Arctic Demography

Lead authors: Dmitry Bogoyavlenskiy, Center for Demography and Human Ecology, Institute for Economic Forecasting, Russian Academy of Sciences, Russian Federation, and Andy Siggner, Statistics Canada.

Approximately 4 million people live in the Arctic. Some countries are completely located within this region, namely Iceland, Greenland, and the Faroe Islands. Other countries, Russia, Canada, United States, Norway, Sweden, and Finland, have just a small portion of their overall populations residing within their respective Arctic areas.

This chapter describes the different populations in the Arctic by focusing on key demographic characteristics: how many people there are, where they live, fertility, mortality, age and gender composition, and migration. The statistics refer to the population of the Arctic countries as a whole for those countries that are completely within the Arctic. For the other countries, the statistics refer to the geographic areas included in the circumpolar region of the world as defined in *Chapter 1. Introduction: Human Development in the Arctic.*

Population of Arctic Regions and Countries circa 2003

Arctic Country/Region	Square (1,000 sq km)	Date	Population Size (1,000)	Population Density (per 100 sq km)
Total	**12575**		**4058.0**	**32**
USA: Alaska	1516	1.7.2003	648.2	43
Canada: Arctic regions	4191	15.5.2001	130.3	3
Denmark: Greenland	2176	1.1.2003	56.7	3
Iceland	103	31.12.2002	288.5	280
Denmark: Faroe Islands	1	31.12.2002	47.7	3410
Norway: Arctic regions	107	1.1.2003	462.7	431
Sweden: Arctic regions	99	31.12.2002	253.6	257
Finland: Arctic regions	93	31.12.2002	187.8	202
Russia: Arctic regions	4289	9.10.2002	1982.5	46

General population characteristics

Despite the fact that the demographic situation is different in various parts of the circumpolar region, there are general population characteristics that make the various Arctic populations closely related to each other and distinctly different from those residing in the more southern areas of their countries, or in other non-circumpolar areas of the northern hemisphere (*1*).

Fertility, although decreasing, is generally higher in the Arctic when compared to southern parts of Arctic countries and the Nordic countries in Europe as a whole. Mortality is also higher, and life expectancy, accordingly, is lower.

During the last decade of the 20th century, the inflow of population in all the circumpolar regions has been less than the outflow, resulting in a net loss of population due to migration.

The age structure of the Arctic population differs from that of its more southern counterparts. The most noticeable difference is the relatively high share of the population in the labor-force age group, as well as in younger age groups in some circumpolar regions, and a smaller portion in older age groups. This peculiar feature of the age structure is characteristic of the population in the majority of circumpolar regions and depends on migration flows into and out of these regions.

In the countries where there are data for the indigenous populations, these populations tend to be much younger, with a very high share of their populations under 5 years old (see box on page 29 for definitions of indigenous). Depending on the relative shares of indigenous and non-indigenous populations in each circumpolar region, this factor often has significant impact on the socio-economic conditions of the region. An example is Nunavut, Canada, where 85% of the population is Inuit, and only 15% is non-indigenous. The median age of Inuit in Nunavut is 19 years, old (which means that half the Inuit population is under that age). If one includes the non-indigenous population in Nunavut, the median age rises to only 22 years because of the

Some Vital Indices of Arctic Countries (1950-2000)

Country	Regions	Index	1950	1960	1970	1980	1990	2001
USA	Whole	CBR	24.1	23.7	18.4	15.9	16.7	14.1
		CDR	9.6	9.5	9.5	8.8	8.6	8.5
		TFR			2.48	1.84	2.08	2.12
		LEx-m	65.6	66.6	67.1	70.0	71.8	74.4
		LEx-f	71.1	73.1	74.8	77.4	78.8	79.8
	Alaska	CBR	30.0	32.8	24.1	23.6	21.3	16.0
		CDR	9.6	5.6	4.7	4.1	4.0	4.7
		TFR					2.61	2.32 2000
		LEx-m	57.8		66.1 1969-71	68.7 1979-81		72.3 1994-98
		LEx-f	62.8		74.0 1969-71	76.9 1979-81		77.5 1994-98
Canada	Whole	CBR	27.2	26.1	15.8	15.0	14.4	10.5
		CDR	9.0	7.7	7.2	6.9	6.9	7.1
		TFR						
		LEx-m	66.3	68.4	69.3	72.0	75.0	77.0
		LEx-f	70.8	74.2	76.4 1970-72	79.0 1980-82	81.0 1990-92	82.0 2000
	Arctic Regions	CBR*	N/A	45.2 1961	30.5 1972	24.7 1981	24.3 1991	17.3 2001
		CDR*	14.7 1951	9.4 1961	6.2 1972	4.7 1981	3.6 1991	4.4 2001
		TFR						
		LEx-m**	N/A	N/A	54.9	69.7	71.9	70.7
		LEx-f**	N/A	N/A	59.8 1971	74.9 1981	75.1 1991	75.5 1999
Greenland	Whole	CBR	45.5 1953	48.8	24.6	20.5	22.6	16.6
		CDR	17.4 1953	7.8	6.1	7.6	8.4	7.8
		TFR	5.76 1952	6.98	3.07 1971	2.40	2.44	2.45
		LEx-m	32.2 1946-51		58.9 1966-70	59.7 1976-80	60.7 1986-90	62.8 1996-2000
		LEx-f	37.5 1946-51		65.7 1966-70	67.3 1976-80	68.4 1986-90	68.0 1996-2000
Iceland	Whole	CBR	27.9 1951-55	28.1 1956-60	21.5 1966-70	19.8	18.8	14.3
		CDR	7.9	6.6	7.1	6.7	6.7	6.0
		TFR		4.17 1956-60	3.14 1966-70	2.48	2.31	1.95
		LEx-m				73.5 1976-80	75.0 1986-90	78.1 2000-01
		LEx-f				79.5 1976-80	80.1 1986-90	82.2 2000-01
Faroe Islands	Whole	CBR		22.0	21.1	17.1	20.1	13.5
		CDR		7.9	7.4	7.1	7.5	7.7
		TFR			3.85 1966-70	2.64 1976-80	2.71	2.31
		LEx-m					72.8 1986-90	75.2 1996-2000
		LEx-f					79.6 1986-90	81.4 1996-2000

