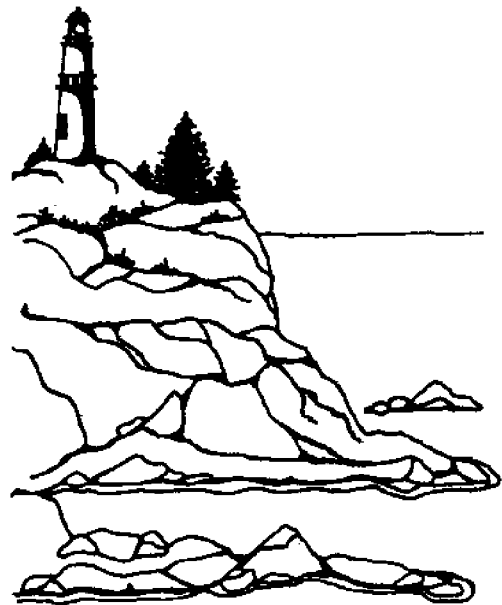




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**OREGON
COASTAL
ZONE LAND:
use, ownership
and value change**

**R. M. Northam
T. J. Maresh
M. L. Nolan**



**OREGON STATE UNIVERSITY
SEA GRANT COLLEGE PROGRAM**
Publication no. ORESU-T-75-006

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acknowledgment

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related publication

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Analyzes some of the linkages between economic growth and environmental change in a rural community. The report makes use of recently developed methodology for estimating induced as well as direct environmental changes from new industry. This methodology is applied to an actual development issue on the Oregon coast.

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introduction

In the Fall of 1973 a letter was sent to the Chairman of the Department of Geography at Oregon State University by the Director of the Sea Grant College Program, William Q. Wick. This letter mentioned the possibility of involvement by the Geography Department in research projects within the scope of interest of the Sea Grant Program. Subsequently, a meeting was held among members of the departmental faculty whose interests would coincide with those of the Sea Grant Coastal Management Program and a number of possible topics were generated. In turn, a meeting was held between members of the Sea Grant staff and interested departmental faculty to discuss the merits and suitability of each of the suggested research topics. It was proposed that the topic most suited to Sea Grant interests and the one most likely to be funded was one dealing with changes in land ownership and land use in the coastal zone.

In response to encouragement by the Sea Grant staff, the decision was made to form a departmental research team comprised of Ray M. Northam, Thomas J. Maresh and Mary Lee Nolan, and to submit a formal Sea Grant proposal to undertake study of land ownership and land use change in a portion of the Oregon coastal zone. After consultation with interested parties, especially staff members of the Oregon Coastal Conservation and Development Commission (OCC & DC) and following numerous meetings of members of the designated research team, the proposal was submitted to the Director of the Sea Grant College Program on November 19, 1973. In the spring of 1974, the project director, Ray M. Northam, attended a review session conducted for the benefit of the on-site visitation team to clarify any points if the need existed. The response of the on-site reviewers, as was the case with other reviewers, was quite favorable and only minor points were raised for clarification. Later in the spring of 1974 the research team was notified that the research project was to be funded by the Sea Grant Program. Steps were taken so that the project could be initiated on June 17, 1974.

project methodology

Discussed below are the three major objectives set for this research project as well as details concerning the time period covered in the study, types of data inputs, sources of data and the handling of data. Location of reliable and usable data sources proved problematic in some instances and cross checks among several data sources were often necessary.

STUDY OBJECTIVES

Three project objectives were identified in the proposal submitted to the Sea Grant Program and the research conducted has been in accord with those objectives. The objectives were:

1. To investigate the magnitude, nature and locations of recent changes in land ownership in the Oregon coastal zone.
2. To establish relationships between changes in land ownership and changes in land use of individual land parcels.
3. To establish relationships between changes in land ownership, changes in parcel size and changes in land value.

With reference to the first of these objectives, the effort was to determine the incidence of change of land parcel ownership in the central Oregon coastal zone during the period 1967-1973. This entailed determining how many land transactions occurred during this approximate half-decade and also the places of residence of owners of land located in the central Oregon coastal zone. It was believed that certain sections of the central Oregon coastal zone would be more likely to experience changes in land ownership than would others. With this in mind, attempts were made to locate precisely those land parcels that experienced change in ownership, with the aim of determining the location and characteristics of the most dynamic sections of the study area with regard to ownership change.

The purpose of the second objective was to provide information on the degree to which land use change has occurred on land parcels in the

central Oregon coastal zone, both for parcels that have changed ownership and those that have remained in a single ownership throughout the 1967-1973 period. To meet this objective, it was necessary to develop a land use classification system that included all major land types in the study area and yet was applicable to the available sources of information. This system is presented in a later section of this report.

The third objective deals with relationships between changes in land ownership and changes in parcel size and value. It was suspected that there might be size differences between parcels that changed ownership and those that did not. Were large parcels more likely to be purchased than small parcels? Also of concern was the matter of the assessed value of land parcels that entered the land market during the stated time period. Were land parcels that were purchased those of higher value than those experiencing no ownership change? Did values of land parcels appreciate substantially upon change in ownership? These are questions that were addressed initially to satisfy the third objective.

It is the expectation of the research team that information gained in meeting the objectives stated above will be of value in evaluating recent changes involving the land resource in the central Oregon coastal zone. This information should prove of value to local, regional, and state land management and land planning groups, and to organizations and individuals interested in the Oregon coastal zone.

TIME PERIOD COVERED

To meet these objectives, it was necessary to examine contemporary conditions in the study area. The year nearest the time of inauguration of the study was 1973; hence land use information was compiled for that calendar year, with a field check made in the first half of 1974 to verify 1973 data. Data on ownership, parcel size and valuations, however, were compiled for the tax year extending from January 1, 1973 to December 31, 1973. Data applying to the end of the tax year, then, apply as well to 1973, the year for which land use data were obtained. Thus, the upper or most recent end of the time period considered in this study essentially was 1973.

Selection of the beginning year of the time period used in this study was dictated by two factors: (1) the need to deal with the recent past so that findings and conclusions could be viewed as being contemporary,

and (2) the need to adjust to dates of available data sources. Based upon these two factors, the beginning point of the time period for this study was the tax year 1967. This was the year for which ownership, parcel size and parcel value data were available in a form suitable to computer processing. Land use data were available from air photos for the years 1967 and 1968, which coincide with the dates for which other data could be obtained.

Taking 1967 as the beginning year and 1973 as the terminal year, there is a six year period over which change in the variables is experienced. This was considered an adequate time period over which to assess temporal change of land ownership and land use in the central Oregon coastal zone.

TYPES OF DATA INPUTS

Completion of this project necessitated obtaining land ownership records for land parcels in the study area for the years 1967 and 1973, as well as data on land values for parcels in the same years. Further, cadastral maps were needed to determine the geographic locations of land parcels. Also, information on land use had to be obtained for the same time period.

Once data were in hand, basic inventories could be made of each of the variables dealing with the land resource of the study area. After completion of the basic inventories, relationships between variable elements could be made. These are presented at appropriate points in this report.

DATA SOURCES

Tax offices in the county courthouses of Lincoln and Tillamook counties were the logical places to obtain data on land ownership during the period 1967-1973. Sales records, deed records and assessment records were examined in both courthouses at the beginning of this study. However, both data sources proved to be unacceptable because (1) there was too great a volume of records to copy, (2) needed records were not systematized or well organized, (3) there was uncertainty as to the specific records to be copied, and (4) normal operations in the tax offices were not geared to long-term accommodation of research assistants.

Some counties in Oregon have in recent years put their tax records on computer tapes; Lincoln County was one of these, although Tillamook County has retained its rather unwieldy system of card files. Further, the Property Tax Division, Department of Revenue,

State of Oregon has used a computerized county tax record system for annual preparation of (Tax) Ratio Studies; these computer tapes were made available for this study at cost of duplication. It was decided to utilize these computer tapes for provision of basic data needed. The computer tapes used to store tax records were, however, incompatible with the Oregon State University computer. It was necessary to transfer data from the original tapes to new, compatible tapes. This was accomplished at the computer facility at the University of Oregon. Numerous meetings and contacts with personnel of the Department of Revenue were necessary to obtain the basic tapes and have them duplicated, but the task was finally accomplished and the essential data were obtained in a usable form for Lincoln County.

The data provided for the years 1967 and 1973 included (1) location of the ownership parcel, (2) name and address of the parcel owner, (3) size of the land parcel in acres or portion thereof, and (4) assessed value of the land, timber and improvements, if any. These data were available for all land parcels in Lincoln and Tillamook counties, for all land parcels in the study area as discussed in sections to follow, and for land parcels included in the sample utilized in this study. Data on computer printouts of tax records for 1967 and 1973 were not always in a form suitable for analysis, however, and checks had to be made in tax offices in the respective courthouses to clarify certain points, such as verification of parcel sizes.

In addition to data dealing with land ownership, land values and parcel size, information was also needed on land use of parcels included in the study in 1967 and 1973. Land use data were provided, in part, by aerial photographs made available by the Agricultural Stabilization and Conservation Service offices in Tillamook and Newport and the tax assessor's office in Tillamook. These photographs were supplemented by photos of larger scale obtained from the State Highway Department and taken in 1968 and 1973. The Highway Department photos provided coverage at a scale of 1:1200 for the 1968 photos and a scale of 1:2400 for the 1973 photos. These photos, though of considerable clarity and high resolution, had limited utility since they followed the coastline of the two counties and cover only the extreme coastal margin up to 0.45 miles inland on the 1968 photos and up to 0.90 miles inland on the 1973 photos.

To supplement land use coverage from air photos, a field check was made of all land

parcels in the study area that were included in the sample utilized. This field check, conducted in the summer of 1974, involved an on-site determination of current land use to verify information gained from the 1973 air photos, or to determine land uses that were not readily discernible from air photos. This on-site check of land use of sample parcels included determination, through physical evidence and from personal interviews, of land use on sample parcels in 1968. Again this was supported by evidence gained from air photo interpretation. In this manner, then, land use information was obtained by (1) detailed interpretation of available air photos for the years 1968 and 1973, and (2) from on-site field checks of land parcels included in the sample.

study area

In general, this is a study of a portion of the central Oregon coastal zone, yet precise definitions or delimitations of the coastal zone are lacking. The research team dealt with the matter of definition of the area that might be generally accepted as the "coastal zone" but was left generally frustrated.

LIMITS OF THE STUDY AREA

It was considered that the coastal zone consisted of a littoral adjacent to offshore waters, although one might include portions of these offshore waters within the coastal zone. Even if one accepts the premise that the seaward extent of the coastal zone is coincident with the edge of the land mass, questions still arise regarding the precise boundary. It could be the line established by mean sea level, by mean high tide or by maximum high tide. For purposes at hand, the research team realized their concern was with parcels of land held in the private sector and that publically owned lands were excluded from consideration. Therefore, wet or dry beaches in the public sector and administered by public agencies were not included within the scope of this study. The seaward extent of the coastal zone, then, was established by the seaward extent of cadastral units in the private sector as shown on official assessor's plat maps.

This did not resolve questions in every case, however, for examples were found of platted areas that now exist beneath the ocean surf at some distance offshore. Such cases have not been explained in the course of this research and remain a puzzling anomaly, since most platted areas are clearly parts of the present land mass. Two possible explanations come to mind, however: (1) errors existed in the original survey and platting, or (2) landward erosion and subsequent submersion of dry and platted land parcels took place.

Other study area boundaries that had to be established included the northern and southern ones. At the beginning of discussions of this project, it was considered that a portion of the central Oregon coastal zone

would be the study area since (1) it would provide maximum access to field investigators, (2) there would be a nearly complete mix of land uses, and (3) there would be considerable variation in parcel size. With these points in mind, it was decided that all or parts of Lincoln and Tillamook counties should be the study area. To include all of the coastal margin of these two counties would, however, involve more land parcels than could be considered within the scope of this study and would result in a considerable amount of redundancy. It was decided, therefore, to limit the study area to the zone between the northern corporate limit of Newport on the south and the northern end of Cape Meares on the western margin of Tillamook County on the north (Fig. 1). Further, it was decided to exclude all cities that were incorporated in the initial year of the time period of the study (1967). This meant that Lincoln City and Depoe Bay were excluded from the study. The north-south linear extent of the study area was thus approximately 70 miles (112 km).

The remaining boundary of the study area is the eastern margin. Some suggest the inner margin of the coastal zone is the drainage divide coincident with the crest of the Coast Range. Others suggest that it should be based upon the landward extent of coastal vegetation types. Yet others suggest a perceptual boundary, such as the landward extent of the odor of sea air or the noise of the ocean surf. One party, believing the coastal zone to be restricted to the area under the influence of oceanside outdoor recreation, stated that the landward extent of the coastal zone is established by the "barefoot distance" from the beaches. None of these delimitations was acceptable to the research team, however, since the concern of the study was the interface between land and sea where there would likely be a greater number of changes of land ownership and a greater number of changes in land use.

The team was guided by the notion that the dynamics of the land market would be manifested in response to two factors: access to the shoreline and access to major highways traversing the coastal margin. With these points in mind, it was decided to let the inner margin of the coastal zone extend inland to a distance that would include one section east of the highway paralleling the coastline. In the Lincoln County section and extending northward into Tillamook County to the vicinity of Pacific City, this highway was U.S. 101. From the vicinity of Pacific City, the county road to Cape Meares was utilized. The east-west extent of the study area, then, varied from about 1 mile to 5

miles (1.5 to 8 km).

