all the best land had been plowed, have now lost all the top-soil or enough to cause yield decreases.

Almost no straw or stubble is burned in Gilliam County although most of the straw and chaff is picked for livestock feed and the stubble is often heavily pastured.

Grazing: Most of the land now used for grazing is not tillable and has no other possible utilization than for pasture purposes.

Some of this range land has been seriously damaged by overgrazing while other ranges are still in as good condition as they ever were. It will be much more difficult to revive the badly overgrazed range than it will be to maintain range land which is in good condition. Overgrazed range produces more cheat grass than any other plant, and while this grass is excellent early spring pasture, it has comparatively small carrying capacity. Overgrazed and bare range tends to erode badly.

Many acres are seeded to rye or wheat for late spring or summer pasture. This is an expensive method of producing livestock feed because of the high cost of plowing and seeding. The committee estimates that this type of pasture costs approximately \$2.80 per acre if produced on the same land each year and \$3.80 per acre if seeded on summerfallow. Except as an emergency pasture crop, this practice obviously cannot pay returns.

There is ordinarily ample spring range for the livestock in the county and the stubble pasture takes care of the livestock in late summer and fall. A serious pasture shortage for livestock kept in the county during the summer generally develops in June, July and early August. More cheap pasture needs to be developed for this period.

RECOMMENDATIONS ON LAND USE

Your committee has given consideration to all of the factors previously outlined in this report and have carefully studied land use problems as they exist in the county. From this study we have arrived at what we consider to be the best use for the acreages of land in the county over a long time period, with the single idea of developing a more permanent and profitable agriculture. The following table sets forth these recommendations along with the census figures for 1935 for comparison.

TABLE V—LONG TIME LAND USE RECOMMENDATIONS

Item	Census 1935	Long Time Recommendations
1. Cropland, total	242,424	198,583
2. Harvested	116,220	101,043
3. Failure	14,131	3,520
4. Idle or fallow	112,073	94,020
5. Pasture land in farms, total	426,814	494,569
6. Plowable rotation	8,240	67,185
7. Plowable other	9,248	21,591
8. Woodland pasture	46,198	2,828
9. Other pasture	363,128	402,965
10. Woodland in farms (not pastured)	2,639	0
11. All other land in farms	5,914	5,914
12. Total land in farms	677,791	699,066
13. Land not in farms	90,849	69,574
14. Total land area	768,640	768,640

In analyzing the census figures for 1935, your committee felt that the total cropland figure of 242,424 was lower than normal because 1934 was a drought year. We believe that there has been normally cultivated in the county about 260,000 acres. The most important of the land use recommendations, which we wish to make, is a reduction in total cropland acreage

from this figure to 198,583 acres, a cut of approximately 61,000 acres. The reasons for this recommendation appears later in this report.

Since this 61,000 acres should be seeded to perennial grass, it is therefore necessary to increase the total pasture land a similar amount in the recommendations.

Other adjustments in acreage in the above table, represent the committee's best estimates from all available information as to the probable land use after the acreage of total cropland has been reduced to a proper land use basis.

General Land Use Areas: The committee has prepared a land use map which has been colored to show the general recommendations by areas. A reproduction of this land use map is found on page 16 of this report.

The area not shaded is largely the present grazing land. The committee recommends that on this land there should be no drastic change in type of utilization.

The shaded area on the land use map represents practically all of the present cultivated land in the county. The committee believes that there should be some important changes in the type and system of farming in this area from the standpoint of a permanent and prosperous agriculture.

In Townships 1 and 2, North, R. 22 E. W. M., largely in Eightmile canyon, is a small area which has been cross hatched on the land use map. The committee believes that this area should be withdrawn from farming as a protection to other more valuable farm land lying directly east of this area. The committee recommends that this area be placed under public ownership and withdrawn from grazing or farming.

There are small areas of irrigable land in the county. No change in land use is desirable for these areas.

Land Use Recommendation for Pasture Land

The committee recommends little change for areas now used for pasture. Most of this land has no other possible utilization. Certain ranges are seriously overgrazed and operators should consider the adoption of a range management program which will build up the stands of native perennial grasses before they are completely eliminated or before serious loss of soil from erosion results. Some of the range in the county should be reseeded to a perennial grass rather than attempt to rebuild stands of native grass. The committee believes Crested Wheat Grass to be the best grass available for this purpose. More information on methods of range reseeding are necessary. Proper fencing and development of stock water to permit uniform grazing are necessary for the best utilization of range land.

Land Use Recommendations for Present Cultivated Lands

The committee recommends some rather drastic changes in the utilization of present cultivated land of the county. The major change recommended is that approximately 24% or 61,000 acres now cultivated should be seeded to perennial grass. This does not mean that the committee believes that 24% of every farm should be taken out of cultivation or that this change should take place within the next one or two years. The committee believes that there are areas in the county covering whole farms which should be seeded to perennial grass, but at the same time knows that there are other areas where only a very limited acreage should be taken out of cultivation.

The committee does believe however, that land in the following classifications should be permanently seeded to grass:

1. Land on which the average return from wheat is less than the cost of production because of location, difficulty of cultivation or low yields.
2. Land on which wind erosion cannot be controlled if cultivation is practiced. These areas are ordinarily small, sandy places which menace a larger area if they do blow.
3. Land which is so steep that the top soil is already gone or which is rapidly losing top soil from erosion.
4. Land infested with morning glory or other perennial weeds where the affected area is so large that chemical or clean cultivation methods of eradication are not feasible.

5. Land which is now seeded to rye or wheat for pasture. The committee believes that crested wheat will produce at least as much pasture as annual grains and will eliminate the necessity of expensive plowing and seeding.

The committee estimated that about half of the present cultivated area which should be seeded to grass, or 30,000 acres, would fall in one of the above classifications and should be seeded to grass permanently, never to be plowed again unless reseeding is necessary.

The balance of the grass seeding on cultivated land, or 31,000 acres, should be on the basis of a long time rotation. This would mean that the land should be seeded to grass for a period of 5 or 6 years and then plowed up and used for wheat production for a few years. When the original area of rotation grass was plowed, than another similar area should be seeded to grass. This would permit on most farms a grass, wheat and summerfallow rotation over all but the best of the land during a period of twenty years. These rotation grass seedings will prevent erosion and build up the organic matter content of the soil so that moisture absorption will be greatly increased and erosion lessened even after the grass is plowed up and the land seeded to wheat again. This practice should increase wheat yields per acre on the land in the rotation and help to maintain a permanent and prosperous agriculture over a much longer period.

The committee calls attention to the fact that no agricultural area has been able to maintain a permanent and prosperous agriculture over an extended period of perhaps more than 100 years on a single crop basis. Perennial grass with livestock enterprises, offers the only possibility for rotation and diversification in Gilliam County. It seems logical, therefore, that the committee's recommendation for rotation with grass is sound and sensible.

The committee believes that it will always be necessary to summerfallow in alternate years for profitable production of wheat. When the land is in summerfallow is the critical time so far as erosion losses are concerned. The committee feels that a change in tillage practices for summerfallowing is essential for the maintenance of a permanent agriculture in the county. The practice of trashy summerfallow offers the only known solution to this problem.

Recommendation for Land Which Should Be Withdrawn from Agricultural Uses

In Eightmile Canyon in the northern half of Twp. 1 N R. 22 E. W. M., and the southern half of Twp. 2 N. R. 22 E. W. M., is an area of approximately 4000 acres, almost entirely grazing land, which the committee believes should be withdrawn from agricultural uses at least for a period from 5 to 10 years. This area lies due west of about 10,000 acres of wheat land. The section of Eightmile Canyon indicated has been almost entirely denuded of vegetation by summer grazing and for the past four or five years has been blowing seriously. Wind blows have started up side canyons in eight different places adjacent to wheat land and in two such places have already reached the cultivated land with devastating effect. Wind erosion on the cultivated land cannot be controlled so long as blowing sand is continually deposited on it from Eightmile Canyon. When the eight sand blows have all reached the cultivated land they will spread out in a fan shape and virtually ruin most of the 10,000 acres of cultivated land. So long as grazing goes on in this portion of Eightmile canyon there is no likelihood of sufficient vegetation growing on the land to prevent the continuation of soil blowing out of the canyon. The land in the canyon has already been damaged by erosion to the point where it has little value for grazing or any other purposes but so long as it is privately owned it will probably be grazed enough to prevent vegetation from starting again.

The committee therefore makes the following definite recommendations regarding this area.

1. That it be purchased by some public agency, preferably the county, state or federal government, and withdrawn from agricultural use.
2. That the Soil Conservation Service with C. C. C. labor which they

have available, reseed to grass or other vegetation all of the area where this is practical and that windbreaks or other means be used to immediately stop the sand blows from going up the side canyons on to the cultivated land.

3. That this area be made a portion of the Taylor Grazing District No. 7, and be administered under the Taylor Grazing Act. This administration would then have authority to permit controlled grazing if and when the area is again deemed safe for agricultural uses.

SIZE OF FARMS

The committee believes that there is no possibility of increase in the number of farms within the county. The tendency has been and seems likely to continue that farms will be larger and fewer and that farm population will still further decrease.

The average size of farms in Gilliam County according to the 1935 census is 1925 acres with an average of 738 acres of cultivated land per farm. The committee estimates that the average tillable area of wheat farms is in excess of 1200 acres. This average acreage per farm is already the highest in the state.

LAND OWNERSHIP RECOMMENDATIONS

As is indicated by Table III earlier in this report, 52% of the tillable land is operated by tenants and 48% by owner-operators. Forty per cent of the land is owned by landlords who live outside of the county and who as a rule, are not familiar with changes in farming conditions which are developing within the county. Twelve per cent of the land is owned by landlords who live within the county.