Country	Regions	Index	1950	1960	1970	1980	1990	2001
Norway	Whole	CBR			16.6	12.5	14.4	12.6
		CDR			10.0	10.1	10.9	9.8
		TFR			2.72 1968-69	1.72 1976-80	1.93 1986-90	1.78
		LEx-m					73.1 1986-90	76.2
		LEx-f					79.7 1986-90	81.5
	Arctic Regions	CBR			18.9	13.5	14.7	12.1
		CDR			9.2	9.3	10.6	10.1
		TFR			3.22 1968-69	1.86 1976-80	1.98 1986-90	1.82
		LEx-m					72.0 1986-90	74.6 1996-2000
		LEx-f					79.5 1986-90	80.8 1996-2000
		LEx-f						
Sweden	Whole	CBR	16.5	13.7	13.7	11.7	14.5	10.3
		CDR	10.0	10.0	10.0	11.1	11.1	10.5
		TFR				1.67	2.13	1.56
		LEx-m			71.9	72.4	74.8	77.6
		LEx-f			76.8	78.5	80.4	82.1
	Norbotten	CBR				12.2	14.2	9.4
		CDR				9.9	10.4	10.8
		TFR				1.75	2.18	1.62
		LEx-m			71.5 1966-70	71.5 1976-80	73.4 1986-90	76.0 1997-2001
		LEx-f			76.5 1966-70	77.8 1976-80	79.8 1986-90	81.5 1997-2001
Finland	Whole	CBR	24.5	18.5	14.0	13.2	13.1	10.8
		CDR	10.2	9.0	9.6	9.7	10.0	9.4
		TFR	3.16	2.71	1.83	1.63	1.78	1.73
		LEx-m			65.9 1966-70	68.5 1976-80	70.7 1986-90	74.6
		LEx-f			73.6 1966-70	77.2 1976-80	78.8 1986-90	81.5
	Lapland	CBR	34.8	27.2 1959	15.3	14.1	13.6	9.5
		CDR	9.2	7.0 1959	7.6	7.7	9.0	9.4
		TFR						
		LEx-m						
		LEx-f						
Russian	Whole	CBR		23.2	14.6	15.9	13.4	8.7
		CDR		7.4	8.7	11.0	11.2	15.4
		TFR		2.42 1961-1962	2.01 1970-1971	1.90 1980-1981	1.89	1.21
		LEx-m		63.8 1961-1962	63.2 1970-1971	61.5 1980-1981	63.8	59.0
		LEx-f		72.4 1961-1962	73.6 1970-1971	73.1 1980-1981	74.3	72.3
	Arctic Regions	CBR			18.2	18.1 1979	16.5 1989	10.3 2002
		CDR			6.8	6.9 1979	5.3 1989	9.5 2002
		TFR						
		LEx-m						
		LEx-f						

* Includes only NWT+ Yukon+ Nvt.
* Includes only NWT+ Yukon+ Nvt.
** Note: Life expectacy for males & females are for NWT (including Nunavut) as a proxy for Canada's Arctic regions.)

CBR: Crude birth rate
CDR: Crude death rate
TFR: Total fertility rate
LEx-m: Life expectancy - males
LEx-f: Life expectance – females

numerical weight of the Inuit population. By contrast, also in Canada, the Yukon Territory population is 75% non-indigenous and the median age for the total population is 35.8 years, only 2 years younger than for Canada as a whole. Yet its indigenous population has a median age of 28.6 years.

Our inability to obtain data for all the circumpolar countries by indigenous and non-indigenous composition is very likely hiding important demographic distinctions in those countries where such data are not available. Not having such data available may pose serious challenges for the country's national and regional governments in their planning processes, and subsequently affect outcomes in these regions.

Indigenous and non-indigenous populations in official statistics

A certain part of the circumpolar population is indigenous to these northern localities. They have been residing here for over a thousand years. Another part of the overall circumpolar population is non-indigenous. These ethnically dissimilar populations differ noticeably in their demographic characteristics and lifestyles, despite considerable rapprochement in recent decades.

Official statistics from several Arctic countries do not identify indigenous peoples specifically, nor do they all identify people of other ethnicities. For example, in the Saami inhabited circumpolar areas of Norway, Sweden, and Finland, ethnicity is not registered in official statistics. Therefore, no demographic indicators are available for them. In Greenland, where the indigenous population – the Inuit – are a majority, the situation is similar, although Greenland's official statistics identify those individuals born in Greenland and those born outside. As a proxy, people born in Greenland can be viewed as indigenous inhabitants. In the US census, indigenous peoples include American Indians and Alaskan Natives. The Canadian census defines as indigenous the following: Inuit, North American Indians, and Métis.

Indigenous Population of the Arctic Region

Arctic Region or Country	Date	Population (1,000) Total	Indigenous	Share of indigenous (%)
USA (Alaska)	Census 2000	627	98 (119)*	15.6 (19.0)
Canada: Arctic region	Census 2001	130	66	50.8
Denmark: Greenland	2003	57	50	88.1
Iceland	2003	288	NA	
Denmark: Faroe Islands	2003	48	NA	
Norway: Arctic region	2003	463		
Sweden: Arctic region	2003	254	50**	~5
Finland: Arctic region	2003	188		
Russia: Arctic region	Census 2002	1982	~90***	>4

Notes:
* Just American Indians & Alaska Natives (American Indians & Alaska Natives and some other race)
** Estimate for Nordic Saami (AMAP, 1998)
*** Estimate author (D. Bogoyaviensky, Census 1989 = 77)

The Russian census identifies the following indigenous peoples (from west to east): Saami, Nenets, Khanty, Sel'kup, Enets, Nganasan, Dolgan, Evenk, Even, Yukagir, Chukchi, Chuvan, and Eskimo/Inuit-Yupik.

Population dynamics and settlement patterns

There have been major changes in the Arctic population since World War II. This section looks at the number of people in different parts of the Arctic, including how this has changed over time. Later sections focus on the different factors contributing to growth and decline: fertility, mortality and migration.

A peak in population growth

In the 1950s, the population of the entire circumpolar region was increasing. In the case of Greenland, Alaska, and Northern Russia this increase was significant.

In Greenland, the growth was mostly the result of natural increase, while in the other two countries, much of the growth was due to in-migration up to the 1990s. Greenland's population continued to grow in a strong upward trend until the 1970s when it slowed down sharply. In the last decade of the 20th century, growth became negligible.

In the 1960s, the population of Sweden's Norrbotten and Finland's Lapland regions started to decrease. After a while, there was a period of slight growth, which was then followed by another decrease.

The growth of the three circumpolar counties of Norway first slowed down, and then from the 1980s, their population started to decline. The population of the Faroe Islands continued to grow even in the 1960s, but in the 1990s the increase in population gave place to a slow decrease. The population of Iceland continues to grow.

The Arctic regions of Russia and Alaska have witnessed considerable population growth. In Russia it grew dramatically in the 1930s, the Arctic population increasing from 120,000 in 1926 to 520,000 in 1939. Prisoners and deportees counted for a large share of this increase. In the 1950s-1980s, growth was also fast but not as fast as in the 1930s. This time, it was caused by voluntary in-migration. In the 1990s, there followed a dramatic population decline with the so-called flight from the North. The local population shrank by almost a quarter.

In Alaska, population growth was most rapid in the 1940s-1950s, after which it slowed down, especially in the 1990s. Even then, however, Alaska's population continued to grow.

Canada has demonstrated a similar pattern of growth since World War II, with very rapid growth in its North in the 1950s and 1960s and a marked slow-down in the past 30 years (*2*). Much of the earlier growth can be explained by a combination of a natural increase (birth rates being higher than death rates) and immigration. This immigration was connected to the rapid development of Canada's northern resources, and to the sovereignty and defense issues in the 1950s and early 1960s. Much slower growth has been observed in the Canadian North since the 1990s.

In summary, the peak of the population growth in Arctic Finland and Canada was in the 1960s, in northern Norway in the 1980s, and in

northern Sweden and Russia in the 1990s. In general, by the beginning of the 21st century only Canada, Alaska, Greenland, and Iceland were still growing.

