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MAINE POPULATION PROJECTIONS 1970 - 2020

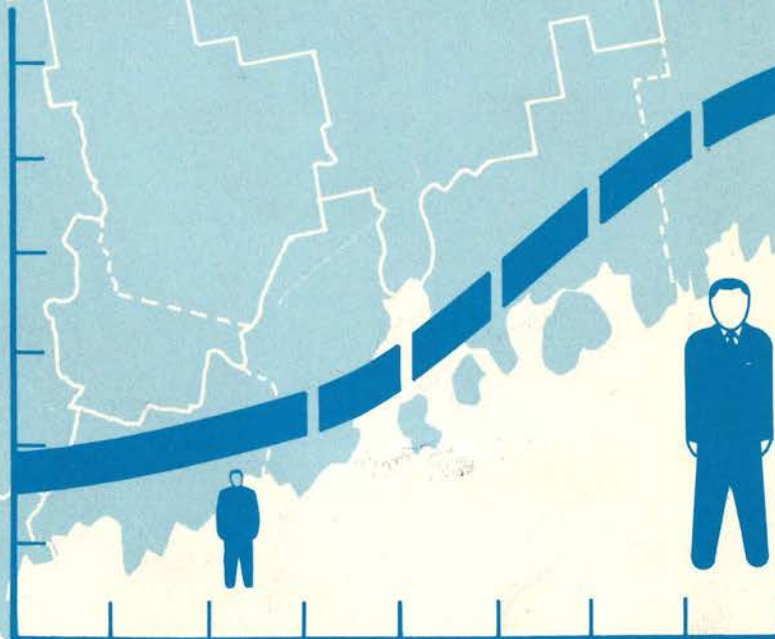
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State Planning Office
Executive Department
State of Maine

KENNETH M. CURTIS
Governor

PHILIP M. SAVAGE
Director



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INTRODUCTION

This is a graphic summary and analysis of the population report prepared for the Departments of Health and Welfare, Educational and Cultural Services and the State Planning Office by the Public Affairs Research Center at Bowdoin College.⁽¹⁾ Assisting in this task was an ad hoc Population Projection Advisory Committee organized and chaired by the State Planning Office. This committee comprised representatives of twenty State departments or bureaus concerned in various ways with the planning for the future human or resource needs plus a representative of the eleven regional planning commissions located throughout the State. During the course of the study, a number of meetings were held with the consultant to determine the population projection needs of each agency and to give him the opportunity to explain the various methods of generating population projections. At these meetings, the consultant was also able to obtain the views of the committee members regarding the assumptions underlying the various projections.

It was agreed by the Committee that a series of five projections would be made projecting total population to the year 2020 with population given for the intervening target years of 1975, 1980, and 2000. For the five and ten year target years (1975 and 1980), the committee agreed that the five projections should be broken down by sex and by the following age groups: 0-4 years, 5-17, 18-21, 22-44, 45-64, 65 years and over. In every case, projections were generated for the State, each county and each Planning and Development District and sub-district. The projection determined most likely to occur (P5) is illustrated in Table 1 with the other four projections in the Appendix. Data pertaining to the breakdown of projected population by age and sex by Planning and Development District may also be found in the Appendix in Table 2.

The committee felt that the smallest area projections should be made by county and by Planning and Development District because population projections for most of Maine cities and towns might be subject to great fluctuation due to single firms moving into or out of town. It was reasoned that a larger population provided some security against extreme fluctuations of population change due to single firm changes. In addition, it was felt that community planners and others concerned with population change could more readily develop a formula for stepping down the population projected for the District or county. This could be done for the community by projecting the community's proportional share of District or county population into the future refined by the community planners' more intimate knowledge of present trends in the community.

This graphic report is a companion publication to the "Maine Population Trends 1960-1970" report published during July 1972 by the State Planning Office. While the 1972 report discussed population trends between 1960 and 1970, the "Maine Population Projections 1970-2020", report examines past trends and projects most likely trends, as determined by the Population Projection Advisory Committee, into the future.

(1) All unreferenced data in this report came from two reports published by PARC: "Maine Population Projection series, 1970-2020," written by Dr. Edward H. Hanis and "Summary of Maine Population Projections 1975-2020" written by Carl E. Veazie, Director of PARC. If the reader wishes to explore State and regional population projections further, it is suggested that he refer to these two publications in the State Library.

This was accomplished by the consultant projecting five trends for the State, each Planning and Development District and each county based on assumptions made by the committee. Five projections were considered sufficient to represent prospective alternative trends in the state and its areas. From these five projections the consultant chose one that he felt most applicable to the State. After due consideration the committee adopted the most likely (P-5) projection recommended by the consultant and applied this trend to each county and to each Planning and Development District.

Something should also be said about the general direction taken in this report. It is basically an analysis of past natural increase and migration trends projected into the future. No population policy has been adopted by the State of Maine setting forth a desired population the State should house in the future. There are some, such as those who would like to see a reduction in the population of Maine so that less of an impact would be exerted on Maine's natural and cultural resources. On the other hand, there are those who view a growth in Maine's population as an increment to Maine's economic progress. A desirable population policy may be found somewhere in between these two extremes.

At the National level, the President's Commission on Population Growth and The American Future, has stated that:

. . . There is hardly any social problem confronting this nation whose solution would be easier if our population were larger. Even now, the dreams of too many Americans are not being realized; others are being fulfilled at too high a cost. Accordingly, this Commission has concluded that our country can no longer afford the uncritical acceptance of the population growth ethic that "more is better." And beyond that, after two years of concentrated effort, we have concluded that no substantial benefits would result from continued growth of the nation's population.

Until a population policy is drafted and supported by the State and various public and private organizations, planners in Maine must continue to develop most reasonable assumptions of future trends and project them into the future. This will have to be done in order to determine what impact Maine's future population will have on its natural and cultural resources and the governmental services that must be provided for this population. Hopefully, this graphical report will give the reader a better understanding of population trends in the State of Maine and its potential population if past trends continue.

TOTAL POPULATION TRENDS IN MAINE

1970 - 2020

Figure 1 on page 7 shows how Maine's population has grown during the 180 year period from 1790 to 1970. The figure is separated into two parts. Each part presents a different perspective of Maine's population as compared to United States and New England population growth. Note that Maine grew at a much faster rate than New England until approximately 1840 when the rest of the Region began to grow at a faster pace than Maine. At that time, 22.5% of the Region's population lived in Maine. In 1970, only 8.4% of the Region's population lived in Maine. The reversal of the pre 1840 trend is attributed to many causes among which the decline of maritime and lumbering activities in Maine during the 1840's played an important part. At the national level, Maine's proportion of the nation's population has declined from 3.2% in 1810 to .49% in 1970.

At the bottom of Figure 1, Maine's total population is shown beginning with the 1790 Census to include the most recent 1970 Census. As will be noted, Maine's population grew rapidly from 1790 to 1860, dropped by about 1,000 during the Civil War and then grew slowly for the next 100 years. During this period, Maine's population increased from 97,000 to 994,000. ⁽¹⁾

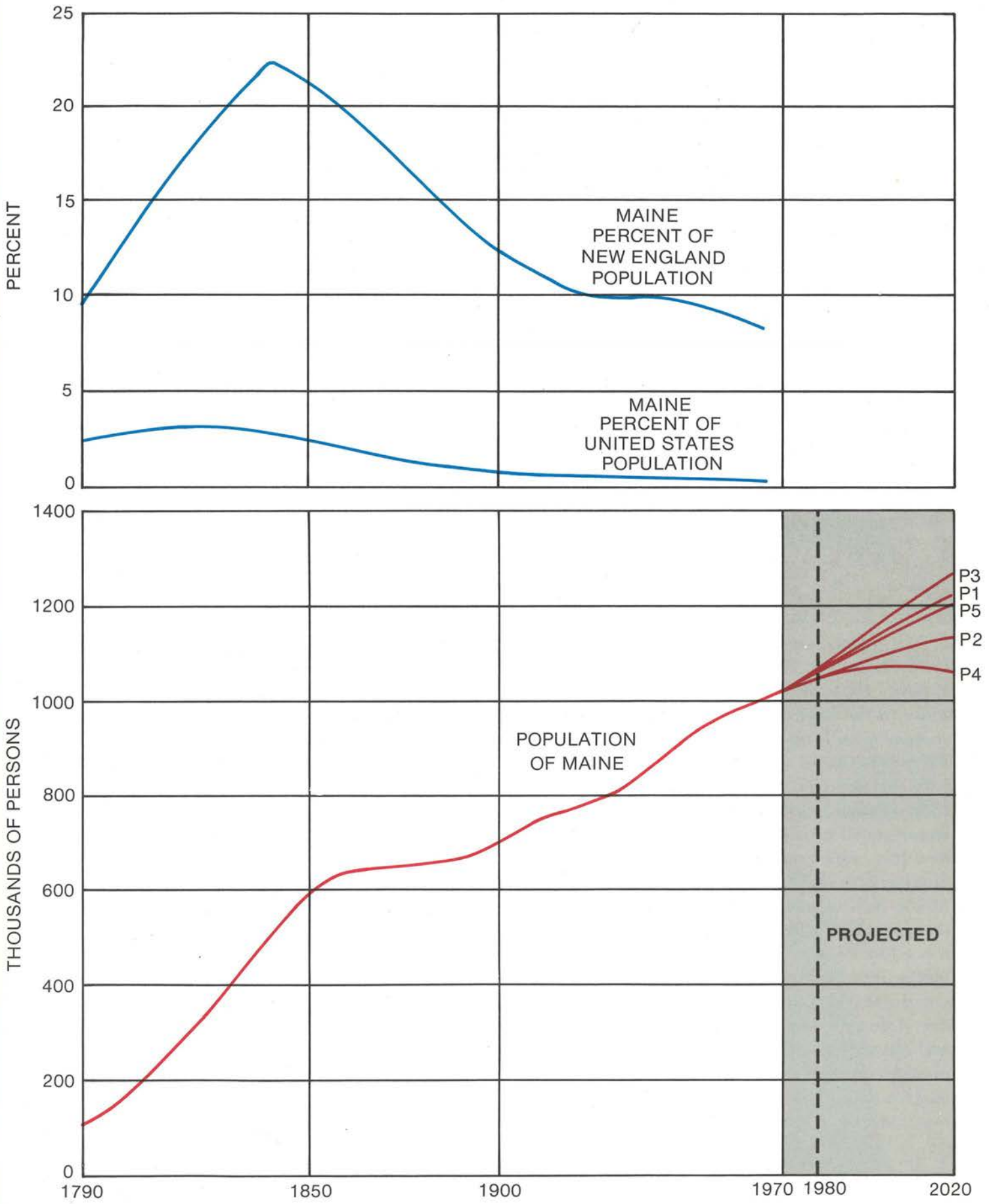
Figure 1 also shows the five projections of total population made by the Public Affairs Research Center for the State based upon the assumptions made by the Population Projection Advisory Committee. The projection or "P" series were based on assumptions of high, medium and low birth rates measured by the number of children born per 1,000 women of child bearing age and assumptions of net migration. For net migration (the difference between the inflow and outflow of population from a particular area), the committee either assumed a net migration rate similar to the 1965-1970 trend for the State or a slight decline in this rate. Various combinations of these factors were related to produce the population projections for total State Population shown in Table 1 in the Appendix of this report.

After careful consideration of all factors involved, the Committee chose the P-5 trend recommended by the consultant as the most likely trend to occur. This trend is based on the assumption of a medium birth rate and a slight drop in net migration for the State. As will be noted on Figure 1, the P-5 trend line is the middle trend line between the high P-3 and low P-4 projections.

In Figure 2, two of the four projections made by the Census Bureau are shown projected to 1990. The Census 1C and 1E projections made in 1972 constitute the lowest and next to lowest projections of the four projection series. These projections are used for comparison with the "P-5" projection because they reflect lower birth rates than do the other projections. This is because the Census Bureau has recently revised its projections downward stating that the nation's birth rate has dropped markedly in the past two years.