The committee believes that the large percentage of tenancy and the extremely large ownership of land by people outside of the county is not desirable in so far as proper land use and the achievement of a permanent agriculture is concerned. Most absentee landlords are not as much interested in development of a permanent agriculture as they are in the year to year return from the land. Most of the absentee landlords are willing to sell their land but not at liquidation prices or on a long time basis which would be necessary if most of the present tenants were to purchase the land. It is reasonable to assume therefore, that many of the present landlords should be interested in the future of their land and should consider any reasonable program of land use adjustment which will sustain or add to the value of their property even though the immediate cash return might be somewhat lessened. The committee therefore recommends that a program be initiated and maintained to keep absentee landlords fully informed at all times regarding development in agriculture in the county. The landlords, especially those outside of the county, are urged to show more interest in the proper use of their property with the idea of maintaining its productivity and value. Tenants should not be encouraged or forced to farm land which does not pay the costs of production and they should be encouraged by landlords to adopt practices which will keep erosion and fertility losses to a minimum.

A major step in the development of better landlord tenant relationship would be the adoption of longer term leases. Most of the rented farms in the county are operated on a yearly basis and a large percentage are under verbal lease. The committee strongly recommends to both tenants and landlords the use of longer term leases. There would be an incentive for the tenant to improve and maintain the property and for the landlord to be interested in the activity of the tenant, if both knew that their relationship was to extend over a period of years.

Assessment and Taxation

PRESENT AGRICULTURAL LAND ASSESSMENT SITUATION

Assessment and taxation on real property play an important part in the problem of land use. The sub-committee has given the matter of changes in valuation because of land use changes, thorough consideration and at the same time has studied the assessed valuation now in effect on all land in the county. The following are the findings of the committee regarding assessed valuations at the present time:

1. Tillable dry land in the county has an assessed valuation of from \$7.50 per acre to \$25.00 per acre. So far as the committee could determine only one farm in the county has tillable land assessed at less than \$10.00 per acre and only a very few dry land farms are assessed over \$20.00 per acre.

2. Irrigable creek bottom land is assessed at from \$20.00 to \$75.00 per acre, with apparently little attention paid to equalized assessment for similar farms.

3. Range land, or non-tillable land, is assessed at a flat \$2.00 per acre with the exception of a very small acreage southeast of Arlington, which because of sand blows, is assessed at \$1.00 per acre.

4. The average assessed valuation of tillable land in the county at the present time is \$15.00 per acre, the lowest in the past 20 years. During the 20 years this average has been as high as \$24.40 per acre.

5. Tillable land acreages shown on the assessment roll are almost entirely estimates and for this reason many inequalities in assessment exist on farms in the county. Comparison of assessment figures of tillable land with measured acreages obtained under the A. A. A. programs shows that some farms are assessed with too much tillable land while others are assessed with too few acres of tillable land.

6. Obvious inequalities in valuation of tillable land exists. Adjoining farms with similar land vary as much as \$5.00 per acre in assessed valuation.

7. During the past three years over 14,000 acres of cultivated land have been seeded to crested wheat grass. The land use committee recommends over a long time period, that 61,000 acres of the present tillable land should be seeded to perennial grass. There has been no provision or study made for revision of assessment of tillable land seeded to permanent grass.

RECOMMENDATIONS FOR ASSESSMENT OF AGRICULTURAL LAND IN GILLIAM COUNTY

It is obvious from the facts stated above that many inequalities exist in present valuations of agricultural lands. In making recommendations for the equalization of assessment, the committee divides the land in three classes, namely, tillable land in cultivation, not-tillable land used only for range, and tillable land seeded to permanent perennial grass. These will be discussed separately.

Tillable Land in Cultivation: The committee believes that the average of \$15.00 per acre for tillable land places agricultural real estate on a proportionate basis with the assessment of other property at the present time. The practice of increasing land values and assessed valuation because of favorable crops or favorable prices for a few years is undesirable and unfair. The committee notes that during the prosperous years from 1918 to 1929, assessed valuations of agricultural real estate were increased far out of proportion to the long time value of the land and to the increase in valuation of public utilities and other real property. This condition should not be permitted to arise again.

The committee believes that there should be a general equalization of assessment on tillable land in cultivation. This equalization, in the committee's opinion, should be based on the following factors:

1. Measured acreages of tillable and non-tillable land.
2. Productivity of the land assessed in comparison to the county average.
3. Distance of the land from shipping point.

To assist the county assessor and the county equalization board in revaluation of tillable agricultural land as recommended above, we recommend that the County Court appoint a tax committee of three men who shall serve in an advisory capacity to the county assessor. This tax committee should be composed of one man from the lower producing areas, one from the high producing area and the third either from the medium producing land or from the city.

We do not wish to hamper the assessor and this committee with definite

limitations as to valuation of agricultural lands, but we strongly recommend that the valuation of agricultural land be maintained in fair proportion to the valuation of other classes of property.

The committee recommends that the County Court take steps to secure the use of the aerial photographs available through the Agricultural Adjustment Administration and that from these photographs the county assessor obtain measured acreages for use in assessment of tillable land. The committee further recommends that the present assessment on tillable land be equalized throughout the county on the basis outlined above.

Non-tillable Land Used for Range: The committee believes that the assessed valuation of non-tillable land is satisfactory at \$2.00 per acre with the exception of a few scattered areas of sand or rock ledges which should be assessed at \$1.00 per acre. The committee therefore makes no recommendations as to change in the present system of assessment on this type of land.

Tillable Land Seeded to Permanent Grass: The committee recommends that the valuation of tillable land seeded to permanent grass should be established at from \$2.00 to \$6.00 per acre depending on the productivity of the land. This valuation should not apply if the perennial grass is harvested for seed.

The lowering of valuation for tax purposes on this land would create an incentive for proper land use. From the landlord's standpoint, perennial grass cannot be expected to pay the returns which can be obtained from wheat, even though the tenant may not get the cost of production from his share of the crop. Fifty-two per cent of the cultivated land in Gilliam County is operated by tenants. If a permanent and prosperous agriculture on a long time basis is to be developed, a large acreage should be taken out of wheat production. The committee feels that the taxation of land taken out of cultivation should be kept at a minimum. Public agencies should not expect the land owner to pay all of the expense of maintaining soil resources and fertility for posterity.

It has been suggested that there be no decrease in valuation of tillable land seeded to grass so long as the Agricultural Conservation Program offers payments for grass seeding. The committee does not subscribe to this idea. There is no way of estimating how long such payments will continue. It takes at least two years to establish a stand of grass which will pay any returns and the lowering of taxes on this land will provide an incentive for proper land use regardless of whether there are federal payments or not. The land use committee has recommended that 24% of the total tillable land be seeded to grass. The Conservation Program will not likely make payments in excess of 15% of the tillable acreage for any one farm. As much as 50% of some farms should and will be seeded to perennial grass, which means that the federal payments would affect only a portion of the land so seeded.

TAXATION

The committee notes that the total tax levy for all purposes on real property in Gilliam County for 1938 is \$176,389.00. This is the lowest levy for more than 20 years. In 1927, the high year of the 20 years studied, this levy was \$301,445.00. As bonded indebtedness of the county, towns and school districts is eliminated under the present plan for retiring these obligations, the property tax levy should decrease still further. This is encouraging and the committee wishes to commend the various tax levying bodies for their excellent work in the reduction of property tax levies during the past five years.

REPORT AND RECOMMENDATIONS OF CROPS COMMITTEE

Your committee on crops has considered its subject from two viewpoints, namely, the long time acreage of various crops which should be grown for the development of a permanent and prosperous agriculture, and the present situation in regard to tillage, varieties, weed control and other

productivity problems. Recommendations based on both viewpoints are included in this report.

LONG TIME ACREAGE OF CROPS IN GILLIAM COUNTY

Your committee on crops has reviewed the recommendations of the Land Use Committee in connection with the long time use of the land and has noted the reduction of 61,000 acres in total cropland recommended by that committee. We substantially agree with this recommendation. We have broken down the total cropland acreage of 198,583 as recommended by the Land Use Committee into acreages of various crops. The following table shows the committee's recommendations for long time crop acreages on the basis of information available today. 1935 census figures are included for the purpose of comparison.

TABLE VI—LONG TIME CROP ACREAGES FOR GILLIAM COUNTY

Item	1935 Census	Long Time Recommendations
1. Idle or Fallow	112,073	94,020
2. Crop Failure	14,131	3,520
3. Total Harvested Acreage	116,220	101,043
4. Corn	146	100
5. Tree Fruits	48	25
6. Vegetable Crops	8	15
7. Potatoes	63	200
8. Wheat for Grain	97,869	88,983
9. Oats for Grain	50	500
10. Barley for Grain	725	500
11. Rye for Grain	384	384
12. Seeds for Grasses	0	900
13. Grains Cut for Hay	15,451	7,500
14. Alfalfa for Hay	1,077	1,800
15. Other Tame Hay	136	136
16. Other Harvested Crops	263	0
17. Total Cultivated Acreage	242,424	198,583

Your committee has the following to offer as reasons for these estimates of a long time acreage.

Line 1—Idle or Fallow: Your committee believes that the land seeded to wheat, to oats, barley or rye, to grain hay and to crops which fail, should ordinarily be summerfallowed in alternate years. Totalling up these items on the table makes an acreage of 101,387. Your committee does believe, however, that some dry land will always be cropped in successive years without summerfallowing and therefore the long time acreage of fallow has been established at 94,020 acres. This represents a decrease under census figures because of the acreage seeded to perennial grass.

Line 2—Crop Failure: The crop failure acreage in the 1935 census is abnormally high. The committee believes that over a period of years an average of not over 10 acres per farm will completely fail. Assuming 352 farms in the county, the acreage of failure was established at 3520 acres. This figure is particularly reasonable when it is considered that the land most likely to fail will be seeded to perennial grass.

Line 4—Corn: Corn can only be grown on the irrigated creek bottoms and the committee believes that in so far as possible, these irrigated farms should be used for the production of alfalfa hay. Not more than 100 acres of corn should be grown in the county each year and then only as a rotation when getting land back in shape for alfalfa.

Line 5—Tree Fruits: The 48 acres listed under the 1935 census is too high. There are not more than 25 acres of orchards in the county today and most of these are uncared for. No additional plantings are recommended.

Line 6—Vegetable Crops (for sale): There is opportunity for a few irrigated farms to produce vegetable crops for sale to supply the local demand. This acreage might be increased from 8 acres to at least 15 acres.

Line 7—Potatoes: The census figure of 63 acres is lower than normal. Your committee feels that enough potatoes should be grown to supply the local demand and has estimated this would require about $\frac{1}{2}$ acre per farm or 200 acres.