Declining share national populations

In the European countries, the share of the total population residing in their respective northern areas is declining gradually. In Norway, its maximum was registered in the 1950s (12.5%), in Sweden in the early 1960s (3.5%), while in Finland the maximum was reached in the mid-1960s (4.8%). At present, the northern population share is 10.2% in Norway, 2.9% in Sweden, and 3.6% in Finland.

The share of Russia's population living in its Arctic regions increased without interruption until recently. It reached its maximum in 1990 (1.7%). There has been a recent rapid drop, however, and in 2002 it was 1.4%.

The growth of the Alaskan share in the total US population has stopped in the past decade at a negligible 0.2%. In Canada, the northern share of the total population was about the same in the 1950s as Alaska's is now, but it rose steadily to about 0.4%, where it has remained stable from 1981 to the present (3).

Population Dynamic of Arctic Region 1940-2000

Population (in 1,000)

Arctic Regions	1940	1950	1960	1970	1980	1990	2000
USA: Alaska (Censuses)	72.5	128.6	226.2	300.4	401.9	550	626.9
Canada*	N/A	33	51.2	81.4	100.2	115.8	120.6
Denmark: Greenland	21.4 1945	23.6 1951	33.1	46.3	49.8	55.6	56.1
Iceland	121.5	144	175.7	204.6	229.2	255.7	282.8
Denmark: Faroe Islands	29.2 1945		34.6	38.6		47.4	46.2
Norway		221.8	237.2	243.2	243.8	239.5	239.1
Sweden	216	241.5	261.8	255.9	267	263.3	257.2
Finland	137	167.1	205.1	197.1	194.9	200.7	191.8
Russia (Censuses)	523.8 1939		1128 1959	1508.7 1970	1948.1 1979	2598.5 1989	1981.1 2002

Notes:
* Canada's Arctic population excludes Nunavik in Quebec due to historical availability issues. Its 2001 population stands at 9,630, which can be added to the 2001 count above.

Average Year Increase (per cent)

Arctic Regions	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000
USA: Alaska (Censuses)	5.9	5.8	2.9	3.0	3.2	1.3
Canada		4.5	4.7	2.1	1.5	0.4
Denmark: Greenland	1.6 1945-1951	3.8 1951-1960	3.4	0.7	1.1	0.1
Iceland	1.7	2.0	1.5	1.1	1.1	1.0
Denmark: Faroe Islands		1.1 1945-1960	1.1		1.0 1960-1980	-0.3
Norway		0.7	0.3	0.0	-0.2	0.0
Sweden	1.1	0.8	-0.2	0.4	-0.1	-0.2
Finland	2.0	2.1	-0.4	-0.1	0.3	-0.5
Russia (Censuses)		3.9 1939-59	2.7 1970-1959	2.9 1970-1979	2.9 1980-1989	-2.0 1989-2002

Where do people live?

The extremely sparse population is the main feature making the Arctic different from the rest of the world. What is more, it is often settled in a rather contrasting way, with vast uninhabited territories and relatively big cities.

Cities of the Arctic

In Alaska, Anchorage is the largest city with 260,000 inhabitants (40% of the total population of the state). More than one half of the Alaskan population is concentrated here and in the other two largest cities (Juneau and Fairbanks, with a population of 30,000 each).

In Iceland, the concentration of population is even greater, with a population of almost 180,000 residing in the capital city of Reykjavik and the six surrounding towns (more than 60% of the country's total population). The population of the next largest city, Akureyri, is about 16,000.

There is not enough population to form what could be considered large cities in Canada, Greenland, and the Faroe Islands. Canada's largest population concentrations can be found in Yellowknife (16,500) and Whitehorse (19,000). Greenland's biggest town, Nuuk, has a population of less than 15,000 while the population of Torshavn, the capital of the Faroe Islands, is just over 15,000. The biggest towns of the northern Norway (Tromsø, 50,000), Sweden (Luleå, 45,000), and Finland (Rovaniemi, 45,000) are far from being large.

The nine biggest cities in the Russian Arctic (over 50,000 each) are scattered from the Kola Peninsula to Taimyr. Almost 980,000 people, or about one half (49.5%) of the population of Arctic Russia, are residing there. The biggest city of the circumpolar world is Murmansk, as a major Russian seaport in the Arctic Ocean (military, fishing and commercial), with its population of about 340,000. Other "mining cities" are Norilsk (135,000) and Vorkuta (over 85,000). Two young "oil-and-gas cities" are Noyabrsk and Novy Urengoi (about 100,000 and 90,000 respectively). The population of most cities in the Russian North, like that of the entire Russian North, is declining (the "oil-and-gas cities" are an exception), and this specific feature makes them different from other big cities of the Arctic.

About two thirds of the total Arctic population is concentrated in relatively big settlements (over 5,000 inhabitants each). But this share varies across the Arctic, reflecting great differences in settlement patterns across countries and regions. Thus, in Arctic Russia, over 80%

live in big settlements, over 70% in Iceland, over 60% in Alaska, and over half in Norrbotten (Sweden), while it is just over 40% in Arctic Canada, less than 40% in northern Norway and the Faroe Islands, and only one third in Greenland.

Focusing on the share of the population living in small settlements, northern Norway stands out among the Arctic countries with 33% of its population in locations of less than 200 people including those in unorganized areas (for Norway as a whole the share is 23%). In other Arctic countries, the share of the population residing in either the smallest locations or outside any settlements is considerably smaller: 18% in Norrbotten (Sweden), less than 10% in Alaska, about 8% in Iceland and Greenland, and more than 3% in the Faroe Islands.

In Arctic Russia, the census data available indicate that the share of the population in these smallest settlements hardly reaches 1%, though there are almost 200 such small communities. Nomads are not listed separately in Russia,however, but rather assigned to various permanent villages and registered as part of those communities. About 15,000 people in the indigenous population of the Russian Arctic lead a nomadic way of life. The biggest nomad group is in Yamal (over 10,000, with the Nenets making the majority); smaller groups are engaged in a nomadic lifestyle in the Nenets Autonomous Okrug, in Taimyr, Yakutia, and Chukotka (about 1,000 people in each region).

In Canada, the majority of northern communities are in the 100-499 range in population size. This represents, however, only about 11% of the overall northern population, while only five communities have 5000+ population, containing 43% of the population of the North.

Fertility

With an average crude birth rate of 19.7 births per 1,000 population, the present-day fertility in the circumpolar region as a whole cannot be characterized as high compared with that of the world (4). However, compared to other developed countries, the USA and Iceland stand out with somewhat higher fertility rates; in Greenland and the Faroe Islands fertility is even higher. At the same time, fertility in Russia is one of the lowest in the world.

Some demographic definitions

The three essential components of change in the size of the population are fertility, mortality, and migration. Two different indicators of fertility are crude birth rate and total fertility rate.

Crude birth rate is the annual number of live births per 1,000 people in the population of a geographic area at the midpoint of a given year.

Crude death rate (mortality) is the annual number of deaths per 1,000 people in the population of a geographic area at the midpoint of a given year.