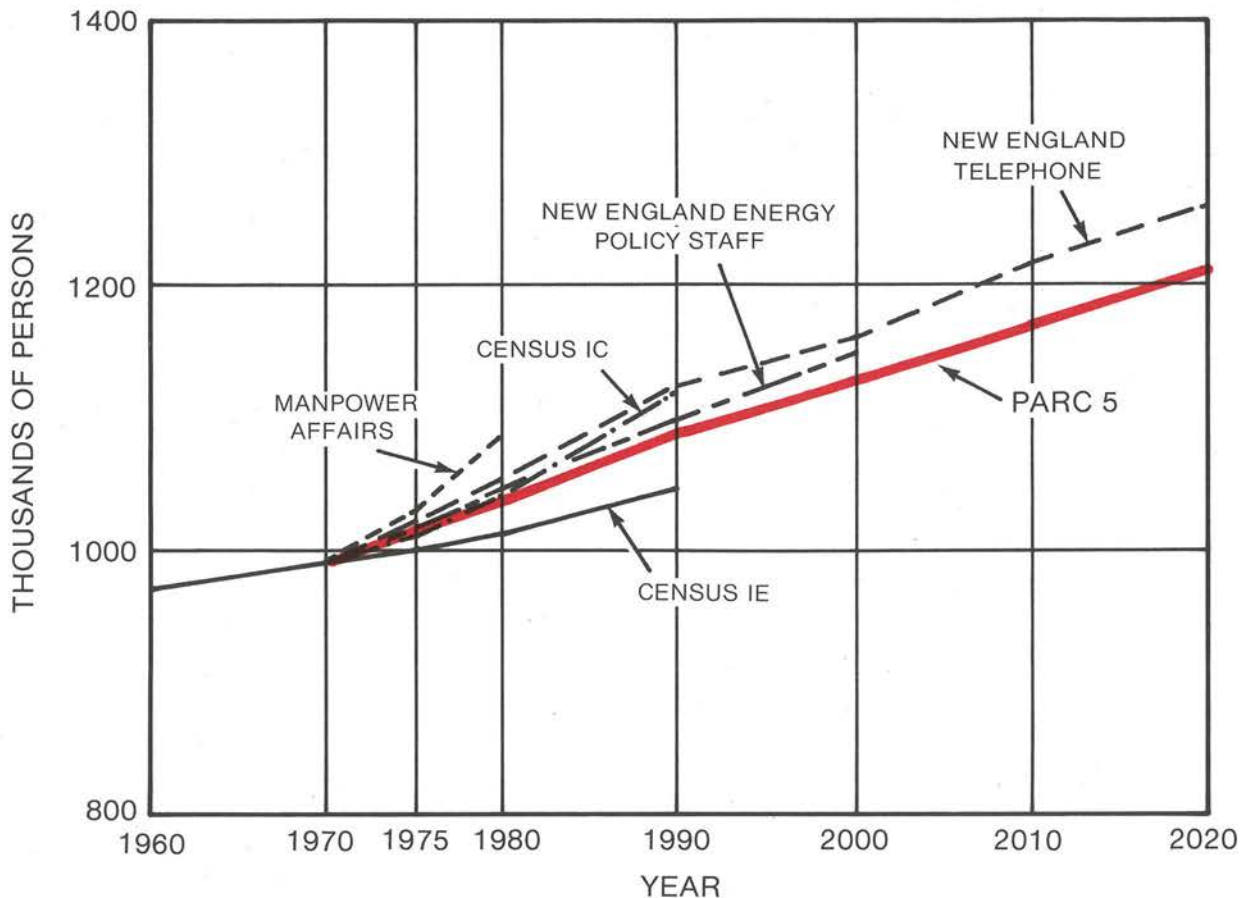
⁽¹⁾ Rounded to the nearest thousand.

Figure 1 — POPULATION TRENDS FOR MAINE, NEW ENGLAND AND THE UNITED STATES WITH PROJECTIONS FOR MAINE 1790 - 2020.

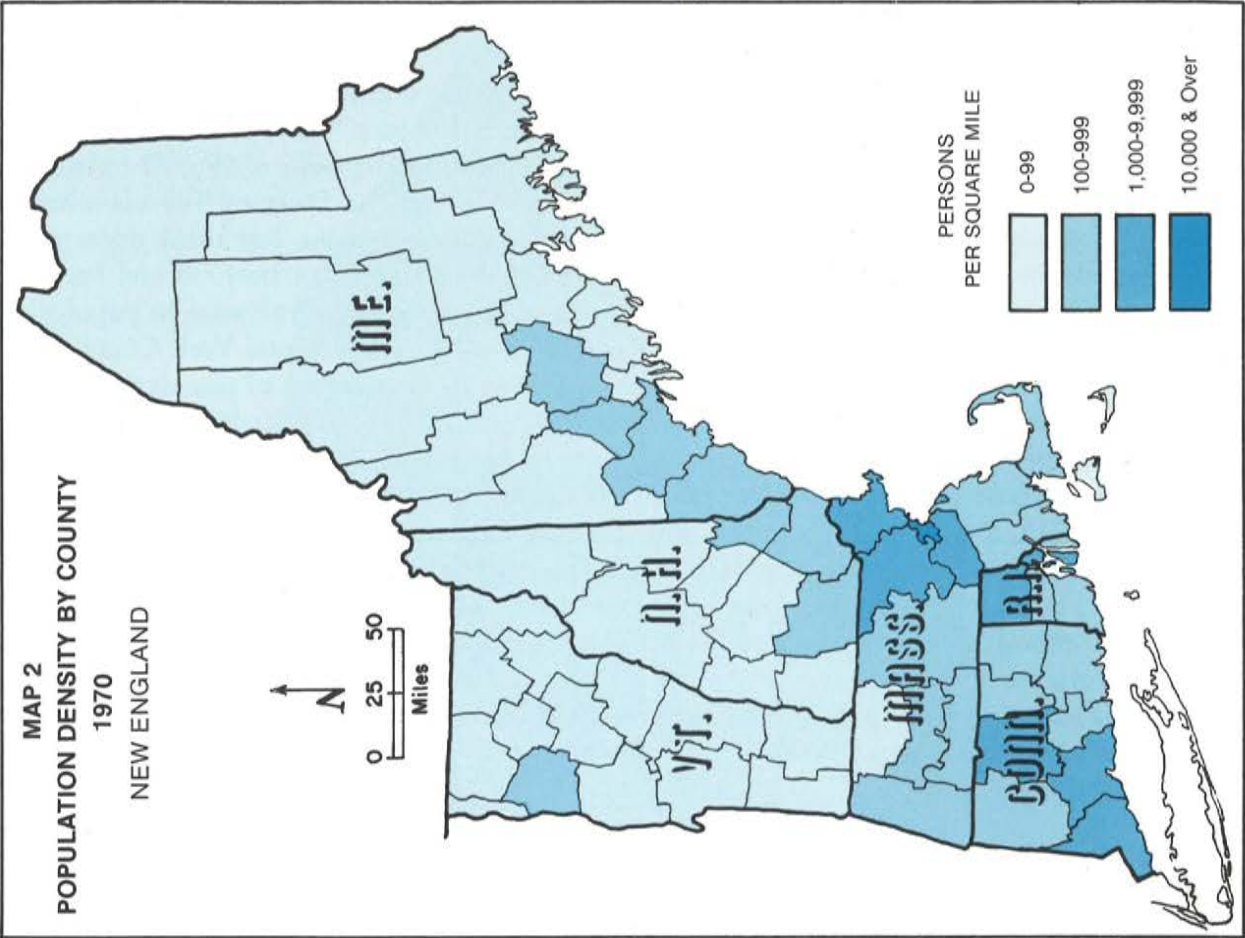
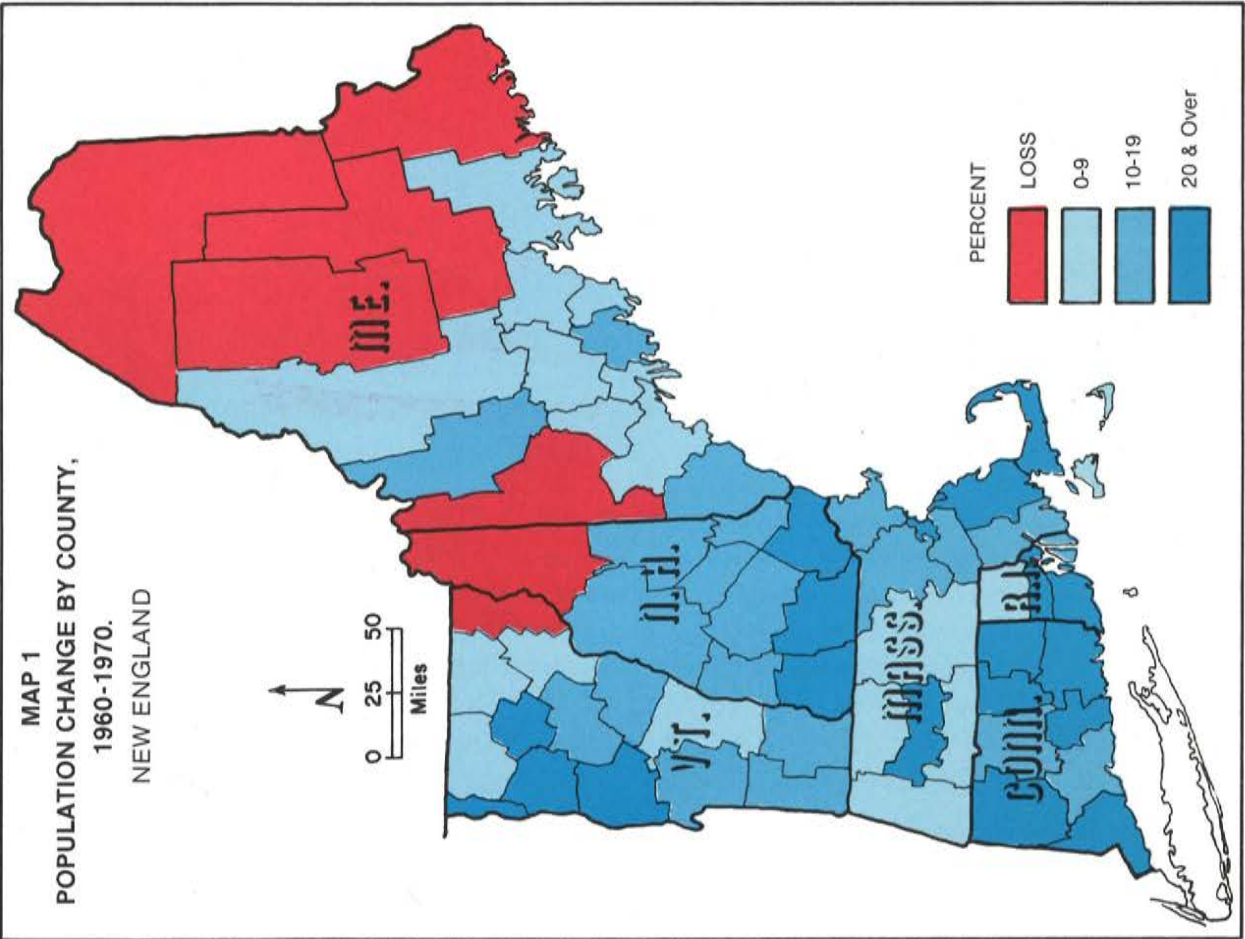


Source: U. S. Census of Population
 Projections by PARC

Figure 2 – PROJECTION OF MAINE'S POPULATION, 1970-2020



Manpower Affairs projections of employment have been expanded to show total population figures to 1980. New England Energy and New England Telephone projections are also shown. Up to 1980, the P-5 projection adopted by the Population Advisory Committee falls close to the lower middle of all the projections. Note that all of the projections indicate a steeper growth rate after 1970 than the growth experienced between 1960 and 1970. If the P-5 projection is way off course in 1975 and 1980, it will share this dubious honor with projections made by a number of governmental and private agencies. However, it is rather unlikely that this will occur if past trends hold. This is because Maine, as a whole, has experienced a period of slow but continuing growth for many years. If a large number of new jobs were created in Maine during the next Decade, this would change past trends. Similarly, a large growth of population working out-of-State but spilling over into Southern Maine to live would also alter Maine's past population trends. Map 2 shows the effect of urbanization in Maine as related to the city of Boston. Note the string of counties that form a corridor of population density of 100-999 persons per square mile from the Massachusetts border into Maine to include Kennebec county. As the areas to the north of Boston become populated, succeeding waves of population moving out of the city and its suburbs may spill over into southern Maine where they will live though retaining their jobs in New Hampshire and Massachusetts. However, this spillover of population into Southern Maine may be insufficient to change statewide population trends during the next Decade. Nevertheless, it will exert a considerable impact on individual southern Maine communities that will be asked by their new residents to provide additional services.