Line 8—Wheat (for grain): There is ordinarily grown in the county, around 110,000 acres of wheat for grain. The census of 1935 was lower because of the Allotment Program and because of the drought year of 1934. Most of the reduction in total cropland must come from the wheat and fallow acreages since the marginal wheat land should be seeded to grass permanently and other wheat land should be rotated with grass. The figure of 88,983 acres was arrived at by estimating the amount of wheat which would be seeded in each community when all the land is placed on a satisfactory land use basis, and then subtracting the acreage which might normally be expected to fail or which would be cut for hay on the hay strips.

Line 9—Oats for Grain: Your committee feels that the 50 acres of oats shown for the census is much lower than it should be and have increased this figure to 500 acres. Sufficient acreage of oats should be seeded each year to supply the local demand of sheepmen and other livestock operators. Oats are often light but the committee felt that ordinarily a ready market could be found for oats grown on at least 500 acres.

Line 10—Barley for Grain: Your committee believes that operators should not seed barley for grain in excess of what they need on their own ranches. Barley produced on dry land in this country is ordinarily so light that it does not have a ready market at any price. Five hundred acres of barley annually should be sufficient for this purpose.

Line 11—Rye for Grain: Only sufficient rye for grain should be grown to supply the local demand for rye seed for hay and pasture seedings. The 1935 census figure of 384 acres appears satisfactory.

Line 12—Seeds of Grasses: Your committee estimates that around 900 acres of Crested Wheat Grass should be harvested for seed annually to supply local demand and to sell outside of the county if there is a market. This acreage might easily be larger or smaller, for the committee realizes that no accurate estimate of the demand for grass seed in future years can be made at this time.

Line 13—Grain Cut for Hay: The census figure of 1935 is abnormally high since many acres seeded were cut for hay in 1934 because of drought and the Allotment Program. About 4% of the area seeded to wheat is cut as hay strips around fields before harvest. This would account for about 3600 acres of grain hay. Your committee estimates that enough more grain hay should be harvested to bring the total to 7500 acres. This acreage should produce sufficient livestock feed, along with alfalfa hay and wheat chaff.

Line 14—Alfalfa: There are about 2000 acres of irrigable land in the county. Your committee believes that 1800 acres of this should be in alfalfa annually. The balance of the irrigable land should be seeded to other crops in preparation for reseeded alfalfa.

Line 15—Other Tame Hay: There are a few acres of seeded meadow and other tame hay in the county. The committee believes the census figures to be substantially correct.

Line 16—Other Harvested Crops: The committee sees no opportunity for production of crops other than those listed.

Tillage

Until the past three years, tillage practices for agriculture and wheat farming in the Columbia Basin, and therefore in Gilliam County, were standardized to a degree seldom approached in any area. Early plowing with moldboard plows, clean summerfallow with free use of weeders and harrows, use of standardized hoe or disk drills with seven inch spacing and seeding to winter wheat crops the land so prepared, was almost the universal custom. Few farmers varied from this well established procedure. Tillage practices to produce highest yields per acre were the only consideration of almost all farmers.

During the past three years, a new consideration has appeared in the thinking of the Columbia Basin farmer in so far as his tillage operations are concerned. This factor has been the loss of soil through wind and water erosion during the season when the land is in clean cultivated summerfallow. This added factor has caused the adoption of numerous modified forms of tillage. Your subcommittee on tillage has largely devoted its report to a discussion of this situation.

Erosion Losses: Your committee on tillage does not question Table IV presented by the Land Use Committee on degree of loss of top soil in this county. We earnestly believe that a change in tillage practices during the summerfallow year is necessary for the maintenance of a permanent agriculture in Gilliam County along its present line of wheat production, mainly because of erosion losses.

We wish to point out that although the loss from wind erosion has been severe and spectacular in the north end of the county, the total loss of valuable top soil from water erosion has been many times greater than from wind erosion.

We consider it impractical and unprofitable to produce wheat in Gilliam County without summerfallowing. Because of limited rainfall we see no possibility of maintaining a growing crop on the land each season in order to reduce erosion losses. The only answer, therefore to the problem of erosion losses on summerfallow, is a change in the method of summerfallow preparation and tillage.

Your committee knows of only two general conditions in which summerfallow can be left which will decrease erosion losses. These are:

1. Establishing and maintaining a cloddy surface.
2. Leaving the crop residue on or near the surface of the soil, commonly called trashy summerfallowing.

Both of these are important and your committee believes that a combination of the two is the most effective way of controlling erosion on summerfallow. Based on the above briefly stated facts, your committee has the following definite recommendations concerning tillage practices which will decrease erosion losses to a minimum and at the same time, maintain wheat yields, control annual weeds and aid moisture penetration.

Tillage Recommendations:

1. The practice of leaving crop residue (straw and stubble) on or near the surface, commonly called trashy summerfallowing, will definitely reduce wind and water erosion losses. We recommend that this practice be adopted by every farmer as rapidly as each can obtain the necessary equipment and can learn to handle this new type of tillage.

2. Summerfallow should be cultivated just enough to control the weeds and then almost entirely with a rotary rod weeder which tends to bring clods to the surface instead of making the surface too fine and clodless. The committee recommends that spike tooth harrows be used at an absolute minimum and preferably not at all.

3. All combines should be equipped for spreading long straw and dumping the chaff. Two members of this committee had their combines so equipped in 1937 and found the method very satisfactory. Your committee recognizes the need for wheat chaff as livestock feed and also recognizes that wheat chaff has little value for erosion control or as organic matter in the soil. Long straw, however, has comparatively little feeding value, and in the committee's opinion has greater value when returned to the soil than for livestock feed. Straw spreaders would prevent plowing difficulties and the need for burning straw dumps, and would give the ground an even coverage of organic matter instead of concentrating the straw on a small area as does the "overshot" straw carrier now often used.

4. The one-way disk plow is not a satisfactory implement for making trashy summerfallow on most of the land in Gilliam County. It tends to cover up most of the trash and at the same time leaves the soil too fine and clodless. If shallow plowing at a low rate of speed is practiced with disk plows, they tend to come out of the ground in hard places so that a rod

weeder will not penetrate. Heavy stubble makes the use of the disk plow more desirable.

5. The mold board plow with mold boards removed or modified has been used satisfactorily for trashy summerfallow. The lister share appears to be an improvement over removed or modified moldboards, because it eliminates side draft, stays in the ground better, reduces drawbar pull and leaves the ground with fewer ridges. Lister shares can be obtained for almost any plow at a total cost of less than ten dollars per bottom, including a new plow "frog" and steel lister share. They can be obtained for 14, 16 or 18 inch plows in widths of 16, 18 and 20 inches so that they lap at least two inches. These were used in Gilliam County for the first time in 1937.

6. The major difficulty likely to be encountered with trashy summerfallow is that of annual weed control. Plowing with an implement which will leave trash on the surface will also leave weed seeds in position to germinate with the wheat. Plowing with a moldboard plow turns weed seeds under so that they do not germinate until turned back on top with the next plowing. Leaving all weed seed on the surface for the first year or two of trashy summerfallowing will have the effect of a double dose of weeds. The committee therefore recommends the use of spring wheat with trashy summerfallow unless early fall rains permit killing of weeds previous to fall seeding. After one or two crops of spring wheat it should be possible to use winter wheat with trashy summerfallow as well as with clean summerfallow. The committee calls attention to the fact that trashy summerfallow can be held over for spring seeding without as much erosion danger as with clean summerfallow.

7. Most farmers using trashy summerfallow will have to adopt the disk drill although a moderate amount of trash can be gone through with a hoe drill if the hoes are properly spaced and staggered. Deep furrow disk drills have been used successfully in some areas and should be given a thorough trial here.

8. Pasturing of stubble must be limited, particularly in the north end of the county and throughout the county in short crop years, if organic matter content and productivity of the soil is to be maintained. Areas which need organic matter the worst ordinarily "burn" badly and livestock prefer the areas of "burned" wheat straw or stubble.

9. Basin listers, subsoilers and similar implements offer some possibility for use in Gilliam County. They were tried for the first time in 1937. The committee believes that basin listers might be used to advantage on summerfallow to be carried over for spring seeding if the cost of listing and re-leveling the ground for seeding can be kept at a low enough figure. The committee calls attention to the fact that low cost operation makes possible the growing of wheat in this county. Any of these additional operations tend to increase costs and a definite return must be realized if they are to be practical.

10. More attention should be paid to farming on the contour instead of up and down the hills. Many bad washes have been caused by implement tracks running with the slope. The seeding of steep land and inaccessible corners to perennial grass will make farming on the contour easier.

11. Construction of contour terraces on wheat land is not practical under Gilliam County conditions because of the cost of construction and the added cost of farming after the terraces are on the land.

12. The construction of small earth dams in rocky "scab" draws on wheat land in the Condon and Mayville sections is inexpensive and practical. Results of such dams built near Condon in 1936 were plainly noticeable in 1937, both in wheat yields around the dams and in increased spring flow below the dams. This is another method of water and soil conservation which will pay returns now and over a long time period.

Wheat Classification and Marketing

WHEAT VARIETIES

Your committee has gathered figures based on deliveries to various

warehouses showing the percentage of varieties grown in 1937 in different parts of the county.

A careful study of these figures shows that the varieties of wheat in Gilliam County are fairly well standardized. Because of the dry fall for the 1937 crop and the necessity of some reseeded there was a much larger than normal percentage of spring wheats in 1937, mainly Early Baart and Federation, particularly at Blalock, Gwendolen, Mikkalo and Clem. The committee believes that normally four varieties of wheat, Turkey Red, Fortyfold, Federation and Early Baart will account for nearly 90% of the seeded acreages in the county.

WHEAT VARIETY RECOMMENDATIONS

1. Standardization of varieties, with as few different varieties as possible, is desirable from the standpoint of the grower, the warehouseman and the buyer.

2. Turkey Red should be the standard winter wheat for the northern end of the county, probably as far south as the Gwendolen and Ajax districts. Your committee believes that white wheats should not replace Turkey Red in that portion of the county because there is apparently little yield advantage and the marked demand for hard red wheats makes their production particularly desirable in the Pacific Northwest where we have a heavy surplus of white wheats.