CHARACTERISTICS OF THE STUDY AREA

Like most of the Oregon coastal zone, the study area is comprised basically of seaward projections of the Coast Range, with numerous bays and coves occupying the interstices between them (Fig. 2). The projections of the Coast Range extend into the ocean as headlands exposed to the erosive forces of the surf zone. Some of the better known of these headlands include Yaquina Head, Cape Foulweather, Cascade Head, Cape Kiwanda, Cape Lookout and Cape Meares. In a number of cases remnants of these headlands have been detached, creating isolated clusters of rocks; most are exposed only at low tide, although some outlying rock portions or stacks remain exposed at all times. From constant exposure to wave action, there is development of such erosional coastal features as sea arches, sea caves, wave-cut notches at the base of cliffs and abrasion platforms outward from the sea cliffs.

While the projecting headlands and their associated features provide much of the spectacular shoreline scenery of the coastal zone, the sheltered beaches provide many sites for more active recreation pursuits in the area. There are several large and many smaller bayhead beaches, longshore beaches and spits that are noteworthy in the study area. These beaches are all in the public sector, although access to a number of them may be in private ownership. Agate Beach, Beverly Beach, Moolack Beach, Lincoln Beach, Glendon Beach, Siletz Spit, Salmon River Estuary, Nestucca Bay Estuary, the Sandlake area and Netarts Spit are some of the better known beach areas. Erosion by the sea, a constant occurrence, is a problem on some of these beaches, as it is along the headlands. It is particularly a problem on Siletz Spit since it has become quite intensely developed with vacation and year-round homes in the Salishan project.

Numerous streams originate in the Coast Range and flow through the study area to the Pacific; the largest are the Siletz, Salmon and Nestucca Rivers. Elevations in the study area range from sea level on the coast and in the estuaries upward to over 1000 feet (300 m). The headlands rise abruptly from the sea to elevations of 500 feet (150 m) or more before slopes descend into adjacent stream valleys. With such a range of elevations and a relatively dense stream network, slopes are steep for the most part, with only small pockets of flatter land along some of the longshore beaches and in the river estuaries.

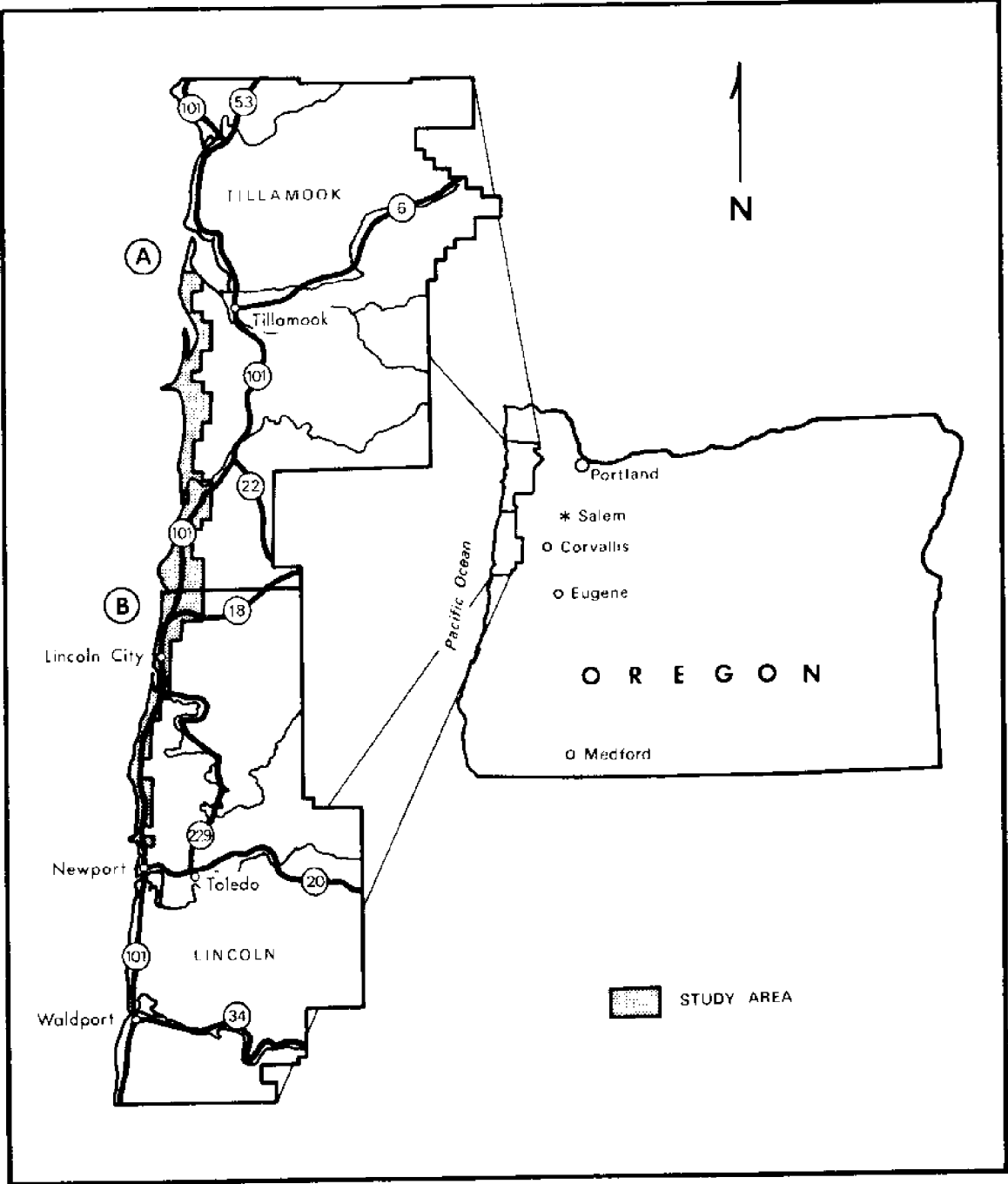


Fig. 1. Study area: relative location.

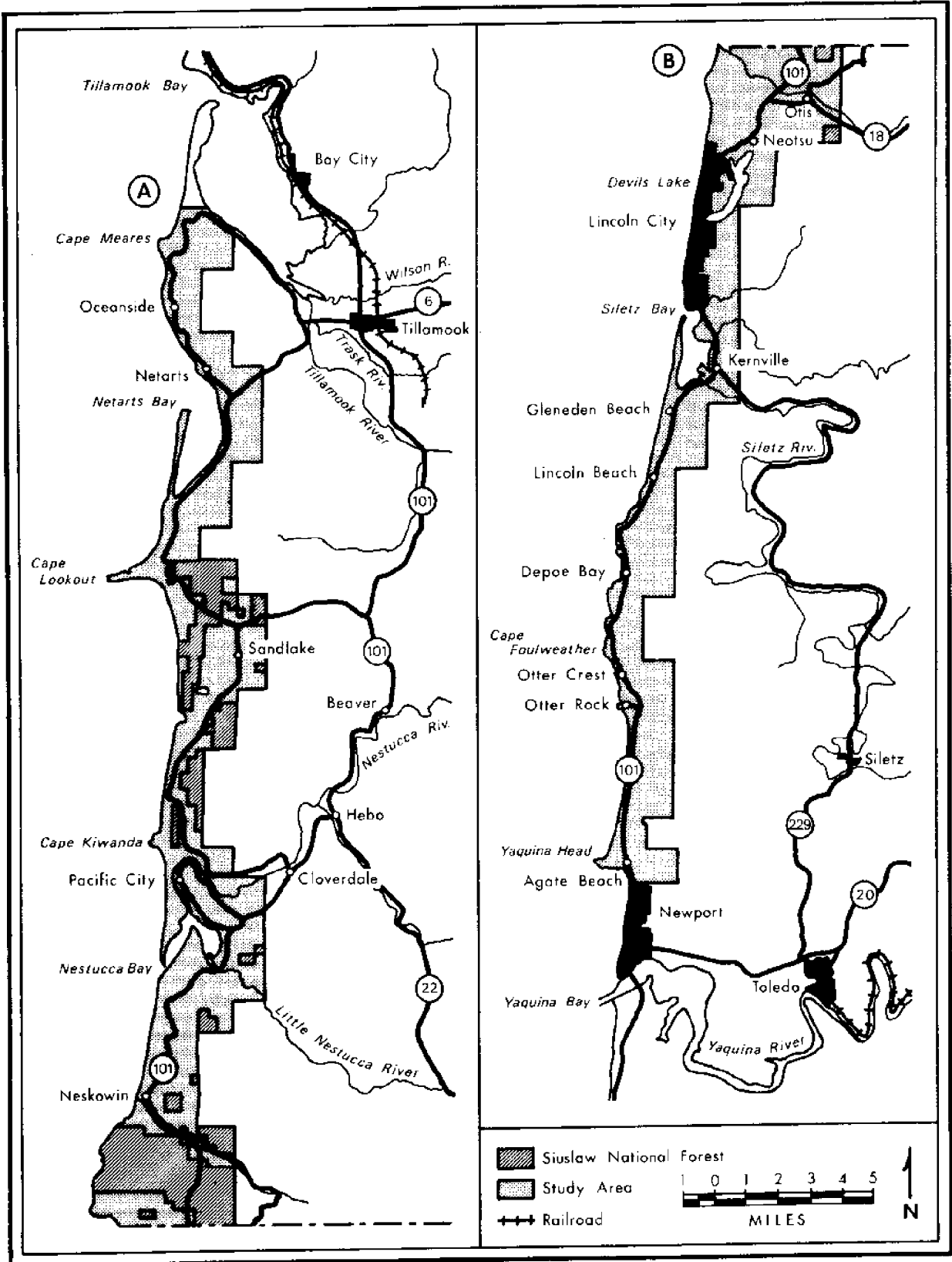


Fig. 2. Generalized study area.

The vegetative cover in the study area is largely one of coniferous trees, with some smaller areas of brushland and dunes. Much of the forest area included in the study area is contained within sections of the Siuslaw National Forest which extends further to the east than the bounds of the study area.

The climate of the study area reflects its proximity to the sea, with mildness in temperatures and abundance of precipitation the prevailing characteristics. Warmest month temperatures (July) average about 58° F. (15° C), while coldest month temperatures (January) average about 40° F. (5° C). Thus there is an annual monthly range of about 18° to 20° F. (7° C.). Average annual precipitation in the study area is in excess of 80 inches (200 cm), with somewhat less in sheltered valleys and considerably more in exposed sections. Strong winds are common throughout most of the year, especially in winter when many gusts in excess of 100 mph (160 km/hr) have been recorded. Advection fog also is common in all seasons of the year, with over 40 days per year having dense fog and many more having less dense fog, especially along the beaches and projecting headlands. The average length of the frost-free period is in excess of 270 days, depending upon specific locations in the study area.

In this area, with a surface configuration unfavorable to settlement and without an especially significant resource base other than the open sea and standing timber, human settlement has been modest to sparse and has been localized in clusters occupying the most favorable sites. Settlement has followed major transportation routes for the most part, with these in turn oriented to major stream valleys and the coastline.

There is no railroad or scheduled air service in the study area, although a number of major highways provide the accessibility vital to the residents. U.S. Highway 101 parallels the coast in most of the study area, while U.S. 20 connects the study area with the mid-Willamette Valley at Corvallis. Oregon Highways 18 and 22 connect the study area with McMinnville and Salem respectively and Oregon Highway 6 connects it with the Tualatin Valley and Portland. The bulk of the population is located along these routes in such agglomerations as Depoe Bay, Glenden Beach, Neskowin, Cloverdale, Pacific City and Netarts, as well as the larger incorporated cities of Newport and Lincoln City.

Population change in Lincoln and Tillamook counties, in which the study area is located, has been one of contrast. The population of Lincoln County has steadily increased in the period 1960-1974, while that of Tillamook County decreased from 1960-1970 and is reported to have increased in the period 1970-1974 (Table 1.).

Within the study area there are approximately 10,000 residents. With regard to population trends in county subdivisions of Lincoln County in the 1960-1970 period, the Agate Beach Division experienced a decline, while the Depoe Bay and Delake Divisions showed increases. In Tillamook County in the same period, the Neskowin Subdivision showed an increase and the Beaver and Tillamook Divisions, a decrease in population. Again, incorporated cities have not been considered in this summary of population trends in county subdivisions. Of cities adjacent to the study area, the City of Newport had a decline in population of 2.9 percent in the 1960-1970 period, followed by a reported in-

Table 1. Population and Rates of Change: Lincoln and Tillamook Counties, 1960 - 1974*

County & State	Number of Inhabitants			Absolute Change		Rate of Change	
	1960	1970	1974	1960-1970	1970-1974	1960-1970	1970-1974
Lincoln County	24,635	25,755	27,300	1,120	1,545	4.55	6.00
Tillamook County	18,955	17,930	18,450	-1,025	520	-5.41	2.90
Oregon	1,768,687	2,091,385	2,266,000	322,698	174,615	18.25	8.35

*Data for 1960 and 1970 from the Bureau of Census; 1970 census of Population; Number of Inhabitants: Oregon. Data for 1974 from the Center for Population Research and Census; Portland State University.

crease in 1970-1974 of 12.6 percent. The City of Tillamook showed a decline of 6.5 percent in 1960-1970 and a reported subsequent increase during 1970-1974 of 5.1 percent.

In summary, population in the study area is largely coincident with major highway corridors and displays a spatial pattern of small nucleations along major highways and parallel to the shoreline. Population change has been erratic, with most rural areas undergoing population decline in recent years and urban centers in the area experiencing population increases after earlier population decline. It should be mentioned that statements made above refer to resident population and do not take into account the sizeable summer transient population comprised of tourists passing through the area and vacationers occupying owned, leased or rented dwellings for longer duration stays in the coastal zone.

land parcels in the study area

After omission of publicly owned land parcels in the study area and parcels included within corporate cities, there are an estimated 12,789 privately owned parcels remaining. The distinction between privately owned and publicly owned is sometimes difficult to make, however, since some parcels on the tax rolls are used in a public manner. In such cases, if parcels appeared on the tax rolls with an assessed value, they were considered as being in the private sector. Of the estimated total number of land parcels in the study area, 7,721 are in Lincoln County and 5,068 are in Tillamook County.