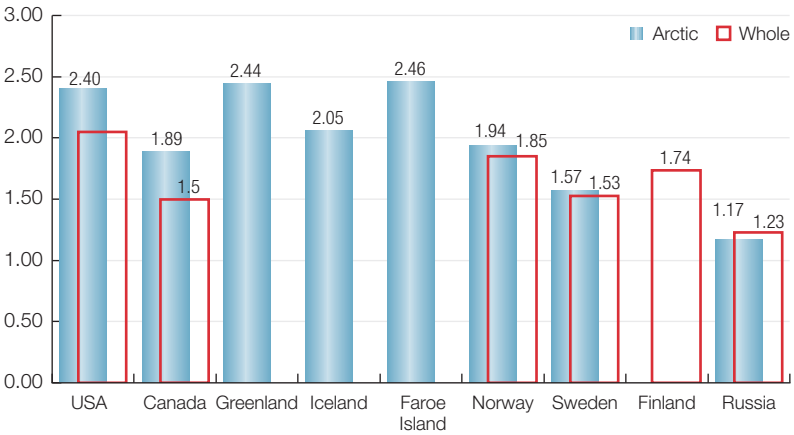
Natural population change is the difference between birth rate and death rate (mortality).

Total fertility rate (TFR) is an estimate of the average number of children who will be born alive to a woman during her lifetime, i.e. the average number of children a woman will have in her childbearing years.

Net migration is the number of people moving into an area minus the number of people moving out.

Life expectancy is the average number of additional years that people of a given age can expect to live, assuming that age-specific death rates remain constant.

Total Fertility Rates, Arctic Regions and Countries about 2000



As has been already noted, fertility in the majority of circumpolar regions is slightly higher than in their respective countries as a whole.

In the United States and Canada the differences in fertility between circumpolar regions and the countries as a whole are significant. It is largely explained by the greater percentage of indigenous populations, whose fertility is higher than that of the non-indigenous residents. Thus, in the year 2000, the total fertility rate of Alaska's population as a whole was about 2.3, with a indigenous rate of 3.5 and a non-indigenous rate of 2.1. The non-indigenous fertility rate was almost the same as that for the United States as a whole (5). In Canada, based on the total fertility rates for the Northwest Territories in 2001, where the population is about 50% indigenous and 50% non-indigenous, the rate was 1.8 births per woman. The estimated total fertility rate for the indigenous population in the territories (excluding Nunavut, northern

Québec and Labrador) was an average 3.1 births per woman over the 1996-2001 period. By contrast, in Nunavut where the population is 85% Inuit, the total fertility rate is estimated at 3.7 births per woman.

In both Norway and Sweden, the differences in fertility rates are small between the Arctic and the rest of the country. In Norway, for example, fertility in the county of Nordland is low and almost equals the overall Norwegian rate; however, in the county of Finnmark, it is appreciably higher (*6*).

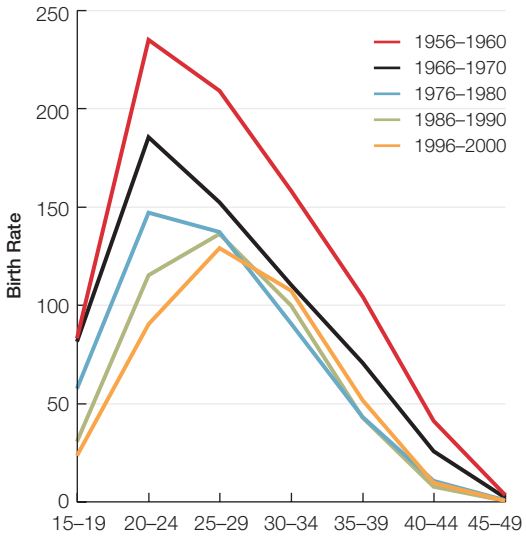
The fertility of Russia's circumpolar population is equal to, or slightly lower than that of Russia's total population. This can be explained by the high proportion of urban population, including those inhabiting large towns (Murmansk, Norilsk, Vorkuta, Noyabrsk, Novy Urengoi), where fertility rates have always been lower. Since the share of the indigenous population in the Russian North is very small, its indicators have almost no bearing on the indicators of the overall population of the region. However, in regions with a relatively high share of indigenous people, the differences in the levels of fertility among the urban and rural population are evident, and reflect the fact that the indigenous population by and large consists of rural inhabitants. For example, in Chukotka in year 2000, the total fertility rate of the urban population was only 0.9 per woman while that of the rural population was as high as 2.5.

Declining fertility rates in various stages

Fertility rates declined during the second half of the last century among all the populations in the Arctic. However, the rates of decrease and their contemporary levels differ significantly among the various countries and regions. One explanation is that the decrease in fertility of the indigenous and non-indigenous populations is taking place in different stages.

In the Nordic countries (Iceland, the Faroe Islands, Norway, Sweden, and Finland), an intentional constraint of fertility has been practiced for over a hundred years, with the fertility of older women being reduced first. Since the 1960s, a new fertility pattern has been underway, with the fertility of young women under age 25 declining faster than in other age groups. The peak in fertility is now pointing at the 25-29 age group, in comparison to the 20-24 age group in earlier years. One of the basic reasons for this is the conscious decision of women to postpone giving birth to their first child for reasons of educational and professional growth. This phenomenon is referred to as the second stage of the demographic transition. This fertility decline in the last decades of the 20th century occurred at an especially fast rate. The same phenomenon is characteristic of the non-indigenous populations of the United States and Canada.

Age-Specific Birth Rates, Iceland 1956-2000



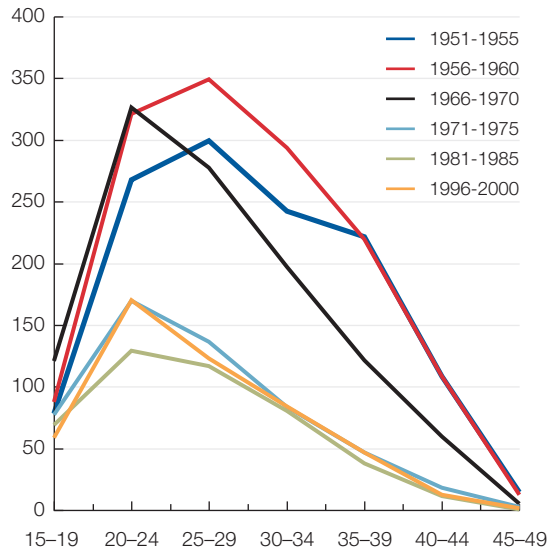
Source: http://www.hagstofa.is)

In Russia, there are signs that large-scale intentional postponement of giving birth to the first child is underway. This is a relatively new trend however, and the fertility peak is still pointing at the 20-24 age group. The 1990s in Russia witnessed a fast decline of fertility rates, which was aggravated by the simultaneous onset of a severe economic crisis.

Among Arctic indigenous peoples, the decline in birthrates started in the 1960s. Greenland is a classic example of this process (*7*). While Greenland experienced a certain growth of fertility at the earliest stage of the demographic transition in the 1950s (*8*), the rates soon declined. In the 1960s, Greenland exhibited possibly the fastest and the most significant decline in fertility rate in the world. In the first half of the 1960s, the total fertility rate was 7 children per woman, and only ten years later, in the first half of the 1970s, this indicator had dropped to 2.7 (*9*).

At about the same time, a very rapid fertility decline among Alaska Natives was observed (*10*), though slower than in Greenland. Also, the fertility decline in Alaska was not as profound, only reaching 3.7 children per woman in the late 1970s.