We strongly recommend that the old strains of Turkey Red now in use be discarded for the Oro strain because of its greater winter hardiness, smut resistance and superior quality.

3. Your committee recommends that Fortyfold be largely replaced with Rex in the Condon and Mayville sections. This recommendation is made for the following reasons:

- (a) Rex yields are slightly superior to Fortyfold on the average.
- (b) Rex is smut resistant under Gilliam County conditions.
- (c) Rex does not shatter easily as does Fortyfold.
- (d) Milling quality of Rex is superior to Fortyfold and will meet with more favor among the millers.

The chief disadvantages to Rex as compared with Fortyfold is a lower value of the straw for feeding purposes. If Fortyfold is to be grown, seed used should be replaced with improved strains such as Golden or Selection No. 54.

4. Federation and Early Baart should remain the standard spring wheats for the present at least. White Federation shows distinct possibilities and may prove superior to either of the spring wheats mentioned above. In 1937, the quality of White Federation was superior to Federation which pinched badly.

5. Other varieties such as Triplett, Hybrid 128, Arco, Albit, Bluestem, and Marquis are not recommended by the committee. They have all been given a thorough trial and each has been found inferior to one of the varieties already mentioned.

6. Continued search for new and improved varieties is desirable on experiment stations and thorough trial in variety nurseries in the county should be continued. Farmers are urged not to introduce new varieties which have not been tried under controlled conditions. Too many varieties complicate marketing and increase danger of mixture in fields.

7. There is opportunity in Gilliam County for a few farmers to grow certified and improved seed wheat, and those who do produce high quality seed should be patronized by other farmers.

GRADES OF WHEAT PRODUCED

A thorough study of grades of wheat produced in Gilliam County for the 1936 and 1937 crops reveals the following percentages:

This table shows a heavy percentage of low grade wheat in 1936 and 1937. Most of this was Federation which as a rule was extremely low in test weight, in both years. White Federation might be used to correct this situation.

TABLE VII—GRADES OF WHEAT PRODUCED IN GILLIAM COUNTY
IN 1936

Grade	Percent of Total
No. 1 Wheat	20.0 %
No. 2 Wheat	37.8
No. 3 Wheat	20.0
No. 4 Wheat	12.6
No. 5 Wheat	4.0
Sample Grade .....	.4
Mixed Wheat	5.2
Total	100.0 %

Your committee believes that considerable saving could be made if farmers would make an effort to harvest the areas of pinched and light weight wheat in their fields, separately. Often an entire crop will be lowered in grade because of comparatively few acres on one or two slopes where the grain is of very low quality. This low quality wheat should be used for livestock feed if possible but if brought to market, should be kept separate.

Mixed wheat was largely Fortyfold with a large percentage of field hybrids. Either a change from Fortyfold to Rex or the introduction of clean strains of Forty would eliminate the bulk of the wheat grading mixed.

SMUT LOSSES

During recent years, the cost of smut to Gilliam County farmers had averaged about \$20.00 per 1000 bushels of wheat produced. With an average crop of 1½ million bushels this represents a total loss to the county of around \$30,000 annually. Losses from smut include the following items:

1. Actual smut dockage assessed at terminals.
2. Washing charges—1.5c per bushel for light smut; 1.8c for medium smut and 2.4c for heavy smut.
3. Freight on smut.
4. Cost of treating—about 5c per bushel of seed.
5. Loss in yield—when grain is docked at the terminal from ½ to 1% because of smut, the average actual smut in the field is around 6%. Grain docked from 1½ to 3% has an average smut count in the field of 8%. Grain with more than 3% of smut has an average field smut count of 16%. This is by far the greatest loss from smutting.

Surveys made by the county agent indicate that progress in smut control has been made in recent years. These surveys show that nearly 50% of the wheat produced in 1931 was docked for smut, 40% in 1934 and only 20% in 1936. An estimate by the committee indicates that less than 20% was smutty in 1937. Climatic conditions may have caused some of this improvement in the last two years, but the committee believes that improved smut treatment and selection of seed have played an important part.

RECOMMENDATIONS FOR SMUT CONTROL

Based on actual experience and experiment station reports, your committee has the following definite recommendations to make regarding best methods of reducing smut losses.

1. Use only recleaned and smut free seed. If the wheat produced on a farm is smutty it should not be used for seed purposes.
2. Use smut resistant winter wheats such as Oro and Rex.
3. Do a thorough job with smut treatment used. Experience of the past two years indicates New Improved Ceresan to be the best smut treatment now available. It controls smut better, is slightly cheaper, does not affect the user and will not cause drill breakage in comparison with the other dust treatments.

COST OF HOLDING WHEAT

Your committee has no recommendations to offer regarding the best time to sell wheat but it does wish to call attention to the cost of holding wheat in storage after harvest while waiting for a price change.

In figuring this cost, the committee has used as a basis 1000 bushels of

wheat on August 1 worth 80c per bushel, a total of \$800.00 with interest at 8%. The cost of holding per month would be approximately as follows:

8% interest on \$800 for one month	\$5.33
Insurance (average, depends on warehouse)	1.00
Storage	3.00

Total cost of 1000 bushels for one month\$9.33

In other words, this would mean a charge of .933 cents per bushel for each month. The cost of holding wheat by months would be as follows:

1 month	00.933 cts. per bu.	7 months.....	06.531 cts. per bu.
2 months.....	01.866 cts. per bu.	8 months.....	07.464 cts. per bu.
3 months.....	02.799 cts. per bu.	9 months.....	08.397 cts. per bu.
4 months.....	03.732 cts. per bu.	10 months.....	09.330 cts. per bu.
5 months.....	04.665 cts. per bu.	11 months.....	10.263 cts. per bu.
6 months.....	05.598 cts. per bu.	12 months.....	11.196 cts. per bu.

In other words holding wheat for 6 months would require an increase in price of 5.6 cents to break even and holding for a year would require an increase of 11.2 cents per bushel. Your committee urges consideration of these figures by farmers who practice holding their wheat for extended periods.

MARKETING CHANGES BECAUSE OF DEVELOPMENT OF WATER TRANSPORTATION

Your committee is unable to predict what effect the development of water transportation on the Columbia may have on marketing of wheat produced in Gilliam County. The only recommendation which can be made at this time, in the opinion of the committee, is that individuals and groups of farmers keep in close touch with developments with the idea of being prepared to take advantage of any situation which does develop.

Weeds

WEED SITUATION

From a long time viewpoint, perennial weeds constitute the major weed control problem. A survey of the perennial weed infestations in Gilliam County indicate that about 2,500 acres are affected by Morning Glory, 75 acres by Russian Knapweed and 50 acres by White Top. Other perennials including Poverty Weed, Shoestring Weed and Quack Grass are found in smaller areas. Canadian Thistle, Blue Flowering Lettuce and other common perennials have not yet been found in the county. Russian Knapweed and White Top are so far nearly confined to irrigated creek farms although they are beginning to appear on wheatland. Morning Glory is the largest threat to the bulk of the tillable dry land, and is found in areas of varying size on over 40% of the farms in the county. With the exception of perhaps a dozen farms, the area of Morning Glory is not large enough on any one farm to interfere with crop production.

Annual weeds cause many thousands of dollars of loss to farmers each year. Most serious of these are Russian Thistle, Tar Weed, Peppergrass, Tumbleweed and Mustards.

WEED CONTROL RECOMMENDATIONS

1. The interest and activity of the county court in perennial weed control is commended and cooperation with the perennial weed control district should be maintained by every farmer. With the exception of a few dry land farms infested with Morning Glory and the creek bottom ranches on Rock Creek and Willow Creek, the perennial weed loss in this county is not serious. We want to maintain this situation. The time to eliminate perennial weeds is when the patches are small. Elimination is practically impossible after the area becomes larger, and experience has taught that the area will increase in size if any perennial weeds are present on a farm, unless the farmer uses every precaution to prevent spreading.

2. Your committee recommends the following methods of elimination and prevention of spreading:

GILLIAM COUNTY

OREGON



LEGEND

- Shaded—Present tillable land.
- Non-Shaded—Present grazing land.
- Cross-Hatched—Area recommended to be withdrawn from agricultural uses.
- Black Bordered Strips—Present irrigable land.

- A. **Chemical Control on Small Areas:** This is too expensive to be used on larger areas. Sodium chlorate appears to be fairly effective if applied at not less than 3 pounds per square rod the first year and followed by "spot" applications to clean up straggling plants in later years. Salt, carbon bisulphide and Pentox are other possible chemicals.
- B. **Clean Cultivation:** This method will eliminate any perennial weed if continued long and faithfully enough. It cannot be used where soil is likely to blow.
- C. **Smother crop followed by cultivation:** This means seeding fall wheat or rye at a rate of around 2 bushels per acre after summerfallow, cutting for hay in June, plowing immediately, reploting or cultivating when weeds begin to appear, plant again to fall wheat or rye and repeat the operation the second year. This method will require at least two and sometimes three or four years to eliminate the weeds.
- D. **Seed Large Areas to Crested Wheat Grass:** On large areas where eradication methods are impractical the best solution is seeding to Crested Wheat Grass. This has advantage in that spreading by cultivation is eliminated and some return can be realized from the land as pasture.
- E. **Do Not Drag Roots by Cultivation:** Patches of perennial weeds should not be plowed or cultivated in such a way that roots can be carried over the field and dropped where they will start a new patch.
- F. **Clean Threshing Machinery:** Combines and other threshing machinery should be thoroughly cleaned before moving from an infested field. Morning Glory seed is readily scattered by this means.
- G. **Use Crop Seed Known to Be Free from Perennial Weed Seed:** This applies particularly to small seed like alfalfa, but it is important with wheat as well. Wheat seed should never be saved from fields containing any Morning Glory whatsoever.

3. As an aid to farmers in controlling annual weeds, your committee recommends that newly graded state and county roads be seeded to Crested Wheat Grass as soon as grading is completed, and that bad annuals, such as Russian Thistle, be removed by hand from newly graded roads until the grass has a chance to establish itself and control these weeds.