STRATIFICATION OF LAND PARCELS IN THE STUDY AREA

It was recognized that the number of land parcels in the study area was such that collection of data for all land parcels would take more time than available for the study, and that consideration of all parcels in the study area would result in considerable redundancy in findings and results. It was decided that sampling procedures were satisfactory for purposes of the study if they were selected carefully and applied systematically. Two different but related types of sampling were employed, one of which involved stratification of the population of land parcels.

The purpose of stratification was to insure maximum coverage of diverse land use types in the study zone (Fig. 3). Subsequent analysis of data by stratum indicated that this procedure did, in fact, result in significant differences among the strata. This provides additional verification of the sample validity.

Copies of cadastral maps were obtained for the entire study area. These were quarter-section maps at a scale of 1:4800, plus many submaps at a scale of 1:1200. Each of the quarter-section plat maps was then placed into one of four groupings depending upon the general land use type dominant in the quarter-section. In turn, each of these groupings comprised a stratum from which systematic random samples were taken. These four strata were as follows:

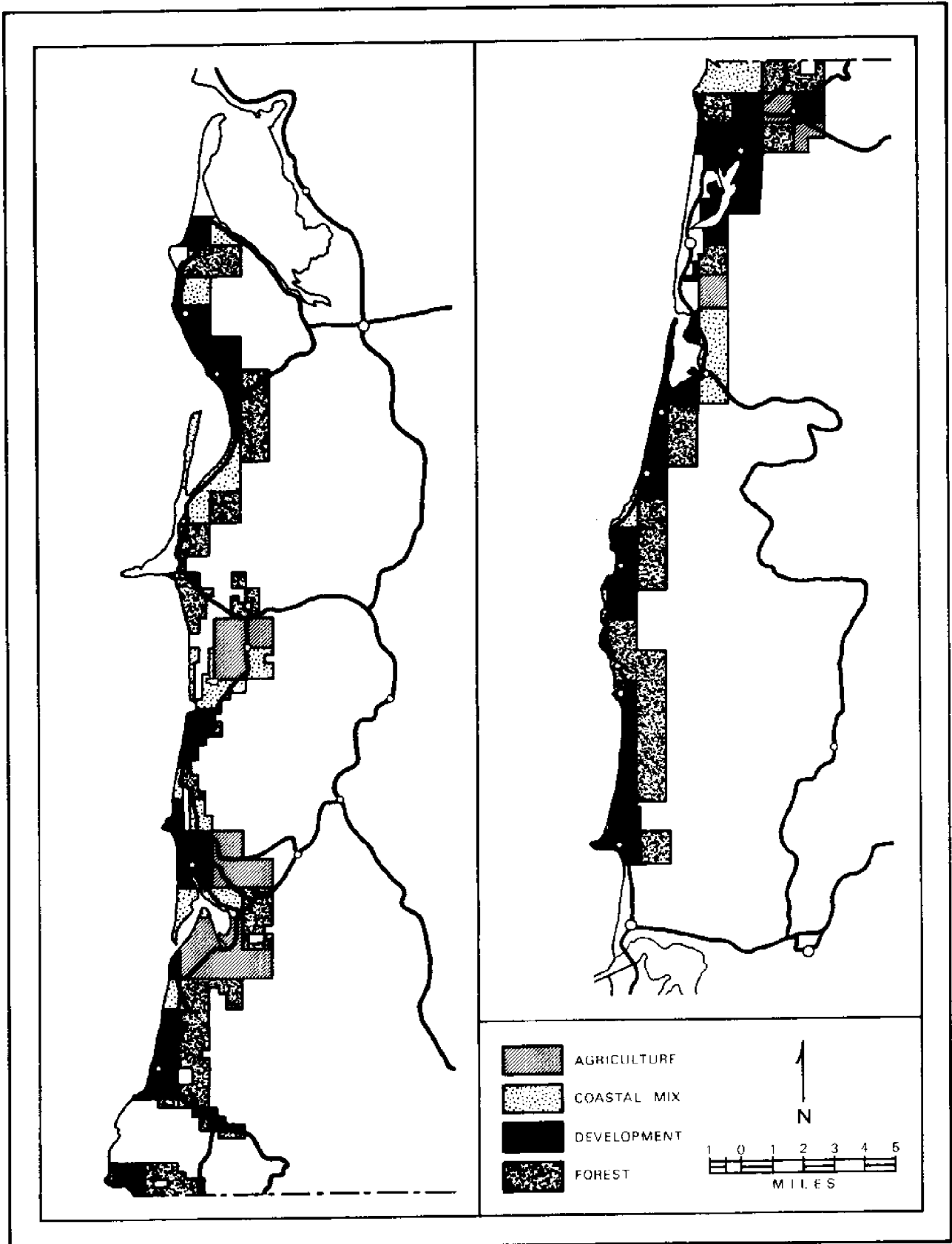


Fig. 3. Study area: land class strata.

Stratum I: Development

Most of the mapped area is devoted to some type of development of a non-agricultural nature and usually involves structures of some type.

Stratum II: Agriculture

Extensive agricultural land use was dominant in the mapped area, with such land generally devoid of commercial grade timber, as indicated by air photos.

Stratum III: Coastal Mix

Land uses were intermixed in such areas, with no one land use dominant. Included were areas of woodland, but not of commercial quality, plus areas of grasses and brushland and occasional structures.

Stratum IV: Forest

The growth of commercial grade trees was the dominant land use in such areas, or the areas involved included land parcels that were taxed as forest land.

The number of land parcels in each of the strata mentioned above and in the entire study area is shown in Table 2.

RANDOM SAMPLE OF LAND PARCELS IN THE STUDY AREA

From each land use stratum, a random sample of land parcels was drawn. This step was undertaken to insure representation of all land uses in the array of land parcels for which detailed data were to be obtained and analyzed (Fig. 4).

Development stratum

The procedure followed in sampling development strata was essentially the same in each county. Lincoln County data, since they were available on computer tapes, were, however, more accessible than those for Tillamook County. In each instance the sampling procedure consisted of the following steps:

1. assign a number to each parcel.
2. determine the total number of parcels to be included in the sample.
3. select sample parcels (n) by means of a table of random numbers.
4. using each of the random parcels as a starting point, clusters of ten parcels were drawn, taking every fifth parcel following the starting parcel. Standardized procedures were established for instances in which an insufficient number of parcels followed the starting point in the data file to permit a cluster of ten.

Table 2. Estimated Number of Land Parcels: Total and by Land Use Stratum; Study Area, Tillamook County Subarea, and Lincoln County Subarea.

Land use stratum	Estimated Number of Parcels		
	Tillamook Co. subarea	Lincoln Co. subarea	Study area
I. Development	4,636	7,103	11,739
II. Agriculture	196	126	322
III. Coastal mix	136	391	527
IV. Forest	100	101	201
Totals:	5,068	7,721	12,789

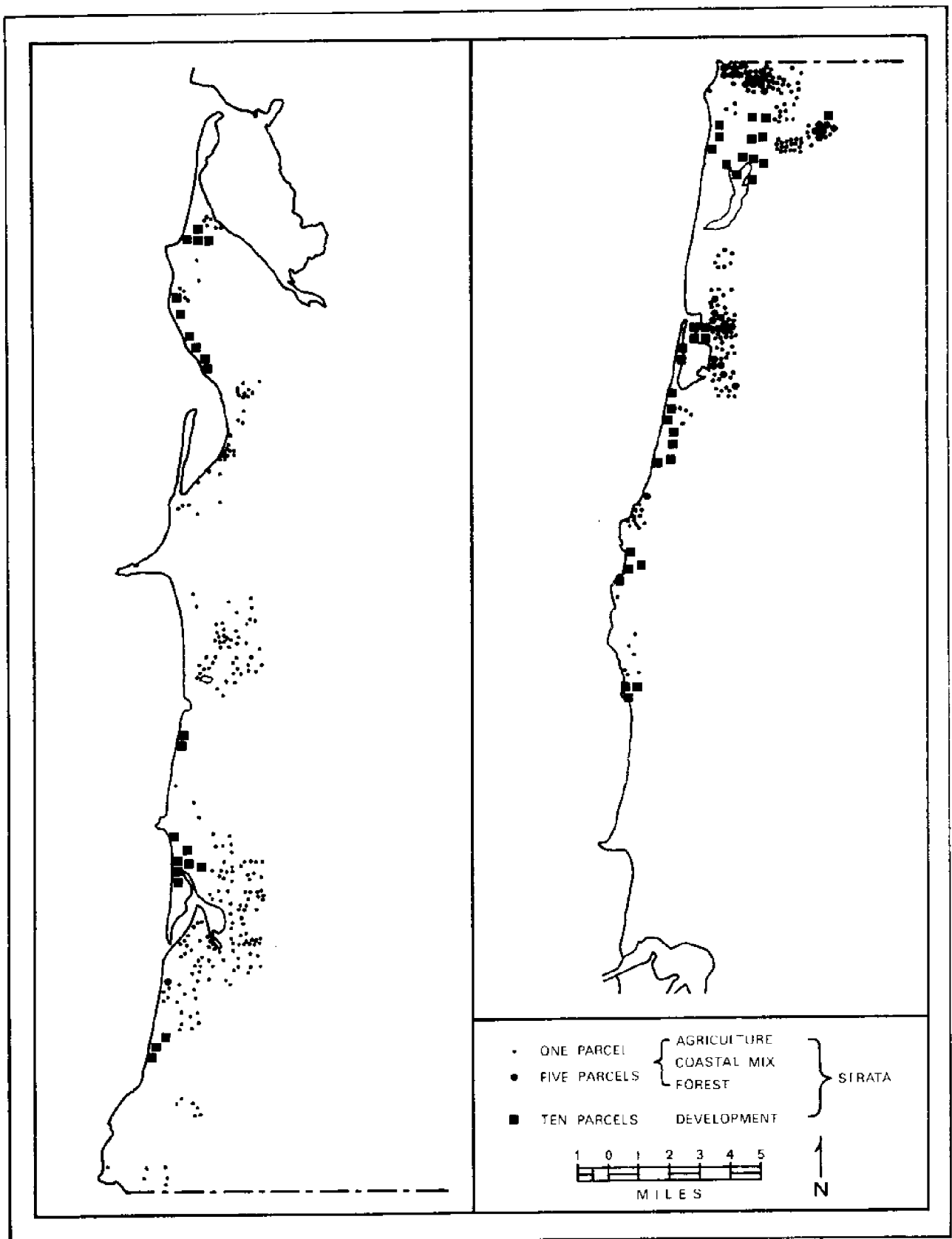


Fig. 4. Study area: sample parcels.

Coastal mix, agriculture, and forest strata

Parcels in the coastal mix and agriculture strata were sampled in Tillamook County by drawing every other parcel. Parcels in the forest stratum were sampled by drawing two parcels, skipping one, then repeating the process. In each case the first parcel was a random selection.

Lincoln County parcels were sampled by the same procedure, except that in all three strata alternate parcels were drawn.

The sample size consisted of 453 parcels in Tillamook County and 643 in Lincoln County, a total of 1,096 in the study area. Given the total number of parcels in the study area, the sample was 8.9 percent of the Tillamook County subarea, 8.3 percent of the Lincoln County subarea and 8.6 percent of the total study area. The number of sample parcels included in each land use stratum and the percentage of land parcels in each stratum included in the sample are presented in Table 3.

been sampled equally (only 4.7 percent of development parcels were sampled, compared with 67.0 percent of the coastal mix parcels in Tillamook County). Accordingly, to reconstruct an accurate representation of the study area, each strata was appropriately weighted prior to analysis.

The size of the sample drawn from different land type strata was not the same (see Table 3). The basic reason for these differences was to insure fair representation in selection of land parcels in each stratum. For example, consider a population of 100 which is made up of four different types of phenomena: 5 of type A, 10 of type B, 15 of type C, and 70 of type D. In a random sample of 10 from the population of 100, there is significant probability that none of types A, B or C would be selected and a considerable possibility that any items selected would not provide a sufficiently large sample from which to derive information. More specifically, if one agricultural land parcel was selected from the sample of ten, all data pertaining to that parcel would be taken as

Table 3. Number of Land Parcels: Estimated Totals and Number in Sample by Land Class Stratum.

Land class	Number of parcels in stratum			Number of parcels included in the sample			Percent of parcels included in the sample		
	T*	L**	SA***	T	L	SA	T	L	SA
I. Development	4,636	7,103	11,739	220	334	554	4.7	4.7	4.7
II. Agriculture	196	126	322	98	63	161	50.0	50.0	50.0
III. Coastal mix	136	391	527	68	195	263	50.0	50.0	50.0
IV. Forest	100	101	201	67	51	118	67.0	50.0	58.7
Totals:	5,068	7,721	12,789	453	643	1,096	8.9	8.3	8.6
* Tillamook County subarea of study area.									
** Lincoln County subarea of study area.									
*** Total study area.									

WEIGHTING OF SAMPLE

This sampling procedure provided that all strata would be included in the sample and that a sufficient number of parcels would be drawn from each stratum to permit meaningful analysis, extrapolation and conclusions. However, not all segments of the total collection of parcels in the study area had

being representative of all agricultural land parcels in the study area. This procedure could easily be misleading and it was decided to take samples from each land type stratum so that consistently reliable information would be obtained.