NATURAL INCREASE

The number of births minus the number of deaths within a designated area during a specified period results in a sum that constitutes that area's "natural increase". According to U.S. Census figures, Maine experienced a natural increase of 92,772 between 1960 and 1970 though many of these persons later migrated from the State to live elsewhere. (1) Most of the natural increase that occurred in the State during the last three decades took place within the populous and prolific counties of Aroostook, Cumberland and Penobscot. These three counties contributed over 51% of the State's natural increase in population. Significant increments also occurred in Kennebec, Androscoggin and York Counties as shown on Map 3. Note that a significant drop in natural increase of population in the various counties occurred between the 1950-1960 and 1960-1970 decades. Table 3 in the Appendix of this report gives a yearly account of birth and death trends with the resulting natural increase shown for the United States as well as for Maine from 1945 until 1971. Prior to 1945, the state's rate of natural increase varied from approximately 4% to 8.5%. After 1945 its natural increase rate per 1,000 population climbed to 11.6%. During the 17 year period from 1946 (the year after World War II ended) to and including 1963, the rate of natural increase remained high. This was due to a continuing decline in the total death rate per thousand population and a rise in the total number of births per 1,000 population beginning in 1946 but slowing down after 1961. Though death rates continue to decline, birth rates have declined at a faster pace. As a consequence, natural increase rates continue to decline.

Compared to the nation, Maine's births per 1,000 total population are comparable while its deaths per 1,000 total population are higher which may be due in part to Maine's higher proportion of elderly than for the nation as a whole.

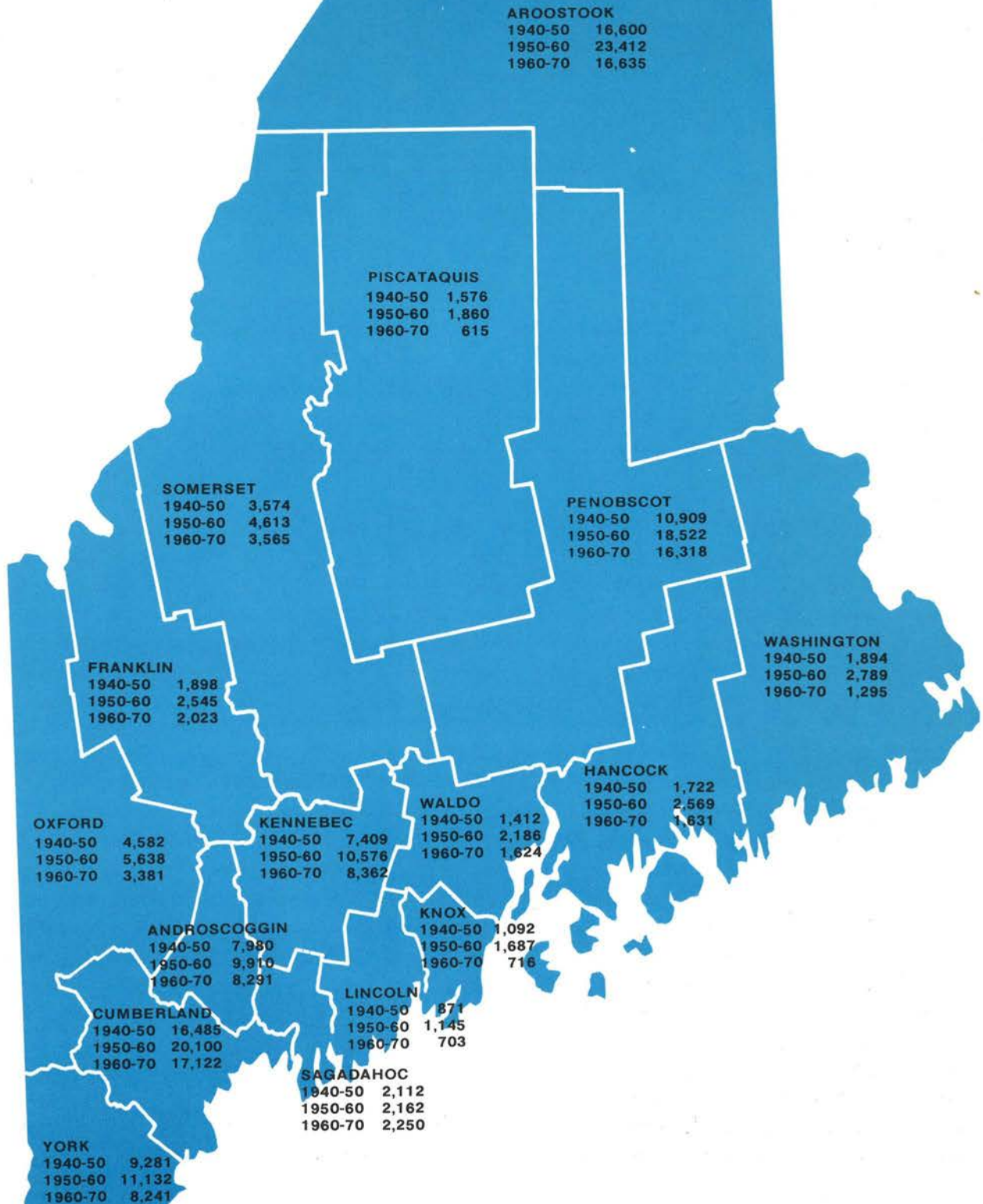
Since 1960 the natural increase of Maine's population has steeply declined. By examination of Map 3, it will be noted that the natural increase in population by county in Maine declined in many instances to the point where many counties were experiencing natural increase rates similar to those experienced prior to World War II. Aroostook and Washington Counties might therefore be expected to contribute less to out of county migration in the future than in the past, because fewer children are now being born to migrate out of county in the future. The smaller drop in natural increase for Penobscot county in spite of the closing down of the large Dow Air Force base at Bangor during the 1960's may reflect a capacity of this area to hold a large portion of its child bearing population.

Death rates will probably continue to decline as medical care is improved in the State and nation. Birth rates, however, may continue to decline in Maine as well as for the nation as a whole. Sample surveys made by the U.S. Census Bureau indicate that white wives aged 18 to 24 now expect to have an average of only 2.2 children or close to the replacement rate of 2.11 in contrast to the 3.2 children anticipated by women of those ages in 1955. In general, rural wives expect more children than urban wives, blacks more than whites, elementary school graduates more than college graduates and the poor more than the affluent. The increased use of contraceptives and abortion as well as changes in the lifestyle of young people have forced birth rates down and may continue to do so in the future. The mean age of childbearing is also falling slightly. The current national average is now 25.3 years. Women are having children earlier and fewer in number.

(1) U.S. Census of Population; Maine Department of Health and Welfare

STATE TOTALS

1940-50 89,397
1950-60 120,846
1960-70 92,772



MAP 3

NATURAL INCREASE OF POPULATION BY COUNTIES 1940-1970

Source: U. S. Census of Population

NET MIGRATION

The second major component of population change is net migration. It is computed by subtracting natural increase from the total population change occurring during a specified time period in a particular area. From Map 3, a natural increase in the State's population of 92,772 can be obtained. Add this figure to the known 1960 Census of Population to obtain a population of 1,062,037, a total State population for 1970 with no migration. Subtract from this amount the actual 1970 Census figure of 993,663 for the State to obtain the 68,374 net out-migration for the State. In a similar way, a net migration figure was calculated for each of Maine's counties. The results are shown on Map 4. Note that in Aroostook county the net migration out of the county more than doubled during the 1960-1970 decade over the previous decade. This occurred in spite of the steep decline in natural increase between the two decades in the county.

On a relative basis, the highest rates of net out-migration between 1960 and 1970 occurred in Aroostook (-27.8%, Penobscot (-13.7%), Washington (-13.2%), and Piscataquis (-10.7%) counties in that declining order. Numerically Aroostook experienced the largest net out-migration in the State (28,621) while Penobscot's net out-migration (17,271) amounted to approximately 60% of Aroostook's. Twelve of Maine's 16 counties registered net out-migration during this period. York gained the highest (3,933), Lincoln (1,337) the second, Hancock (666) the third, and Franklin (352) the fourth in net in-migration.

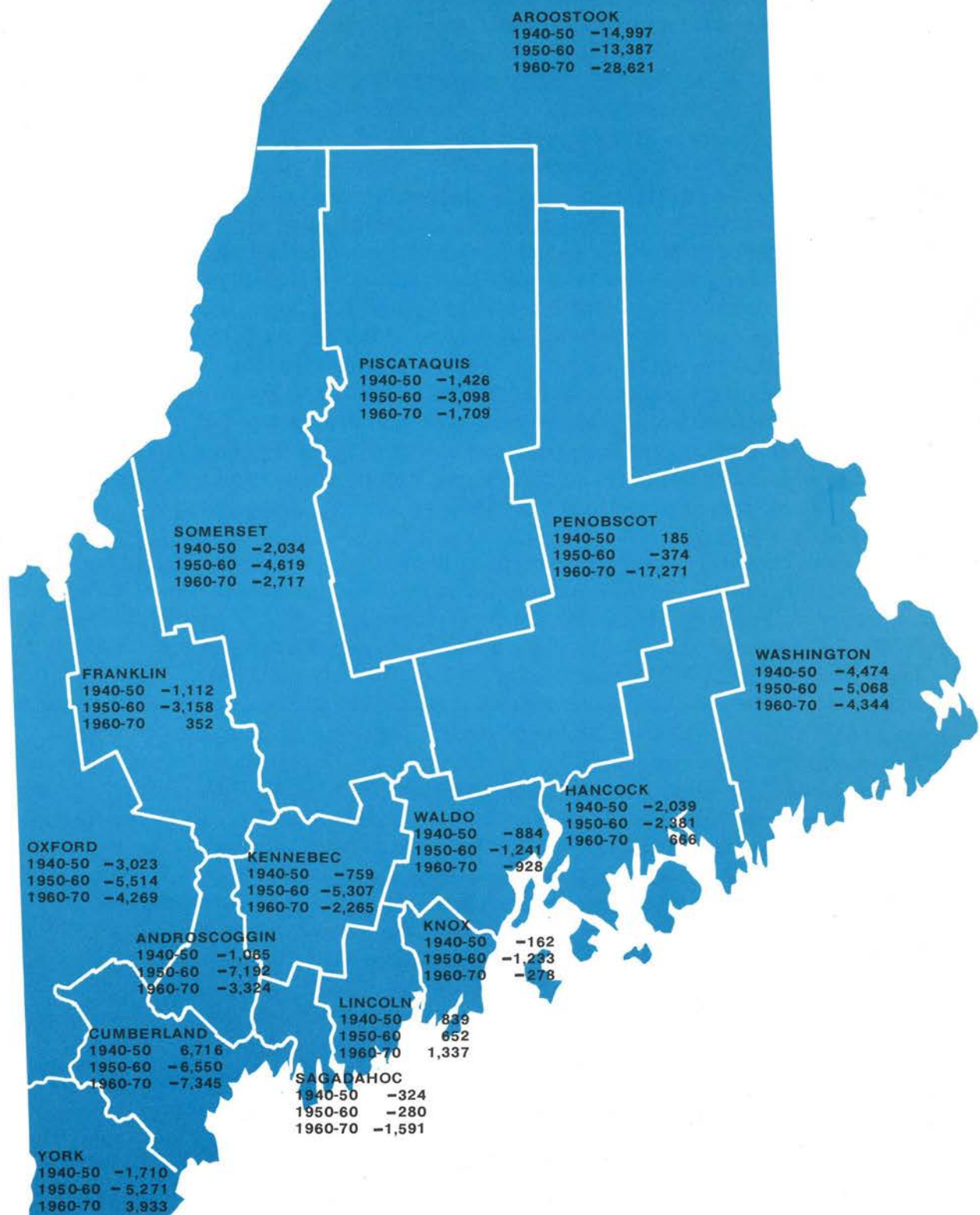
Net out-migration in Maine may be attributed in large measure to the slow growth of jobs in the State. For example, total employment in the State rose by only 32,800 persons between 1960 and 1970 (a net gain of 37,800 civilian jobs and a net loss of 5,000 military personnel) in contrast to the net out-migration of 68,374 persons. About 52,000 of these persons were in the economically active ages of 15-64 during this period. Consequently, a majority of the net out-migrants probably consisted of persons looking for work and their dependents. Although some young and some old people come to Maine to escape urban blight in other States and to enjoy the rural outdoor environment the State offers, they are still far outnumbered by residents of this State who are unable to secure satisfactory employment. These are the people who must leave the State to find employment elsewhere.