Production Cost and Management

WHEAT PRODUCTION COSTS

Many factors must be considered in the determination of cost of producing a bushel of wheat. Your committee has studied this problem. It has been found possible to obtain an average figure for the cost of producing an acre of wheat, but extreme variation exists among farms because of difference in management; yields per acre, distance from market, size of operation, topography of farm and similar factors. Your committee presents the following table which sets forth average costs per operation for producing an acre of wheat on summerfallow in Gilliam County.

TABLE VIII—AVERAGE COST OF PRODUCING ONE ACRE OF WHEAT
IN GILLIAM COUNTY

1. Plowing	\$.75	6. Sacks and Twine	\$.60
2. Cultivation .....	.50	7. Hauling to Market .....	.50
3. Seeding .....	.35	8. Insurance .....	.08
4. Seed .....	.90	9. Interest, 5% on \$20 for 2 years ..	2.00
5. Harvesting	1.75	10. Taxes, average 35c for 2 years ..	.70
Total Cost Per Acre		\$8.13	

These figures indicate that with a price of 80 cents per bushel that 10 bushels per acre will permit a good operator to pay 5% interest on an investment of \$20 per acre in land, but would leave him nothing for his own labor or for that of his family. No credit allowance is made in these figures for return from livestock maintained on wheat chaff and stubble, and this would be considerable in some instances.

From the A. A. A. Wheat Allotment contracts has been obtained data showing the percentage of wheat produced on farms yielding varying amounts. These figures are for the years 1929 to 1932 inclusive.

TABLE NO. IX—PERCENTAGE OF SEEDED ACREAGE FALLING IN VARIOUS YIELD GROUPS, AVERAGE 1929-1932, GILLIAM COUNTY

4-Year Average Yield	Acreage Planted	Percentage of Yield	Bushels Produced
1-5	956	.8	3,820
5-10	26,620	22.0	229,233
10-15	72,972	60.4	909,700
15-20	18,716	15.5	316,136
20-25	1,341	1.1	29,238
25-30	270	.2	7,048
Totals	120,875	100.0	1,495,175

These figures indicate that nearly 23% of the acreage in the county did not produce sufficient wheat to pay cost of production even with an average price of 80 cents per bushel. These figures do not indicate variations in yield on individual farms. It is the opinion of your committee that almost every farm in the county contains land which has produced less than enough to pay costs. Elimination of this land from cultivation would increase the average yields per seeded acre and thereby increase the net income. Cultivation of an acre of low producing land costs nearly as much as cultivation of an acre which will produce twice as many bushels.

WHEAT PRODUCTION WITHOUT SUMMERFALLOWING

Your committee firmly believes that the practice of wheat production without summerfallowing is unsound under Gilliam County conditions, except under extraordinary circumstances.

Reference to Table VIII showing estimates of average cost of production per acre shows that the only reduction in costs of the acre of wheat without summerfallowing would be the elimination of taxes and interest for one year, a total of \$1.35 or 16.5% of the total cost. Your committee believes that on the average wheat yields will be reduced from one-third to one-half by seeding on land not summerfallowed, and if the practice is continued without interruption over a period of years the decrease may be even greater.

Your committee realizes that there may be exceptions in certain years but this does not alter the fact that the average returns received will decrease the net income considerably.

COST FACTORS INVOLVED IN DETERMINING AREAS WHICH SHOULD BE RETIRED FROM WHEAT PRODUCTION

The problem of which acreage should continue to grow wheat and which acreage should be seeded to perennial grass is a complex one. Your committee has given this matter serious consideration.

Assuming that the cost of producing an acre of wheat, exclusive of taxes and interest which would be paid whether the land produced wheat or grass, is \$5.43 as shown in Table No. VIII it would appear that with a price of 80 cents per bushel, land which produces 6.5 bushels or more per acre on the average should continue to produce wheat. Because of some other factors which enter into the placing of relative value on wheat and grass this determination is untrue. Some of these items which must be considered are:

1. Returns from grass as pasture.
 1. Value of grass for erosion control.
 3. Value of grass for restoring organic matter and producing capacity for wheat after grass is plowed up.
 4. Above average costs of operation because of isolation or typography.
 5. Possibility of reduction of assessed valuation if land is returned to grazing.
 6. Federal conservation program payments.
- Landlords and tenants as well as owner-operators are urged to consider all of the factors in determining the best use for their land.

Grazing and Other Crops

GRAZING LANDS

Your committee has few recommendations to make concerning utiliza-

tion of grazing lands. Many ranges in the county are in excellent condition while others are badly depleted. In the committee's opinion, careless management has contributed as much toward range depletion as has over stocking. Your committee has the following suggestions to offer as good management practices for Gilliam County range land:

1. Range Rotation: Divide range into three or four equal units and permit each unit to grow up and seed once every third or fourth year without any early spring grazing.

2. Water Development: Through stock water development and proper fencing, obtain equal grazing over all of the range, rather than a concentration of grazing near scattered watering places.

3. Reseeding: Reseed range with Crested Wheat Grass where native grasses have been killed out.

4. Rodent Control: Squirrels and rabbits sometimes obtain as much of the forage grasses as do the livestock. Range should be systematically poisoned for ground squirrel control.

OTHER CROPS

Because of surplus wheat production wheat growers are interested in other crops as possible substitute for wheat. No satisfactory substitute for wheat as a cash crop in Gilliam County has so far been found. Your committee has the following to report concerning other crops now grown in the county or which might possibly be grown:

Barley: Barley production is limited in Gilliam County by the fact that most of the barley grown is of poor quality and cannot be successfully marketed. No more barley should be produced by farmers than they will use on their own farms.

Meloy is the best beardless variety to grow in the county and is the variety now generally in use. Mariout is the bearded variety recommended by the Moro Experiment Station.

Oats: Oat production is limited in identically the same way as is barley. Farmers should plan to produce only enough for their own needs. Markton is the most desirable variety.

Peas: Peas have been tried in a limited way in the Mayville and Condon areas and while satisfactory growth has been obtained, yields are not high and there is no market for peas either locally or outside of the county.

Seed peas could be produced on the better lands of the Condon and Mayville sections in considerable quantity if the market outlet and price would justify.

Alfalfa: There is a good local market for all the alfalfa hay which can be produced in the county. Ordinarily alfalfa hay is shipped in each year. All the irrigable land in the county should be used for alfalfa hay production except when alfalfa is plowed up for a year or two in preparation for reseeding.

Either Grimm or Ladak alfalfa is recommended by the committee. Ladak is especially recommended because of the following advantages: (a) longer life, (b) greater hardiness, both winter and drought, (c) disease resistance, (d) makes larger first cutting and under conditions where only one or two cuttings are secured, yield is markedly greater, (e) leafier, finer, and better quality hay. Ladak seed is high in price but since the variety is particularly well adapted to Gilliam County conditions it is recommended highly.

Ladak alfalfa once established on dry land will maintain itself. It can be grown successfully on land in the Condon and Mayville communities if seeded in rows and cultivated. There is a possibility of profitable alfalfa seed production on dry land.

Crested Wheat Grass: Ten years of nursery and field trials conducted by the experiment stations and by county agents in Oregon have established Crested Wheat Grass to be far the best grass for dryland conditions in Eastern Oregon. Fourteen thousand acres have already been seeded to Crested Wheat Grass in Gilliam County.

Seed production of Crested Wheat Grass has been very profitable for

those farmers who have had established stands during the past three years. Your committee believes that Crested Wheat seed can be produced as cheaply in this county as anywhere. For this reason, we believe that a few farmers should plan to produce Crested Wheat seed commercially over a period of years.

In 1938, the demand for gress seed will likely continue to be good. Several thousand acres of Crested Wheat seeded in this county during 1936 will produce excellent seed crops if they are properly cared for. Your committee recommends that every farmer who has a stand of Crested Wheat give consideration to seed production in 1938. Cultivation with a spike tooth harrow, hoe drill or spring tooth harrow will be necessary in most cases to control annual weeds. The implement to be used for cultivation will depend on the development of the stand of grass. Some hand work with hoes will be necessary.

Combines can be used for harvesting and recleaning equipment is available in the county. Good stands seeded in 1936 should produce from 50 pounds to 100 pounds per acre in 1938. This should pay a return of from \$10 to \$20 per acre if seed prices do not go below 20 cents per pound.

REPORT AND RECOMMENDATIONS OF LIVESTOCK COMMITTEE

Livestock production is practiced in Gilliam County under two general headings, namely, as a major enterprise and as a minor enterprise in conjunction with wheat growing. Some farms are entirely devoted to the production of livestock, while others obtain only a small part of the total income from livestock and livestock products, but almost every farmer is interested in livestock to a greater or lesser degree. The topography of the county with many steep, broken canyons makes 65% of the total area useful only for livestock grazing. Livestock and livestock products now account for more than 35% of the agricultural income of the county. Livestock production presents almost the only possibility for diversification on Columbia Basin wheat farms. It therefore seems evident that livestock production is and must remain of considerable importance in the economic position of Gilliam County.

Your committee on livestock has considered its subject from two viewpoints, one, the long time numbers of various kinds of livestock which can and should be maintained in the county, and, the other, phases of livestock management practices which could be improved.

LONG TIME NUMBERS OF LIVESTOCK IN GILLIAM COUNTY

National Livestock Situation: 1. Beef Cattle—During the national drought period of 1933-1935 the total numbers of beef cattle dropped to an extremely low level. Since that time prices of beef have been relatively high because of short production and a tendency to hold young stock for breeding purposes. During the past few months prices of all meat products have continually decreased. Cattle numbers will probably increase nationally for the next few years until another period of heavy selling develops. Heavy production of corn and feed crops in the middle west will stimulate cattle production greatly.

2. Sheep—National sheep numbers are not expected to increase during the next few years except in the farm flock areas. The policy of the Taylor Grazing Administration and of the Forest Service in reduction of grazing permits will tend to hold down sheep numbers and may cause some decrease.

3. Hogs—National hog production fluctuates rapidly and is dependent on the size of the mid-western corn crop to a considerable degree. Immediate prospects are for increases in numbers of hogs available for market and a consequent decrease in price.

4. Dairy Cattle—Dairy cattle numbers are nationally still 5 or 6% below the peak of 1933 and milk production is somewhat below average. If feed supplies are favorable, dairy production will increase rapidly during the next few years.