This procedure in effect, weighted the sample drawn from each land type stratum.

It was necessary at a later point to apply the same system of weights so that results would be directly comparable among strata and would represent the entire population of land parcels in the study area. For example, 5 percent of the sample parcels in stratum I (Development) might have undergone a change in use from (a) agriculture, with residence to (b) idle. In the same period, 5 percent of the sample parcels in stratum II (Agriculture) might have experienced the same change in use. These findings are not comparable, however, since the numbers of parcels to which the 5 percent applies is different for different strata. Only by application of the weights referred to earlier can explicit comparisons be made.

land use and land use change

The land use classification system utilized in this study is presented in Table 4. Operational definitions for placing parcels in a land use class were developed after inspection of air photographic coverage of the study area and an exploratory field check in Tillamook County. The criteria for classification were chosen to produce the least amount of error in interpretation between the air photo interpreters and the field team. Parcels were rechecked when inconsistencies appeared between the classification from air photographs and the field check.

CRITERIA FOR CLASSIFICATION

Single family residential parcels include both vacation homes and permanent residences. Most of these parcels are small, consisting of less than one acre; however, a few 1 to 20 acre parcels were placed in this category because they were rural residential rather than agricultural units.

Multifamily residential parcels included duplexes, apartment buildings, and clusters of houses and/or trailers located on a single parcel. Some of these clusters appeared to reflect a sharing of the parcel by kinsmen or close friends with each group having its own housing structure.

Some of the commercial properties also were residential. In several cases, one or two rooms in a dwelling had been converted into space for a small store. These commercial establishments were recognized in the course of the field check by signs inviting public entry to the premises for the purpose of buying a good or service. The length of time that such a commercial establishment had been present was ascertained in interviews.

Industrial properties were marked by the presence of primary or secondary industrial facilities. In some cases, production and selling of the product occurred on the same parcel. These parcels were categorized as industrial rather than commercial. The only exceptions to this rule were the cases of artists and craftsmen, whose establishments were categorized as commercial in spite of

Table 4. Land Use Classification Employed in Study Area.

Land use class	Operational definition of class
A. Single Family Residential	The parcel serves as the site for a house or a mobile home. No agricultural activity other than a vegetable and/or flower garden near the residence is evident.
B. Multifamily Residential	The parcel serves as a site for a duplex, apartment complex, condominium, or contains more than one house and/or trailer.
C. Commercial	A store, filling station, cafe, tourist accommodation, privately owned campground or tourist attraction is located on the site. This category includes commercial establishments which are combined with a residence.
D. Industrial	A factory, quarry, lumber mill, warehouse, shop, or other similar facility is located on the parcel.
E. Idle or Vacant	No functional use is evident. If wooded, the parcel has no recorded taxable timber value and is not owned by a lumber company. If cleared, there is no evidence of intensive grazing or other agricultural activity. Lots in subdivided land (usually less than one acre in size) are considered vacant if they contain no residential structure or mobile home. However, these vacant lots may be used in several ways as discussed in the body of this report.
F. Agriculture with Residence	The parcel contains a farmstead including a residence and usually outbuildings. At least part of the parcel is in agricultural use, usually pasture.
G. Agriculture without Residence	A substantial portion of the parcel is in agricultural use, generally pasture. There may be barns and other outbuildings, but no residence.
H. Forest Land	The parcel has a taxable timber value and/or is owned by a lumber or paper company. Functional farm parcels with some timber value are found in one of the two agricultural categories.
I. Recreational	A golf course, tennis court, organizational camp, or similar facility is located on the parcel. Vacation homes and lots without structures sometimes used for camping and picnicking are placed in categories A and E above.
J. Public Service Facilities	Parcels containing schools, grange halls, churches, post offices and similar facilities.

the fact that the people involved created much of what they had to sell.

Idle and vacant lands were characterized by apparent non-use as judged visually from air photo interpretation and the field check. However, the fact that the parcels did not appear to be used does not indicate

that they are not used in some way which leaves little visual impact on the landscape. In fact, the field check indicated that many of the small vacant lots were being used for a variety of purposes, but the kinds of uses were such that it would not be possible to ascertain whether this use constituted a change from the non-use recorded in 1967 air

photos. For this reason, vacant lots of an acre or less in subdivided areas were placed in this category if they did not contain a structure or permanently placed mobile home.

Included in the idle or vacant land use class were lots developed as campsites and picnic spots. In some cases, small travel trailers were there one day and gone the next during the field check, and parcels on which such transient vehicles appeared were classified as vacant even when a small pole indicated the presence of hook-up facilities.

In the more rural areas, it was not possible to ascertain in all cases whether a few beef cattle or horses were sometimes allowed to graze on the brush, brambles and second growth forest which marked these parcels. Nor was it possible to know whether the lands which--in the words of local people--"had just grown up," would someday be used to grow timber. Most of the land in the study zone is highly conducive to the growth of woody vegetation which means that outside the floodplains any neglected land will soon be given over to such vegetation. Stock may occasionally be grazed on such land for a long period after it is no longer maintained for grazing. It is difficult to say when agricultural usage ends if the process involves slowly decreasing intensity of use. Doubtful cases were classified as idle or vacant.

The predominate agricultural use throughout the study area was for grazing dairy cattle. Many of the pastures were improved and sometimes irrigated. When part of a parcel was not in intensive agricultural use, it was usually on steep slopes for which taxable timber value was sometimes listed. These dual-use parcels were classified as agricultural.

Most of the land in the study area is potential forest land. Woody vegetation replaces other vegetation with only a little neglect of pasture or croplands. Yet there is a difference between the lands which have "just grown up" and those which are reseeded and maintained as timber lands. The latter were easy to identify and almost invariably were parcels held by timber and paper companies. However, the marketable sized trees on small lots in a subdivision cannot be realistically counted as timber because most of the owners will probably pay considerable sums to have the trees cleared and cut for firewood. Therefore, the classification of forest land was restricted to those parcels not otherwise agricultural which either had a taxable

timber value or were in the ownership of lumber and paper companies. This classification does not reflect the amount of land covered in 1967 or in 1973 by a canopy of woody vegetation, but only those parcels deliberately being used for timber production.

The definition of recreational land was also rigidly limited. Public lands were excluded from the study and no attempt was made to distinguish vacation homes from permanent residences. Facilities for tourists ranging from motels to fishing docks and shell shops have been placed in the commercial category. By placing only readily distinguishable recreational facilities in the category of recreational land use, the data in this study are likely to understate the importance of recreational use of land in the central Oregon coastal zone.

Public service facilities included air strips, post offices, schools, libraries and other small parcels intensively used, although publicly owned. No change was observed in Lincoln County, but in Tillamook County the conversion of public service facilities to other uses was notable, although the number of sampled parcels was small.

LAND USE AND CHANGE

The structure of land use in 1967 and 1973 in the study area and in the Lincoln and Tillamook County portions of the study area is presented in Table 5. A more detailed presentation of land use is given in the matrices presented as Tables 6, 7, and 8. These matrices also present land use change over the time period 1967-1973. As an example of interpretation of these matrices, row A in the matrix for the study area (single family residential) is considered. In 1967 there were an estimated 3593 parcels used for this purpose. Of these, 3387 remained in single family use in 1973, 23 were used for multifamily residences, 44 were converted to commercial purposes and 139 were idle or vacant parcels in the later year. It can also be seen that there were an estimated 4739 parcels used for single family residences in 1973; this number included 3387 used for this purpose in 1967, 1213 that had earlier been idle or vacant parcels, 10 that were used for agriculture with residence and 129 that formerly had been used for agriculture without residence. This interpretation can be made of each column and each row in the respective matrices.

Some land parcels in each of the land use classes experienced use changes in the period 1967-1973; some became more numerous while others became less numerous (Table 9). In

Table 5. Land Use, by Parcel: 1967 and 1973*
 Lincoln County Subarea, Tillamook County Subarea and Study Area.

Land use class	Lincoln County Subarea		Tillamook County Subarea		Study Area	
	1967	1973	1967	1973	1967	1973
A. Single family residential	2250	2866	1332	1857	3593	4739
B. Multifamily residential	25	50	2	44	27	94
C. Commercial	122	209	45	130	168	340
D. Industrial	70	89	3	3	72	91
E. Idle or vacant	4222	4287	3323	2724	7579	7045
F. Agriculture with residence	85	35	80	71	174	112
G. Agriculture without residence	841	71	113	89	965	168
H. Forest land	57	40	99	100	167	152
I. Recreational	27	50	22	24	50	75
J. Public service facilities	21	23	47	24	69	48

*Weighted data.
 Totals may not agree due to weighting and rounding.

Table 6. All Land Parcels*
Land Use Change - Study Area 1967-1973.

Unbracketed numbers are numbers of parcels
Percentages of row totals in parentheses

1973 use											
1967 use		A. Single Family Residential n = 4739	B. Multifamily Residential n = 94	C. Commercial n = 340	D. Industrial n = 91	E. Idle or Vacant n = 7045	F. Agriculture with Residence n = 112	G. Agriculture without Residence n = 168	H. Forest Land n = 152	I. Recreational n = 75	J. Public Service Facilities n = 48
A. Single Family Residential n = 3593		3387 (94.26)	23 (.64)	44 (1.23)	--	139 (3.87)	--	--	--	--	--
B. Multifamily Residential n = 27		--	27 (100.0)	--	--	--	--	--	--	--	--
C. Commercial n = 168		--	2 (1.32)	164 (97.36)	--	2 (1.32)	--	--	--	--	--
D. Industrial n = 72		--	--	--	70 (97.22)	2 (2.78)	--	--	--	--	--
E. Idle or Vacant n = 7579		1213 (16.00)	42 (.55)	65 (.86)	--	6232 (82.22)	--	2 (.03)	2 (.03)	21 (.28)	2 (.03)
F. Agriculture with Residence n = 174		10 (5.75)	--	23 (13.22)	--	25 (14.37)	108 (62.06)	2 (1.15)	4 (2.30)	2 (1.15)	--
G. Agriculture without Residence n = 965		129 (13.37)	--	23 (2.38)	--	643 (66.63)	4 (.41)	162 (16.79)	2 (.21)	2 (.21)	--
H. Forest Land n = 167		--	--	--	21 (12.57)	--	--	2 (1.20)	144 (86.23)	--	--
I. Recreational n = 50		--	--	--	--	--	--	--	--	50 (100.0)	--
J. Public Service Facilities n = 69		--	--	21 (30.43)	--	2 (2.90)	--	--	--	--	46 (66.67)

*Weighted data

Table 7. All Land Parcels*
Land Use Change - Lincoln County Subarea 1967-1973.

Unbracketed numbers are numbers of parcels
Percentages of row totals in parentheses

1973 use / 1967 use	A. Single Family Residential n = 2866	B. Multifamily Residential n = 50	C. Commercial n = 209	D. Industrial n = 89	E. Idle or Vacant n = 4287	F. Agriculture with Residence n = 35	G. Agriculture without Residence n = 71	H. Forest Land n = 40	I. Recreational n = 50	J. Public Service Facilities n = 23
A. Single Family Residential n = 2250	2242 (99.64)	2 (00.09)	--	--	6 (00.27)	--	--	--	--	--
B. Multifamily Residential n = 25	--	25 (100.00)	--	--	--	--	--	--	--	--
C. Commercial n = 122	--	2 (1.64)	118 (96.72)	--	2 (1.64)	--	--	--	--	--
D. Industrial n = 70	--	--	--	68 (97.14)	2 (2.86)	--	--	--	--	--
E. Idle or Vacant n = 4222	502 (11.89)	21 (00.50)	45 (1.07)	--	3627 (85.91)	--	2 (00.05)	2 (00.05)	21 (00.50)	2 (00.05)
F. Agriculture with Residence n = 85	2 (2.35)	--	23 (27.06)	--	25 (29.41)	31 (36.47)	--	2 (2.35)	2 (2.35)	--
G. Agriculture without Residence n = 841	120 (14.27)	--	23 (2.73)	--	625 (74.32)	4 (00.48)	69 (8.20)	--	--	--
H. Forest Land n = 57	--	--	--	21 (36.84)	--	--	--	36 (63.16)	--	--
I. Recreational n = 27	--	--	--	--	--	--	--	--	27 (100.00)	--
J. Public Service Facilities n = 21	--	--	--	--	--	--	--	--	--	21 (100.00)

*Weighted data

Table 8. All Land Parcels*
Land Use Change - Tillamook County Subarea 1967-1973.

