

Goal 3

**CLATSOP COUNTY
GOAL 3
COUNTY-WIDE ELEMENT**

AGRICULTURAL LANDS



County-wide Element

Goal 3

Agricultural Lands

Adopted Ordinance 80-7, July 23, 1980 =
Clatsop County Board of Commissioners

Developed By
Clatsop County Department of Planning and Development

Introduction

Farming in Clatsop County has declined in the last 15-30 years and the future does not look particularly bright.

Small farm sizes interspersed with rural tracts, difficult terrain, a wet climate, and competition from other land uses all work against the consolidation of large, efficient farm units which are characteristic of other areas of the state where agriculture is thriving. As pressure for land for other uses increases, and the off-the-farm employment becomes more attractive, it is probable that farm acreage and the number of farms will decline below the present level. However, the pattern of small farms, producing a low income stream, with the operator working in other employment for part of the year, is likely to continue. This compliments the seasonal employment cycles of some of the County's industries and provides an appealing way of life for some people.

Findings

1. Clatsop County's total acreage in farm land continues to be a very small percentage of the State and the regional farm land. Also, the County's acreage in farm land is a small percentage (5.1%) of its own total land area.
2. The average farm size in Clatsop County as of 1974 is 122 acres.
3. The number of farms in the County has declined to about one-quarter of what existed in 1949.
4. The total acres in agriculture has declined nearly 50% since 1949.
5. Average farm size, however, has increased nearly 50% since 1949.
6. A rapid drop has occurred in the number of small farms consisting of 10-49 acres.
7. The majority of farms are owned by older, long-time residents.
8. Approximately two-thirds (2/3) of all farms are operated on a part-time basis.
9. The economic importance of farming in the County is minor compared to other sectors. Farmers here must absorb additional transportation costs to get local products to distant markets, primarily to Portland.
10. There are no agricultural processing enterprises in the County.
11. The small scale of farming also supports very few farm related businesses. This has led to increased costs to farmers for farm equipment, supplies, and services.
12. There are 79,850 acres of Class I-IV soils in the County comprising 14.8% of the total land area. There are no Class I soils due to climatic limitations. Over 90% of the total land area is forest lands including the majority of areas having Class I-VI soils.

2. New proposals shall require a zone change and an assessment of public need and impacts of establishing additional wildlife refuges or game management areas adjacent to agricultural activities.
- b. The State Wildlife Commission shall be officially requested to resolve the existing adverse impacts on agricultural lands associated with elk, including but not limited to, one or more of the following measures:
 1. revision of hunting laws to sustained management levels.
 2. reduce the elk population in Clatsop County.
 3. indemnify the owners for damage on their property resulting from elk.
 4. pay for and install adequate fencing.

9 "In land use changes involving a change from Conservation-Forest Lands or Rural Agricultural Lands to Rural Lands or Development designations an Exception to the Agricultural Lands or Forest Lands Goals must be taken.*

* Amended 84-9, dated May 23, 1984.

BACKGROUND REPORT

GOAL 3

AGRICULTURE IN CLATSOP COUNTY :

by

John Mills, Gail Hochhalter & Janet Young
Clatsop County Department
of Planning and Development

March 1980

Adopted July 23, 1980 by
Clatsop County Board of Commissioners

Amended March 1983

[Handwritten:] 7-20-63
9, 1963 County P.C.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
FACTS AND TRENDS IN AGRICULTURE	2
THE PEOPLE WHO ARE FARMING	7
TYPES OF AGRICULTURE IN CLATSOP COUNTY	9
THE ROLE OF AGRICULTURE	11
ECONOMICS OF FARMING	12
SOILS SUITABILITY	16
CLIMATE	19
STATE AGRICULTURAL LAND USE POLICY	22
MINIMUM PARCEL SIZE	23

INDEX TO TABLES AND FIGURES

TABLE 1. Trends in Farm Numbers and Acreages	2
TABLE 2. Land Rented from Others - Farms with Incomes over \$2500 ONLY	3
TABLE 3. Farms by Size 1959-1978	4
TABLE 4. Farms by Size - 1978 Only	4
TABLE 5. Farms, Land in Farms and Values 1969-1978	5
TABLE 6. Census of Farm Operators	7
TABLE 7. Breakdown of Principal Occupation by Type of Farm	8
TABLE 8. Breakdown of Farm Types	9
TABLE 9. Clatsop County--Estimated Gross Farm Sales 1969-1977 (in \$1000)	14
TABLE 10. Farm Sales and Farm Expenses: 1974 and 1969	15
TABLE 11. Inventory of Acreage by SCS, 1973	18
TABLE 12. Average Daily Cloud Cover--1977	21
TABLE 13. Rainfall in Inches for 1977	21

INTRODUCTION

The protection and preservation of agricultural land is primarily for the purpose of maintaining the soil resource and farm industry as a basis of food and fiber production now and in the future.

The main tools to accomplish this goal are farm zoning and land division controls. Partially through the exercise of these controls, the agriculture industry can be maintained.

As part of the County Comprehensive Plan, this report describes the history, problems and limitations of agriculture in the County. It compares agriculture in Clatsop County to the industry in the entire State and suggests that this north coast area is distinguished from the rest of the state by the small role that agriculture plays in the County.

In addition, policies are included which address the County's commitment to the preservation of agricultural lands and the means to protect them. The commercial agricultural enterprises in the County are described and a minimum parcel size for farm land divisions defined.

The discussion of impacts of agriculture on air, water and land is contained in the Air, Water and Land Quality Background Report. Policies which relate to specific community concerns about agricultural practices can be found in the County Community Plans.

FACTS AND TRENDS IN AGRICULTURE

Agriculture had a poor beginning in Clatsop County. Livestock and a variety of vegetable seeds were brought to the area by the Astor Fur Company in 1811, a few years after Lewis and Clark wintered here. Except for radishes, potatoes and turnips, the crops failed to mature. According to one party member, the turnips were huge, one measuring 33 inches around and weighing 15-1/2 pounds. But, due to mice infestation and other problems, all their crops came to nothing. The farm was abandoned in 1813.

By 1850 the increased business of ocean and river traffic caused the development of lumber mills, large livestock import for dairy and beef farms, and a fishing export industry. Agriculture grew.

