THE GROWTH OF THE ACTIVE POPULATION AGED 15 TO 64 AMONG CANADIAN REGISTERED INDIANS FROM 1975 TO THE YEAR 2000: Short and Long-Term Issues

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The Growth of the Active Population Aged 15 to 64 Among Canadian Registered Indians from 1975 to the Year 2000: Short and Long-Term Issues

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Introduction

The Demographic Unit within the Departmental Statistics Division recently completed a set of population projections for the Canadian registered Indians for the period 1973 to 1985 in compliance with a request from the Policy, Planning and Research Branch of the Indian and Eskimo Affairs Program. Based on these projections, the author has decided to examine more closely the growth of the active population aged 15 to 64 for the short-term period 1975 to 1985, and over the longer-term period 1985 to the year 2000, since the growth of this population implies certain policy and planning issues. The original projection period was extended to the year 2000 for several age groups to facilitate the long-term analysis.

The purpose of this paper is to forecast the annual net growth in the active population aged 15 to 64 at five-year time intervals beginning with 1975, 1980 and so on to the year 2000. Normally such analyses would focus on rates of growth and on percentage increases; however, in order to give Program policy makers and planners a feel for the size of the expected growth in the active population, we have decided to focus on the absolute numbers instead.

We examine in detail the components of the annual net growth in the active population between 1975 and the year 2000 in sections 2 to 4. These components include (a) the population entering the active population group at age 15, (b) the population leaving the active population group at age 65, and (c) the numbers of deaths occurring to the active population between ages 15 and 64. Section 5 discusses the annual net growth in the active population in the short-term period 1975 to 1985 and in the long-term period 1985 to the year 2000.

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In Section 6, some short and long-term issues in the areas of policy formulation and program planning, based on the results of the forecasted growth in the active population, are raised.

1. Summary of the Main Findings

Policy makers and program planners will find that the large net growth to the active population aged 15 to 64 between 1975 and 1985 is virtually locked in for the Canadian registered Indians. We can expect an average annual net growth in the active population of about 6,000 per year between 1975 and 1985. Therefore, the total population aged 15 to 64, which numbers roughly 150,000 persons in 1975, will reach about 212,000 persons by 1985, an increase of 41 per cent in ten years. This overall growth is largely caused by a type of "baby boom" in the late 1960's which will begin to affect the active population aged 15 to 64 in the early 1980's.

If fertility continues its projected downward trend from 1975 to 1985, the latent impact of the fertility decline will not significantly affect the active population until 1990 and this impact will persist to the year 2000. Although there is no guarantee that the assumed projected fertility trend will materialize, if it does, we can expect the average annual net growth to the active population aged 15 to 64 to decline to about 4,600 persons per year over the fifteen-year period 1985 - 2000. This would cause the total active population to increase from roughly 210,000 in 1985 to about 280,000 by the year 2000, an increase of 32 per cent in fifteen years. To put the short-term and long-term growth rates on a comparative basis, the average annual percentage increase in the 1975 - 1985 period is just over 4 per cent per year while the average annual rate of increase in the 1985 - 2000 period is just over 2 per cent per year, assuming that fertility follows its recent downward trend through to 1985 and that the mortality rate remains constant.

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2. Population Reaching Age 15 in the Projection Period 1975 - 2000

This section will examine the size and growth of the population reaching age 15 at five-year intervals from 1975 to the year 2000. To carry out this analysis, it is necessary to examine the fertility trends occurring between 1960 and 1985, and the subsequent latent impact of fertility which provides the most significant proportion of growth in the active population aged 15 to 64. Section 2 is divided into two parts; the first part deals with the short-term growth in the population cohorts reaching age 15 between 1975 and 1985, and the second part examines the long-term growth to these cohorts between 1985 and the year 2000. The long-term growth to the age 15 cohorts is based on an assumed downward trend in fertility between 1975 and 1985.

2.1 Short-term growth in the population reaching age 15, 1975 to 1985

For the population to reach age 15 between 1975 and 1985, the members would have to be born between 1960 and 1970. As is obviously the case, these births have already occurred. The trend in the number of births between 1960 and 1970 can be seen in Chart 1. What is observed may be described as a type of "baby boom" in the registered Indian population. The number of births rose from about 8,500 in 1960 to a high of almost 9,500 in 1965, followed by a decline to approximately 9,100 in 1970. Although Chart 1 does not show it, the annual number of births between 1965 and 1970 remained over 9,000 except in 1969 when the number dropped to 8,947[1].