Oregon Livestock Situation: 1. Beef Cattle—According to census figures the numbers of beef cattle in Oregon numbered 702,669 in 1930 and 929,452 in 1935, an increase of 30%. This is in direct contrast to a reduction in cattle numbers nationally over the same period.

2. Sheep—Oregon sheep numbers decreased from 3,319,271 in 1930 to 2,209,898 in 1935 but the 1935 figure is still about one-half million greater than 1925. Except for farm flocks the sheep which can be maintained in Oregon are limited by summer range available. Numbers of range sheep cannot be expected to increase greatly over a long time period for this reason.

3. Hogs—Hog numbers in Oregon decreased nearly 100,000 head between 1930 and 1935. There has probably been an increase in numbers since 1935 but no definite figures are available. Oregon is a pork importing state and there is definitely a place for the production of more hogs in the state.

Dairy Cows—Dairy cow numbers have increased slightly in Oregon during the past few years.

Gilliam County Livestock Situation: Your committee has considered the numbers of livestock in Gilliam County in past years as shown by the census and has made recommendation as to numbers which should be maintained over a long time period. The following table sets forth census figures for 1925, 1930 and 1935 and the committee recommendations for future numbers:

TABLE X—NUMBERS OF LIVESTOCK FOR GILLIAM COUNTY

Item	1925	1930	1935	Recommended
Horses	7,001	4,614	3,398	2,500
Beef Cattle	5,172	5,133	7,710	8,926
Dairy Cattle	846	1,131	1,311	1,300
Sheep	61,516	86,033	80,898	80,898
Hogs	1,953	1,912	2,043	2,500

In general, your committee recommends that there be no increase in total animal units. Horses have decreased rapidly in the past ten years and as they have decreased the numbers of cattle have increased. Beef cattle numbers in the committee's recommendations have been increased only enough to replace a further decrease in horses. Dairy cattle have been increased only slightly and there should be no extensive dairying in the county because of a shortage of feed for that type of animal. Sheep numbers should not be increased and in the committee's opinion, sheep numbers may be forced lower. Hog numbers should increase somewhat but shortage of green pastures and almost no hog tight fencing makes hog production difficult.

Gilliam County Feed Supply: The numbers of livestock which can be maintained in an area is predicated upon the available supply of feed and forage. In comparing the supply of winter feed available with the numbers of livestock in the county, your committee has arrived at the following table.

TABLE XI—WINTER FEED AVAILABLE, AVERAGE YEAR, GILLIAM COUNTY

Item	Acreage	Yield, tons per acre	Tonnage
Grain Hay	7,500	3/4	5,625
Alfalfa	1,800	3	5,400
Wild Hay	136	3/4	102
Straw and Chaff	88,383	1/7	12,626
Total Winter Feed Available			23,753

Since there is always a large supply of grain available in the county, no consideration of the amount of grain available or consumed is deemed necessary.

On the basis of the committees recommendations as to animal numbers in the county over a long time period, the following table shows the approximate feed supply necessary in a normal winter:

TABLE XII—WINTER FEED NECESSARY, AVERAGE WINTER,
GILLIAM COUNTY

Animal	Number	Pounds Consumer per Head	Tons Needed
Horses	2,500	2,000	2,500
Beef Cattle	8,926	1,500	6,169
Dairy Cattle	1,300	6,000	3,900
Sheep	80,898	250	10,112
Total Tons Needed			22,681

A comparison of the production of 23,753 tons of winter feed in an average year with the consumption of 22,681 tons shows a satisfactory margin of safety in case of an extended feed period. Actually, the winter feed which is available for livestock is extremely flexible. If needed, a large amount of grain hay can be cut and the amount of straw and chaff saved for feed can be increased or decreased as conditions warrant.

In the Lonerock section, a serious winter feed shortage invariably develops if the feeding period is longer than normal. No more land suitable for hay production is available in the community. Livestock operators in the Lonerock section who often have winter feed difficulties could well afford to maintain a reserve supply of hay even if this reserve had to be purchased and hauled in during the summer months before it is needed.

Wheat straw and chaff produced in this county has much higher value for feeding purposes than is generally credited to this class of feed, and it is used extensively and successfully for wintering all kinds of livestock.

Your livestock committee notices that the committee on crops has recommended the use of spreaders on all combines for scattering long straw and dumping the chaff, on the basis that the long straw is worth more returned to the soil than it is for feed. We are not inclined to challenge this recommendation. We do call attention to the fact, however, that if the long straw is scattered it will be necessary for all the chaff to be used for livestock feed if recommended numbers of livestock are to be maintained on feed produced within the county. This means that those wheat growers who do not keep sufficient livestock to utilize all of their own chaff will need to sell their excess feed to livestock operators. At the present time much straw and chaff is dumped in the fields and never gathered. If all straw is scattered it will be necessary to utilize practically all of the chaff for livestock if present numbers are to be maintained.

Gilliam County Grazing Supply: Almost the entire area of the county is grazed at sometime during any year. Non-tillable land is used for spring, winter and late fall range while stubble is used in the late summer and fall and to a certain extent for winter and early spring grazing. About three-fourths of the sheep are summered out of the county, 23,000 on national forests and the balance on privately owned mountain range. About one-fourth of the sheep and most of the cattle are summered in the county.

Because of the difficulty of maintaining sheep in the county during the summer, sheep numbers are limited by the outside summer grazing which can be obtained. Ample summer range becomes an increasing problem for sheepmen each year.

Cattle can be summered in the county more readily than sheep but the difficult season of the year for cattle owners is during June and July when grazing lands have dried up and stubble is not yet available. Seeded rye and wheat are used as emergency forage for this period, but this practice is expensive. Your committee hopes that Crested Wheat Grass seedings will provide satisfactory pasture for summer use in place of seeded annual grains.

With proper management, your committee believes that there is ample grazing in the county for the numbers of livestock recommended for a long time basis.

We recommend that, instead of increasing numbers of livestock, quality be improved and that those which are kept be better fed and cared for.

Hay and Straw Chopping: During recent years, several livestock operators have adopted the practice of chopping grain hay or straw for winter

feeding purposes. Your committee recommends this practice to all operators for the following reasons:

1. There is little waste because the animals will eat almost all the straw and hay when chopped. This saving in feed will more than pay the cost of chopping.
2. Volume of the feed is reduced one-half or more by chopping so that more tonnage can be kept under cover in barns and sheds. Hauling of feed from longer distances during bad winter months is avoided because more feed can be concentrated near the feed yards or in barns.

Both the hammer mill and the ordinary cutter have been used for chopping hay or straw in the county and both are apparently successful.

Disease Control: 1. Tuberculosis—Gilliam County is a modified tuberculosis free area and should be kept so by regular testing of dairy animals and suspected beef animals.

2. Blackleg—Your committee recommends vaccination of all young cattle against Blackleg, the most serious contagious disease affecting cattle in the county. One dose lifetime immunization of suckling calves is possible now and every calf should be vaccinated before six months of age.

3. Bang's Disease (Contagious Abortion)—Almost all of the cattle in the county have been tested under the Federal Bang's Disease program during the past three years. Your committee understands that federal indemnity for reactors will be discontinued on July 1, 1938. We urge every cattle owner who has not already had the Bang's test made to see that his cattle are tested before July 1. Purchasers of breeding cattle should be sure that they are free from Bang's disease before buying.

4. Sheep Diseases—Stiff lamb disease, ewe paralysis, "lunger" disease and other sheep diseases cause loss to sheepmen every year. We commend the state legislature for appropriation of funds for sheep disease studies and urge that this be continued.

Livestock Breeding: Your committee has no recommendation to make concerning the best breeds of animals for Gilliam County conditions. All the standard breeds are good, if the animals are of high quality. The sire is half of the herd and the easiest and cheapest way of improving quality is through the use of good purebred sires. Improvement in females should not be overlooked. A good sire alone cannot produce high quality offsprings. Well bred animals of high quality will produce quicker, cheaper and more profitable gains than will inferior livestock.

Livestock Fattening: Fattening of lambs and cattle on feeds produced in this county is possible. In most years there is ample grain hay and low quality grain to permit some livestock fattening. The profit factor in livestock feeding depends entirely on the difference between the feeder price and the fat price, the value of the feeds used, and the gain per pound of feed.

In years of low prices for grains, many Gilliam County operators could profitably utilize their low grade wheat for fattening cattle or lambs.

Dairying Practices: With the exception of a few dairymen supplying fresh milk to Arlington and Condon, dairying is carried on in Gilliam County entirely on a butterfat production basis. Wheat farmers as a rule do not like dairying and use the milking of cows as a last resort to obtain some cash when price or production of wheat fails. The periodic fluctuation of butterfat production because of the farmer who moves in and out of the dairy business is disastrous for the regular dairyman and is bad for the dairy industry.

There should be no general increase in dairying in Gilliam County. All farmers should keep enough cows for milk needed at home. There is much room for improvement in production per cow.

POULTRY PRODUCTION

Chickens: Poultry production in Gilliam County is of minor importance, most chickens are kept to produce eggs and meat for home consumption, with eggs sold only during the seasons of high production.

According to the census, chicken numbers were 23,478 in 1925, 22,434 in 1930, and 17,314 in 1935, a decrease of 23% in ten years.

Your committee believes that chicken numbers should be returned to the 1925-30 level. Gilliam County is an egg importing section during many seasons of the year and enough eggs should be produced to at least supply the local demand.

Disease losses in poultry on Gilliam County farms is very heavy, mostly because of unsanitary conditions. On many farms, chickens have been grown in the same quarters for years without thorough cleaning and disinfection of the chicken house and without a change in ranging ground. Poultry disease losses are numerous even under the best conditions. Every effort must be used to keep down disease losses if a poultry enterprise is to be successful.

Turkeys: Ordinarily about 5,000 turkeys are grown and marketed from Gilliam County annually. This number occasionally increases to as many as 10,000 birds as it did in 1936.

Turkey production offers a satisfactory diversification of enterprises for a few small farms where there is insufficient range land to permit the growing of livestock.