Unbracketed numbers are numbers of parcels
Percentages of row totals in parentheses

1973 use /	1967 use	A. Single Family Residential n = 1857	B. Multifamily Residential n = 44	C. Commercial n = 130	D. Industrial n = 3	E. Idle or Vacant n = 2724	F. Agriculture with Residence n = 71	G. Agriculture without Residence n = 89	H. Forest Land n = 100	I. Recreational n = 24	J. Public Service Facilities n = 24
A. Single Family Residential n = 1332	1138 (85.44)	21 (1.58)	43 (3.23)	--	130 (9.76)	--	--	--	--	--	--
B. Multifamily Residential n = 2	--	2 (100.00)	--	--	--	--	--	--	--	--	--
C. Commercial n = 45	--	--	45 (100.00)	--	--	--	--	--	--	--	--
D. Industrial n = 3	--	--	--	3 (100.00)	--	--	--	--	--	--	--
E. Idle or Vacant n = 3323	704 (21.19)	21 (0.63)	21 (0.63)	--	2577 (77.55)	--	--	--	--	--	--
F. Agriculture with Residence n = 80	6 (7.50)	--	--	--	--	71 (88.75)	1 (1.25)	2 (2.50)	--	--	--
G. Agriculture without Residence n = 113	9 (7.96)	--	--	--	15 (13.27)	--	86 (76.11)	1 (0.88)	2 (1.77)	--	--
H. Forest Land n = 99	--	--	--	--	--	--	2 (2.02)	97 (97.98)	--	--	--
I. Recreational n = 22	--	--	--	--	--	--	--	--	22 (100.00)	--	--
J. Public Service Facilities n = 47	--	--	21 (44.68)	--	2 (4.26)	--	--	--	--	--	24 (51.06)

*Weighted data

Table 9. Change in Use: Estimated Number of Parcels and Percent of Parcels in Class*
1967-1973

Land use class	Absolute change (no. of parcels)			Percent change		
	Lincoln Co. Subarea	Tillamook Co. Subarea	Study Area	Lincoln Co. Subarea	Tillamook Co. Subarea	Study Area
A. Single family residential	616	525	1146	27.34	39.41	31.90
B. Multifamily residential	25	42	67	100.00**	2100.00**	248.15**
C. Commercial	87	85	172	71.31	188.89	102.38
D. Industrial	19	0	19	27.14	0.00	26.39
E. Idle or vacant	65	-599	-534	1.54	-18.03	-7.05
F. Agriculture with residence	-50	-9	-62	-58.82	-11.25	-35.63
G. Agriculture without residence	-770	-24	-797	-91.56	-21.24	-82.59
H. Forest land	-17	1	-15	-29.82	1.01	-8.98
I. Recreational	23	2	25	85.19	9.01	50.00
J. Public service facilities	2	-23	-21	9.52	-48.94	-30.43

*Weighted data
 **Exceptionally high value due to weighting of data.
 Totals may not agree due to weighting and rounding. Separate runs were made of three sets of data and each produced values that were rounded and weighted leading to minor discrepancies.

the study area, the largest percentage increases in number of land parcels were in the classes of multifamily residential and commercial. Somewhat smaller percentage increases occurred in single family residential, industrial and recreational classes.

There were significant absolute and relative declines in the number of idle or vacant parcels used for agriculture with or without residence, forest land and public service facilities. These might be considered expected general trends except for the decrease in public service facilities; logically, this usage would be expected to increase along with increases in residential, commercial and industrial parcel use.

A possible explanation for this decrease in public service facilities may be found in the field survey data. For example, a former elementary school in the Sand Lake community reflects a centralization of public service facilities. As transportation improves and rural hamlets become less viable, structures that once served the public are abandoned or given over to other uses. By the same token, increasing demand on more urbanized areas may result in building new structures to serve old needs.

The old library building in Pacific City is another case in which a former public service facility changed usage. Between 1967 and 1973 a new library had been built

and the old structure had been converted into an art shop.*

Multifamily housing showed the greatest percentage of increase, although the actual number of parcels involved was relatively small. The estimated number increased from 27 to 94 during the study period. The field survey indicated that the change from single family residential to multifamily residential occurred when one or more other housing units (including mobile homes) were placed on a property which had previously contained only one such unit. These new residences apparently reflected the addition of separate accommodations for an extended family and/or rental units. The change from commercial property to multifamily housing is based on one sample parcel which had been an operating motel in 1967, but has since been converted to rental units occupied by a more permanent clientele. The other multifamily units have been recently constructed on vacant land parcels. There is no indication that former family residences are being torn down or partitioned to provide for multifamily housing in the study area.

The next greatest percentage of increase is associated with commercial properties. New commercial establishments had been built on idle or agricultural lands. In addition, the field check indicated that rooms in well-located single family residences had been given over to commercial purposes. In all cases actually surveyed, the structure was still a residence for the family which maintained the commercial establishment. This was the case with many other properties classified as commercial, but that had been jointly residential and commercial since before 1967. There are probably cases in which a former residence was totally converted into a commercial establishment, but none were found in the sample.

The fifty percent increase in recreational land use is based on a small sample. All of the recreational parcels sampled which were in recreational use in 1967 were still in the same use in 1973. By that date two agricultural parcels and one vacant or idle parcel had been changed to recreational use. One of these lay in the developed stratum and therefore received a high weighted value.

* This sample parcel was located in a "development" zone and was weighted high, whereas the Sand Lake school was located in an agricultural zone and weighted relatively low. The small sample size requires caution in interpretation.

As indicated earlier in this report, many of the parcels classified as residential and idle or vacant were primarily used for recreation. An unknown number of the residential parcels were vacation homes and were occupied occasionally for recreational purposes rather than providing a family with a year-round residence. In addition, a substantial number of the small lots in subdivided areas were being used as family campsites, picnic areas and places to keep trailerable boats in season. These areas had no taxable improvement value and contained no permanent structures.

Some of the larger "idle" parcels also were being used occasionally for recreation. For example, acreage sold by a local resident was being used by a family from Arizona that vacations in Oregon once or twice a year. They camp out on the acreage which they intend to convert to a vacation/retirement homesite at some future time. Meanwhile the land in question was idle and untended for some forty-nine weeks of the year and in recreational use the remaining three weeks. Thus, there was difficulty in determining which of the apparently vacant land parcels were occasionally used for recreational purposes.

The thirty-two percent increase in single family residences seems small compared with the percentage increases in the categories previously discussed. However, it is important because it involves a significantly greater number of parcels. An estimated 1141 new residences were built, or in the case of mobile homes, placed, in the study area between 1967 and 1973. The estimated 23 parcels which have changed from single family to multifamily residences may largely reflect (as previously mentioned) the addition of residential structures on a single plot. Many of the conversions to commercial use do not exclude residential use, but merely reflect the opening of a business in a home.

The estimated 139 single family residences retired from this use to the idle or vacant category reflect several things. In some cases, the old structure had burned down and not been replaced. In others, it may have been moved to a new location. More often, it was an abandoned dwelling in various states of ruin. Whenever possible, the exact date of abandonment was obtained from local people. For other dwellings the amount of second growth vegetation was a clue in determining whether the old structure had been residential in 1967. It was evident in the field check that abandoned dwellings

are not unusual in the central Oregon coastal zone, especially in Tillamook County.

The indicated increase in industrial use of parcels in the study zone may be misleading. Only eight parcels in the sample were classified as industrial. One of the industrial establishments had gone out of operation between 1967 and 1973. One new industrial parcel was identified on land previously used for timber production. Because this parcel was located in a development zone, it was given a high weight. The field survey, which included an overview of total land use as well as identification of use on sample parcels, indicated less change in industrial land use than is evident in the statistics. There is plentiful evidence of defunct industries--from lumber mills to cheese factories--in the study area, and not much evidence of conversion to industrial land use.

The seven percent decrease in idle or vacant land in the study area seems surprisingly small given the amount of development. This low percentage of decrease, however, reflects much about the process of land use change in the area. As a general rule, lands in the central Oregon coastal zone seem to change from one kind of use into an idle or vacant status for a considerable period of time before the lands in question are clearly used for something else. For example, a marginal agricultural property may slowly change from intensive use to occasional use and finally non-use as the thick growth of woody vegetation makes the land unsuitable for pasture. Ultimately it might become timber land but, in the meantime, may be subdivided for residential purposes. Then it becomes not so much idle land as a series of vacant lots. These lots are sold to people who buy them with varied intentions. Many land parcels in the study zone seem to have remained vacant for one reason or another long after the subdivision took place. Thus, much of the land in the study zone now classified as idle or vacant was once agricultural land although the transition was made prior to 1967. In other cases, lands once used for intensive grazing, although perhaps technically subdivided, have become totally non-agricultural within the past few years as vacation homes and permanent residences appeared on some of the parcels. The 643 parcels estimated as agricultural in 1967, but vacant or idle in 1973, may largely reflect these processes.

CONTRASTS BETWEEN LINCOLN AND TILLAMOOK COUNTY SUBAREAS

Examining changes in the subareas of the

study zone indicate a considerable difference in the nature of land use change between Lincoln and Tillamook counties. Although there was a greater increase in the number of single family homes built in the Lincoln County subarea, the percentage of increase was greater in the Tillamook County subarea. The Tillamook County subarea led in both absolute numbers and percentage increase in multifamily housing. The number of new commercial establishments was about the same in both subareas, but the percentage increase was much greater in the Tillamook County subarea. Thus, the Tillamook County subarea experienced greater relative change in these forms of land use during the study period.

There was a substantial decrease in the number of parcels classified as idle or vacant in the Tillamook County subarea, due largely to building on these parcels between 1967 and 1973. Previously idle or vacant parcels also were put to use in the Lincoln County subarea, but this was offset by the large number of parcels phased out of agricultural use during the steady period. To some extent the figures reflect the decision to classify a large, hilly subdivision in the Lincoln County subarea as agricultural in 1967. The land in question was being phased out of intensive agricultural use during the 1960's; however, telephone interviews with knowledgeable persons indicated that substantial numbers of cattle were grazed on the land through the late 1960's. This land was of marginal suitability for grazing compared with the lowland pastures of the Tillamook County subarea.

In both subareas, most of the land going out of agricultural use was marginal for grazing. However, there were exceptions in both counties in the form of housing and mobile home developments on the estuarine flood plains. These developments not only replace a highly suitable use of such parcels as grazing land, but are subject to flood hazard.

Differences in industrial, recreational and forest usage are based on small samples and may not be highly significant. Change from public service facilities to other uses was found only in Tillamook County and reflects specific sample parcels as already discussed.

SUMMARY

A general trend in the study zone is toward an increase in year-round and vacation housing, both single family and multifamily. The number of commercial establishments is also increasing along with recreational use of the land. Planned use of timber land

appears to be decreasing to some extent and agricultural use is definitely declining, especially in the Lincoln County subarea. Many of the parcels being paved out of agricultural use are not highly suitable for that purpose, but there are exceptions in the form of developments along some of the estuaries. There is little evidence of industrial growth and there has been a tendency for public service facilities to become consolidated, sometimes in places outside the study area. Finally, the proportion of essentially unused land, whether in the form of vacant lots in subdivisions or more extensive acreages which have grown up in brush, seems relatively high as it has been for some time.

ownership patterns and ownership change

Data for this study included 643 sample parcels in the Lincoln County subarea and 453 in the Tillamook County subarea, a total of 1096 sample parcels in the study area. Of these 1096 parcels, 542 experienced a change in ownership during the 1967-73 period, while 554 experienced no change in ownership.¹

During the six years 49.5 percent of the parcels changed ownership, while 50.5 percent did not. This finding is in general accord with the statement made by a local tax assessor that about 10 percent of land parcels in the study area change ownership each year.

Of land parcels in portions of the two counties which comprise the study area, the degree of ownership change was greater in Lincoln County than it was in Tillamook County (Table 10). This change in degree of ownership is not attributable to the fact that different land classes were considered in the two subareas of the study area, since near equal samples were taken from a given land class. Different degrees of land ownership change are in the ratio of 1.00 to 1.42 in Tillamook and Lincoln County subareas respectively. This may be evidence that coastal zone land parcels in Lincoln County have greater degrees of marketability than those in Tillamook County.

There have been some interesting and significant changes in ownership patterns in

¹ Changes in ownership were difficult to establish in cases where there was a change in names of owners of parcels with dual or multiple ownership during the time period considered. It appeared that many parcel ownerships were altered by a) death of husband or wife, b) assumption or termination of partial ownership by family members, or c) divorce or separation of married couples listed as co-owners. The manner of dealing with such cases in this study was that if the name of the first listed owner on the tax rolls in 1967 also was listed as an owner on the tax rolls in 1973, there was no change in ownership of the land parcel.

Table 10. Ownership changes of Land Parcels.

	Lincoln County Subarea		Tillamook County Subarea		Study Area	
	No. of parcels	Percent of parcels	No. of parcels	Percent of parcels	No. of parcels	Percent of parcels
Ownership change	362	56.3	180	39.7	542	49.5
No ownership change	<u>281</u>	<u>43.7</u>	<u>273</u>	<u>60.3</u>	<u>554</u>	<u>50.5</u>
Total	643	100.0	453	100.0	1096	100.0

Table 11. Residences of Local Owners of Coastal Zone Land Parcels, Tillamook and Lincoln Counties.*

Location of residence of owner	Lincoln County Subarea			Tillamook County Subarea		
	Percent of land parcels 1967	Percent of land parcels 1973	Percent change 1967-73	Percent of land parcels 1967	Percent of land parcels 1973	Percent change 1967-73
Lincoln County (total)	58.2	44.5	-23.5			
Study area	51.2	42.8	-16.4			
other than study area	7.0	1.7	-75.7			
Tillamook County (total)				50.3	42.4	-15.7
Study area				12.1	9.1	-25.8
other than study area				38.3	33.5	-12.5

* "Local", as used herein, refers to the two coastal counties, Lincoln and Tillamook.

the study area in the period considered. Of the total number of parcels in the study area in 1967, 55.8 percent were owned by residents in the study area, as compared to 44.2 percent in 1973. This pattern of decrease in proportion of locally owned parcels characterizes both portions of the study area: the Lincoln and Tillamook County subareas, although the proportion of locally owned parcels in the Tillamook County subarea was much lower at the beginning of the study period. The proportion of locally owned parcels in the Tillamook County subarea changed from 12.1 percent in 1967 to 9.1 percent in 1973, a decrease of 25 percent. In the same time period the proportion of the Lincoln County subarea changed from 51.2 to 42.8 percent, a decrease of 16 percent. However, many of the land parcels in the Tillamook County subarea were owned by other Tillamook County residents. The matter of locally owned land parcels is summarized in Table 11.