The cohorts of births born in 1960, 1965 and 1970 will reach age 15 in 1975, 1980 and 1985, respectively, as further shown in Chart 1.

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[1] See Table A-4 in "The Methodology for a Population Projection Model for the Registered Indian Population by Residence for Canada and Regions: 1973 to 1985", by A. Siggner and G. Brulotte, Departmental Statistics Division, D.I.A.N.D., February, 1975.

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Due to mortality, especially infant mortality, the size of the cohorts reaching age 15 in each of these years is reduced, but not significantly enough to alter the latent impact of the baby boom of the late 1960's. Therefore, those reaching age 15 in 1975 are expected to number 7,558. By 1980, the number of persons reaching age 15 will rise to 8,518 and decline only slightly to 8,464 by 1985 (See Table 1).

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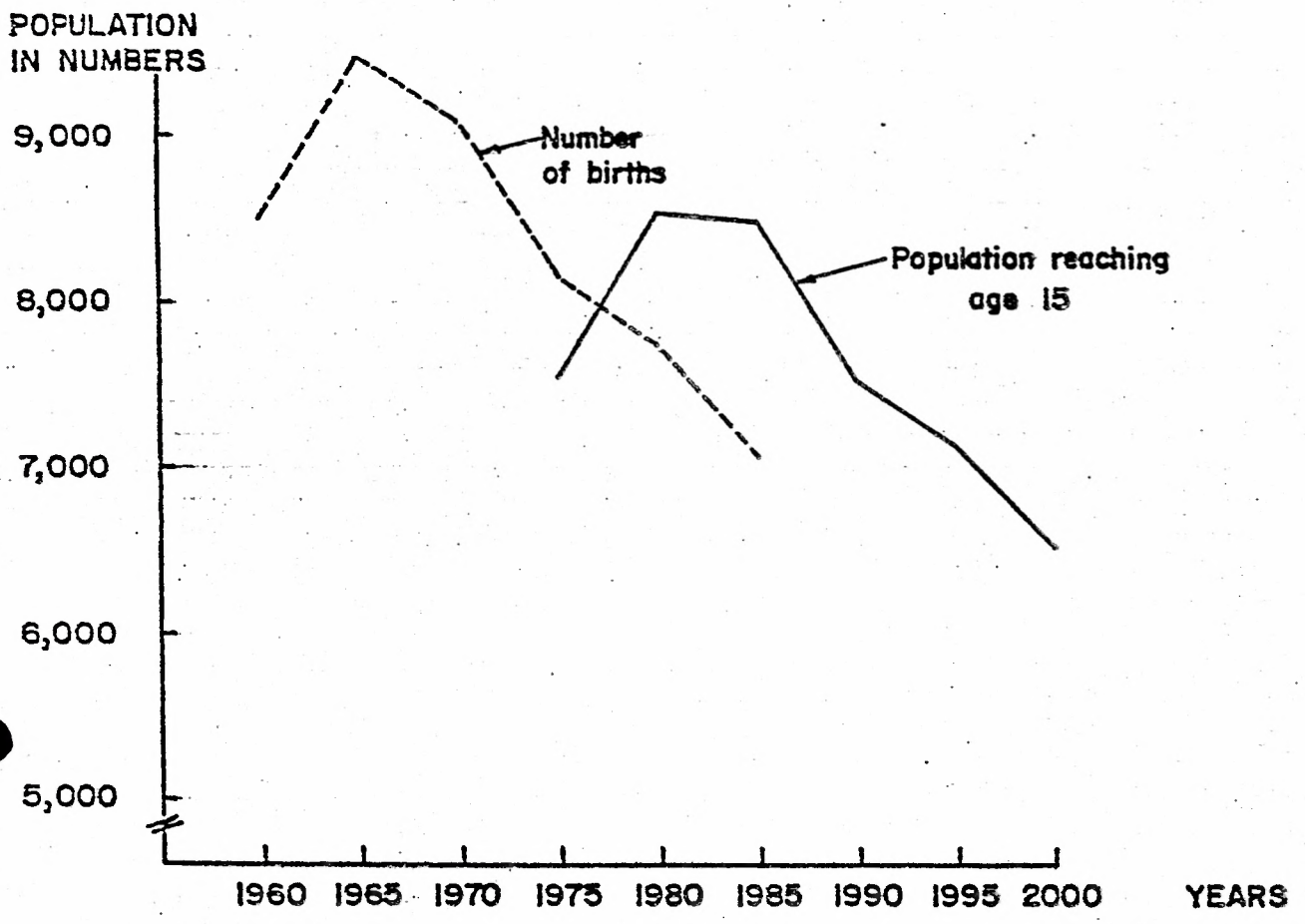
Chart 1. Registered Indian Population Born In Years 1960[a], 1965, 1970, 1975, 1980 and 1985 Reaching Age 15 In The Corresponding Years 1975, 1980, 1985, 1990, 1995 and 2000.