Farming in the County was also strong in the 1940's to the early 1960's. There were 56 small poultry farms with from 1,000 to 10,000 hens. There were four milk processing plants, several raw milk distributors and many small 40 to 50 acre dairies. Other specialty crops and products that also experienced growth were mink, cranberries, holly and Astoria bent grass lawn seed.

Since 1949, agriculture in the County has declined to its present level. Several factors may have been responsible. Among these are:

1. The local agriculture processing industry and, consequently, a ready market for farm products gradually disappeared;
2. Farming required continuing improvement of management methods (i.e. mechanization);
3. The disappearance of very large farms (over 1,000 acres);
4. Increasing costs.

Since 1969, the amount of land in the County in farms has remained about the same, as has the average size of a farm.

Table 1. - Trends in Farm Numbers and Acreages

<u>Year</u>	<u>Acres</u>	<u>% total Land Area</u>	<u>Total # Farms</u>	<u>Average Farm Size</u>	<u>Median Farm Size</u>
1949	57,000	11.1%	837	68.1 acres	--
1954	51,000	9.9%	NA	NA	--
1959	55,082	10.7%	457	120.5 acres	--
1964	39,501	6.6%	486	81.3 acres	--
1969	23,745	4.6%	258	92.0 acres	--
1974	26,560	5.1%	217	122.0 acres	--
1978	22,631	4.2%	234	96.9 acres	60.5 acres

Source: Census of Agriculture

The Census separates farms which have an income of \$2500 or more from all farms in the County. Of the 234 farms in the County, only 128 reported incomes of at least \$2500. Only two counties, Curry and Wheeler, had a fewer number of farms in this category in 1978. In the case of Wheeler County the average farm size was 8695 acres. Two of their farms would make up all the farm acreage in Clatsop County with incomes over \$2500. Curry County had 122 farms with incomes over \$2500 compared to Clatsop County's 128. Lincoln County had only slightly more, at 132. These three coastal counties appear similar in agricultural characteristics, although Tillamook and Coos counties have many more farms earning at least \$2500 as well as many more total farms.

Clatsop County had the highest number of farms in which all crops failed of all coastal counties.

Farms are defined by the Census of Agriculture as including crop land and pasture land but also include wood land, waste land, and land under houses, roads and ponds. For Clatsop County:

Woodland not pastured:	5,037 acres
Land in house lots, roads, ponds, etc.:	1,893 acres
	<hr/> 6,930 acres

Total farm acres in County: 22,681 acres

Therefore, 30.5% of farm land acreage is not used at all for crops or pasture land. This leaves 15,751 acres used as farm land in the County.

Reported farm acreage includes "all lands under the day-to-day control or supervision of one person or partnership." This includes land rented from others. For farm with incomes of over \$2500 rented lands are a significant amount of farm acreage.

Table 2. - Land Rented from Others
Farms with Incomes over \$2500 ONLY

<u>Farm Acreage</u>	<u># of Farms</u>	<u>% of Farms Which Rent Land From Others</u>	<u>% of Acreage on Farm Rented From Others</u>
1-19 ac	13	7.7%	D*
20-39 ac	15	13.3%	D*
40-79 ac	32	15.6%	11.5%
80-159ac	35	31.4%	18.3%
160-319ac	23	47.8%	32.6%
320 or more	10	90%	39.9%

D*: Reported at District level only

For farms over 160 acres, an average of 1/3 or more of the acreage is rented from others.

Table 3. shows the trends in farm acreage classes since 1959. Total numbers of farms, as well as most categories, dropped from 1959 to 1974. Since 1974, though the total number of farms has increased. What is most evident from the 1978 figures is the growth of small farms and the corresponding drop in the number of large farms. It is impossible to make any conclusions from these figures on how agricultural activities are conducted in Clatsop County. In combination, though, with figures listed later in this section showing the large number of part-time farms in the County, the figures may infer the growth of small, part-time farms replacing large farms.

Table 3. - Farms by Size 1959-1978

<u>Size</u>	<u>1978</u>	<u>1974</u>	<u>1969</u>	<u>1964</u>	<u>1959</u>
Under 10 acres	19	11	25	45	42
10-49 acres	80	68	100	232	203
50-179 acres	105	98	100	154	164
180-499 acres	26	35	29	44	39
500-999 acres	4	6	3	9	6
1000-1999 acres	0	1	1	1	1
2000+ acres	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2</u>
Total	234	217	258	486	457

A Census of Agriculture breakdown of farms in other size ranges is shown in Table 4. Is is useful for finer breakdown of smaller size ranges.

Table 4. - Farms by Size - 1978 Only

<u>Acreage</u>	<u>Number of Farms</u>
1-19 acres	46
20-39	36
40-79	61
80-159	51
160-319	29
320+	<u>11</u>
Total	234

From this table it can be determined that 61% of the farms in Clatsop County are 79 acres or less. A minimum parcel size of 40 acres in the EFU zone would require at least an 80 acre parcel before any farm use division could take place. Therefore, the majority of farms in the County would not be capable of any further division.

Table 5. compares agriculture in Clatsop County with the industry in the entire state.

In most cases, the trends for Clatsop County follow those of the state. The number of farms is one area which shows a difference - with farm numbers up almost 20% in the state but down 9% here. A drastic difference shows up in the "other cropland" category. In Clatsop County, almost 1/3 of that acreage was for crops which failed.

Table 5.

Farms, Land in Farms and Values 1969-1978

	Clatsop County				State of Oregon			
	1978	1974	1969	% Change 1969-1978	1978	1974	1969	% Change 1969-1978
Acres of Farm lands % of Total Area in Farm Land	22,681	26,560	23,745	-4.5%	18,414,484	18,241,455	18,017,850	+1.2%
Number of Farms	4.2%	5.2%	4.6%	-	29.9%	29.6%	29.3%	+1.0%
Average Size of Farms (Acres)	234	217	258	-9%	34,612	26,753	29,063	+1.0%
Average Value of Land and Buildings Per Farm (\$)	97	122	92	+5.4%	532	682	620	-1.2%
Acres in Crop Land	127,698	82,326	40,235	+217%	267,149	170,145	93,134	+11.5%
- Total	10,815	12,549	10,194	+6.1%	5,247,487	5,074,988	5,197,520	-1.9%
Acres Harvested								
Crop Land	3,799	4,692	3,684	+3%	3,280,005	3,213,399	2,893,632	+11.1%
Acres Pasture Only	6,187	7,607	6,455	+4.2%	814,484	815,197	1,077,257	-23.1%
Other Crop Land*	829	250	55	1407%	1,152,998	1,045,392	1,226,631	-6.5%
Acres of Woodland, Including Woodland Pasture								
All Other Farm Land (Includes unimproved pasture land, barn lots, ponds, wasteland, etc.)	7,248	8,618	8,626	-15.9%	1,786,919	1,730,245	2,037,077	-11.3%
	4,618	5,393	4,925	-6%	11,380,078	11,436,212	10,790,253	+4.5%

*Other crop land includes crop land with cover crops or soil improvement grasses which is not harvested or pastured; crop land in summer fallow; crop land lying idle; and crop land on which all crops failed.