From the foregoing, it follows that approximately 44 percent of the land parcels in 1967 and 56 percent in 1973 were owned by non-local residents. The proportion of absentee ownership in the Lincoln County section of the study area was about 42 and 56 percent in 1967 and 1973 respectively, and about 50 and 58 percent in the Tillamook County subarea. Thus, at the present time the greatest number of land parcels included in the sample were owned by parties not residing in either Lincoln or Tillamook County (Table 11).

The greatest share of non-local owners of land parcels in the study area were residents of counties in the Willamette Valley (Figure 5). Although the reasons for ownership of land parcels in the study area by Willamette Valley residents were not studied, indications include acquisition for 1) vacation home sites, 2) outdoor recreation sites, including space for mobile homes and/or camper vehicles

and 3) speculation. Of the study area land parcels owned by Willamette Valley residents, the largest share was owned by residents in the Portland metropolitan area, comprised of Multnomah, Washington and Clackamas counties. In 1967 this section of the Willamette Valley accounted for ownership of nearly one-quarter of the study area parcels, and this proportion had risen to one-third in 1973. Multnomah County alone accounts for slightly less than one-quarter of parcel ownerships in the study area at present, followed in order by Clackamas and Washington Counties. The Portland urban area accounted for a higher proportion of non-local ownerships in the Tillamook County subarea than in the Lincoln County subarea in both 1967 and 1973, possibly the result of a shorter route distance. However, more parcels were owned in the Lincoln County subarea by Portland area residents than in the Tillamook County subarea (Table 12).

Willamette Valley counties, other than those in the Portland metropolitan area, accounted for about 8 percent in 1967 and 9 percent in 1973 of land parcel ownerships in the study area. The proportion was considerably higher for the Lincoln County subarea than for the Tillamook County subarea. Interestingly, the role of these Willamette Valley counties has become greater in Lincoln County in the period 1967-73 than in Tillamook County, again likely a result of shorter route distance to the central Oregon coastal zone. Counties in the Willamette Valley outside the Portland metropolitan area that provide places of residence for owners of

land parcels in the study area are summarized in Table 12.

In 1967 owners of study area land parcels resided in nine counties in Oregon other than those including the study area or the Willamette Valley, and in fourteen additional counties in 1973. These owners comprised only 2.0 percent of study area ownerships in 1967 and 2.3 percent in 1973 (Figure 5). Most of these counties were in central and southwestern Oregon, although the coastal zone counties of Curry and Clatsop included owners of study area land parcels.

Owners of study area land parcels resided in fifteen states other than Oregon in 1967 and nineteen in 1973 (Figure 6). Of these, Washington and California accounted for the greatest number, with 3.4 and 4.0 percent respectively in 1967 and 3.7 and 4.2 percent in 1973 (Table 13). In both years and in both the Lincoln and Tillamook County subareas, owners residing in California slightly outnumbered those residing in Washington.

One might note the entry in Table 13 indicating ownership of study area land parcels by persons residing outside the U.S. There were four such instances, all of which occurred in the Tillamook County subarea in 1967. The listed residences of these owners were British Columbia, Belgium, Bolivia and Saudi Arabia, although the parcels had been sold by 1973. In at least two of the four cases, the owners appeared to be American citizens working and temporarily residing abroad.

Table 12. Residences of Willamette Valley Owners of Coastal Zone Land Parcels.

Location of residence of owner	Lincoln County		Tillamook County		Study Area	
	1967	1973	1967	1973	1967	1973
(percent of total parcels)						
Portland metropolitan area:	20.4	30.2	26.8	38.7	23.0	33.7
Multnomah County	15.6	21.8	18.3	24.3	16.7	22.8
Washington County	2.3	4.4	3.7	5.7	2.9	4.9
Clackamas County	3.5	4.0	4.8	8.7	3.4	6.0
Other Willamette Valley	9.6	12.3	5.4	4.1	7.9	8.9
Marion County	3.9	5.6	1.5	2.6	2.9	3.7
Yamhill County	2.6	1.6	2.0	1.5	2.4	1.5
Lane County	0.5	1.7	1.1	*	0.7	1.2
Polk County	1.1	1.2	*	*	0.6	0.9
Benton County	0.9	1.1	*	*	0.6	0.8
Linn County	0.6	1.1	0.7	*	0.6	0.8

* Less than two occurrences or 0.2 percent.

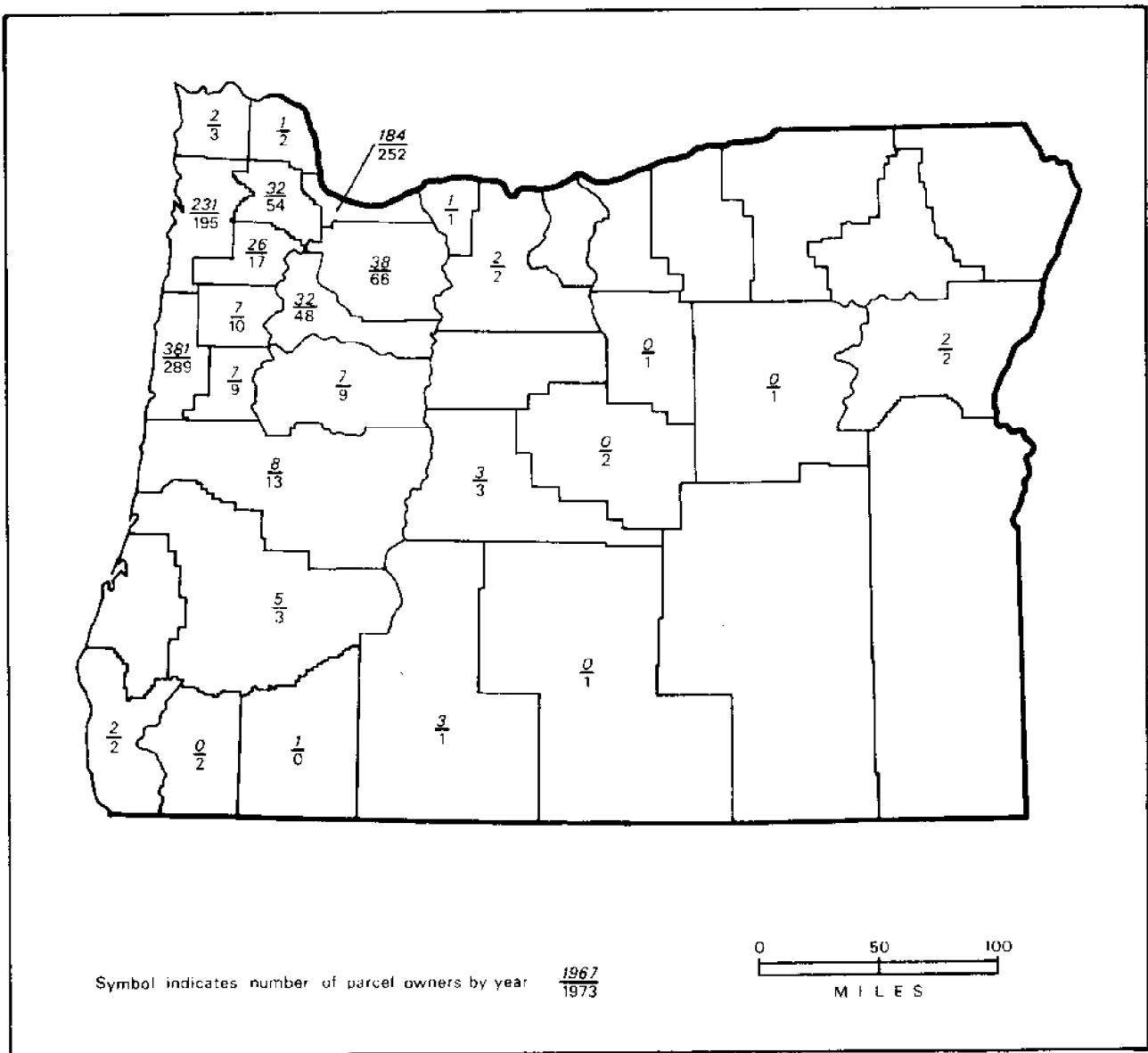
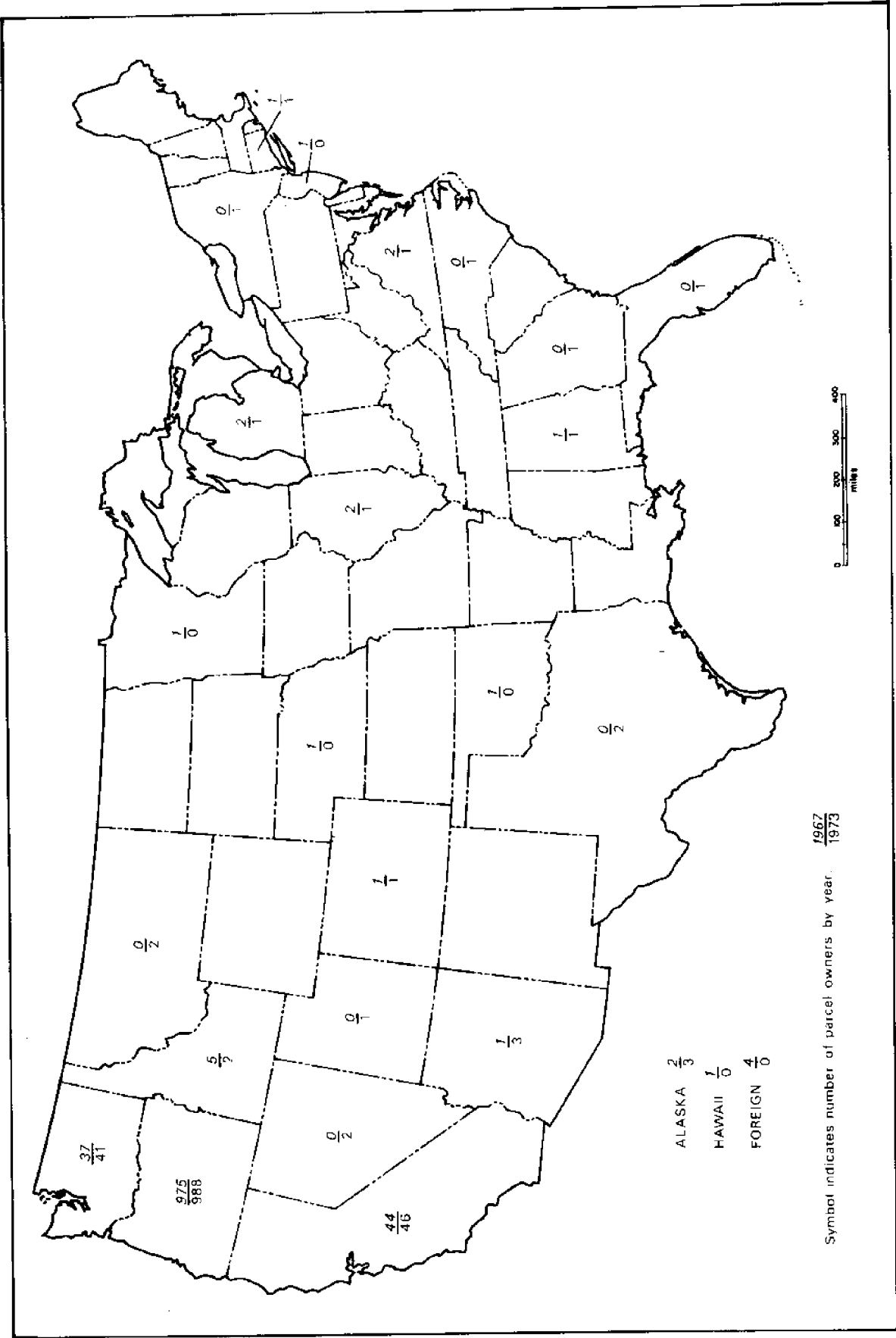


Fig. 5. Distribution of parcel owners by county in Oregon: 1967 and 1973.



Symbol indicates number of parcel owners by year. $\frac{1967}{1973}$

Fig. 6. Distribution of parcel owners by state: 1967 and 1973.

Table 13. Residences of Owners of Central Oregon Coastal Zone Parcels, Study Area, 1967 and 1973.

	1967		1973	
	No. of parcels	Percent of parcels	No. of parcels	Percent of parcels
I. Central Oregon Coastal Zone	612	55.8	484	44.2
A. Lincoln County	381	34.8	289	26.4
1. Study area	336	30.7	278	25.4
2. Other Lincoln County	45	4.1	11	1.0
B. Tillamook County	231	21.0	195	17.8
1. Study area	55	5.0	41	3.7
2. Other Tillamook County	176	16.0	154	14.1
II. Willamette Valley	341	31.1	470	42.9
A. Portland Metropolitan area	254	23.2	372	33.9
1. Multnomah County	184	16.8	252	23.0
2. Washington County	32	2.9	54	4.9
3. Clackamas County	38	3.5	66	6.0
B. Other Willamette Valley	87	7.9	98	8.9
III. Other Oregon	22	2.0	26	2.3
IV. Washington	37	3.4	41	3.7
V. California	44	4.0	46	4.2
VI. Other Western U.S.	10	0.9	14	1.3
VII. Other U.S.	12	1.1	13	1.2
VIII. Foreign	4	0.4	--	--
IX. Not available	14	1.3	2	0.2
TOTALS	1096	100.0	1096	100.0

Table 14. Residences of Owners of Central Oregon Coastal Zone Land Parcels, Lincoln County Subarea, 1967 and 1973.