The turkey business is a short term enterprise, for during periods of high prices many rush into it and during low prices there is a general withdrawal of marginal producers. The cycle of both high and low prices is very short and prediction of price levels based on the previous year cannot be safely made. In the committee's opinion the successful turkey grower is one who produces about the same number of birds each year and at the same time fortifies his business with proven management practices, knowledge of disease control, study of cost of producing a pound of turkey meat and establishment of ample credit.

REPORT AND RECOMMENDATIONS OF FARM HOME AND RURAL LIFE COMMITTEE

Home Life

PURPOSE OF THE COMMITTEE

The objectives of the Farm Home and Rural Life Committee of the Economic Outlook Conference has been to study and analyze national and local conditions that affect the home, and to draw up recommendations for a long time program on the betterment of Gilliam County homes. The committee hopes that by having a clearer picture of the main problems of the homes of the county, and by suggesting possible ways of solving these problems, families will be assisted in planning and working together for a finer home life and a more cooperative community life.

Family life is the basic social institution of the nation. The American farm home offers the best opportunity for the conservation of American civilization and culture. To that end we urge serious study and consideration of the problems involved, and a whole-hearted desire to eliminate the objectionable features which tend to reduce the ideal and practical as well as desirable standard of living.

The committee has studied four subjects that have direct effect upon successful and happy farm home life: (1) sound financial management; (2) a convenient, satisfying house; (3) good, nutritious food; (4) community life.

REPORT ON FINANCIAL MANAGEMENT

Outlook and Findings: In Gilliam County statistics on the value of farm products sold, traded, or used by the operator's family, are available for 1929. This year was chosen because conditions have been abnormal since then. These statistics show the following percentages in various gross income groups:

Gross Income	Percent of Farms
Under \$600	4.4%
\$600 to \$1,000	2.4%
\$1,000 to \$1,500	6.5%
\$1,500 to \$2,500	10.0%
\$2,500 to \$4,000	16.5%
\$4,000 and over	60.2%

These figures do not indicate the net income. Farmers' account books are usually too incomplete to know what the net income is and for what it was spent. In order to receive maximum value for expenditures, rural families should budget family expenditures and should use simple farm and home accounts. The operation of a farm is a business, and only by conducting the farm and home on a business basis can the fullest benefit be derived from the farm income. Therefore:

I. We recommend that farm families budget their incomes carefully, and that they keep joint farm and home accounts in order to insure well balanced spending. The family budget should provide food and clothing necessary for health, comfortable housing, family recreation, savings, provision for old age, and adequate insurance.

HOUSING

Outlook and Findings: Nearly half of the homes of Gilliam County are occupied by tenants rather than by owners. This situation makes improvement in housing rather difficult to secure in many cases. Two hundred and sixty-four homes were surveyed in 1934 in order to ascertain conditions. In 1938 a survey was taken of 64 homes. A comparison indicates many improvements in the four years, especially in the addition of water and sewage systems. The 1934 survey showed that 35% of the houses were of unpainted frame construction and about half are over 25 years of age. Over half of them were not in a good state of repair respecting screens, roofs, interior walls and ceilings, stairs and insulation. The need for additional space was evident, especially the need for more closets, bathrooms, storage space for fruits and vegetables, laundry rooms and wash rooms for hired help. Ninety per cent of the homes had cold running water; only 60% had hot piped water. About one-half still had unimproved outside sanitary facilities. About 40% had complete bathroom equipment with septic tanks.

Less than one-twentieth of the farm homes were on a power line. The long distance between homes, the large size and small number of farms, create heavy expenses in the running of power lines. About 25% of the farms had private electric plants, but these were not useful for refrigeration or for cooking.

Furnaces were found on 14 farms. Circulating heaters were numerous. Mechanical refrigeration appeared in about one-fifth of the homes, but very few had circulating air coolers in the kitchen.

The majority of Gilliam County homes had power machinery for washing. Lawns and plantings depend largely upon the water supply and have been considered possible in about half of the farm homes of the county that were surveyed. About one-half had walks and drives, and nearly all had fences to keep out livestock.

Many homemakers expressed a desire for modernized kitchens and improved home furnishings.

Recommendations of the Committee on Housing: The committee wishes to emphasize their desire first for complete water systems in farm homes, and second, for complete rural electrification.

1. Water Systems and Sanitation—Water systems, including hot and cold running water, are of first importance. Either gravity or pressure systems with hot water coils in cook stoves can be installed at comparatively low cost. Therefore—

(a) We recommend that those homes not having hot and cold water systems make this their first major improvement.

(b) That more homes be provided with bathrooms and complete bathroom fixtures.

(c) That a separate room be provided where possible on the kitchen level for laundry, and that it have at least two stationary laundry tubs and a place for men to wash.

Septic tanks are the only sanitary and healthful method of disposal of rural sewage, and they can be installed for about \$50.00 each, exclusive of labor. Therefore—

(d) We recommend that those home with water systems, but without septic tanks, should make this one of their first major improvements.

2. Rural Electrification—The use of electricity for lighting, laundering and other farm and home conveniences is of major importance as a labor saver and home improvement.

The housing survey of 1934 showed only 13 Gilliam County farm homes supplied from power lines. The committee estimates that four farms have since been added to this number making a total of 17 at the present time. The same survey indicates that the average distance of Gilliam County farm homes from power lines is 7.8 miles. Approximately 50 farm homes now have home power plants.

The Federal Rural Electrification Administration has established a 25 mile project with three customers per mile as the minimum project which they will finance for cooperative power districts. The committee sees no opportunity for the organization of such districts in Gilliam County because of the long distances between farms.

The committee estimates that there are 25 farms in the county located within one mile of already established transmission lines which are not now receiving power. With the exception of these farms, the only possibility for added electrification on farm homes is with home power plants unless cost of construction of power lines is greatly reduced.

With these facts in mind we make the following recommendations:

(a) We urge electrification of farm homes from power lines where distance will permit after considering the difference in cost and maintenance between construction of power line and installation of home plants.

(b) Cheaper power from Bonneville may change this situation but the committee cannot furnish intelligent information on this at the present time.

3. Convenient Kitchens—The homemaker spends 51% of her time in the kitchen, and in order to make this a time and energy saving, cheerful and comfortable place in which to work—

(a) We recommend that kitchens be equipped with built-ins for saving time and energy through convenient work centers for food preparation, cooking, serving, dish washing and storage. Convenient kitchen arrangement and kitchen equipment should be studied. The Model Kitchen Trailer, designed by the Extension Service, should be exhibited in communities in Gilliam County.

(b) That food storage facilities including an insulated storage room for fruits and vegetables (walls lined with sawdust) be installed.

4. House Furnishings—Home furnishings play an important role in the enjoyment of home and family life. Home furnishings should suit the needs of the family. They should be easily cared for. They should add color and beauty to the home. There are many simple and inexpensive ways of improving home furnishing and arrangement. Therefore—

We recommend that an educational program on home furnishings be developed including a study of color schemes; refinishing furniture, floors, woodwork and walls; curtaining; rug making; furniture arrangement; removal of "extras" etc.

REPORT ON FOODS AND NUTRITION

Outlook and Findings: An adequate food supply is one of the first necessities of the home. The food supply should be adequate not only in amount but also in its content of proteins, minerals, vitamins and other essential nutrients that comprise a balanced diet. The newer knowledge of nutrition teaches us that milk, eggs and other proteins, vegetables, fruits

and whole grain cereals are the essential foods for normal persons. The maintenance of the health of the family, the normal growth and health of children, depend largely upon the regular use of the right proportions of these foods in daily meals. Successful family life, efficiency in work, and happy social attitudes and relations are influenced, not only by sound economics and modern conveniences, but also to a great degree by the physical condition and health of the individual members of the family. A large percentage of the illness which comes to men and women in maturity is due to improper food habits at some time in life, often in early childhood.

Recommendations: 1. Homemakers could well devote more time and thought to a program of feeding the family for health. Therefore—

(a) We recommend that better nutrition practices be developed by an educational program in food selection. That the program be carried on through public schools, 4-H clubs, and through reliable agencies for adult education.

The men and boys on our farms often realize the importance of balanced rations when feeding livestock, and they carefully provide proteins, minerals and vitamins for them. They often choose their own food, however, for personal whim, fad or fancy. Therefore—

(b) We recommend that men and boys be included in the aforementioned educational program of food selection.

2. Home Food Production and Home Food Preservation—The rural families of Gilliam County are fortunate in being able to raise many of the essential foods through home production. Home production and home preservation of the family food supply reduce expense and provide the healthful types of foods in fresh, palatable condition. The money saved by home production and home preservation of food can wisely be invested in education of the children, in home conveniences and home beautification, or for the enjoyment of whatever the family most desires.

(a) We recommend that where possible families of Gilliam County plan and raise adequate amounts of vegetables to meet the family needs.

The consumption of one quart of whole milk in some form daily by each child, and one pint by each adult, is recognized as one of the fundamental requirements for nutrition for normal people. Therefore—

(b) We recommend that each farm maintain two or more dairy cows in order to provide a continuous supply of milk.

A minimum of one egg daily per person throughout the year is a standard nutrition requirement for normal people. Therefore—

(c) We recommend that farm families where possible maintain a flock of at least 25 pullets for every four persons.

Farm families effect a large saving of expense for food and gasoline by preserving supplies of food for future use through canning, storing, drying, curing and in some places through freezing. Therefore—

(d) We recommend that home preservation of surplus food is a desirable practice, the methods of preservation to depend upon individual circumstances.

3. Nutrition of School Children—The proper nutrition of growing children is basic to good health and good physical condition during the whole of their lives. Many cases of illness in adults have their start in irregular, hurried, unbalanced cold lunches at school. Therefore—

(a) We recommend that a hot dish be provided for children who eat at school. That a supervised lunch period be maintained at school, and that the children be required to remain seated at least 15 minutes at lunch.

Recreation and Youth Development

An analysis of the recreation facilities available to people living in Gilliam County brings out the following points.

1. Recreation facilities for adults are in general, sufficient and satisfactory. Grange, lodge and other organization activities along with picture

shows, card parties, dances, automobiles, radios and athletic contests provide a fairly well balanced recreational program both from the standpoint of pleasure and opportunity for self expression for adults of the county who care to participate in these things.