Age-Specific Birth Rates, Persons Born in Greenland, 1951-2000



Source: Statistical Yearbook of Denmark; http://www.statgreen.gl/

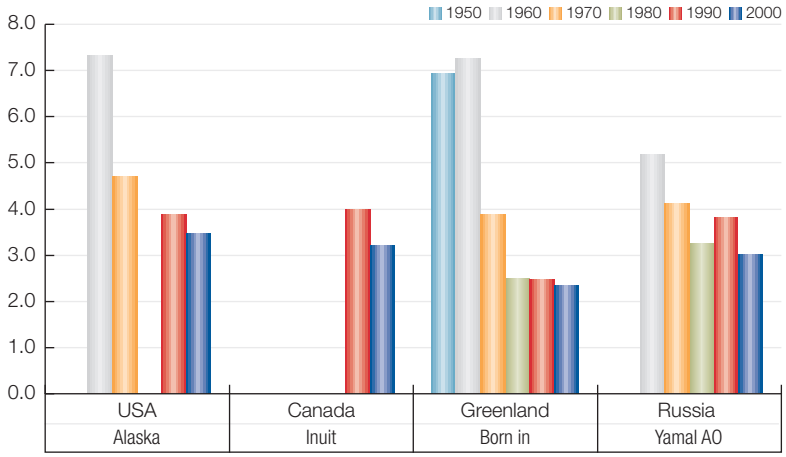
The decline of fertility among Russia's indigenous peoples also started in the 1960s, according to the data available, but from lower levels (*11*).

Fertility decline among indigenous northerners started with a decline in the number of births among women in older age groups. Simultaneously, fertility in the youngest group (15-19 year olds) was growing. Even today, when fertility among indigenous people in this age group is on the decline, the crude birth rate among Alaska Natives are still a high 90 births per 1000 women, while in Greenland and Russia it is about 60 per 1000 women. By contrast, the rate among Alaskan non-indigenous young women is about 30 per 1000 women. The rates are even lower in other countries. The peak of fertility among indigenous women in all the countries observed is in the 20-24 age group (*12*).

In the Canadian North, fertility rates appear to be declining among the indigenous populations, but they remain high relative to those of non-indigenous peoples. The former group appears to be going through the second stage of the demographic transition with declining but still high fertility, while mortality is declining yet more quickly, yielding a relatively high natural population increase rate. This is more true of the Inuit than of other indigenous populations in Canada, who have much lower fertility rates and are approaching the third stage of the demographic transition, namely low fertility, low mortality, and low natural increase.

The recent decline in fertility is evident in the age composition of the various Arctic countries and regions, with the 0-4 age group being smaller than that of older age groups. There may be an echo baby boom, however, when the very large cohorts who are currently under age 15 enter the family formation stage in the next ten to fifteen years. Even if fertility rates continue to decline, these cohorts could still produce large numbers of children - the echo effect - because they are numerically large.

Total Fertility Rates, Arctic Indigenous Peoples



Mortality

In an international comparison, the majority of Arctic countries have very low mortality among both children and adults (*13*). Life expectancy at birth is an indirect measure of mortality. The Scandinavian countries and Canada are among those countries whose life expectancy, on the whole, is among the highest in the world. Iceland also ranks high.

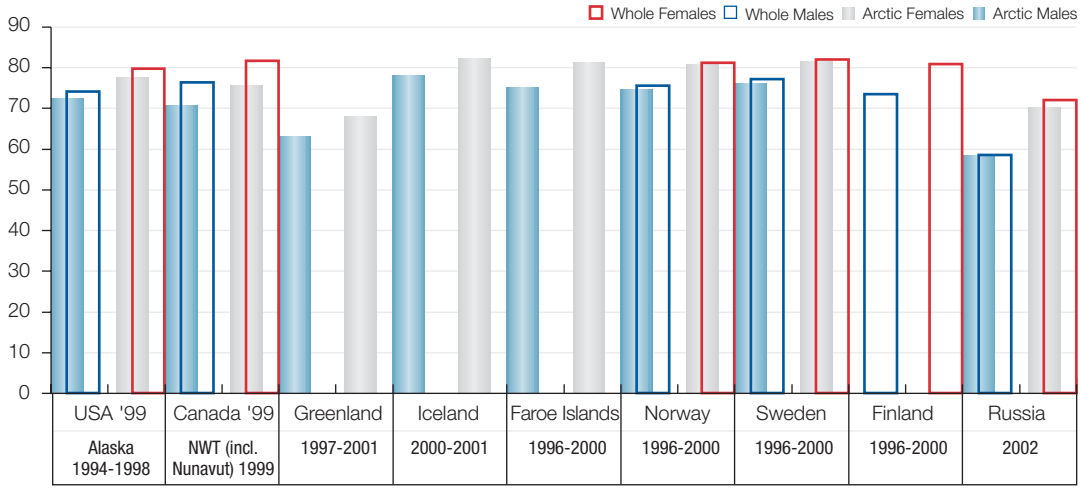
Russia is an exception, however, joining countries with low infant mortality rates but high adult mortality rates (*14*). Consequently, in the Arctic as a whole, Russia has the lowest life expectancy.

In the Arctic regions of large countries, mortality is generally higher than in other parts of those countries, which results in a lower life expectancy. In Alaska, life expectancy is almost two years lower than in the United States as a whole.

In the circumpolar parts of Norway and Sweden, the differences in life expectancy in their northern areas are due in part to greater male mortality.

As with the case of fertility, differences in life expectancies between the northern counties in

Life Expectancy, Arctic Regions and Countries, circa 2000



Norway are quite noticeable. In Nordland, this indicator does not differ significantly from that of Norway as a whole, while in Finnmark it is one year lower for women and almost three years lower for men.

In Russia, the geographic and socio-economic differences are great across the North, and differences in mortality rates follow this pattern. In the Murmansk Region, life expectancy is almost the same as in Russia as a whole, while in Taimyr, Sakha-Yakutia, and Chukotka, it is 2-3 years lower.

In the circumpolar region as a whole, male mortality is higher than female mortality. However, gender differences in life expectancy rates vary greatly across the Arctic. They are the lowest in Iceland with a difference of about four years. In Alaska, Greenland, and Norrbotten (Sweden), the difference is more than five years, and in northern Norway and the Faroe Islands, it is more than six years. There are no data on Lapland (Finland), but on the whole, the difference in Finland is more than seven years, and it is likely that is it not less than that in the Arctic. In various Arctic regions of Russia, this difference reaches 11-13 years, similar to Russia as a whole (*15*).

Changes in overall mortality and life expectancy

There is a trend towards a decrease in mortality in the majority of the Arctic countries and regions. During the past 15-20 years, male mortality has decreased faster than female mortality, with life expectancy increasing 1-2 years for women and 2-4 years for men.

Russia is an exception to this trend of decreasing mortality, with no steady decrease during the past 30-40 years. Also, life expectancy has been on the decline, a decline that has been faster among men than among women. Hence, Russia is facing a gender gap in life expectancy of about 13 years, which is larger than anywhere else in the Arctic.