Findings:

1. The amount of land in the County in farms and the acreage size of a farm have stayed about the same since 1969.
2. Of coastal counties, Clatsop County had the highest number of farms in 1978 in which all crops failed.
3. In 1978, Clatsop County ranked 34th out of 36 counties in the State in the number of farms with incomes over \$2500.
4. Over 30% of the 22,631 acres defined as farm land in the County are in wood land or house lots, roads, ponds, etc.
5. For farms with incomes of over \$2500, lands rented from others are a significant amount of farm acreage.
6. In 1978, Clatsop County had a total of 234 farms; only 128 of these had incomes of \$2500 or more.
7. Since 1974, there has been an increase of small farms (49 acres or less) and a decrease of very large farms (500 acres or more).
8. In 1978, 61% of farms in Clatsop County are 79 acres or less.
9. The average size of a farm is 97 acres. The median, or middle sized farm is 60.5 acres. Therefore, half of the farms in the County are less than 60.5 acres, half greater (1978 data).
10. Between 1969 and 1978, Clatsop County had a decrease of 9% in the total number of farms, whereas the entire State had an increase of nearly 20%.

THE PEOPLE WHO ARE FARMING

This section is to provide some general census information on the farm operators in the County.

Table 6.
Census of Farm Operators

<u>Days Reported Working Off Farm</u>	<u>1978</u>		<u>1974</u>		<u>1969</u>	<u>1964</u>	<u>1959</u>
	<u>All Farms</u>	<u>Farms w/sales of \$2500+</u>	<u>All Farms</u>	<u>Farms w/sales of \$2500+</u>	<u>All Farms</u>	<u>All Farms</u>	<u>All Farms</u>
None	74	48	70	41	n/a	n/a	n/a
1-99 days	13	9	23	11	25	40	48
100+ days	143	68	106	32	144	237	225
<u>Total Farms</u>	234	128	217	95	258	486	457
<u>Principal Occupation</u>							
Farming	81	61	90	61	n/a	n/a	n/a
Other	153	67	125	32	n/a	n/a	n/a
<u>Average Age</u>	51.2	50.9	53.3	54.7	52.8	n/a	n/a
<u>Farms by Tenure</u>							
Full Owners	181	89	171	63	208	n/a	n/a
Part Owners	45	35	38	30	37	n/a	n/a
Tenants	8	4	8(3.7%)	2(2.1%)	13(5%)	n/a	n/a

Source: Census of Agriculture

The first category of Table 6. indicates the number of days that farm operators reported working off their farms. As can be seen from the number of days worked off the farms since 1959, part-time farming has been the usual in Clatsop County for many years. This category does not include spouses who may work off the farm.

It is interesting to note the difference between 1974 and 1978 in the number of operators of farms over \$2500 income per year with a principal occupation other than farming. The number of principal operators has remained the same at 61, but the number of part-time operators has increased from 32 to 67.

In the next category, "Average Age", the Table shows that farmers on an average are over 50 years old in Clatsop County, which is comparable with the rest of the State.

Table 7.
Breakdown of Principal Occupation by Type of Farm

<u>Principal Occupation</u>	<u>Dairy Farms</u>	<u>Intensive Animal Husbandry</u>	<u>Extensive Animal Grazing</u>	<u>Horticultural Specialities</u>	<u>Total All Farming 250</u>
Farming	17	9	28	2	61
Non-farming	2	3	53	5	67

As would be expected, more operators of grazing operations have other principal occupations than in the other two major types of farming in the County. A grazing operation involves less intensive maintenance than dairying or mink ranching.

FINDINGS

1. The majority of farms are owned by older residents.
2. Almost 2/3 of all farms are operated on a part-time basis.
Even of those farms earning over \$2500, over 1/2 are operated on a part-time basis.
3. Most operators of dairy farms and intensive animal husbandry farms list farming as their principal occupation. For grazing operations, only about 1/3 of the operators are principally employed by farming.

TYPES OF AGRICULTURE IN CLATSOP COUNTY

Agriculture is not diverse in Clatsop County. Grazing, mink farming and dairying are predominant, with numerous miscellaneous crops and specialties such as cranberries, holly, small fruits and berries.

Intensive animal husbandry, a category which includes mink farming, comprises only 10.3% of the farms in the County but generates almost 1/3 of the farm income. The average parcel size of a farm in this category is 32.6 acres.

Extensive animal grazing, by contrast, constitutes 69.7% of the farms but generates less than 1/4 of the farm income. The average parcel size of a grazing operation is 81.5 acres.

Clatsop County has 19 dairies, compared to Tillamook County, our neighbor to the south, with 190. These 19 dairies constitute only 8.1% of the farms in the County but generate 42.8% of the farm income. Characteristics of climate and soils are similar for Clatsop and Tillamook counties as well as characteristics of the dairy operations themselves. Tillamook Dairy Cooperative is the market for most Clatsop County milk. It is reasonable that planning provisions which have been found to be adequate to protect the dairy industry of Tillamook County would also protect the much smaller dairy industry of Clatsop County.

In Tillamook County, the Soil and Water Conservation District and a majority of the County's citizen advisory committee members agreed that 40 or more acres are normally required for a viable dairy farm (source: Tillamook County Plan). They stated that a 40 acre minimum lot size requirement would help protect conversion of commercial agricultural land to non-farm uses.

Clatsop County's Exclusive Farm Use (EFU) zone has a 40 acre minimum parcel size, identical to the 40 acre parcel size for farms in Tillamook County.