[a] George, M.V. and Piché, V. "Estimates of Vital Rates for Canadian Registered Indians, 1960-1970", in Demography, Vol. 10, No. 3, Aug. 1973, p. 373; for 1960 births only.

Source: Unpublished worksheets used in the production of the population projections for Canadian registered Indians, 1973 to the year 2000 available from the Senior Demographer, Departmental Statistics Division, D.I.A.N.D.

Table 1

Components Of Growth In The Registered Indian Active Population, Aged 15 to 64, Canada, 1975 - 2000.

Year	Population Reaching Age 15	Population Reaching Age 65	Number of Deaths to Population Age 15 to 64	Net Growth to the Active Population, Age 15 to 64 (A-B-C)	Total Active Population Age 15 to 64[a]
1975	7,558	939	914	5,705	150,786
1980	8,518	961	1,081	6,476	181,512
1985	8,464	1,154	1,225	6,085	211,963
1990	7,536	1,343	1,380	5,157	239,613
1995	7,128	1,516	1,535	4,077	262,158
2000	6,515	1,821	1,690	3,004	279,330

[a] The projected total active population for 1990 was calculated by distributing the decrease in the net growth in the active population annually over the five year period 1985 to 1990. The average annual decrease was then subtracted from 6,085 in 1985 to get the net growth in 1986 which was then added to the total active population in 1985, i.e. 211,963 in order to derive the 1986 total active population. This procedure is repeated for each year between 1985 and 1990 to eventually arrive at a total active population in 1990. The entire procedure is repeated using the 1990 and 1995 net growth figures and repeated again for the 1995 - 2000 period.

Source: Unpublished worksheets used in the production of the population projections for Canadian registered Indians, 1973 to the year 2000 available from the Senior Demographer, Departmental Statistics Division, D.I.A.N.D.

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The reader will notice that approximately 1,000 persons died between birth in 1965 and age 15 in 1980 while only about 650 died between birth in 1970 and age 15 in 1985. This indicates that, despite a decline in fertility between 1965 and 1970, there was also a significant 33 per cent reduction in infant mortality which off-set the decline in fertility during that period. Therefore, although fewer children were born in 1970 than in 1965, more of the 1970 birth cohort survived to age 15 than of the 1965 birth cohort; accordingly, the numbers of persons reaching age 15 in 1980 and 1985 are not that different in size. This is an important point for policy makers and planners to keep in mind, namely that large reductions in fertility can be off-set somewhat by reductions in infant mortality[2].

Over the next ten years, 1975 to 1985, the number of young Indian people turning age 15 and entering the active or potentially employable age group 15 to 64 is going to grow rapidly. The average size of the age 15 cohorts entering the active population will number about 8,000 per year between 1975 and 1980 and about 8,350 per year between 1980 and 1985. What the policy makers and planners should remember is that those reaching age 15 in the next ten years have already been born, the product of the baby-boom between 1960 and 1970.

2.2 Long-term growth in the population reaching age 15, 1990 to the year 2000

Because the original projection period was for 1973 to 1985 only, the latent impact of fertility occurring between 1973 and 1985 would not be experienced by the active population aged 15 to 64 until 1988; That is to say, the 1973 births would not reach age 15 until 1988. Accordingly, the author decided to extend the projection period for the following three birth cohorts: the 1975 birth cohort which is survived to age 15 in 1990, the 1980 birth cohort survived to 1995, and the 1985 birth cohort survived to the year 2000[3].