The circumpolar pattern of decreased mortality was most pronounced among the indigenous population in the 1950s-1960s. It started from extremely high mortality rates in the indigenous populations in the early 1950s, much higher than among their non-indigenous counterparts. Life expectancy of Alaska Natives (48 years) was 20 years lower than in the United States as a whole (*16*), while infant mortality was four times higher than among the non-indigenous population (*17*). During the same period, life expectancy in Greenland was 35 years, 34 years less than in Denmark at that time.

In Alaska, the general mortality rate went down from 19 per 1,000 in the late 1940s to 10 per 1,000 in 1955. It stayed around 9 per 1,000 throughout the 1960s. Life expectancy of indigenous Alaskans grew from 48 (1949-1951) to 60 years (1959-1961) in about a decade (*18*). The mortality decline in Alaska continued, although at a slower pace. During the following 30-40 years, life expectancy increased by 9 years (*19*). While this increase in life expectancy among the indigenous Alaskan population is significant, their life expectancy is still lower than that of their non-indigenous counterparts (a 6-year difference) and that of the United States as a whole (an 8-year difference).

In Greenland, the overall mortality rate dropped from 25 per 1,000 in the late 1940s to 9 per 1,000 in 1960 and 6-7 per 1000 in the second half of the 1960s. At the same time life

expectancy went up from 35 (1946-1951) to 60 (1960-1965) (*20*). The decrease in mortality rates in Greenland slowed down notably in the 1970s-1990s, with a life expectancy of 65 years in the late 1990s, 11 years less than in Denmark. The gap has hardly changed since the second half of the 1960s.

Among the indigenous peoples of the Russian Arctic, the decrease in mortality rates started in the 1960s, but it was not as rapid, and even in 1979 the crude death rate was 17 per 1000, while life expectancy was about 50 years (*21*). In the mid- and late- 1980s, the crude death rate went down to 11 per 1000, while life expectancy increased to 60 years (*22*). In the 1990s, mortality among indigenous peoples, similar to Russia's population as a whole, was increasing with the death rate up to 15 in mid-decade, and 13 at the end.

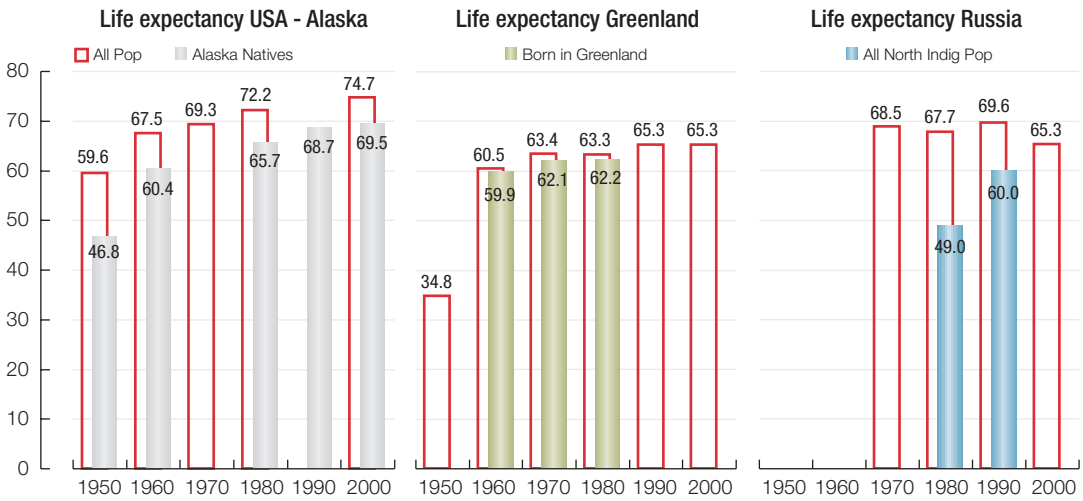
There are also regional and ethnic differences in mortality of indigenous populations in the Russian Arctic, being lowest among the Saami of the Murmansk Region, and highest among the indigenous populations of Taimyr and Chukotka (*23*).

1,000 births among the indigenous peoples of Alaska, which was four times higher than among the non-indigenous population, while at present it is only twice as high (about 10 per 1,000 and 5 per 1,000 respectively). In Russia, infant mortality has dropped from more than 100 infant deaths per 1000 births in the early 1960s, to 70 per 1,000 by the first half of the 1970s, and 30 per 1,000 in the late 1990s. In the Russian Arctic, the infant mortality rate among the indigenous peoples is twice as high as that of the non-indigenous population (15 per 1000).

Adult mortality decreased at a considerably slower pace. At present, the differences between indigenous and non-indigenous mortality rates are largely determined by higher mortality rates among young and middle-aged indigenous groups. Non-natural causes stand out as leading causes of death.

In Greenland, approximately every sixth death is due to non-natural causes (17.5% in 2000). While this is a considerable share, it has been declining in the last 10-15 years. At its peak, from the 1970s into the first half of the 1980s, it reached 30% and more. In comparison,

Life Expectancy, Arctic Indigenous Peoples (*25*)



Changes in infant and adult mortality

The high mortality rate of the indigenous peoples of the Arctic is rooted in higher infant mortality (especially in Greenland and Arctic Russia) and high mortality among adults due to non-natural causes, such as accidents, suicides, and murders.

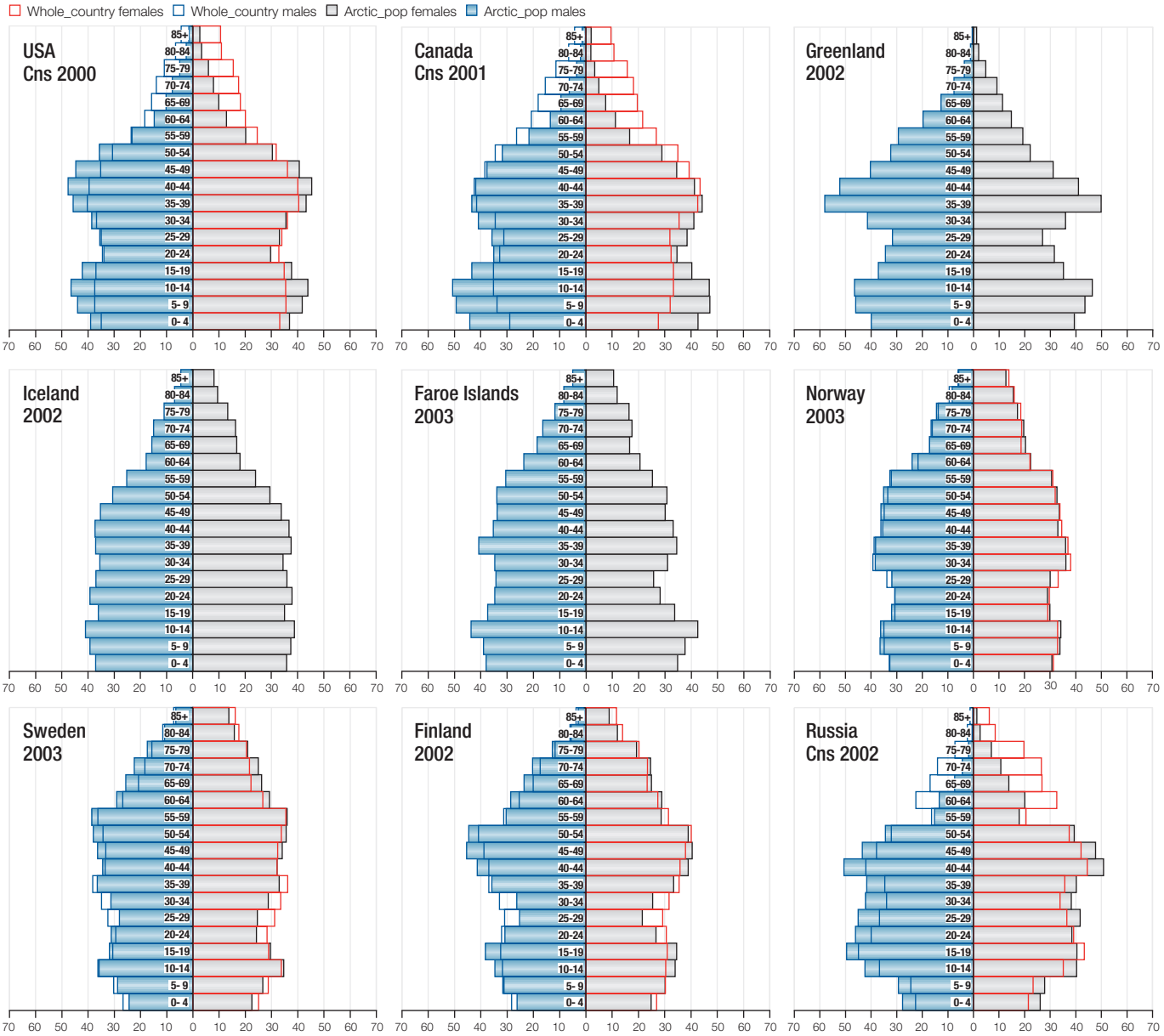
The decrease in mortality rates for infants and children has been most significant. In the early 1950s, there were about 100 infant deaths per