2. School activities, 4-H clubs, Boy Scouts, Campfire Girls, Juvenile Grange, athletics and picture shows furnish ample amusement and desirable recreation for all children of the elementary and high school age with the exception of a few isolated cases.

3. There is an "in between" age group, generally from perhaps 16 to 26 years, who are out of school and are not yet ready or willing to take their place with adults. Dances, picture shows and automobile riding provide amusement for this group of young people but does not provide opportunity for self expression, further education and recreation along creative and social lines. This group is, in the opinion of the committee, the problem group in so far as proper recreation and development is concerned. This group is composed of both young men and young women who as a rule have been unable to go to college, or have completed college and are home again without a particular objective in view. They have had considerable education and cultural training in school or college but are now without any opportunity to continue their development. Some of this group will become farmers and housewives while others will leave the county and enter into lines of endeavour other than farming.

RECOMMENDATIONS OF COMMITTEE

Young People, the "in Between" Group: In order to meet the needs for organization and recreational advantages for the "in between" group of young people out of school and still not adults in the true sense, your committee has the following suggestions:

(a) For the young men, the Smith-Hughes instructors at Arlington and Condon should make available the facilities for their departments for organization and instruction in various subjects including shop work, discussion material, public speaking and classroom instruction. Some successful work along this line has already been accomplished in the department at Condon.

(b) For young women, a system might be worked out whereby high school home economics teachers could conduct work in home economics, dramatics, homemaking and similar subjects. These teachers could be hired with the knowledge that this was part of their work and be reimbursed accordingly.

(c) The Extension Service, through its county office, should provide special work for these groups and attempt to reach isolated communities or individuals where other agencies mentioned could not go.

(d) Every community should recognize this distinct problem in the development of leadership and citizenship and use every means to meet the situation.

4-H Club Work: Efforts to increase participation in 4-H club work should be strengthened. Out of about 400 boys and girls in the 4-H age limits, only about 160 are normally enrolled. This situation could be improved with greater parent interest and more community participation. Leaders are often needed and unobtainable.

The following factors will provide definite aids to 4-H club work:

(a) Provisions for local leaders through schools or community organization.

(b) Provision of additional 4-H summer school scholarships.

(c) Continuation and improvement of county fair.

(d) Provision of a set of trailer scales for use of livestock clubs.

Miscellaneous Recreation Recommendations:

(a) Better playground equipment and books should be provided in rural schools. This is often entirely overlooked in rural schools because the number of pupils is limited.

(b) School buildings should always be available for legitimate community and recreational groups.

(c) Recreational facilities such as gymnasiums should be made available to as many people as possible. Physical educational in schools should be broadened to include all pupils.

(d) There is need for a complete and constantly added to and revised library of program material for various community and recreation groups.

Education

PRESENT SCHOOL SITUATION

Problem of the Committee: It is common knowledge that the school population of Gilliam County has decreased rapidly during the past few years. This rapid decrease in numbers has caused the development of some severe problems in the administration of our school system, particularly among the rural districts. The county as a whole is anxious to maintain its school population and is particularly concerned about maintaining the rural population. Your committee on Education has attempted to determine if any relationship exists between the school situation in this county and the dwindling rural population, and if so to find the best solution for the situation.

Objectives: Your committee felt that the first thing necessary in the study of the problem was to fix an objective toward which to work. This objective would be a sort of ideal situation which would tend to hold responsible farmers on their ranches and yet provide the education for their children which they desired. Our final objectives were:

1. Equal educational advantages for all children.
2. Retention of rural schools wherever they were justified.

Present District Set-up: Under the present district set-up of schools, it is necessary for the active district to have at least six children on its school census list. If it fails to have this number for two consecutive years the school is closed and its money is turned over to the county treasurer to hold in trust for this time, and if at the end of the three year period, it has not had six children of school age on its census list, this money is turned into the county school fund and apportioned to the active districts of the county. The district then becomes completely abandoned. If during this time there are six children on its census list, the money is returned and the district becomes active again. The unfortunate part is that a district may have some children who need schooling but not the required six. It cannot use the funds on hand to educate these children, and they must go to another district at private expense. Some of these districts have no hope of ever becoming active districts again. In some cases, consolidation might be effected but this is uncertain, and so these children remain in the district and their education is paid for by their parents entirely, or the parents feel that it is better to give up the ranch and move where schools are convenient. In other words, our present district set-up does the very thing we do not want, it tends to drive people from their farm homes.

The following table shows a comparison of the school census for 1930 and for 1937:

SCHOOL DISTRICT CENSUS

Name of District	1930 Census	1937 Census	Increase	Decrease
Quinook	13	11		2
Blalock	13	9		4
Arlington	152	143		9
Willows	36	20		16
Morgan (Joint)	0	1	1	
Montague	6	14	8	
Rock Creek	20	19		1
Mikkalo	19	5		14
Olex	33	34	1	
Flett	8	7		1
Clem	19	16		3
Ajax	8	0		8
Hay Creek	11	7		4

Gwendolen	7	Abandoned in 1936	7
Brown (Includes Gwendolen) ..	14	17	3
Igo	14	12	2
Maley	0	4	4
Richmond	9	10	1
Cooney	11	5	6
Condon	349	319	30
Matney Flat	19	11	8
Scrivner	16	To be abandoned June '38	16
Lonerock	45	38	7
Pine Ridge	21	11	10
Trail Fork	3	7	4
Cameron	7	7	
Quinn	9	5	4
Buckhorn	23	7	16
Breasewood (Joint)	2	2	
Mayville	39		
Badger	2		
Mayville & Badger (Consolidated)		15	26
Lost Valley	12	4	8
Spring Gulch	8	3	5
Linnville	9	On abandoned list	9
Pattee	5	4	1
Edick	28	17	11
City Farm	13	4	9
Cook (Formed in 1932)		5	5
Totals	1003	793	27
			237

This table shows a number of districts which will pass off the census roll this year or in the near future. A total decrease of more than 20% in school population is indicated over a period of seven years.

Districts Near Abandonment: It is interesting to note that during the space of seven years, the Gwendolen district has been completely abandoned, the Scrivner district will be abandoned this June, the Ajax and Linnville districts have been placed on the probationary list, and further that Maley district, Spring Gulch, Pattee and the City Farm will be placed on the list this year, having received the last school money to which they are entitled under the present set-up. Then there are three districts which reported less than six for the first time this year and unless they are able to show more pupils next fall, they too, will be placed on the list of abandoned school districts. A number of these districts have children of school age, and the parents must educate them without any assistance from school funds, or they will be forced to leave their present homes and move nearer a school.

Inequalities in Assessed Valuation: Besides the inequalities due to the distribution of school population, we have just as unequal distribution of assessed valuation. This county is peculiar in that its public utilities are for the most part concentrated in one end of the county, and while the county as a whole contributes to their support, only about a third of the school districts receive any direct financial aid from them. Further, we see a district which has a census enrollment of nine pupils having twice as much assessed valuation as a district with 34 pupils, and about 50% more than a district which has 319 pupils on its list. This means one district can raise as much money from a one mill tax levy as another raises from a two mill levy.

High School Situation: This county has what is known as the County High School System. Some years ago the people of the county voted to establish this type of high school system and the county acquired the property on which the Condon High School now stands. The law permits the county board to establish branch high schools and at one time there were four high schools operating. Two of these were closed by the State Department of Education because their small enrollment made it too expensive for them to operate on a standard basis. We now have high schools at Condon and at Arlington. While the county owns the Condon High School property, the

Arlington school district owns the property on which the Arlington High School stands. The high school board is limited in what it can legally do for the Arlington High School. Any permanent improvement made there would become the property of the Arlington school district and the county would lose control over it. Because of this, the county board cannot legally make permanent improvements there, although there is need for some and the board would be willing to make them if it could. By the same token it is limited in what it can do for the Condon High School. There are improvements needed in the Condon High School which the board is reluctant to make until some way is provided to compensate the Arlington school for them.

Roads: Roads affect the present school situation adversely since transportation is next to impossible in many cases. Because the schools are so scattered, no concentrated effort can be made to obtain the improvement of any one of them.

POSSIBLE SOLUTIONS

Consolidation of Districts: The committee believes that the present set-up of school districts is not producing the results needed to retain rural population. Consolidation of school districts was considered but was found inadequate. In the first place two contiguous school districts might not see things alike and that would forestall consolidation. Records show that this has happened. A consolidated district might soon find itself again without sufficient pupils and be faced with the problem of further consolidation.

County Unit System: The committee has given serious study to the county unit system of schools. This plan has many things in its favor. Under this plan the county would be divided into five zones by the County Court. Each of these zones would be represented on the board by one member. Rural schools which feel that they might be discriminated against will notice that the balance of power on the board would come from rural communities. People usually think of the county unit as being a highly centralized system. This is wrong. The plan is flexible enough so that schools may be established wherever the board deems it justifiable, regardless of the number of pupils. There is no such thing as an abandoned district under this plan. While there might be some centralization, one room rural schools could still be maintained where there was reason for it. The committee also found that this plan would equalize the tax burden and so afford equal opportunities for education regardless of the part of the county in which children reside. The two high schools would be placed on an equal basis and improvements could be made as needed. The buying of supplies in quantities could effect substantial savings. Further the committee felt that the county unit plan could have a favorable effect upon the road building in the county. The county unit board could go to the County Court with definite information that it intended to hold school in certain areas and urge road improvement to those centers.

Under the county unit law, the funds which any district might have when the county unit is established is credited to it and allowance is made for that amount when levying taxes. Any indebtedness a district might have is charged against it alone and a special levy is made against such districts until such indebtedness is paid off.

Klamath, Crook, Lincoln and Hood River counties have operated under the county unit system over a period of years. Although the law permits them to vote to return to the district set-up, so far none of these counties have made any effort to go back to the old district school, and the committee has reports that they are well satisfied with the system.

RECOMMENDATIONS

Your committee has attempted to present the important facts about the schools of the county and how this situation relates to retaining our rural population and attracting others. We have tried to present the important facts concerning our decision. It is our recommendation that the county unit system of schools be adopted for Gilliam County, and that the County Court be requested to place the question on the ballot at the next election.

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General Secretary	- - -	R. M. McKennon, Condon

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