[2]For a full discussion on the relationship between mortality, fertility and economic development, the reader may like to refer to a university research paper written by and available from the author entitled "The Relationship of Mortality and Economic Development".

[3]An extensive methodological discussion of the projection model and its mortality and fertility assumptions are contained in the Siggner-Brulotte paper op.cit.

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The reader will recognize that this segment of the projection exercise depends on fertility which has not taken place as yet. Therefore, the projected growth for the population reaching age 15 in 1990, 1995 and 2000 is based on an assumed future fertility trend. The projected 1974 - 1985 trend in fertility is essentially the continuation of the downward trend between 1965 and 1973.

One other assumption should be noted here and that is the mortality assumption. We have assumed it to be constant by using the 1965-68 registered Indian life tables[4]. Therefore, any future reduction in infant mortality between 1975 and 1985 which might off-set the projected decline in the numbers of persons reaching age 15 between 1990 and 2000 is not taken into account.

Turning to Chart 1, the assumed declining size of the birth cohorts in years 1975, 1980 and 1985 begins to affect the subsequent growth in the population reaching age 15 in the corresponding years 1990, 1995 and 2000. However, let us first recall that the size of the age 15 cohort in 1985, which was the end of the latent impact of the 1965-70 baby-boom, was 8,464. In 1990, the population expected to reach age 15 will decline to 7,536, and the subsequent growth of the age 15 population will decline to 6,515 by the year 2000 (See Table 1 as well). Thus, we can expect the average annual number of persons reaching age 15 to be about 8,000 per year between 1985 and 1990; about 7,300 per year between 1990 and 1995; and about 6,800 per year between 1995 and 2000.

Of course, these projected figures rely almost wholly on the declining fertility assumption. However, there is absolutely no guarantee that fertility will retain this downward trend. Therefore, if fertility should increase over the next ten years in the registered Indian population, or if infant mortality remains constant or is reduced even further, then the population surviving to age 15 after 1985 may not decline but may, in fact, increase. Once again, such findings would imply a number of long-term issues.

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[4] Ibid. #3

3. The Population Reaching Age 65 between 1975 and 2000

We have arbitrarily chosen age 65 as the exit age from the active populations aged 15 to 64. The population reaching age 65 in the projection period 1975 - 2000 would have been born between 1910 and 1935. The cohort survival approach is used to survive these cohorts to age 65 in 1975, 1980, 1985, 1990, 1995, and 2000. For example, we pick up the cohort born in 1910 at age 63 in 1973 and the age 63 cohort is survived to age 65 in 1975; the cohort born in 1915 is age 58 in 1973 and it is survived to age 65 in 1980, and so on until the last birth cohort of 1935 is survived to age 65 in the year 2000.

From Table 1, we see that the population expected to reach age 65 will number 939 in 1975, 1,154 by 1985 and 1,821 by the year 2000. In other words, the number of persons reaching age 65 between 1975 and the year 2000, under a constant age-specific mortality assumption, will double. What this trend implies is that the cohorts born after 1930 had a greater probability of survival at birth than the earlier birth cohorts. Even if the size of these later-birth cohorts was the same as that of the earlier cohorts, the later-birth cohorts were affected by mortality, especially at the younger ages. During the short term 1975 to 1985, we can expect the average annual population reaching age 65 and, therefore, leaving the active population aged 15 to 64 to number about 1,000 per year. In the long term 1985 to 2000, we can expect the average number of persons reaching age 65 to rise to about 1,450 per year.

4. Number of Deaths in the Active Population Aged 15 to 64 between 1975 and the Year 2000

There are two ways in which the total active population aged 15 to 64 is reduced. The first exit has just been discussed, namely, the population reaching age 65. The number of deaths in the population 15 to 64 years of age constitutes the second type of exit from the active population.

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The morality rate for the 15 to 64 year age group, approximately 6 deaths per 1,000 population, is held constant over the 1975 - 2000 period, but because the active population is growing, the number of deaths also increases. In Table 1, the number of deaths in the active population is expected to increase from 914 per year in 1975 to 1,690 per year by the year 2000.