Table 8. Breakdown of Farm Types

	<u>% of Total Farms</u>	<u>% of Farms Over \$2500+ Income</u>	<u>% of Total Income</u>
Extensive Animal Grazing	69.7	63.3	24
Intensive Animal Husbandry	10.3	9.3	29.3
Dairying	8.1	14.8	42.8
Horticultural Specialties	4.7	5.4	1.5

Findings

1. Predominant agricultural activities in Clatsop County are grazing, dairying and mink farming.
2. The majority of farm income in the County is derived from dairying and intensive animal husbandry (including mink farming).
3. Grazing is the agricultural activity which comprises the majority of farms (69.7%) in the County but generates less than 1/4 of the farm income.

4. A 40 acre minimum parcel size has been found to be sufficient to protect the dairying industry of Tillamook County, the County adjacent to the south with a dairy industry 10 times the size of Clatsop County.

THE ROLE OF AGRICULTURE

Employment in the agricultural sector has steadily declined in the County from 860 people in 1960 to 550 in 1970 to an estimated 182 (Input/Output Analysis) for 1977. The 1974 Agriculture Census, however, shows a gain in hired farm workers from 1969 to 1974, from 272 to 309 workers, respectively. The Census also shows that these hired workers were working for fewer days in 1974 than in 1964 and that the total dollar payroll went from \$211,000 to \$247,000. The 1977 estimate of 128 workers accounts for 1.6% of the total County employment.

Oregon State University's Extension Service has conducted an Input/Output Analysis of the County's economy from which the estimated farm employment for 1977 was derived. The Analysis also shows the Agricultural sector as representing 0.6% of the total export sales (dollars into the County) of Clatsop County.

The figures above place agriculture far down on the list in comparison with the County's top three industries: forestry, fisheries, and tourism. In export sales the lumber and wood products industry is 51.9%, the marine resources industry is 18.0%, and the retail/whole products and services sector (tourism) is 9.9% of the County's total.

The lumber and wood products industry employs 2,092 people or 17.8% of the total County employment (1977). This industry constitutes 474,000 acres of the County or 90% of the total land area.

There are no agricultural processing enterprises in Clatsop County except for preliminary processing of milk and mink occurring on the site.

There are also very few supportive businesses for agriculture. For example, there are only three slaughterhouse/butchers in the County for people wanting to butcher their cattle for personal consumption. Cattle operators must ship the cattle to Portland to market adding a transportation cost to expenses. There are no tractor sales or farm equipment repair shops in the County.

There are four outlets for fertilizer and feed and seed in the County. One outlet (Mayflower Farms, Inc.) adds \$13.00 freight per ton of fertilizer increasing the cost by 5-7% above the price in Portland.

Findings

1. The economic importance of farming in the County is minor compared to other sectors. Farmers here must absorb additional transportation costs to get local products to distant markets, primarily to Portland.
2. There are no agricultural processing enterprises in the County.
3. The small scale of farming also supports very few farm related businesses. This has led to increased costs to farmers for farm equipment, supplies, and services.

ECONOMICS OF FARMING

This section addresses the economic status and health of farming in the County in recent years and the economic importance of the agricultural sector in the County.

The gross cash sales for specific farm items in the County is shown in Table 9. The numbers have increased since 1970 but this is deceptive since inflation is not taken into account. The mainstays of agriculture in the County include hay crops, small fruits and berries, particularly cranberries, specialty products such as holly and forestry, cattle and calf operations, dairy products, and miscellaneous animal products, particularly mink. It is expected that these items will continue to be the County's predominant farm products.

Table 9. shows overall gains in total farm sales. However, in constant 1967 dollars the amounts are nearly equal. Farm expenses also increased by 3-1/2 times more than the sales rate, as shown on Table 10. The events that led to this situation of skyrocketing prices began with the grain crisis in 1973-74. The cost of grain had a dramatic impact on feed for cattle and poultry operators as shown in the "Cattle and Calves" and "Chicken Eggs" categories in Table 9. Another factor increasing expenses in those years was the price of petroleum, including fuel and fertilizers. This example is indicative of the effects and uncertainty that is caused by the lack of diversity in the County's agriculture.

Table 9. also shows the gradual disappearance of the "Grass and Legume Seeds", "Field Crops", and "Tree Fruits and Nuts" categories. Some field crops were combined into "Truck Crops". Astoria bent grass is no longer grown in this County due to a combination of climate and fluctuating market conditions.

It is not possible to directly correlate the information of Table 9. with the next chart, Table 10., which shows farm sales against farm expenses in the County. This is because Table 10. includes only the farms with sales of \$1000 or more.

For total farm sales from 1969 to 1974 Table 10. shows a very small increase of 18.9% for the County compared to the State's increase of 93%. This is due, partly, because 1974 was a poor year for cattle operations in the County and the decrease in this one item by 45% that year also significantly decreased the total sales figures (by 15%).

Farm expenses are also on the rise due to fencing needed to protect crops from elk damage. Total losses due to elk on farm land have not been documented but are well known in farming communities. For example, the annual Brownsmead Corn Feed was cancelled in 1979 because the farmer lost his entire crop to the elk.

The value of agricultural products for the County in 1977 represents 10% of the Tillamook-Clatsop-Columbia region's value of agricultural products. Clatsop County ranked 34th in the State in 1977 for the total value of farm sales, 35th in the percent of land in farm land and 36th in the total number of acres in farm land. Unlike other areas, a bad year in one farm item meant a significant drop in total agricultural sales. These two factors, a lack of diversity, and a few years of low prices, have had investments in farming, agricultural processing, and related business in the County.

Findings

1. Clatsop County does not have a diverse agricultural base.
2. While the mainstays of agriculture have experienced a slight increase in total farm sales, some products are gradually disappearing.
3. The increase in farm expenses spurred by the skyrocketing cost of feed and fuel has decreased profits and caused uncertainty in farming in the County.
4. Clatsop County ranks very low in the state in total farm sales, total amount of farm land, and percent of land in farm land.