only 5.8% of the deaths in 1999 in Denmark were due to non-natural causes.

Every fourth death among the indigenous population of Alaska is non-natural (24.6% in 1999), while among non-indigenous Alaskans it is every seventh death (13.6%).

The share of non-natural deaths among indigenous inhabitants of the Russian Arctic is even higher. In several districts, it reached 45% during the period of the1970s and 1980s. In 1998-2001, the share of such deaths among all

Age-Gender Structure, Arctic Regions and Whole Countries circa 2000
per 1,000



the indigenous populations of the Tumen' Region, incorporating the circumpolar Yamalo-Nenets Okrug, was still 37%, which is far greater than Russia's high average share (14%).

Age and gender composition

The age structure of Arctic populations differs noticeably from the structure of the overall populations in the respective Arctic countries. The most striking difference is the higher share of individuals of labor-force age and the smaller share of those in older age groups. This peculiar feature of the age structure is affected by the inflow of working age migrants and the outflow of retiring people of older ages.

The smallest differences in age structure between the Arctic regions and their countries as a whole are observed in Norway. Here the age-gender pyramids almost coincide. There are small though noticeable features making Sweden's Norrbotten and Finland's Lapland different from their corresponding country's national age structures. The share of younger adults (25-39) is somewhat smaller here, while that of the older adults (40-59) is bigger than in the countries as a whole. The differences between national age-gender composition and those of the Arctic populations in Russia and the United States (Alaska) are far greater. The most profound differences are seen in the Canadian Arctic and are a consequence of the high proportion of indigenous people in the population,

the highest in any large country's Arctic region. Greenland's "born-in Greenland" age-gender structure is similar to those of Canada and Alaska.

Focus on age pyramids

The demographic history of Arctic populations is clearly reflected in the age pyramids. Their modern pattern largely depends on the level and dynamics of fertility decline, but also on the age structure of in- and out-migrants from the Arctic.

The most stable age pyramid belongs to the population of Iceland. There are almost no age cohorts that appear very deep or which protrude more than others. Fertility declined gradually, without strong fluctuations. On Greenland's pyramid, in contrast, there is a very pronounced cavity in the 20-34 age groups formed as a result of a very rapid fertility decline more than 30 years ago. In Canada and in Alaska, the smallest age cohort is the 20-24 age group. To understand the shape of their current age-gender pyramid it is important to analyze not only fertility 20 or so years ago but also how migration and mortality patterns have affected the size of this age group over time.

The age pyramid of Russia's Arctic population is considerably "indented," with a cavity at the age of 30-34. This reflects a numerically small generation of children born to those who were born during World War II, a "second demographic echo of the war"). The abruptly narrowed foundation of the pyramid reflects a dramatic fertility decline in the past decade, when the economic crisis of the 1990s and "the second echo of the war" coincided.

The foundations of the "Arctic" pyramids of Sweden and Finland are similarly narrow, indicating low fertility, though lacking the sharp differences seen in Russia. The broadest foundations are observed for the populations of Canada and Greenland, but they are narrowing.

The differences in the tops of the pyramids are even more radical. The greatest shares of seniors are in Norrbotten and in Lapland, where they are even higher than in the total populations of Sweden, Finland. The smallest shares of seniors are in the Arctic regions of Canada and Greenland. Those few who are 70 years or older lived here during periods of high mortality, especially high infant mortality.

Focus on indigenous age structures

Age structures of indigenous and non-indigenous populations differ greatly even within the same region or country. Indigenous populations have a distinctly higher share of children in the age cohort 0-14 years. In Arctic Canada it is 37%, compared to 19% among the non-indigenous population. In Alaska the figure is 32% (for non-indigenous it is 24%). Among people born in Greenland, children make up 28% of the population, while for children of those born outside Greenland the figure is only 10%. In the Arctic regions of Russia, 0-14-year olds make up 37% of the indigenous population compared to 29% of the non-indigenous population (*24*).