Recent Census data reveals that about two-thirds of the net out-migration of 19,000 persons which occurred in Maine between 1965 and 1970 consisted of the 20 to 29 year old males and females. There were smaller numbers of net out-migrants in the other age groups as shown in Appendix Table 4. The State experienced net in-migration only for persons aged 55 - 64 years. The Table also indicates that Census Economic Area 4 (York, Androscoggin, Kennebec, Sagadahoc and Lincoln counties) comprised the only area of the State that experienced a net in-migration of people between 1965 and 1970.

The flow of people to and from Maine to and from other States and areas of the United States is also of interest in a population report. Table 5 in the Appendix reveals that the largest flow of migrants to and from Maine between 1965 and 1970 occurred between Maine and the other New England States, principally Massachusetts.

STATE TOTALS

1940-50 -22,849
 1950-60 -65,355
 1960-70 -68,374



MAP 4

NET MIGRATION OF POPULATION BY COUNTIES 1940-1970

Source: U. S. Census of Population

MAINE'S FUTURE POPULATION

Maine's total population projected to the year 2020 is shown in Table 1 in the Appendix of this report. This Table shows five different trends projected into the future based on the assumptions of migration and natural increase trends briefly described on page 6. Most of the members of the Population Projection Advisory Committee felt that the consultants' projections for the State as a whole were good. It was noted that the difference between the high and low "P" projections made by the Public Affairs Research Center varied by only 14,000 as of 1980 or less than 2% of the State's population recorded in the 1970 Census. However, it became much more difficult for the members of the Committee to analyze and comment intelligently on the projections that were made by Planning and Development Districts and for the counties even though they were familiar with population trends in various parts of the State. For the State as a whole members could agree that the trend of net out-migration from the State would probably slow down during the next decade. This would be due to a continued increase in jobs with no major military phase outs such as experienced during the last decade. A decline of the net out-migration would also be due in part to a reduction in the natural increase of population. The decline in natural increase would be based on a steep reduction in Maine's birthrate to the point where the State could experience a zero natural increase rate sometime in the not too distant future. In the Public Affairs Research report, the consultant stated that in his judgement, Maine's future population growth would be characterized by a birth rate slightly above replacement level and a reduction of the net out-migration from the State.

The consultant's projection based on the assumptions concerning natural increase and net migration, follow similar trends projected by other agencies as shown in Figure 2. Of particular interest is the U.S. Department of Labor projection of Maine's labor force to 1980. Based on their knowledge of state trends, they projected a rise of 13.4% in Maine's labor force from 413,000 persons in 1970 to 468,000 in 1980.¹ The Maine Department of Manpower Affairs projected the state's employment to 1980 by industry and by occupation.² By using a method of relating Maine trends to comparable U.S. trends by industry and the use of national projections for 1980, a total of 417,600 civilians employed in Maine by 1980 was obtained. Based on this number of civilian workers plus a little over an estimated 15,000 armed force personnel, a total population figure was derived by multiplying the ratio of known workers to known total population times the projected number of work force to obtain total population in 1980. These projections, made by agencies that have a feel for employment growth potentials appear to give Maine a fair increase in jobs during the next seven years. In the Department of Manpower Affairs report, the number of jobs available will be due to the creation of new jobs through new industrial growth and the replacement of workers retiring or otherwise separating from the State's work force. If the number of jobs increase as projected by the Department, Maine's general net out-migration should slow down thus adding to the State's resident population in spite of the slow down of Maine's birthrate.

1. U.S. Department of Labor, Bureau of Labor Statistics, *Tomorrow's Manpower Needs*, Volume 1, Bulletin No. 1606, February 1969.

2. Maine Department of Manpower Affairs, *1960-1980 Industrial and 1969-1980 Occupational Manpower Needs in Maine*, September 1972.

Maine's population was projected on the basis of historical survival rates of male and female age groups tempered by general assumptions about the natural increase and net migration rates. Up to 1980 the various age and sex groupings were separately identified, but after 1980 they were lumped together. Through use of a computer it was relatively easy to project the great number of historical trends for the various sex and age groups into the future modified by the assumptions mentioned above. It would have been a tremendous task to have made these calculations manually.

Table 2 in the Appendix shows the results of the P-5 projections to 1980 by the various age and sex groups chosen by the Population Projection Advisory Committee. The age groups are as follows: 0 - 4, 5 - 17, 18 - 21, 22 - 44, 45 - 64 and 65 and over.

The Table also compares the 1970 Census figures for age and sex groups with those projected for 1980. It will be noted that a 17,000 person rise in the 0 - 4 population is projected. The projected decline of 28,000 persons in the 5 - 17 age group will create less of an impact on our primary and secondary school systems than during 1970. The projected 9,000 increase in persons in the 18 - 21 age bracket in 1980 is a result of the aging of the large number of 5 to 14 year olds counted in the 1970 census. However, the projected increase of 39,000 persons in the 22 - 44 age group has raised questions from those who believe that Maine will not have a sufficient number of jobs to keep many of these people in Maine. As stated in the Maine Population Trends 1960 - 1970 report published by the State Planning Office, the greatest gains in population between the 1960 and 1970 Census occurred in the 15 to 24 age group. In 1980, these people will be 25 to 34 years of age. So the persons in this age bracket are living in Maine, but will they stay? Will there be a sufficient number and different types of jobs available to enable many of Maine's sons and daughters to remain in the State?

The "Maine Business Indicators" May 1973 newsletter, published by the Maine Bank, shows a State increase of 4,700 jobs based on average annual employment between 1971 and 1972. This increase in jobs is low compared to the projected need of 16,536 new workers each year from 1969 to 1980 made by the Department of Manpower Affairs. However, the Department's figure was obtained by dividing the eleven year period into the projected eleven year total increase of 39,000 jobs. This average could vary considerably year by year. Secondly, this Department should have a better understanding of employment potential in the State than any other agency. It is for these reasons, that this Department's employment projections were accepted as a basis for assuming that an increase in total State population in the 22 - 44 age bracket appeared likely.

The projected loss of 1,000 persons in the 45 - 64 age group is not surprising since the age group that would overlap this group ten years later, experienced a decline in population between 1960 and 1970. No one on the Advisory Committee took issue with the projected increase of 7,000 persons in the 65 and over age category.

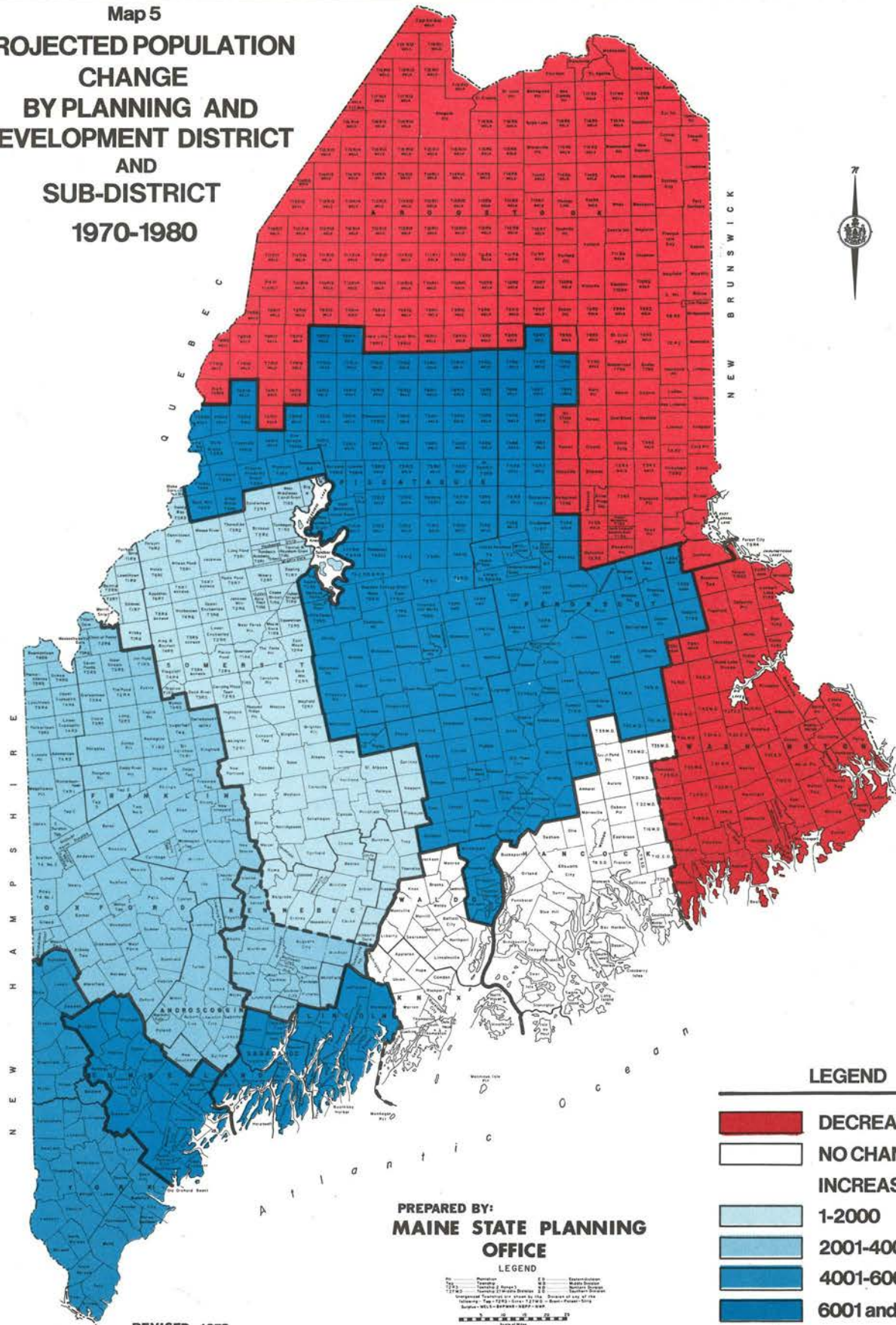
Comparisons between the sexes in so far as the growth of population is concerned is not treated in depth in this report, because similar male and female population trends have occurred in almost every age category. However, before proceeding to the next section of this report, it should be noted that females contributed the largest proportion of the projected population growth for the State in the 22 - 44 and 65 and over population age groups.