TABLE 9.
Clatsop County--Estimated Gross Farm Sales
1969-1977 (in \$1000)

	1969	1970	1971	1972	1973	1974	1975	1976	1977
Wheat	30	23	33	32	41	53	88	49	73
Hay	4	12	20	5	3	3	--	--	--
Grass and Legume Seeds	2	2	4	3	5	--	--	--	--
Field Crops	2	2	4	3	5	--	--	--	--
Tree Fruits and Nuts	2	2	2	3	4	--	--	--	--
Small Fruits and Berries	66	35	37	42	58	32	58	58	51
All Truck Crops	8	9	6	5	8	11	12	11	11
Specialty Crops (including forestry)	128	116	52	162	175	315	425	500	620
ALL CROPS	240	201	154	252	294	414	583	618	773
Cattle and Calves	598	453	512	681	982	529	507	665	581
Pigs and Pigs	12	10	4	12	28	13	15	45	*
Sheep and Lambs	9	10	10	9	15	14	13	23	*
Dairy Products	667	387	411	517	617	620	621	949	913
Farm Chickens	97	n.a.	1	1	1	2	1	1	4
Chicken Eggs	121	n.a.	50	68	106	46	51	29	11
Misc. Animals & Products	538	n.a.	333	338	518	546	781	683	1401
ALL LIVESTOCK AND PRODUCTS	2042	n.a.	1321	1626	2267	1770	1989	2395	2913
ALL CROPS AND LIVESTOCK	2282	n.a.	1475	1878	2561	2184	2572	3013	3695

TABLE 10.
Farm Sales and Farm Expenses: 1974 and 1969

	CLATSOP COUNTY--ALL FARMS		STATE OF OREGON--ALL FARMS	
	1974	1969	1974	1969
	% of Change		% of Change	
Total Farm Sales (\$1000)	2540	2136	1,025,082	531,209
	+18.9%		+93.3%	
Average per Farm	\$11,705.	\$8,279	\$38,317	\$18,277
	+41.4%		+110.3%	
Sales by Category (\$1000)				
Crops including nursery products and hay				
• Farms	65	56	15,457	16,826
\$1000	227	189	651,552	260,416
	+20.1%		+150.2%	
Forest Products				
Farms	29	27	1,485	1,646
\$1000	226	44	13,051	6,827
	+413.6%		+91.2%	
Livestock, Poultry, and products				
Farms	181	209	18,417	19,455
\$1000	2,086	1,902	350,480	263,966
	+9.7%		+33.6%	
Total Farm Expenses (\$1000)	2,225	1,735	784,663	466,946
	+71.8%		+68.2%	

Source: Census of Agriculture

SOILS SUITABILITY

Clatsop County is predominantly a mountainous upland area with over 90% of the land area being forest land. Because of its topography and the resulting high precipitation and runoff experienced here the County continues to have a very high potential for erosion.

Over time the erosion of sedimentary rock areas has formed deposits of fine grained sediments that make up the soils of the alluvial floodplains and river terraces in the County. When igneous rock areas have been eroded then deposits of sand and gravel are also likely to occur in these floodplain and terrace areas.

Estuarine deposits are fine sand, silt, and clay intermixed with peaty material that occur in the estuarine tidal flats of the Columbia River. Many of these areas have been protected by dikes and drainage systems to create soils suitable for agriculture.

Finally, peat and organic materials intermixed with fine sand make up the organic soils of the Clatsop Plains area.

Together these deposits make up the soils most commonly used for agriculture in the County.

The peat soils, the estuarine deposits called the Coquille and Clatsop soils, the alluvial floodplain deposits which are usually Nehalem soils, and the river and stream terrace deposits most often being Knappa, Walluski and Chitwood soils have all been ranked by the Soil Conservation Service into "Land Capability Classifications" with the other soils of the County. Soil characteristics such as permeability, water holding capacity, depth, inherent fertility, texture, structure, wetness, acidity, overflow hazards, slope, and also climatic conditions as they influence use, management, and productivity of land are considered in the grouping of soil types into eight land capability classes which are designated by Roman numerals. The hazards and limitations of the use of the groups increase as the class number increases so that Class VIII soils have the most limitations.

Table II. shows the number of acres in each of the classes for Clatsop County. Classes I, II, III and IV soils are considered suitable for agriculture. No Class I or Class V soils occur in Clatsop County. Each capability class is divided into subclasses that show the major cause of the limitations: "e" is for erosion hazard, "w" for wetness, "s" for root zone limitations, and "c" for climatic limitations. The definitions of each class are given below:

Class I soils have few limitations that restrict their use and are excellent for cultivated crops.

Class II soils have some limitations that reduce the choice of plants or require special conservation practices and are good for cultivated crops.

Class III soils have severe limitations that reduce the choice of plants or require special conservation practices, or both. They are fair for cultivated crops.

Class IV soils have very severe limitations that restrict the choice of plants, require very careful management or both. They are poor for cultivated crops. All four of the above classes can also be used for pasture or wood land.

Class V soils. There are no Class V soils in the County.

Class VI soils have severe limitations that make them generally unsuited for cultivation and limit their use largely to pasture and wood land. Physical conditions are such that pasture and wood land improvements can be made if needed. These soils are often on steep slopes.

Class VII soils have very severe limitations that make them unsuited for cultivation and that restrict their use largely to grazing, wood land or wildlife. Physical conditions are such that it is impractical to apply improvements.

Class VIII soils have limitations that prohibit their use for commercial plant production and restrict their use to recreation, wildlife, water supply, and aesthetic purposes.

The mapping of soils for EFU designations are based on detailed soils maps completed by the Soil Conservation Service. These maps were surveyed primarily from 1964 to 1976 although earlier surveys from 1939 to 1950 were done for the Necanicum River and Clatsop Plains areas. Not all of the County has been surveyed.

Beginning in November 1978, the Soil Conservation Service began examining the unsurveyed areas of the County and correlating them with past surveys to provide a complete detailed soils mapping of the County. Based on these revisions the acreage estimates in Table 11. may change.

The 1978 Agricultural Census shows a total of 22,681 acres in Clatsop County in farms. Some small percentage of these are probably in Classes VI-VIII, but most are on Class I-IV soils. Since there are almost 80,000 acres of Class I-IV soils in the County, and only about 1/4 are in farm use, the remainder are in either "built or committed" to residential development or in forest use.

Findings

1. There are 79,850 acres of Class I-IV soils in the County comprising 14.8% of the total land area. There are no Class I soils due to climatic limitations. Over 90% of the total land area is forest lands including the majority of the areas having Class II-IV soils.
2. Over 3/4 of the land in the County is in soil Class VIe which has severe limitations for agricultural use and is subject to wind and water erosion.