	1967		1973	
	No. of parcels	Percent of parcels	No. of parcels	Percent of parcels
I. Central Oregon Coastal Zone	374	58.2	286	44.5
A. Lincoln County	374	58.2	286	44.5
1. Study area	329	51.2	275	42.8
2. Other Lincoln County	45	7.0	11	1.7
B. Tillamook County	--	--	--	--
1. Study area	--	--	--	--
2. Other Tillamook County	--	--	--	--
II. Willamette Valley	193	30.0	273	42.5
A. Portland Metropolitan area	131	20.4	194	30.2
1. Multnomah County	100	15.6	140	21.8
2. Washington County	15	2.3	28	4.4
3. Clackamas County	16	2.5	26	4.0
B. Other Willamette Valley	62	9.6	79	12.3
III. Other Oregon	12	1.9	15	2.3
IV. Washington	27	4.2	28	4.4
V. California	26	4.0	31	4.8
VI. Other Western U.S.	5	0.8	8	1.2
VII. Other U.S.	4	0.6	2	0.3
VIII. Foreign	--	--	--	--
IX. Not available	2	0.3	--	--
TOTALS	643	100.0	643	100.0

Table 15. Residences of Owners of Central Oregon Coastal Zone Land Parcels, Tillamook County Subarea, 1967 and 1973.

	1967		1973	
	No. of parcels	Percent of parcels	No. of parcels	Percent of parcels
I. Central Oregon Coastal Zone	238	52.5	198	43.7
A. Lincoln County	7	1.5	3	0.7
1. Study area	7	1.5	3	0.7
2. Other Lincoln County	--	--	--	--
B. Tillamook County	231	51.0	195	43.0
1. Study area	55	12.1	41	9.1
2. Other Tillamook County	176	38.9	154	34.0
II. Willamette Valley	148	32.7	197	43.5
A. Portland Metropolitan area	123	27.2	178	39.3
1. Multnomah County	84	18.5	112	24.7
2. Washington County	17	3.8	26	5.7
3. Clackamas County	22	4.9	40	8.8
B. Other Willamette Valley	25	5.5	19	4.2
III. Other Oregon	10	2.2	11	2.4
IV. Washington	10	2.2	13	2.9
V. California	18	4.0	15	3.4
VI. Other Western U.S.	5	1.1	6	1.3
VII. Other U.S.	8	1.8	11	2.4
VIII. Foreign	4	0.9	--	--
IX. Not available	12	2.6	2	0.4
TOTALS	453	100.0	453	100.0

changes in property value and parcel size

Given the data inputs in this study, it is somewhat difficult to derive information on changes in property values of study area land parcels. In the time period included, assessment procedures changed, land parcel sizes changed, land uses changed and improvements were made on numerous land parcels thereby changing their monetary value. On the first item, changes in assessment procedures, beginning in 1968 the state directed that the assessment ratio was to be 100, i.e., the assessed value was to be 100 percent of the true market value. Prior to 1968 the assessment rate was 25 in both Lincoln and Tillamook Counties. In the assessment process, county tax assessors place an assessed value on property in a county within a certain period during the calendar year. Tax rates are then applied to that assessed value, with the taxes to be paid by the property owner by a specified date which falls in the next calendar year. In Lincoln County, the end of the major tax assessment period is October of a given year; in Tillamook County the end of the major assessment period is December 31 of a given year. In both cases, payment of tax bills is to be made by July of the following calendar year. Thus, taxes are levied on real property assessments at a certain time in one calendar year, normally toward the end of the year, and tax payments are made in the early part of the next calendar year. The question arises regarding the year to which the taxes apply; the year in which the assessment is made or the year in which tax payments are made. It was considered in this study that a given assessment would apply to a short period in one year and to a longer period in the following year. Thus, an assessment made in 1967 would represent property values in most of 1968 as well. There would be no intervening assessment prior to late in the second year unless a special assessment was made by a private assessor; no countywide assessment would be made in the intervening period.

To better evaluate property value change in the study area, some type of perspective is necessary. This is provided by consideration of a) changes in property values in Lincoln and Tillamook Counties which include portions of the study area, b) average

Table 16. Changes in Assessed Property Values: 1967-1973
Oregon Counties.

County (Col. 1)	Class of Property			
	Land (Col. 2)	Improvements (Col. 3)	Total Real Property (Col. 4) ^{1,2}	Timber (Col. 5)
(percent of change)				
Baker	- 3.0	24.3	10.4	--
Benton	70.3	58.0	62.3	163.5
Clackamas	113.7	95.3	102.3	97.6
Clatsop	117.0	52.1	74.1	94.4
Columbia	96.4	70.9	80.9	209.2
Coos	69.3	28.6	43.9	104.0
Crook	49.4	47.6	48.5	--
Curry	99.0	62.1	79.8	73.8
Deschutes	117.4	98.2	106.1	--
Douglas	87.8	35.7	55.2	154.7
Gilliam	-43.4	-14.4	-37.2	--
Grant	15.5	36.4	23.8	--
Harney	0.2	15.7	5.9	--
Hood River	65.6	26.0	38.3	210.9
Jackson	51.4	46.1	48.0	126.2
Jefferson	18.8	44.6	29.3	--
Josephine	78.3	56.7	65.7	110.1
Klamath	50.2	40.0	44.4	--
Lake	24.8	6.0	19.0	--
Lane	35.0	42.6	40.3	70.8
LINCOLN	29.7	71.3	56.0	135.3
Linn	42.9	60.7	53.2	79.1
Malheur	25.5	43.9	33.4	--
Marion	45.7	55.4	52.1	84.4
Morrow	-18.0	17.2	-10.3	--
Multnomah	100.6	42.3	57.6	164.0
Polk	41.5	51.9	47.5	131.6
Sherman	-25.0	18.0	-16.9	--
TILLAMOOK	132.8	63.9	92.9	89.1
Umatilla	- 9.3	15.4	2.2	--
Union	12.4	52.0	32.1	--
Wallowa	-12.0	18.7	- 0.9	--
Wasco	13.9	22.0	17.9	--
Washington	65.5	93.8	84.0	315.7
Wheeler	14.9	25.6	17.2	--
Yamhill	60.8	47.4	53.1	216.1
State (36 county average)	45.4	43.7	42.0	138.5

Source: Based on data presented in Ratio Study: 1968 and Ratio Study: 1973, Department of Revenue, Property Tax Division, State of Oregon; Salem, Oregon.

¹ Values do not take into account relatively minor deductions for veterans and senior citizens residence exemptions.

² Values may not equal the sum of the two previous columns due to rounding.

Table 17. Changes in Assessed Property Values: 1967-1973
Selected Oregon Areas.

Area (Col. 1)	Land (Col. 2)	Improvements (Col. 3)	Total Real Property (Col. 4)	Timber (Col. 5)
(p e r c e n t o f c h a n g e)				
I. Central Oregon Coastal Zone (Lincoln and Tillamook Counties)	81.3	67.6	74.5	112.2
II. Other Coastal Zone (Clatsop, Coos, and Curry Counties)	95.1	47.6	65.9	90.7
III. Portland Metro- politan Area (Multnomah, Washington, and Clack- amas Counties)	93.3	77.1	81.3	192.4
IV. Willamette Valley (Yamhill, Polk, Marion, Benton, Linn, and Lane Counties)	49.4	52.7	51.4	124.3
V. Central Oregon (Jefferson, Crook, and Deschutes Counties)	61.9	63.5	61.3	--
VI. Northeastern Oregon (Umatilla, Union, Wallowa, and Baker Counties)	-11.9	27.6	11.0	--
OREGON	45.4	43.7	42.0	138.5

Source: op. cit., Table 16.

changes in property values of all 36 Oregon counties and c) average changes in property values in groupings of counties in different locational settings. The first comparison of property values at the beginning and end of the time period provides a basis for comparison of changes in study area values relative to those of the counties in which the study area is included. The second comparison provides insight into changes in the study area and the two central Oregon coastal counties relative to all other counties in the state. The third comparison provides information on changes in the study area and the two central Oregon coastal counties relative to other areas in the state, each with its own demographic, physical and economic characteristics.

Changes in property values in the period 1967-1973 for all counties in the state are presented in Table 16, while changes in property values in the same period for several county groupings in different spatial settings are presented in Table 17. In comparing real property value change (land and improvements) in Lincoln and Tillamook Counties with the mean of all counties in the state, one can note that both counties have experienced an increase greater than the state mean (Table 16). The increases greater than the state mean have been 33 and 121 percent respectively in Lincoln and Tillamook Counties. In comparing change in real property value in Lincoln and Tillamook Counties (Table 16) with changes in different state areas (Table 17), it can be observed that increases have been greater in Tillamook

County than those in any of the other areas. Table 16 also shows that the increase in Lincoln County has been lower than that of the Portland Metropolitan area, other coastal zone counties and central Oregon, but higher than those of the Willamette Valley and of northeastern Oregon. However, considering Lincoln and Tillamook Counties together, the mean increase in property value of 74.5 percent is greater than each of the other state areas, except for the Portland metropolitan area.

For purposes of comparison with data presented in Table 16 and 17, data are presented on changes in real property value and timber value for the study area. Data are presented both on percentage changes in value over the period 1967-1973 of land, improvements, total real property and timber, as well as the assessed value of each of these classes of

property mentioned above for each of four land use strata: development, agriculture, coastal mix and forest. These land use strata have been discussed and defined earlier in this report. As examples of the types of data presented in Table 18, data are presented on sections that are predominately agricultural (agriculture stratum) including assessed value of land in 1967 and 1973 and the percent of change in this value. In addition, data are presented on improvements of agricultural land, total property value (land plus improvements) and timber value.

As to changes in land values in the study area in the period 1967-1973, comparisons can be made between Table 17, column 2 and Table 18, column 6. Land values in the study area increased by 83 percent, which is very near to the mean of the two county values presented in Table 17. This indicates that

Table 18. Changes in Assessed Property Values: 1967-1973
Study Area Sample Parcels, by Use Stratum.

Class of property (Col. 1)	Development (Col. 2)	Agriculture (Col. 3)	Coastal Mix (Col. 4)	Forest (Col. 5)	Total (Col. 6)
<u>Land</u>					
assessed value: 1967 ¹	\$ 1629 ²	\$ 960	\$ 798	\$ 295	\$ 3924
assessed value: 1973	2936	1268	1900	1614	7166
percent change: 1967-73	80%	32%	138%	98%	83%
<u>Improvements</u>					
assessed value: 1967	1367	1019	812	296	3494
assessed value: 1973	2528	712	896	385	4521
percent change: 1967-73	84%	-30%	10%	30%	29%
<u>Total Real Property</u>					
assessed value: 1967	2996	1979	1610	833	7418
assessed value: 1973	5464	1980	2796	1447	11,687
percent change: 1967-73	82%	*	74%	74%	58%
<u>Timber</u>					
assessed value: 1967	7	31	287	213	538
assessed value: 1973	**	50	495	857	1402
percent change: 1967-73	-97%	61%	72%	302%	161%
¹ Total assessed value for all land parcels in given stratum. ² Dollar amounts stated in thousands (000's). * Less than one percent change. ** Less than \$1,000 assessed value.					

land values in the study area increased in accord with those of the counties in which the study area is located, even though urban agglomerations were deleted from the study area for the most part. It can be noted that land values in the study area increased at a rate greater than those in the Willamette Valley, somewhat more than in Central Oregon and significantly more than in northeastern Oregon. By contrast, land values in the study area did not increase as much as those in the Portland metropolitan area or those in other coastal zone counties. The increase in land values in the study area was 87 percent of the former and 85 percent of the latter. Still, the increase in land values in the study area was 179 percent of the average increase of all Oregon counties.

Changes in the value of improvements to real property lagged behind those of the counties in which the study area was located and behind those of most Oregon counties (Table 16, column 3 and Table 18, column 6). The increase in value of improvements in the study area was 29 percent, which is lower than increases in other sections of the state, except for northeastern Oregon (Table 17, column 3). These circumstances would tend to reflect the rural nature of the study area in which urban centers with especially high improvement values are excluded, and the nature of the land use mix in the study area which includes agricultural parcels and parcels devoted to forest growth.

Increases in value of total real property (land and improvements) in the study area lag behind those of the two-county area in which the study area is found. The mean value of the two-county area increased 75 percent, whereas the study area had an increase of 58 percent in value of total real property. This could be attributed to a relatively low increase in Lincoln County, and the exclusion of urban properties that generally have high improvement value.

An interesting point is raised by the fact that increases in value of timber to which a state tax is applied, (not a local tax of timber land), increased in the study area by 161 percent in the period 1967-1973. This value for the study area is higher than that of the two-county area of which the study area is a part (112 percent), greater than the increase in timber value in other coastal zone counties (91 percent), and higher than the increase in the Willamette Valley counties (124 percent). It is lower, however, than the increase in the Portland metropolitan area counties (192 percent). These percentages indicate increases in the value of standing timber and not the value

of forest land. This could, then, reflect increased value of timber in the study area as stands of second growth trees on privately owned lands approach merchantable size.

Contrasts presented in Table 18 are noteworthy; they show variations between different land use strata. Land values in the study area increased most for the coastal mix stratum and somewhat less for the forest stratum. Land values increased in value least for the agriculture stratum and by an amount considerably below the total land value increase for all parcels in the sample. Increases in value of improvements to real property in the study area samples were highest in the development stratum; greater than in the two-county area containing the study area. By contrast, increases in improvement value were low in the coastal mix and forest strata, while improvements in the agricultural stratum were lower in value at the end of the time period than at the beginning. There was an overall decrease in value of improvements of minus 30 percent. Total real property values (land and improvements) increased in the development, coastal mix and forest strata and remained virtually constant in the agriculture stratum. This could result from small marginal agricultural operations in the study area becoming less profitable during the period 1967-1973 so that less capital and less incentive were available for improving existing holdings. Many of them fell into states of disrepair and neglect which in turn was reflected in their assessed values. The assessed values of timber increased greatly in the forest stratum (up 302 percent) where most of the merchantable timber is found. Values of timber increased significantly in the coastal mix and agriculture strata where less acreage of quality timber is found. Timber value declined in the development stratum, although it was not particularly high at the beginning of the time period. Because marketable timber is not a common land use element in areas that are undergoing development, this decrease in value is not surprising.