POPULATION PROJECTIONS BY PLANNING AND DEVELOPMENT DISTRICTS

Projections by Planning and Development District and sub-districts are shown on Map 5. On this Map, the Cumberland and Penobscot Districts show the greatest increase in population. The Bath-Brunswick sub-district of the Mid-Coastal District also show substantial increases in population by 1980. It may be seen that all Districts and sub-districts except Northern Maine and the sub-districts of Washington, Hancock, and Knox show varying amounts of population increase. As stated earlier, the determination of migratory trends is the most difficult task in making population projections. In large part, net migration is determined by the number and type of jobs available. Based on past District shares of jobs projected into the future, PARC obtained estimates of future job growth by District and sub-district. However, the consultant stated that the methodology used in stepping down Manpower Affairs statewide job projections by District and sub-district was rather crude and a more refined method was needed to portray more accurately the job growth potential in each area. Unfortunately, the more refined method of determining job growth potential was beyond the financial scope of the population report. Nevertheless, when PARC apportioned the Department of Manpower Affairs job growth figures for 1980 to each District and sub-district, it was noted that Southern Maine's growth in jobs grew at a faster pace than nearly all of the Districts. If these estimates are correct, Southern Maine's population should grow at a faster pace than most of the rest of the State. However, PARC projections of population by District do not show as much population growth for the Southern portion of Maine as for the Penobscot District. This contradicts the Department of Manpower Affairs State job projections stepped down to each District. In addition, most of Maine's population growth occurred in southern Maine during the last decade.

In answer to these concerns raised by various individuals, PARC states that projections for each District and sub-district have been made by projecting past trends of natural increase and net migration tempered by committee assumptions related to anticipated natural increase and migration trends in the future. The assumptions were programmed into two models: a natural increase model and a net migration model and run on the computer. The resulting age and sex groups as projected were totalled by Planning and Development District and by county and then for the entire State. Though several members of the Population Advisory Projection Committee raised questions about the change in population trends in the State to show greater growth in the Penobscot District than in the Southern Maine District, the consultant has stated that he will not change his projections without substantive data; such data have not been furnished to the consultant. Figure 3 illustrates the consultant's anticipated population growth by Planning and Development Districts. Note that the total population trend between 1960 and 1970, when it declined slightly, makes a significant turnabout in the Penobscot District to show the greatest population increase by District in the State between 1970 and 1980. The economic argument for this apparent contradiction in trend is based primarily on what has happened during the last thirteen years. During that time the Bangor area suffered the economic loss of the Dow Air Force Base when 5,230 military jobs and 8,100 dependents were lost due to the closing of that base. Since the loss of the Air Force base, however, a new international airport has come into being, new industries and the University of Maine have expanded in and around the former Air Force Reservation. Even during the latter part of the last decade, civilian employment increased in the Bangor area while Air Force personnel were phasing out. There may be good grounds for projecting a significant turnaround in population growth in the Bangor area which will undoubtedly make housing even more difficult to obtain than previously.

Map 5
PROJECTED POPULATION
CHANGE
BY PLANNING AND
DEVELOPMENT DISTRICT
AND
SUB-DISTRICT
1970-1980



LEGEND

- DECREASE (4000)
- NO CHANGE
- INCREASE
- 1-2000
- 2001-4000
- 4001-6000
- 6001 and Over

PREPARED BY:
MAINE STATE PLANNING
OFFICE

LEGEND

 10 - Population 20 - Transportation
 25 - Land Use 30 - Water Resources
 35 - Planning 40 - Economic
 45 - Environmental 50 - Social
 55 - Regional 60 - State
 65 - Federal 70 - Other
 75 - Unlabeled
 80 - Unlabeled
 85 - Unlabeled
 90 - Unlabeled
 95 - Unlabeled
 100 - Unlabeled

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General population trends for the other Districts follow a continuing pattern. Androscoggin and Cumberland appear to continue their pace of growth while Eastern Maine shows a loss between 1970 to 1980. Kennebec and Southern Maine illustrate a slowing down of growth in their areas during the next decade.

As mentioned previously, several persons on the committee felt that Southern Maine and Kennebec should grow at a faster pace than shown by the consultant's projections. The consultant has agreed that most likely population trends for the State may not be as applicable to the southern portion of the State as to its other parts. This is due to three basic unknowns: the future of the Portsmouth Naval Shipyard at Kittery, the trend of interstate commutation of persons living in Maine and working in New Hampshire or Massachusetts, and the prospective spinoff of industries in the Boston area that relocate near or in southern Maine.

Other members of the Committee also believed that their respective areas would grow at a faster pace than projected by PARC. A good example of this is the Northern Maine District that PARC shows declining in population, but at a slower pace than previously. Regional Planning technicians from the Northern Maine Regional Planning Commission expressed strong convictions that Northern Maine's large net out-migration would bottom out and the area would show a slight increase in population between 1970 and 1980. For additional reference to projected population totals, please refer to Table 6 in the Appendix. This Table gives the projected total population for each Planning and Development District and sub-district for 1975 and 1980 with comparison to 1970. County totals for the same years are found in Table 7.

PROJECTED AGE GROUPS BY PLANNING AND DEVELOPMENT DISTRICT

Numerical gains and losses by various segments of the population are important to know in planning service facilities and utilities for the population. A detailed breakdown of population into various sex and age groups is necessary, for example, in planning schools and other facilities to serve the youth in Maine. A knowledge of the trend in which particular age and sex groups are changing is desirable if state, regional and local facilities and utilities are to be built to serve particular age group needs in the future.

It will be noted in Figures 4 through 9 that the designated age groups have only been projected to 1980. This is because population projections are subject to many influences that may change them. The further these projections are made into the future, the greater the potential for trend changes. PARC was therefore requested to break down the total population projections by sex and age groups to 1980 and then to lump total population projections together for the target years of 2000 and 2020. However, due to the difficulty of showing sex and age group changes on the same graph in this graphical summary report, the population change for each District is shown by age groups to 1980 and then compared to 1970.

In Figure 4, the projected change in the 0 to 4 age group is illustrated. In every District a proportional increase in this age groups' share of total population is projected. In "Maine Population Trends 1960-1970," it was shown that the 15 to 24 age group grew the most during that Decade. During the next 10 years, this group will contribute a large share of the children born who will constitute the 0 to 4 age group in 1980.

The 5 to 17 age group is not projected to grow. In every District, this group will decline in number and proportion of the District's total population. In Northern Maine, the projected steep decline in this age group for that area will place less of a burden on the primary and secondary school system in Aroostook County.

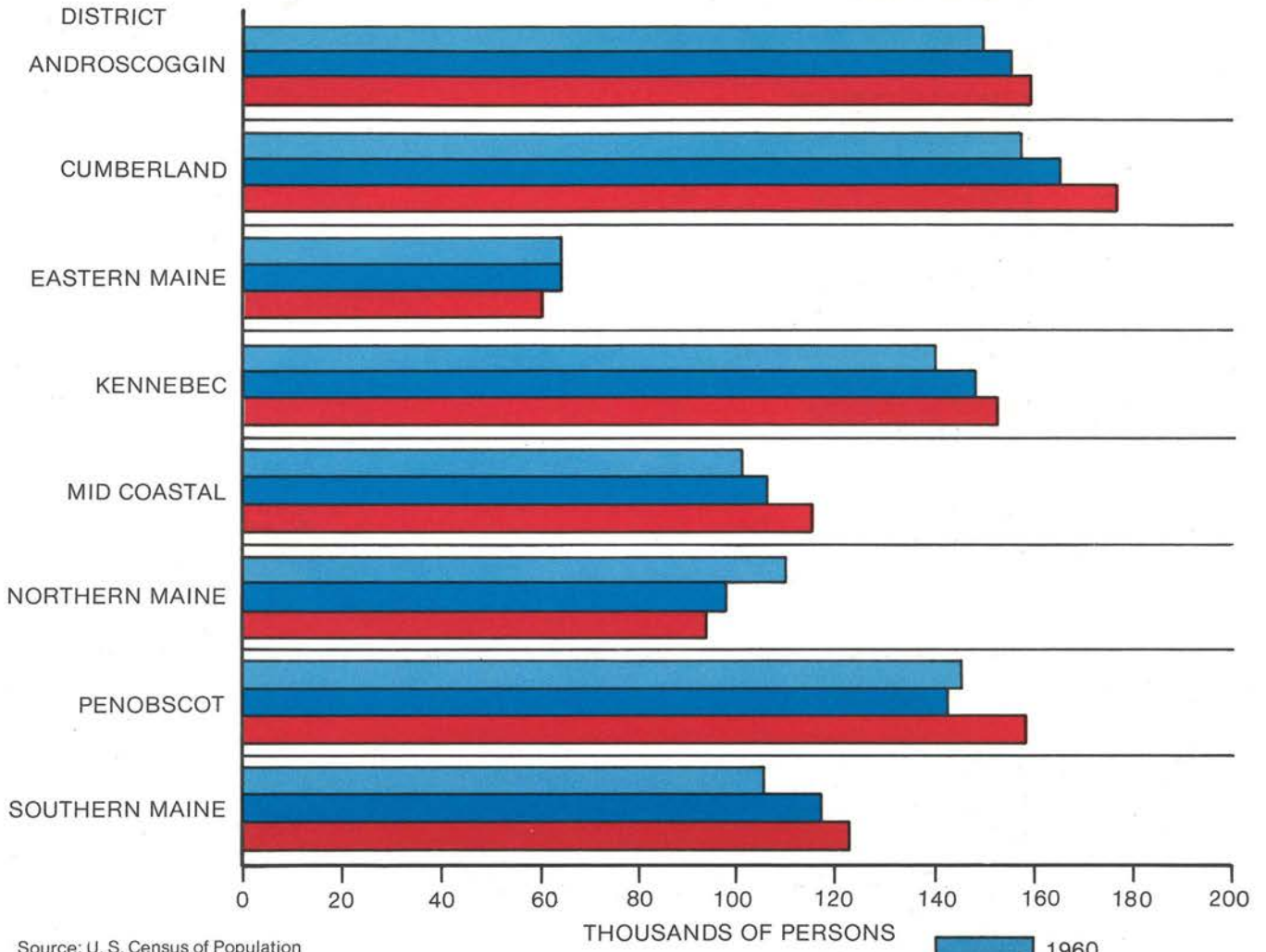
In contrast to the 5 to 17 age group, the 18 to 21 age group is projected to increase. The growth of this group will place additional strain on our higher educational facilities in the State. The Eastern Maine and Northern Maine Districts will probably not feel as great an impact of growth in this age group as the other Districts. This is due to the substantial net out-migration of young people in this age category seeking work outside of the District. In the Southern Maine District, this population group is projected to gain slightly numerically, but decline proportionally to the rest of the District's population. This simply means that other age groups will grow at a faster pace than this one and it will therefore decline as a proportion of the total District's population.

The 22 to 44 age group grew numerically in all of the Planning and Development Districts except Eastern Maine. It is encouraging to note that Northern Maine may experience a growth in its working age population. PARC believes that Northern Maine will continue to lose population, though not as much as in the past, and it may gain new jobs. The effect of this may be seen in this projection of additional persons in the 22 to 44 age group in Aroostook County who will be able to remain in the District because more jobs may be available. In the Cumberland District, the number of persons in the 22 to 44 age groups is expected to increase gradually. This could be expected because the Portland area constitutes the largest urban concentration in the State. It has probably more services to offer to industry and to its inhabitants than any other area of the State. Bangor is another large urban area. Though it does not house as many people as Portland, it does serve a much larger area which is predominately rural in nature. PARC projections for the 22 to 44 age group in the Penobscot District show a striking increase of persons of this age group in this District. It is this age group that adds the most people to the District during the 1970-1980 Decade as projected by PARC. As this age group comprises an important segment of the work force, a sufficient number and types of jobs must be available to support them.