TABLE 11.
Inventory of Acreage
by Soil Conservation Service Capability Class and Subclass
Clatsop County, 1973

<u>Class & Subclass</u>	<u>Acreage</u>	<u>% of Total</u>
I	None	--
II	45,170	8.4%
--e	--17,445	
--w	--16,657	
--c	--11,070	
III	27,130	5.0%
--e	-- 6,150	
--w	--20,978	
IV	7,550	1.4%
--e	-- 1,080	
--w	-- 6,470	
Class I-IV Soils	79,850	14.8%
V	None	--
VI	417,620	77.7%
--e	--417,620	
VII	16,945	3.2%
--e	-- 3,640	
--w	-- 1,520	
--s	-- 11,785	
VIII	23,085	4.3%
--w	-- 3,855	
--s	-- 19,228	
TOTAL	537,500	100.0%

Source: U.S. Soil Conservation Service

CLIMATE

Climatic conditions in the County have significantly limited the potential and diversity of agriculture in the County. This limitation is reflected in the soils ratings described above. There are no Class I soils in the County because of a soil temperature factor which is directly related to the climate.

On the other hand the mild climate is beneficial for dairying, and for peas, lettuce, and other cool weather crops providing the excess precipitation can be drained.

The two climatic limitations are the heavy precipitation, which greatly shortens the growing season and invariably ruins hay crops each year, and also the lack of sunshine which contributes to an adverse soil temperature factor.

The heavy precipitation does substantially reduce a need for irrigation in the County whereas it is a necessary expense for other areas. However, the lack of sunshine is a limitation that will always plague farmers and gardeners here as anyone who has tried to grow tomatoes in the County can attest.

Table 12. shows the cloud cover on an average day for different areas of the State over the summer months and indicates that Astoria remains in the cloudy category for the entire summer unlike any of the other areas shown. The year 1977 was used because it was a typical year. Since 1953, the month of May has averaged 3.3 clear days; July averaged 6.0 clear days; August averaged 6.6 clear days; and September averaged 8.7 clear days.

The difference in Astoria's amount of sunshine compared to other areas is significant when it is related to soil temperature and to the advantage of other areas that have successive days of sunshine. Also, it is significant that the difference in Astoria's 7.1 to Portland's 6.1 average cloud cover (on a scale of 0-10) for the month of July is the result of 6 clear, 8 partly cloudy, and 17 cloudy days in Astoria compared to 14 clear, 8 partly cloudy, and 9 cloudy days in Portland.

A favorable climatic factor for agriculture is the mild temperature in Astoria which is very seldom cold enough to cause a concern about frost. The average duration of days with temperatures above 32 since 1953 is 207 days per year. These days generally occur between mid-April to mid-November. This factor can be advantageous, such as when local sweet corn reaches the Portland fresh market after other areas have finished, or when livestock require a mild climate. However, it is not an indication of a long growing season because the ground is usually too wet due to the precipitation.

Table 13. shows the amount of rain that is stopped by the mountains when a front passes from the Coast to the Willamette Valley. Generally there is almost twice as much precipitation at Astoria than in the Willamette Valley.

Findings

1. A combined climatic condition of heavy precipitation and a lack of sunshine in the County seriously hampers farming because it limits the diversity of agriculture in the County and shortens the growing season.

Table 12.
Average Daily Cloud Cover (in tenths) From Sunrise to Sunset--1977

	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>
Astoria	8.1	7.7	7.1	7.3	7.2	7.0
Burns	7.6	5.4	3.1	5.3	5.0	4.6
Eugene	8.3	6.6	5.2	5.6	7.0	8.1
Medford	7.5	5.1	1.8	4.4	4.3	5.9
Pendleton	7.6	5.6	4.2	4.4	5.8	5.5
Portland	8.3	6.2	6.1	5.1	6.7	7.3
Salem	8.0	6.1	5.2	4.4	6.5	7.1

Clear: 0-3 Cloudy: 8-10 Partly: 4-7.

Source: National Weather Service

Table 13.
Rainfall in Inches for 1977
January through December

	<u>Astoria</u>	<u>Portland</u>	<u>Newport</u>	<u>Salem</u>	<u>Eugene</u>
January	3.20	1.07	2.31	.88	1.11
February	5.22	2.49	7.09	2.83	5.05
March	9.74	3.50	8.82	3.33	4.66
April	1.65	1.04	1.20	.62	1.47
May	6.00	4.30	6.21	3.76	2.84
June	1.36	.83	1.15	.73	.97
July	.44	.39	.25	.26	.11
August	3.85	3.26	3.07	1.70	1.70
September	5.44	3.33	5.38	2.36	2.39
October	4.38	2.28	4.18	2.37	2.87
November	12.37	5.56	11.94	6.19	9.14
December	14.34	8.98	15.55	8.73	14.60
Total	67.99	37.03	67.15	33.76	46.91

Source: National Weather Service

STATE AGRICULTURAL LAND USE POLICY

As part of ORS 215 the State Legislature adopted a policy on agricultural lands. The County's Agricultural Plan element and Exclusive Farm Use zone must be consistent with this policy.

215.243 Agricultural Land Use Policy,

The Legislative Assembly finds and declares that:

(1) Open land used for agricultural use is an efficient means of conserving natural resources that constitute an important physical, social, aesthetic and economic asset to all of the people of this state, whether living in rural, urban or metropolitan areas of the state.

(2) The preservation of a maximum amount of the limited supply of agricultural land is necessary to the conservation of the state's economic resources and the preservation of such land in large blocks is necessary in maintaining the agricultural economy of the state and for the assurance of adequate, healthful and nutritious food for the people of this state and nation.

(3) Expansion of urban development into rural areas is a matter of public concern because of the unnecessary increases in costs of community services, conflicts between farm and urban activities and the loss of open space and natural beauty around urban centers occurring as the result of such expansion.

(4) Exclusive farm use zoning as provided by law, substantially limits alternatives to the use of rural land and, with the importance of rural lands to the public, justifies incentives and privileges offered to encourage owners of rural lands to hold such lands in exclusive farm use zones. (1973 c.503 §1).