The above information provides data dealing with changes in real property values and timber values of all sample parcels in the study area, and land parcels of a given land use type. It does not indicate, however, changes in size of land parcels in the time period 1967-1973, yet this would have a bearing on changes in property values. For example, the average parcel size in 1967 in the development stratum was 7.28 acres, while in 1973 the average parcel size in this stratum was 1.24 acres. Changes in parcel size in other land use strata are presented in Table 19.

Table 19. Mean Parcel Size: 1967 and 1973
By Land Class Stratum.

Land Class	1 9 6 7						1 9 7 3					
	Mean (acres)			Standard Error*(acres)			Mean (acres)			Standard Error*(acres)		
	L	T	SA	L	T	SA	L	T	SA	L	T	SA
Development	7.64	6.76	7.28	1.16	1.42	.90	1.12	1.42	1.24	.33	.53	.31
Agriculture	33.22	35.23	34.44	2.63	2.84	2.03	10.79	29.28	22.04	2.64	2.72	2.03
Coastal Mix	25.83	43.02	30.32	1.89	6.22	2.27	7.67	37.07	15.35	1.28	5.79	1.97
Forest	55.32	100.33	81.04	8.00	7.89	6.31	40.75	74.73	60.17	8.01	7.62	6.10

* At the 95 percent confidence level.
L = Lincoln County subarea of study area.
T = Tillamook County subarea of study area.
SA = Study area.

Mean parcel size in 1973 for the development stratum was 17 percent of the average parcel size in 1967, with equivalent values for other strata being 64 percent for the agriculture stratum, 51 percent for the coastal mix stratum and 74 percent for the forest stratum.

The trend has been toward smaller parcel size, regardless of the land use class involved. The usual circumstance is that per unit area costs are less for larger size land parcels, or conversely per unit area costs are higher for smaller-sized land parcels. Further, property value assessments are by law, in accord with true market values which tend to reflect parcel size. With these points in mind, average per acre assessed property values were derived for the study area and for the subareas of the study area in Lincoln and Tillamook Counties. These data are presented in Table 20.

In a comparison of Table 18 and Table 20, a major difference comes to light. When changes in assessed property values per acre are considered, rather than changes in assessed values of all land parcels, the magnitude of increase in property values is escalated, often several fold. Based on the condition that has prevailed in recent years in the study area in which average parcel size has decreased for all land use strata, per unit area property values have increased

greatly. In general, landholdings have become smaller in size, but their aggregate assessed values have increased significantly--but not nearly as much as the percentage increase in assessed values per unit area.

RELATIONSHIPS

Computer runs were made of data for land parcels in the study area with the objective of determining significant relationships between pairs of variables. These relationships are expressed as simple coefficients of correlation and are presented in the matrix included as Table 21.

The strongest correlations in the entire study area exist between 1) parcel land value in 1967 and total parcel value in 1967, 2) improvement value in 1967 and total parcel value in 1967, 3) timber value in 1967 and timber value in 1973, 4) parcel land value in 1973 and total parcel value in 1973, and 5) improvement value in 1973 and total parcel value in 1973. These relationships hold true for each of the subareas of the study area as well, including the Lincoln and Tillamook County subareas.

Perhaps of significance are the negative relationships among the variables, although none of these are especially pronounced (Table 21). It can be noted that parcel improvement value in 1973 is negatively associ-

Table 20. Changes in Assessed Property Values per Acre: 1967-1973.

Class of Property	Lincoln Co. Subarea	Tillamook Co. Subarea	Study Area
	(mean assessed value per acre)		
<u>Land</u>			
assessed value per acre: 1967	\$ 255	\$ 362	\$ 295
assessed value per acre: 1973	2802	961	1614
percent change: 1967-1973	999%	165%	447%
<u>Improvements</u>			
assessed value per acre: 1967	329	158	251
assessed value per acre: 1973	2467	669	1313
percent change: 1967-1973	659%	361%	423%
<u>Total real property</u>			
assessed value per acre: 1967	584	520	546
assessed value per acre: 1973	5269	1630	2927
percent change: 1967-1973	802%	213%	436%
<u>Timber</u>			
assessed value per acre: 1967	8	10	9
assessed value per acre: 1973	15	87	63
percent change: 1967-1973	89%	785%	573%

ated with 1967 parcel size, 1967 timber value, 1973 parcel size and 1973 timber value. This indicates that larger land parcels are not characterized by commensurately large expenditures in improvement, and that land parcels with higher timber value are not characterized by large improvement expenditure. The same negative correlations can be noted for 1967 parcel size and 1967 timber value and for 1967 parcel size and 1967 improvement value.

major findings and conclusions

SUMMARY

1. Detailed examination of a sample of 1096 land parcels in the central Oregon coastal zone between Newport and Cape Meares was made; 453 in the Tillamook County subarea and 643 in the Lincoln County subarea.
2. It was estimated that 12,789 land parcels existed in the study area, given the stated exclusions of incorporated places and most publicly-owned land parcels. The sample of land parcels from this population constituted 8.6 percent of the total estimated number of parcels in the study area.
3. Sampling was made of land parcels in each of four land class strata: development, agriculture, coastal mix and forest. This was done to insure representation of each major land use class in the study area.
4. Changes in land ownership have been common in the study area in the period 1967-1973, with nearly one-half of the parcels changing ownership in this period. Change in ownership has been more characteristic of the Lincoln County subarea than of the Tillamook County subarea, with 56 and 40 percent respectively.
5. Regardless of ownership change, absentee ownership of land parcels is dominant over local ownership; 56 percent of the parcels are owned by non-local residents. Absentee ownership has increased more in the Tillamook County subarea than in the Lincoln County subarea. Also, absentee owners in the Tillamook County subarea are more likely to be residents of other parts of Tillamook County than are residents of other parts of Lincoln County being owners of Lincoln County subarea parcels.
6. Non-local owners of land parcels in the study area are primarily from Willamette Valley counties. Of these, the greatest share reside in the Portland metropolitan area (34 percent of all owners), with the proportion greater in the Tillamook County subarea than the Lincoln County subarea. This may be the result of greater accessibility to the Portland area. In 1973 owners of study area land parcels resided in fourteen

Oregon counties other than Tillamook, Lincoln and the Willamette Valley counties. Owners of parcels also resided in nineteen states other than Oregon, mainly California and Washington.

7. The greatest share of land parcels in the study area in 1973 (54.8 percent) were idle or vacant, a decrease from 58.9 percent in 1967. Parcels used for single residences accounted for 36.8 percent of the total in 1973, an increase from 27.9 percent in 1967. Other land uses, in descending order of representation in 1973, were commercial (2.6 percent), agriculture without residence (1.3 percent), forest land (1.2 percent), agriculture with residence, multifamily residential, industrial, recreational and public service facilities.

8. Land uses becoming more significant in the 1967-1973 period, based on increase in number of parcels, were dominated by single family residential parcels. There were increases in number of parcels used for, in descending order, commercial, multifamily, residential, recreational and public service facilities. Land uses experiencing a decline in number of parcels were, in descending order, agriculture without residence, idle or vacant, agriculture with residence, public service facilities and forest land.

9. Assessed values of land parcels in the study area have increased appreciably in the 1967-1973 period. Values have increased for land, improvements and timber by 83 percent, 29 percent and 161 percent respectively. Compared with mean increases of all 36 Oregon counties, land values are greater than the state mean, improvement values are somewhat lower and timber values are considerably higher in the study area. However, land values have not increased as much as those in other coastal zone areas or the Portland metropolitan area, and improvement values are lower than those in other areas of the state, except for northeastern Oregon. Timber values in the study area are higher than those in other areas of the state, except for the Portland metropolitan area.

10. Land parcels in the study area have decreased significantly in average size in the 1967-1973 period. Average size of parcels decreased 83 percent in the development stratum, 36 percent in the agriculture stratum, 39 percent in the coastal mix stratum and 26 percent in the forest stratum.

CONCLUSIONS

In assessing the changes undergone by the land resource of the central Oregon

coastal zone, several general conclusions emerge--they pertain to patterns and change of use, ownership and value of land parcels. These conclusions refer to dominant changes in the study area, but not necessarily to each of the land parcels examined.

Most of the land parcels in the study area were not devoted to any functional use at the beginning or the end of the study period from 1967 to 1973, i.e., the greatest share was idle or vacant. This condition of nonuse of the land resource pervades most of the study area and has changed only slightly over five years. As some vacant or idle land parcels are converted to a functional use, others have passed from a former use, especially agricultural, to a state of idleness. This condition of idleness or vacancy of land parcels tends to indicate that, for the most part, the central Oregon coastal zone outside incorporated cities has a low degree of viability. Much of the land resource is also not providing any direct benefit to its owners, or else the benefits are marginal. Agricultural lands often seem to be non-viable in the study area in terms of providing productive units. The question remains, however, whether this is more or less true of agricultural lands in the study area than agricultural lands elsewhere. The impression is that much of the agricultural land resource in the study area is marginal at best, and therefore, is more subject to vagaries in use.

Of land parcels that in 1967 were idle or vacant, a significant number were converted to single family residential use by 1973 at the same time that many agricultural parcels with a residence were being abandoned to a state of idleness or vacancy. The locations of agricultural parcels with residences left idle or vacant were, however, different from locations of vacant or idle parcels being developed for single family residential use. One point that bears on the latter case is the nature of the housing provided. In many instances, the new single family dwelling consisted of a mobile home (motionless or otherwise) placed on an idle or vacant parcel, so that one might not consider this a lasting or permanent type of land use conversion. Further, a number of new single family dwellings, mobile homes or those constructed on-site, are occupied on an irregular basis by owners who use them as vacation homes for recreational purposes. Again, the longevity of such dwellings is uncertain.

Accompanying the changes in land use of study area parcels is a considerable degree of change of ownership, approaching 10 percent per year in the study area. Land

parcels have been purchased increasingly by non-local residents, many of these parcels of vacant or idle land. Willamette Valley residents in particular have become owners of study area parcels, although the proportions of owners residing in other Oregon counties and in adjacent states has increased as well. There would appear to be two possible objectives underlying this situation: 1) non-local residents acquiring land parcels for the eventual purpose of developing a vacation home or other recreational site, or 2) non-local residents wishing to invest in the land market with the eventual aim of resale, i.e., land speculation--perhaps to a party having the aim mentioned in item 1. Given present conditions of the economy, however, especially the cost and availability of motor fuel, the feasibility of development of sites purchased for recreational purposes by owners in the Willamette Valley or elsewhere along the Pacific Coast would appear to be impaired. However, the desirability of such sites might prove to be greater as the alternative of travel to a single recreation site might be selected over travel to an array of such sites, i.e., touring.

Based on percentage change in number of parcels, the estimated increase in parcels used for multifamily residential and commercial uses (248 and 102 percent respectively), are somewhat surprising. The former is accounted for to a considerable degree, by placement of mobile home units on land parcels with single family dwelling units, and not the construction of large or small apartment complexes. The estimated increase in parcels used for commercial purposes is explained primarily by adding a commercial function to an existing residential unit and not by constructing new free-standing commercial structures.

The study area, then, is generally comprised of land parcels on which the uses are marginal or non-viable and for which turnover in ownership is widespread and common. A large proportion of the parcels continue to be idle or vacant and many of the agricultural parcels in the past five years have become idle and no longer function as productive units. The majority of land parcels are owned by non-residents of the study area and the proportion of absentee ownership has increased in the past five years. It might be expected that, in view of the above circumstances, the demand for land in the study area would be depressed and that property values would have declined or stabilized. Such is not the case, however, as evidenced by the fact that land values have increased more than in counties in the Willamette Valley, except the Portland metropoli-

tan area. True, improvement value of land parcels in the study area has not increased as much as in other areas of the state, except for northeastern Oregon. As a result, total real property values have not experienced the increase characterizing most areas of the state. Bearing on this statement, however, is the exclusion of major urban agglomerations from the study area. Timber values have increased in general on study area parcels, (except in areas of development), more than in most areas of the state.

Generally, it would appear that land parcels in the study area have lost or are losing their *functional viability*, as evidenced by high and increasing numbers of idle and vacant land parcels. Still, it appears that land parcels retain a considerable degree of *economic viability*, based on the degree of change in parcel ownership, increases in real property values and, to a lesser degree, in timber values. It is possible to speculate that large parcels that have become non-viable have been partially subdivided, forming a greater number of smaller parcels. These smaller units of land are more desirable for the small investor--often with a non-local residence--and become viable units in the land market. Such small parcels are purchased by new owners for possible future use or resale; this tends to maintain the pace of ownership change and increases the value of each parcel in the process.

The scenario outlined above does not apply to all cases examined in the study area, but depicts a general situation that exists. The implication might be that while the economic viability of the study area rests on land speculation and possible future recreational land use, the functional viability of the land resource is diminished. In the past the economic mainstays of the study area included use of the area's cropland and timber resource in addition to the recreational resource. As demands mount for more output from the croplands of the nation and the state, however marginal, and for more wood products for domestic and foreign needs, there well may be a revitalization of lands that can once again perform these functions. This may occur regardless of a loss of viability. It is conceivable that public policy--even more than the actions of the marketplace--might force this course of action.

It might be concluded that the study area, as one section of the Oregon coastal zone, has been experiencing a state of transition in terms of use of the land resource of the area. This state was likely entered before

the beginning date of this study, but no one is in a position to speculate with any credibility when this transition stage might end.