In all but two Districts the 45 to 65 age group is projected to decline numerically by 1980. The two exceptions to this projected trend are found in the Mid-Coastal and Penobscot Districts. In these two areas, this age group is expected to increase numerically. The attraction of Maine's beautiful coast and the close proximity of the southern portion of the Mid-Coastal District to the Portland area will encourage the numerical growth of this age group in the District. This may occur at the partial expense of the Cumberland District that is projected to lose some of its inhabitants in this age category. Some of the persons in this age group may also be former Maine residents who are returning to settle down before retiring. The trend in the Penobscot District projected by PARC is much more difficult to rationalize. Bangor may find itself growing at the expense of the rural areas in its large service area. Persons from the peripheries of the District and from the coastal areas of the Eastern Maine District may be relocating nearer the Bangor area in order to take advantage of a greater number of employment opportunities. Persons returning to the State to find employment in this area may also partially explain why this working age group is projected to increase in number during the 1970-1980 period.

The 65 and over age group is projected to grow in each of the Districts in Maine during the 1970-1980 Decade. The increased numbers of this age group will place additional emphasis on the need for services for the aging in the State. Maine's increase, both numerical and proportional, follows national trends. However, Maine will probably find a larger proportion of its population in the 65 and over age group in 1980 due to the continuing out migration of the younger age groups and the increase of persons returning home to retire.