5. Net Growth in the Active Population Aged 15-64 Between 1975 and the Year 2000

Having analysed the three sources of growth to the active population aged 15-64, we are ready to calculate the annual net growth in the active population. The net growth in the active population is arrived at by taking the population age 15 and subtracting from it the population age 65 and all deaths in the 15-64 year age group. This calculation may be described symbolically as follows:

$$_{t}NP_{15-64} = {}_{t}P_{15} - ({}_{t}P_{65} + {}_{t}D_{15-64}),$$

where $_{t}NP_{15-64}$ = the net growth to the population age 15 to 64, in Year t

$_{t}P_{15}$ = the population age 15 in the year t, and

$_{t}D_{15-64}$ = the deaths in the age group 15 to 64 in year t.

5.1 Short-Term Annual Net Growth in the Active Population 1975 to 1985

From Table 1, we can expect an annual net growth in the active population of 5,705 persons in 1975. This annual net growth will increase to 6,476 in 1980 due largely to the peak of the baby boom in 1965 reaching age 15; it will remain at over 6,000 per year until 1985. The average annual net growth to the active population over the following 10 years will be just over 6,000 per year. Therefore, we can expect the total active population aged 15 to 64 to increase from 150,786 to 211,963, an increase of just over 61,000 or 41 per cent. As a point of comparison, the Canadian population aged 15 to 64 is expected to grow by 21 per cent during the same period.

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5.2 Long-Term Annual Net Growth in the Active Population, 1985-2000

After 1985, the latent impact of the annual downward trend in fertility will begin to have its effect on the active population. The increasing number of persons reaching age 65 and the increasing number of deaths to the population aged 15 to 64 will also serve to reduce the annual net growth in the active population. From Table 1, we can expect, given our fertility and mortality assumptions, that the annual net growth in the active population will drop from 6,085 in 1985 to 3,004 by the year 2000, a decline of 50 per cent. However, despite the decrease in the annual net growth to the active population during this 15-year period, the overall size of the population aged 15 to 64 will rise from 211,963 to 279,330 between 1985 and 2000. This represents a 32 per cent increase over the fifteen-year period, a considerably slower growth than the 41 per cent increase expected during the 10-year period between 1975 and 1985. Nevertheless, we would like to remind the reader that the long-term projection of the active population rests wholly on the fertility and mortality assumptions. We have no guarantee that fertility especially will follow its assumed downward trend.

6. Issues Relating to the Projected Growth in the Active Population Aged 15 to 64 Between 1975 and the Year 2000

6.1 Short-term issues for the 1975-1985 period

When one realizes that the baby boom of the late 1960's has already occurred and that these large waves of young people will begin reaching age 15 in the early 1980's, the rapid growth in the active population aged 15 to 64 is virtually locked in for the next ten years 1975 to 1985. As we have already noted, we can expect an average annual increase in the active population of approximately 6,000 per year between 1975 and 1985. However, it should be pointed out to policy makers and planners that this annual increase is for the total registered Indian population 15 to 64 years old not excluding such unemployables as students and the infirmed, nor does it exclude the proportion of annual growth occurring off-reserve.

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Since it may be claimed that a large proportion of the aged-15 population is still in school and, therefore, unemployable, then perhaps entrance to the active population should more suitably begin at age 18. However, changing the entrance year to age 18 will serve only to delay by three years the latent impact of the late 1960's baby boom so that the peak growth period would begin in 1983 instead of 1980.

With respect to the off-reserve population, a substantial proportion of the net annual increase in the 15-to-64 year age group will be occurring off-reserve, due either to migration away from the reserves or to the resident off-reserve population reaching age 15 and thus entering the active population group. We have estimated the percentage of the annual net increase in the total active population occurring off-reserve to be about 25 per cent. Therefore, 75 per cent of the annual increase in the active population is estimated to occur on-reserve or on-crown land. This means that the average annual increase in the on reserve-crown land population aged 15 to 64 between 1975 and 1985 will be about 4,600 per year.

Based on these projected findings, a number of short-term issues relating to policy formulation and program planning may be raised.

(a) Is the Department prepared to provide a sufficient number of economic development programs to provide employment to an on-reserve and crown land active population aged 15 to 64 which is expected to increase annually on the average of approximately 4,600 persons over the next ten years?