The following section discusses minimum parcel size in the EFU zone. The 40 acre minimum parcel size for EFU lands in Clatsop County complies with the State Agricultural Land Use Policy by conserving land in large enough blocks to maintain the commercial agricultural economy of the County.

Since 50% of the farms in the County are under 60.5 acres and 61% are under 79 acres, these farms would not be capable of any further division, except under the very limited criteria for non/farm developments. Only 39% of farms would normally be capable of any land divisions. Many of the larger farms in the County are in long-time family ownership with no intentions of dividing up the commercial enterprise. Large enough parcel sizes to maintain the four major types of commercial agriculture in the County will continue to exist. The following section further discusses the minimum parcel size of 40 acres.

MINIMUM PARCEL SIZE

Goal 3 requires that "such minimum lot sizes as are utilized for any farm use zones shall be appropriate for the continuation of the existing commercial agricultural enterprise in the area."

This standard is further explained in the Agricultural Lands Administrative Rule (OAR 660-05-015). The size needed to maintain the existing commercial agricultural enterprise shall be determined by identifying the types and sizes of commercial farm units in the area. Any divisions smaller than that minimum parcel size are considered non-farm divisions and are evaluated by the criteria in ORS 215.21(3)(3). Non-farm divisions are discouraged and the criteria will be strictly interpreted by the County. The minimum parcel size being discussed in this section is for farm land divisions, not non-farm. All divisions of EFU land for farm purposes must meet the minimum parcel size of 40 acres which is consistent with the State Agricultural Land Use Policy. Dwellings must be necessary to carry out the Agricultural activity on the parcel. Dwellings on parcels less than 40 acres must meet the same criteria as creation of a parcel less than 80 acres.

The Census of Agriculture describes certain agricultural characteristics on a county-wide basis. No analysis of agriculture in subareas of the County has been done. This is because agriculture is such a minor portion of Clatsop County's employment (1.6% - see Economic of Farming above) and total land area (1.2% - see Facts and Trends in Agriculture above) that examining it on a county-wide basis makes more sense than further dividing up an already small industry.

The Administrative Rule states that types and values of products produced and how they are marketed are more important in determining a minimum lot size than characteristics of part-time and full-time farming. Part-time farming is presently, and has been for some time, a major factor in Clatsop County agriculture. Figures listed above show that this category is a growing one.

The activities which constitute the commercial agricultural activities in Clatsop County are primarily:

- (1) Extensive animal grazing
- (2) Intensive animal husbandry
- (3) Dairying
- (4) Horticultural specialties

The average size of a farm in this County is 97 acres. Statistics above show that this figure commonly includes land rented from others. Farm acreage also includes non-contiguous parcels, often fields managed by one operator may be in different locations in a part of the County. The average size, then, of a farm which is in one contiguous block must be less than 97 acres. The median, or middle sized, farm in Clatsop County is 60.5 acres.

35
A minimum lot size of 40 acres in the EFU zone would require at least an 80 acre parcel to be eligible for division. 61% of the farms in the County are 79 acres or less. Median parcel size of 60.5 acres shows that well over half of Clatsop County farms would not even be eligible to request a farm land division.

Average Parcel Size

Extensive Animal Grazing	81.5 acres
Intensive Animal Husbandry	32.6 acres
Dairying	170.0 acres
Horticultural Specialties	93.4 Acres*

*This figure is very skewed by one large farm.
The median parcel size in this category is about 20 acres.

Median Parcel Size

All Farms in the County	60.5 acres
-------------------------	------------

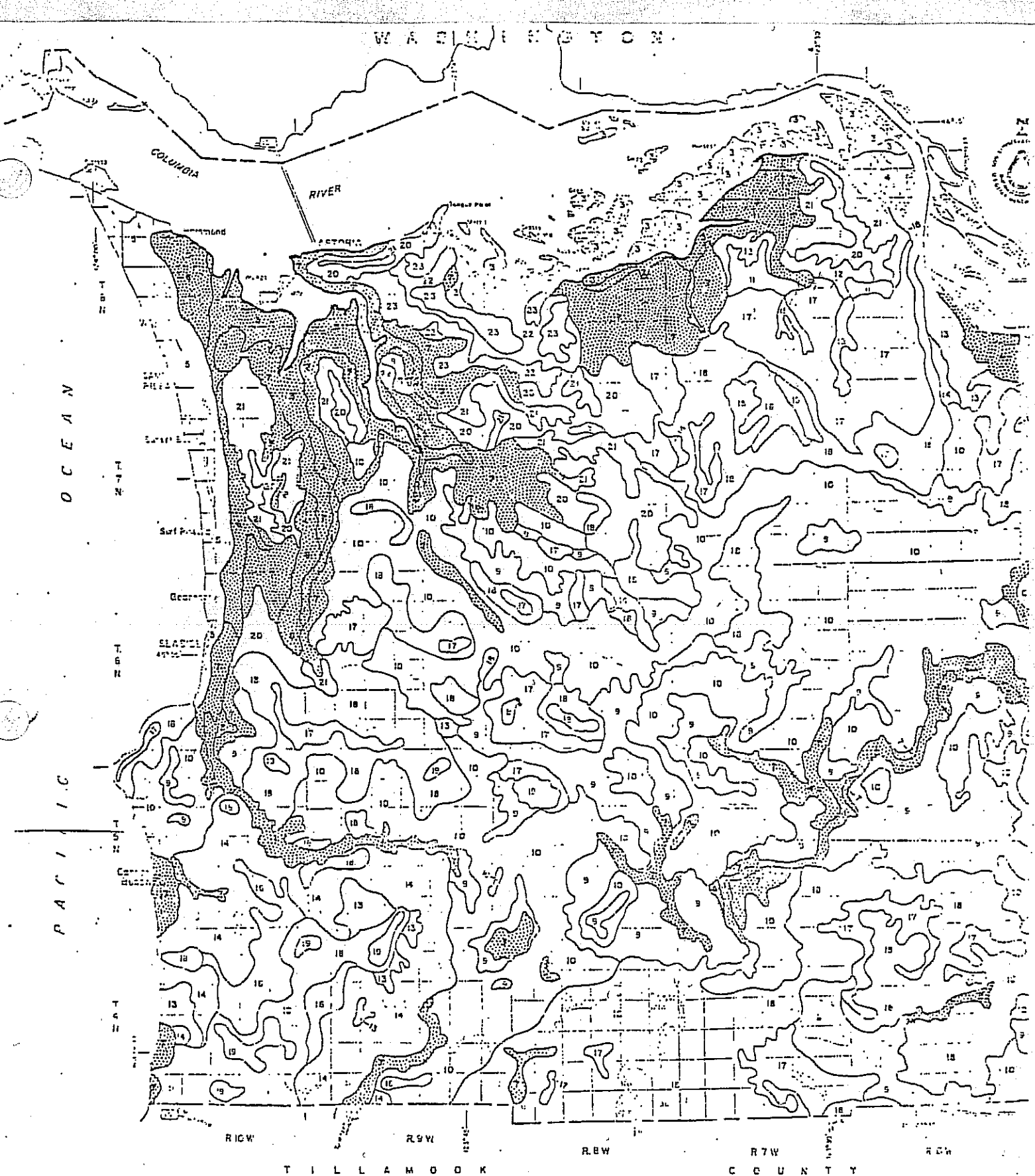
Under Types of Agriculture (page 8), the relative values of the different major agricultural enterprises are discussed. Dairying is the largest percentage of total farm income with 42%. As discussed earlier, 40 acres has been found to be a reasonable minimum parcel size to protect the much larger dairy industry of Tillamook County. Although Tillamook has 10 times the number of dairies of Clatsop County, the other characteristics of the industries are similar. The average size of dairies is somewhat smaller in Clatsop County than Tillamook. In both counties farm acreage is often rented from others and farms commonly include non-contiguous parcels.