**Figure 3 — POPULATION CHANGE BY PLANNING AND DEVELOPMENT DISTRICT
1960-1970-1980**



Source: U. S. Census of Population
Projections by PARC

1960
1970
1980

Figure 4 – PLANNING AND DEVELOPMENT DISTRICT PROJECTED POPULATION CHANGE IN 0 TO 4 AGE GROUP

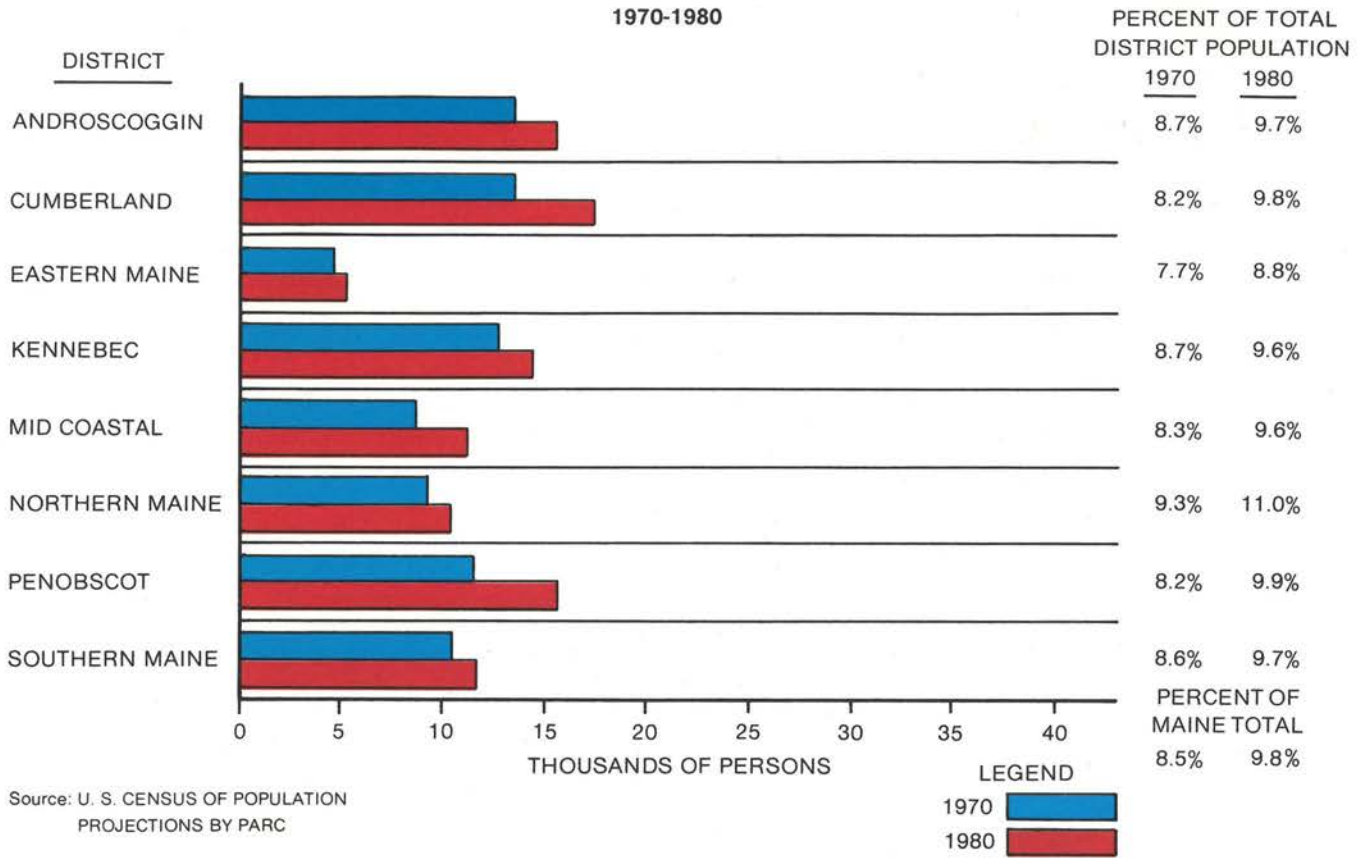


Figure 5 – PLANNING AND DEVELOPMENT DISTRICT PROJECTED POPULATION CHANGE IN 5 TO 17 AGE GROUP

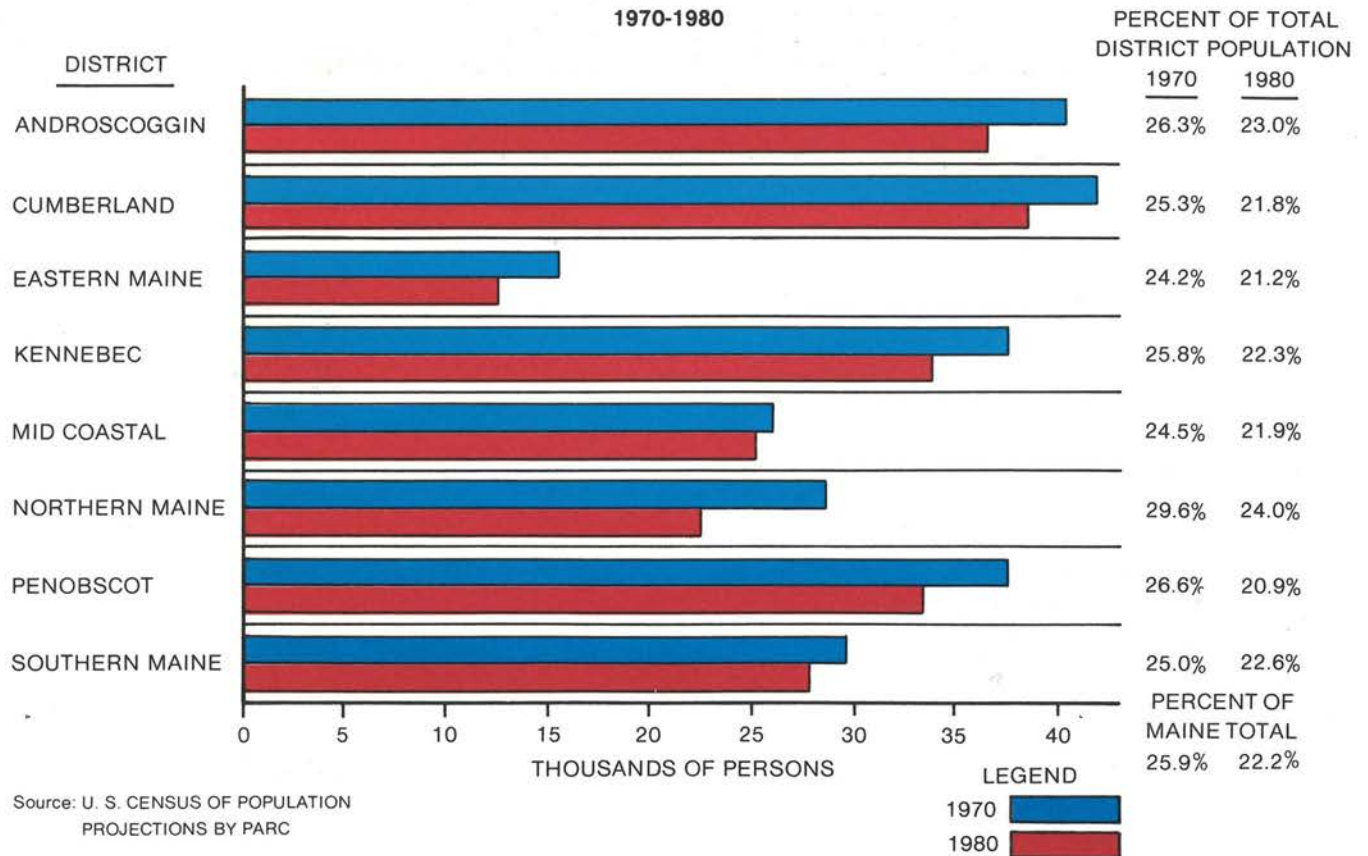


Figure 6 – PLANNING AND DEVELOPMENT DISTRICT PROJECTED POPULATION CHANGE IN 18 TO 21 AGE GROUP

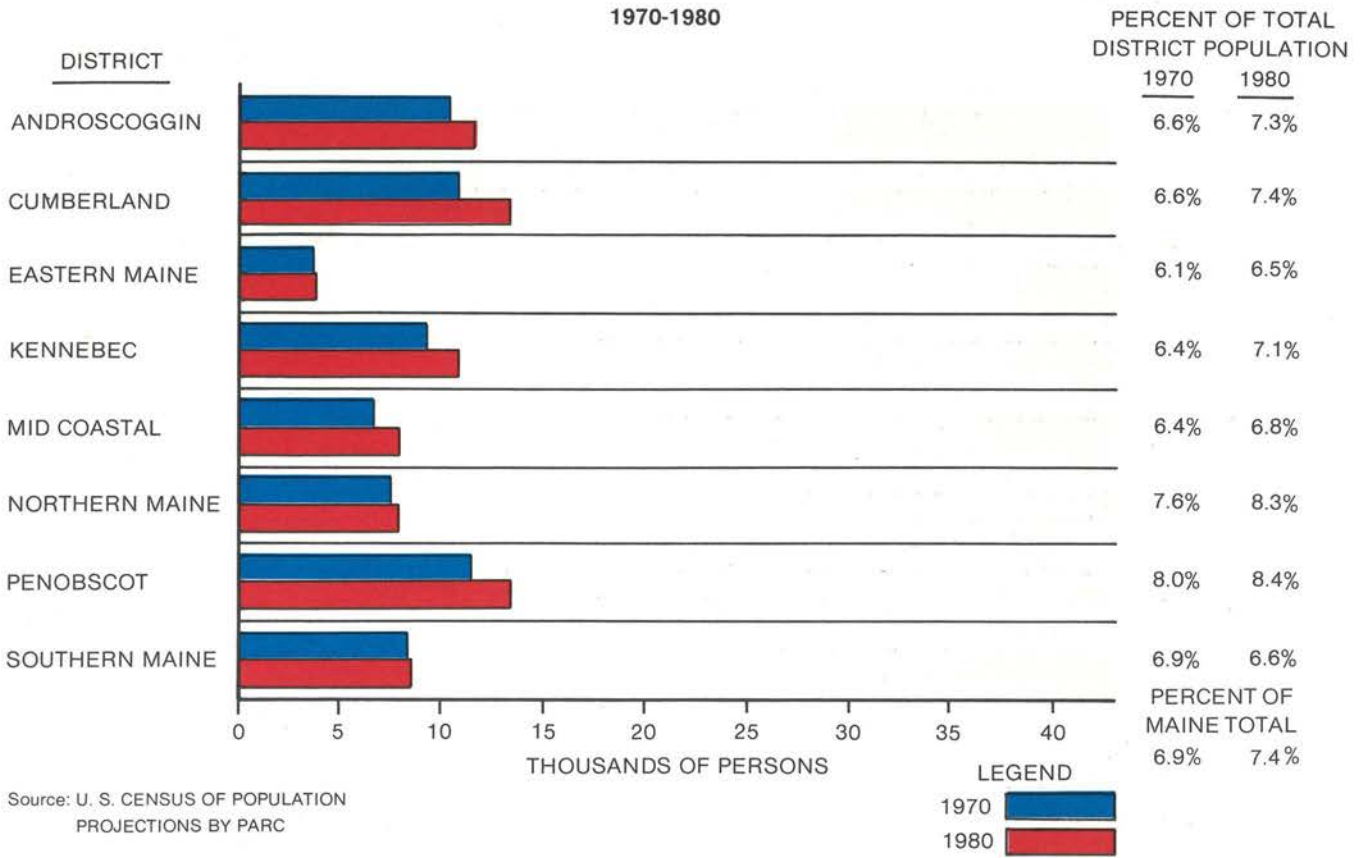


Figure 7 – PLANNING AND DEVELOPMENT DISTRICT PROJECTED POPULATION CHANGE IN 22 TO 44 AGE GROUP

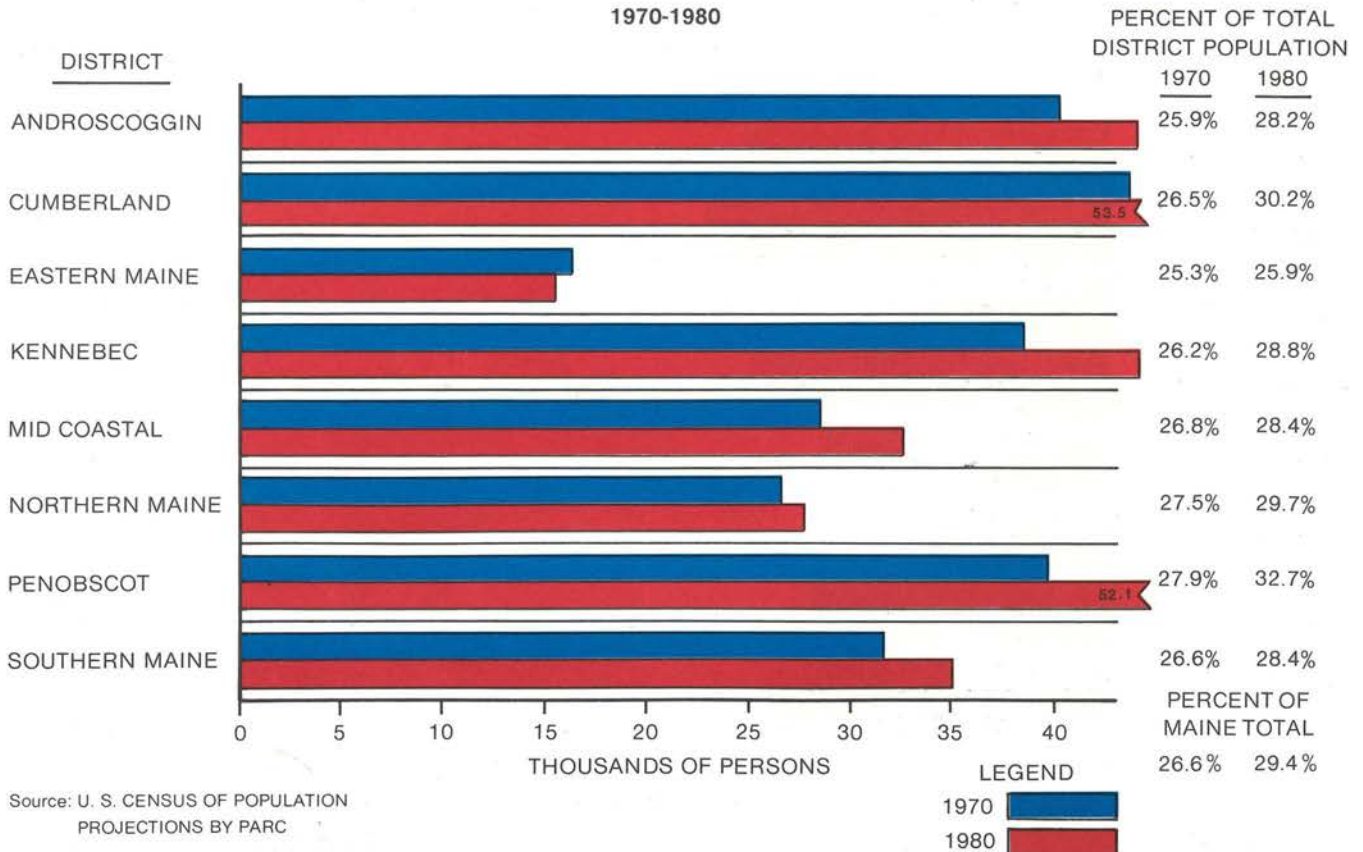


Figure 8 – PLANNING AND DEVELOPMENT DISTRICT PROJECTED POPULATION CHANGE IN 45 TO 64 AGE GROUP

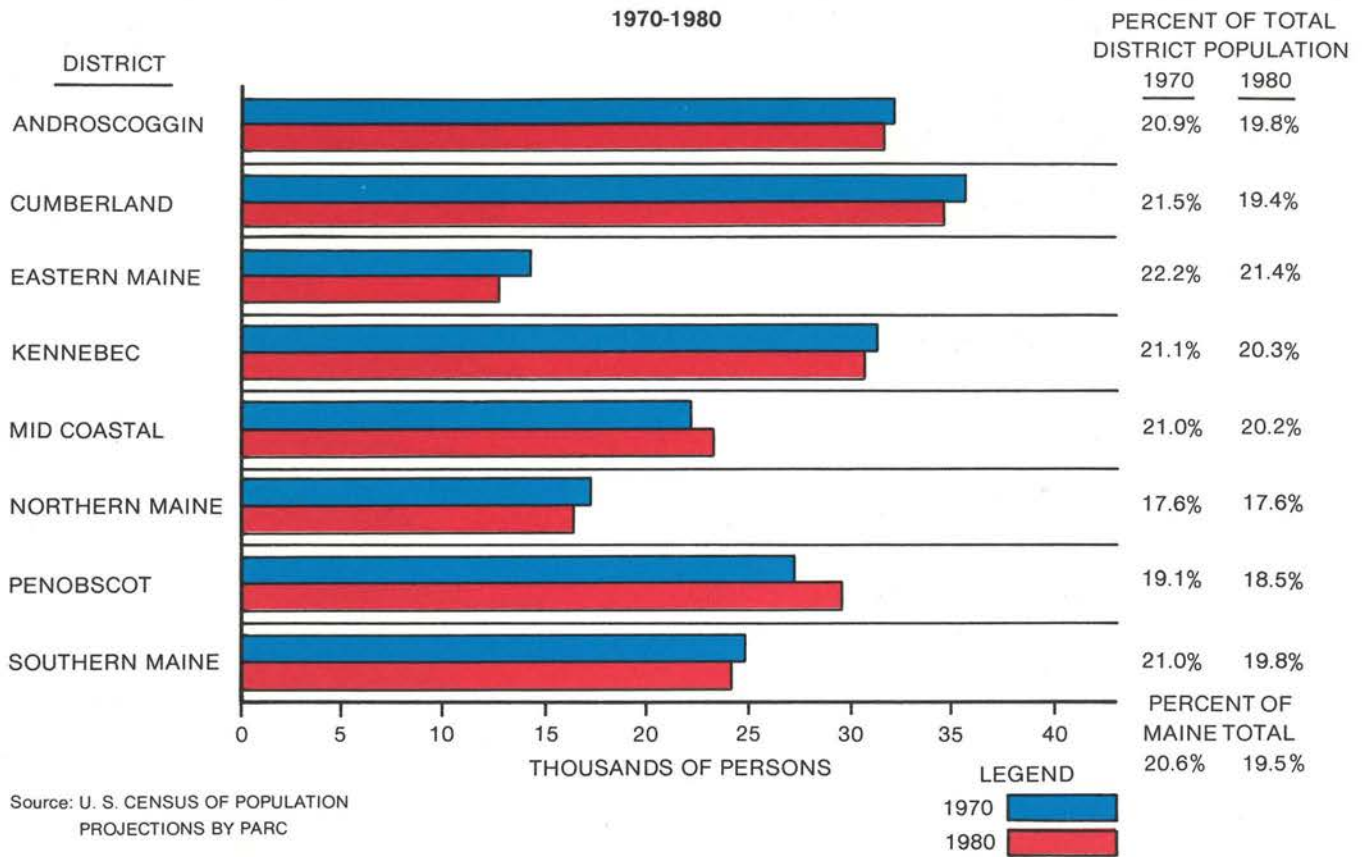
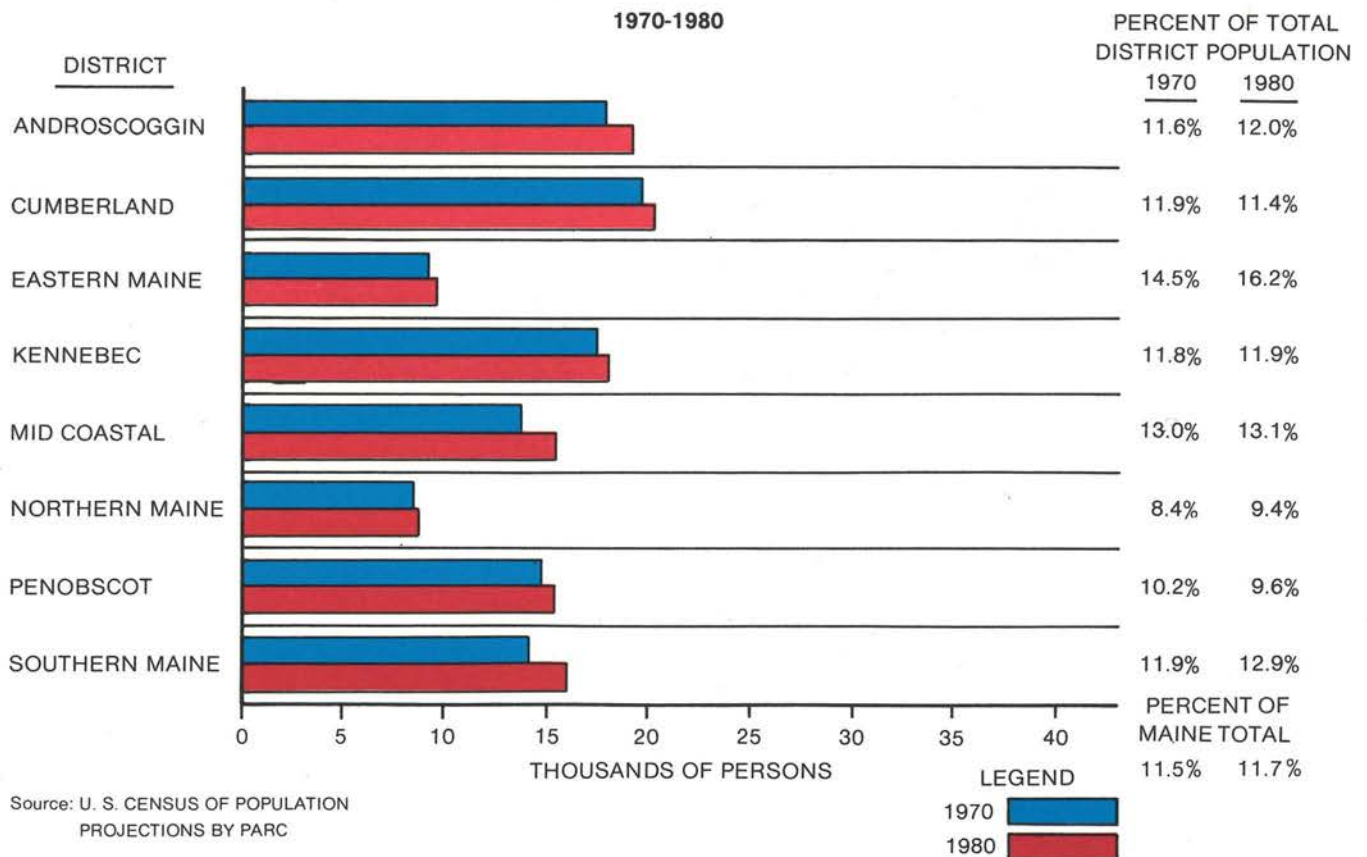