(b) Should the Department consider actively encouraging migration away from the reserves if not enough economic opportunity can be generated to support such an overall rapid growth in the active population on reserves?

(c) What kind of increase in social and welfare assistance programs is the Department looking at in the short term with such a rapid expansion in the active population on reserves, especially given the already high unemployment rates on the reserves?

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(d) In the last few years there has been progress in increasing educational levels in the young Indian population. Sociological studies have shown that when education levels rise in a population so do aspirational levels.

In studies conducted on American urban ghetto riots, two demographic factors tend to be associated with such urban violence, namely the (size) and the (youth) of the minority group involved in the rioting. In the Canadian Indian population, we see a rapidly growing and predominantly young active population whose aspirational levels are also growing. This population is fairly spread out across the country, but the recent phenomena of growing Indian cultural consciousness, political awareness, and social movements such as the American Indian Movement have lead to a crystallization of issues and a crystallization of opinion on these issues. Therefore, is it not possible that a large, young and potentially unemployed population could be prone to civil disobedience and militancy manifested through demonstrations and occupations of government installations, and subsequently degenerating into violent confrontations?

While this last question may be alarmist in nature, the author feels obliged to point out that the demographic, social and economic conditions seem to be in place for the possible development of such crises in the next five to ten years. Therefore, does not the creation of greater employment opportunities for native people become a critical issue toward which the Department and relevant operating Programs should be directing themselves during the next five to ten years?

6.2 Long-term issues for the 1985-2000 period

After 1985, we can expect a decline in the net growth of the active population. This will occur if and only if fertility continues to decline between 1975 and 1985. Net growth in the active population will drop from 6,000 per year in 1985 to 3,000 per year by the year 2000.

(a) If the Indian population itself expresses an interest in family planning programs, should not the Department consider providing appropriate information and services?

The issue of family planning is raised because we have already demonstrated earlier in this paper that the major source of growth to active population is a result of the latent impact of fertility. The fertility which will be affecting the growth of the active population between 1975 and 1985 has already occurred, but the births affecting the growth of the active population after 1985 will be occurring between 1975 and 1985. Furthermore, as reductions in mortality generally occur in the younger age groups, any future decline in mortality will permit more children to survive to age 15 and to enter the active population. So, in fact, the family planning issue becomes not a long-term one, but a short-term one, since any decline in the annual net growth of the active population after 1985 would mean at least a continuation of the present downward trend in fertility. To reiterate, there is no guarantee that the recent downward trend in fertility will continue into the future.

(b) Dissipating the growth of the active population through the encouragement of off-reserve migration as has already been mentioned in the short-term issues section. But, while a thorough analysis of the migration phenomenon among Indians has yet to be carried out, the author would like to offer an initial observation.

An examination of the flow of net migrants between on-reserve and off-reserve locations for registered Indians by age between 1972 and 1973 shows a large net out-flow from on-reserve to off-reserve locations among the population age groups 0 - 14 and 15 - 25. After age 25, the number of net out-migrants from reserves drops significantly, particularly in the 25 - 35 year age group. A possible explanation of this age pattern of net migration is as follows.

Judging by the large net out-migration in the 0-to-14 age group, there are young adult families with children as well as young, unmarried adults who are moving off-reserve. For whatever reasons, be it lack

of appropriate occupational and education skills to compete in urban job markets, discrimination against Indians off-reserve, or lack of adequate housing, there seems to be a heavy return migration to the reserves after age 25, at least for the 25-to-35 age group. Again, this explanation represents only a guess as to what the crude estimates of net-migration by age for one year, 1972-73, may imply. It by no means represents the conclusions from extensive reserarch, but it may be a clue as to what is really happening.

If policy makers and program planners recognize migration as one way of relieving on-reserve unemployment, considerably more research on the registered Indian population migration will have to be undertaken. For the most part, data on this phenomenon are lacking; a much better migration data base and a subsequent comprehensive analysis of it are needed if proper planning decisions are to be made. The present author has already begun to attempt to measure the migration phenomenon with available data, but he would be interested in knowing whether the Indian and Eskimo Affairs Program would be interested in supporting a more intensive migration research approach.

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April 22, 1975