In Clatsop County most dairies are farms that have been operated by one family for quite some time. Some processing of milk occurs here but most is marketed through Tillamook County dairy cooperative. That Co-op has limitations on new dairies and on numbers of cows per dairy. This type of limited entry would make it difficult for a new dairy to become established.

Another limitation to dairies is the availability of adjacent land for expansion. The configuration of narrow river valleys with timbered uplands requires that, if more land is needed, it generally must be acquired a distance away from the main farm. A 40 acre parcel size preserves fields of a size necessary to maintain the dairying industry.

For Extensive Animal Grazing, Intensive Animal Husbandry and Horticultural Specialities, most of the farms would not be capable of further division for farm purposes with a 40 acre minimum parcel size. This parcel size will protect those agricultural enterprises.

For certain agricultural lands in the County where a block of parcels all less than 80 acres exist, there is a limited amount of Agriculture-Forestry 20 zoning. Since this zoning category often exists in forest lands or areas of mixed agricultural and forest uses, a discussion of the zone is found in the Forestry Element of the Plan.



SOIL SUITABILITY FOR FARM CROPS

Legend on Next Page

SOIL SUITABILITY FOR FARM CROPS CLATSOP COUNTY, OREGON

JANUARY 1973



Good soil suitability for farm crops. These soil associations have over 50 percent of their areas occupied by detailed soil mapping units that are in land capability classes I or II, and less than 50 percent of their areas in classes IV, VI or VII. The soils have slopes of less than 12 percent, good or moderately good drainage, or, if somewhat poor or poor drainage, good response to underground drainage systems, not more than occasional winter overflow, surface layer texture of sandy loam to silty clay loam, and depth to hard bedrock of over 40 inches.



Fair soil suitability for farm crops. (1) These soil associations have less than 50 percent of their areas occupied by detailed soil mapping units that are in land capability classes I or II, and less than 50 percent of their areas in classes IV, VI or VII. Up to 100 percent of their areas may be land capability class III. The soils may have slopes of 12 to 20 percent, good to poor drainage, moderately good response to open ditch or underground drainage systems, occasional to frequent winter overflow, surface texture of silty clay or clay, or depth to hard bedrock of 20 to 40 inches.



Poor soil suitability for farm crops. These soil associations have more than 50 percent of their areas occupied by detailed soil mapping units that are in land capability classes IV, VI or VII. The soils may have slopes steeper than 20 percent, good to poor drainage, with poor response to a drainage system, frequent winter overflow, or depth to hard bedrock of less than 20 inches.

(1) Only soils in soil association 3 that are protected by dikes have fair suitability. Unprotected areas have poor suitability.

CLATSOP COUNTY GENERAL SOIL MAP LEGEND

AREAS DOMINATED BY NEARLY LEVEL, WELL TO POORLY DRAINED SOILS ON STREAM BOTTOM, AND MODERATELY WELL TO VERY POORLY DRAINED SOILS ON TIDE LANDS.

1. Nehalem association
2. Brenner-Nestucca association
3. Coquille-Tidal marsh (fresh)-Clatsop association
4. Sauvie-Peat association

AREAS DOMINATED BY EXCESSIVELY TO VERY POORLY DRAINED SOILS ON THE COASTAL PLAIN.

5. Westport-Gearhart-Dune land association
6. Brallier-Warrenton association

AREAS DOMINATED BY WELL TO POORLY DRAINED, NEARLY LEVEL TO MODERATELY STEEP SOILS ON TERRACES.

7. Walluski-Knapka association
8. Chitwood-Hebo association

AREAS DOMINATED BY WELL DRAINED, GENTLY SLOPING TO VERY STEEP SOILS ON THE COAST RANGE.

9. Astoria-Winema association, 3 to 30 percent slopes
10. Astoria-Winema association, 30 to 60 percent slopes
11. Svensen association, 0 to 30 percent slopes
12. Svensen association, 30 to 60 percent slopes
13. Astoria-Hembra-Klickitat association, 3 to 30 percent slopes
14. Astoria-Hembra-Klickitat association, 30 to 60 percent slopes
15. Hembra association, 3 to 30 percent slopes
16. Hembra association, 30 to 60 percent slopes
17. Hembra-Klickitat association, 3 to 30 percent slopes
18. Hembra-Klickitat association, 30 to 60 percent slopes
19. Rock outcrop-Kilchis-Klickitat association, 60 to 90 percent slopes
20. Tolovana association, 3 to 30 percent slopes
21. Tolovana association, 30 to 60 percent slopes
22. Tolovana association, sandstone substratum, 3 to 30 percent slopes
23. Tolovana association, sandstone substratum, 30 to 60 percent slopes

Svensen, Tolovana, and Walluski are tentative names subject to change in correlation.