Figure 9 – PLANNING AND DEVELOPMENT DISTRICT PROJECTED POPULATION CHANGE IN 65 AND OVER AGE GROUP



APPENDIX

POPULATION PROJECTION ADVISORY COMMITTEE MEMBER LIST

Dr. Burton R. Anderson, Water Resources Division, State Planning Office

Thomas J. Cieslinki, Supervisor of Planning and Research, Maine Park and Recreation Commission

Stuart Cunningham, Planner, Androscoggin Valley Regional Planning Commission

Vance Dearborn, Public Affairs Specialist, Cooperative Extension Service, University of Maine
at Orono

Peter Ezzy, Director of Research, Maine Office of Economic Opportunity

Gary Sawyer, Director of Research, Maine Law Enforcement Planning and Assistance Agency

Raynold A. Fongemie, Director of Economic Analysis and Research, Employment and Security
Commission, Maine Department of Manpower Affairs

Philip Goggins, Planning Director, Maine Department of Sea and Shore Fisheries

Alan D. Goodwin, Director of Technical Services*, Maine State Planning Office

Harold M. Grodinsky, Director of Higher Education Facilities Planning, Maine Department
of Educational and Cultural Services

Gloria Hutchinson, Maine State Housing Authority

David H. Leake, Supervisor of Planning and Research, Maine Land Use Regulation Commission

John W. McGrail, Assistant Engineer, Maine Department of Environmental Protection

Paul J. Miner, Urban Studies Engineer, Maine Department of Transportation

Joseph Natale, Planning and Education Project, Maine Department of Educational and
Cultural Services

Martin Needham, Director of Research, Comprehensive Health Planning, Maine Department
of Health and Welfare

Mary E. Pierce, Statistician, Maine Department of Mental Health and Corrections

Carl T. Silsby, Research, Planning and Program Assistance, Maine Department of
Commerce and Industry

Mark Stein, Research, Evaluation and Planning, Bureau of Social Welfare, Maine Department
of Health and Welfare

Dale Welch, Director of Research and Statistics
Maine Department of Health and Welfare

David Wilson, Division of Research and Statistics, Bureau of Labor and Statistics,
Maine Department of Manpower Affairs

*Chairman of Committee

TABLE 1
FIVE POPULATION PROJECTIONS FOR MAINE
1970 - 2020

SERIES	THOUSANDS OF PERSONS				
	1970	1975	1980	2000	2020
P-1	994	1014	1040	1132	1225
P-2	"	1008	1027	1089	1135
P-3	"	1014	1041	1148	1263
P-4	"	1012	1032	1071	1058
P-5	"	1013	1038	1127	1204

Source: Public Affairs Research Center, Bowdoin College, 1973.

TABLE 2
MAINE'S POPULATION BY AGE AND SEX
P-5 PROJECTION FOR 1980 COMPARED TO 1970
(Thousands of Persons)

Age Groups	Male		Female		Total		Increase or Decrease by 1980
	1970	1980	1970	1980	1970	1980	
0 - 4	43	52	42	50	85	102	+17
5 - 17	131	118	126	112	258	230	-28
18 - 21	34	39	34	38	68	77	+ 9
22 - 44	130	149	134	155	265	304	+39
45 - 64	98	96	106	107	204	203	- 1
65 and Over	48	49	67	73	115	122	+ 7
TOTALS:	484	503	509	535	994	1638	+43

Source: U.S. Census of 1970; PARC

TABLE 3

BIRTH, DEATH AND NATURAL INCREASE RATES PER 1,000 POPULATION

FOR MAINE AND THE UNITED STATES

1945 - 1971

Year	MAINE			UNITED STATES		
	Birth Rate	Death Rate	Natural Inc. Rate	Birth Rate	Death Rate	Natural Increase Rate
1945	18.9	11.3	7.6	20.4	10.6	9.8
1946	23.0	11.4	11.6	24.1	9.9	14.2
1947	26.7	11.2	15.5	26.5	10.1	16.4
1948	24.7	11.2	13.5	24.8	9.9	15.0
1949	24.2	11.2	13.0	24.5	9.7	14.8
1950	23.2	10.9	12.3	23.9	9.6	14.3
1951	23.0	11.0	12.0	24.9	9.7	15.2
1952	22.9	10.8	12.1	25.0	9.6	15.4
1953	23.4	10.6	12.8	25.0	9.6	15.4
1954	24.0	10.6	13.4	25.2	9.1	16.0
1955	24.2	10.8	13.4	25.0	9.3	15.7
1956	23.7	10.8	12.9	25.1	9.3	15.8
1957	24.2	10.6	13.6	25.2	9.5	15.7
1958	24.1	10.9	13.2	24.5	9.5	15.0
1959	24.0	11.2	12.8	24.3	9.4	14.9
1960	24.0	11.1	12.9	23.8	9.5	14.4
1961	24.1	11.0	13.1	23.5	9.3	14.2
1962	23.5	11.3	12.2	22.6	9.4	13.2
1963	22.3	11.2	11.1	21.9	9.6	12.3
1964	21.4	11.0	10.4	21.2	9.4	11.8
1965	19.9	10.9	9.0	19.4	9.4	10.0
1966	18.8	11.1	7.7	18.4	9.5	8.9
1967	18.2	10.2	8.0	17.8	9.4	8.4
1968	17.2	11.3	5.9	17.5	9.7	7.8
1969	17.9	11.0	6.9	17.7	9.5	8.2
1970	17.6	11.2	6.4	18.2	9.4	8.8
1971	17.3	10.7	6.6	17.3	9.3	8.0

Source: Maine Department of Health and Welfare; U.S. Bureau of the Census, P-25 No. 465.

TABLE 4

NET MIGRATION OF POPULATION IN MAINE ECONOMIC
AREAS BY AGE & SEX
1965 - 1970

Age and Sex	Area 1 (Aroostook)	Area 2 (Oxford, Franklin Somerset, Piscataquis, Penobscot)	Area 3 (Knox, Waldo, Hancock, Washington)	Area 4 (York, Androscoggin Sagadahoc, Kennebec Lincoln)	Area A (Cumberland)	State Totals by Age Groups
Males						
5 - 9	-375	-583	-54	+474	-237	-775
10 - 14	-462	-591	-31	+103	+74	-907
15 - 19	-297	+396	-461	-166	+112	-416
20 - 24	-272	-556	-915	-669	-592	-3004
25 - 29	-1078	-1808	-35	-117	-531	-3569
30 - 34	-226	-626	+38	+369	-302	-747
35 - 39	-253	-272	+45	-50	-106	-636
40 - 44	-308	-209	+104	+156	-62	-319
45 - 54	-358	-222	+7	+362	-71	-282
55 - 64	-135	+8	+238	+429	-154	+386
65 and Over	-297	+218	+216	+195	-360	-28
Male Totals	-4061	-4248	-848	+1086	-2229	-10,297
Females						
5 - 9	-425	-558	+57	+217	+51	-658
10 - 14	-363	-436	+96	+50	+123	-530
15 - 19	-437	+510	-645	-242	+159	-655
20 - 24	-958	-817	-834	-626	-574	-3809
25 - 29	-523	-914	+77	+25	-649	-1984
30 - 34	-182	-274	+51	+227	-96	-274
35 - 39	-257	-336	-9	+156	+58	-388
40 - 44	-226	-227	-113	+171	-41	-436
45 - 54	-329	-40	+142	+173	-89	-143
55 - 64	-219	-233	+354	+310	-109	+103
65 and Over	-190	-35	+40	+318	-131	+2
Female Total	-4109	-3360	-784	+779	-1298	-8772
STATE TOTAL:	-8170	-7605	-1632	+1865	-3527	-19069

Source: U.S. Census of Population, 1970. Migration Between State Economic Areas.

TABLE 5

MIGRATION OF POPULATION BETWEEN MAINE AND OTHER NEW
ENGLAND STATES AND MULTI-STATE REGIONS

1965 - 1970

<u>REGIONS</u>	<u>To Maine From:</u>	<u>From Maine To:</u>	<u>Net Migration</u>
NEW ENGLAND REGION STATES			
New Hampshire	6,003	7,706	-1,703
Vermont	1,203	1,750	- 547
Massachusetts	16,578	14,542	+2,036
Rhode Island	1,300	1,780	- 480
Connecticut	8,777	9,881	-1,104
MULTI-STATE REGIONS OF THE U.S.			
Middle Atlantic	11,868	11,237	+ 631
East North Central	4,781	6,816	-2,035
West North Central	2,087	2,408	- 321
South Atlantic	8,901	16,959	-8,058
East South Central	1,499	1,655	- 156
West South Central	2,492	4,723	-2,231
Mountain	2,143	3,507	-1,364
Pacific	5,775	9,542	-3,767

Source: U.S. Census of Population, 1970, Migration Between State Economic Areas.

TABLE 6

PROJECTED POPULATION OF MAINE PLANNING AND
DEVELOPMENT DISTRICTS AND SUBDISTRICTS

1970 - 1980

DISTRICT AND SUBDISTRICT	TARGET YEARS		
	1970	1975	1980
Androscoggin	154,600	156,700	159,400
Cumberland	165,300	170,700	177,100
Eastern Maine	63,700	61,400	59,300
Hancock County	(34,600)	(34,700)	(34,700)
Washington County	(29,100)	(26,700)	(24,600)
Kennebec	146,900	148,900	151,600
North Kennebec	(89,900)	(90,700)	(91,900)
Southern Kennebec Valley	(57,000)	(58,200)	(59,700)
Mid-Coastal	106,200	110,300	115,200
Bath-Brunswick	(64,000)	(68,200)	(73,000)
Knox County	(42,200)	(42,100)	(42,200)
Northern Maine	96,900	94,800	93,300
Penobscot	141,800	150,000	159,300
Southern Maine	118,300	120,600	122,900
STATE TOTAL:	993,700	1,013,400	1,038,100

Sources: U.S. Census of Population; Public Affairs Research Center P-5 Projections for 1975 and 1980. All data rounded to nearest 100 persons.

TABLE 7

PROJECTED POPULATION OF MAINE COUNTIES

1970 - 1980

COUNTY	TARGET YEARS		
	1970	1975	1980
ANDROSCOGGIN	91,300	93,400	95,900
AROOSTOOK	94,100	91,900	90,300
CUMBERLAND	192,500	198,800	206,400
FRANKLIN	22,400	23,200	24,000
HANCOCK	34,600	34,600	34,700
KENNEBEC	95,200	96,700	98,800
KNOX	29,000	29,000	29,100
LINCOLN	20,500	21,600	22,700
OXFORD	43,500	42,500	41,700
PENOBSCOT	125,400	134,600	144,800
PISCATAQUIS	16,300	15,900	15,400
SAGADAHOC	23,500	26,000	29,200
SOMERSET	40,600	40,400	40,400
WALDO	23,300	23,200	23,200
WASHINGTON	29,900	27,500	25,300
YORK	111,600	113,900	116,400
MAINE TOTAL:	993,700	1,013,200	1,038,300

Sources: U.S. Census of Population; Public Affairs Research Center P-5 Projections for 1975 and 1980. Rounded to nearest 100 persons.

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