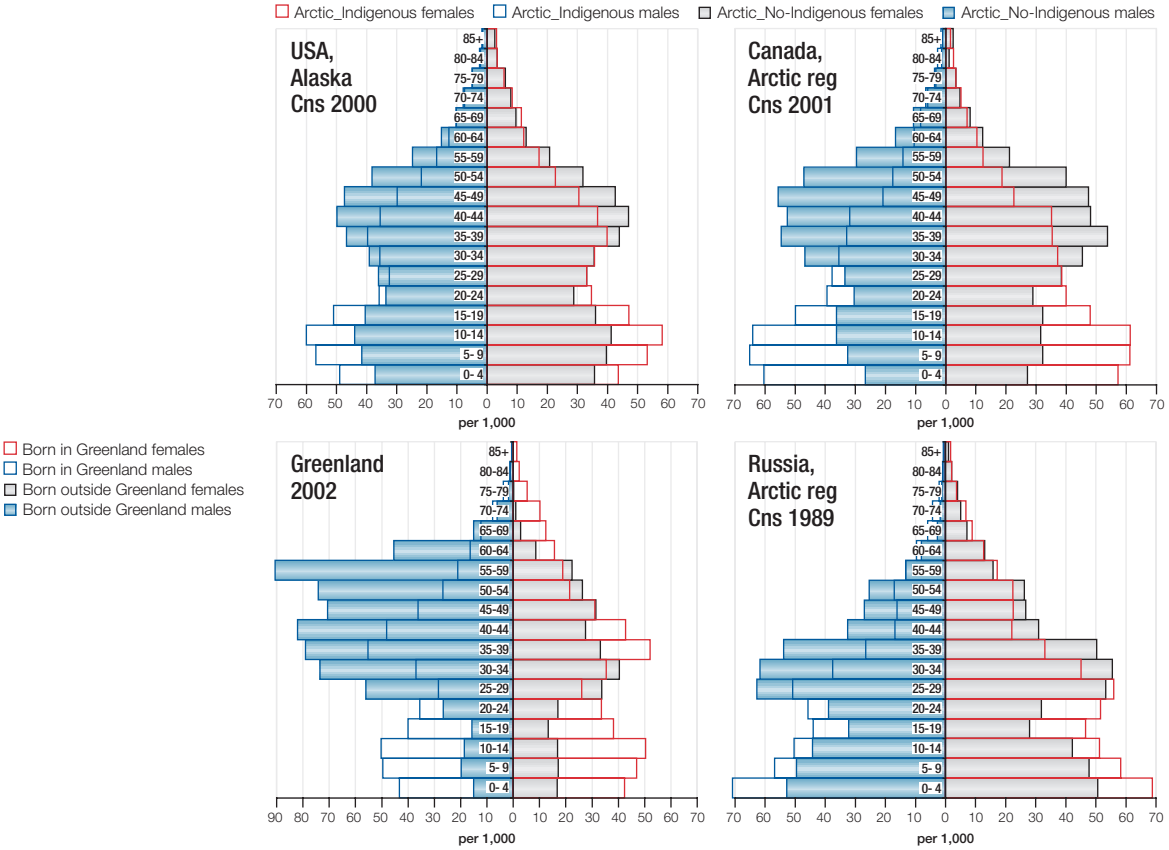
There are more individuals of labor-force age (25-64 years) among the non-indigenous population of the Arctic region. In the Arctic region of Canada, 41% of the indigenous population is in the labor-force age group, compared to 64% of the non-indigenous population. In Alaska, 45% of the indigenous population is in the labor-force age compared to 57% for the non-indigenous population. In Russia in 1989, these shares were 42% and 56% respectively; and in Greenland, 51% and 80% respectively.

Focus on gender structures

On the whole, there are more men than women in the Arctic, largely as a result of more male than female migrants moving to the North. The only region where the number of women is somewhat higher is the Russian Arctic: 990 men per 1,000 women according to the latest Russian census. However, the female majority throughout Russia is far more impressive: 872 men per 1,000 women. The female majority is a new phenomenon for the Russian Arctic. In the 1989 census and earlier, there were more men than women. This shift is most likely a consequence of the high male mortality rate. During the period 1995-2002, the number of male deaths outstripped male births by 3,000, while the number of female births outstripped female deaths by 25,000. There was thus an overall natural increase of population in the region of about 22,000.

In all other circumpolar countries and regions, there are more men than women. At the same time, there are more women than men in "large" Arctic countries as a whole. The male majority is greater among the non-indigenous population than the indigenous one.

Age-Gender Structure, Indigenous and Non-Indigenous Populations of the Arctic circa 2000
per 1,000



Migration

Migration is important to the population structure in many areas of the Arctic. One of the main causes of migration seems to be employment opportunities. The Arctic is not an exception in this. Migration depends heavily on economic conditions and the inflows of population into the Arctic regions often give way to outflows.

Focus on Alaska

The connection between migration and economic conditions is clearly seen in Alaska, where there have been three "tidal waves" of in-migration changing into almost similarly big ebb tides during the past three decades. The strongest fluctuations of migration gains and losses have also been registered here, caused by the relatively small Alaskan population when compared to the country as a whole, making the flows of in-migration from and out-migration to "the lower 48" especially significant for the state. During 2001-2002, the net migration was positive, but in the previous eight years (1993-2000), Alaskan migration losses were 24,000. Compared to the late 1980s, when such losses were 44,000 in four years, the recent migration is not very significant, however.

Focus on Greenland

Greenland has witnessed an almost constant flow of out-migration for the past twenty years, varying in quantity only. Most people who leave were born outside Greenland. The long-term net migration is practically zero as the number of in-migrants roughly equals that of out-migrants, the latter being 3% more. The migration flows declined notably in the 1990s compared to the 1980s (by 40%). Despite the fact that those born in Greenland migrate less than those born elsewhere, the number of indigenous people leaving Greenland is greater than the number of those returning to Greenland. Net out-migration was 3,300 in 1992-2002 compared to 1,800 in 1981-1991. It is a remarkable figure for Greenland and represents about 6% of the total population leaving in 11 years.

There are more women than men among the indigenous people leaving Greenland. This raises the question of whether there is a gender bias among those leaving the North. (see *Chapter 11. Gender Issues*, for further discussion.)

Focus on the Nordic countries

In Iceland, the migration out-flow has changed into an in-flow. The end of the last decade and the beginning of the current one (1997-2002) are characterized by a net in-migration, while the previous five-year period (1992-1996) had a negative balance. The net in-migration for the past decade amounts to a total of 1,700, people or 0.5% of Iceland's population.

The Faroe Islands experienced a considerable outflow of population, relative to total population size, in the first half of the 1990s, when in-migration decreased and out-migration went up sharply. The total population decrease was more than 7,000 people (15% of the 1989 population) because of the migration processes in 1989-1995. More recently, in the period 1996-2002, there has been a net in-migration, but this has only compensated for one third of the losses suffered in the previous five-year period.

In the three northern counties of Norway out-migration has almost always exceeded in-migration during the past three decades. On the average, the annual migration loss was close to 2,000 people. However, fluctuations still prevail: in "good" years (1972-73, 1979, 1991-93, 1999), the migration loss was minimal or even non-existent, whereas in "bad" years (1984-86, 1996-97) it went up to 4,000 people a year or more.

In Norway as a whole, immigration has ensured an inflow of population since the second half of the 1960s. The number of immigrants in the northern part of Norway has also exceeded the number of out-migrants from the beginning of the 1970s. However, numerically they offset less than one half of losses in the migration exchange with the southern parts of Norway.

Finland's Lapland has been decreasing in population size as a result of net out-migration for more than thirty years now, while in Finland itself, net migration has been steadily positive since the early 1980s. During the past nine years (1993-2001), Lapland lost about 17,000 people, or 8% of its 1993 population, due to migration.

In Norrbotten (Sweden), unlike its Nordic neighbors, the migration outflow of population at times changes into an inflow. In the long run, however, there has been net population loss here as well. During the past 20 years, the migration waves in the Arctic region of Sweden have been contrary to those in Arctic Norway: when there is an inflow of population in Norrbotten, then the biggest outflows occur in Nordland, Troms, and Finnmark.

Focus on Russia

The past 15 years have witnessed the greatest-ever outflow of population from the Russian Arctic (and on a greater scale, from all of the Russian Far North), and it is still going on. This tendency has been in direct contrast with the situation facing Russia as a whole, where an impressive inflow of population from the outside has taken place.

Migration from the Arctic began in the 1990s and reached its peak in the period 1992-1994, when 2-4% of the population left the region every year. In Chukotka, more than 10% of the population left every year. Unlike the Faroe Islands, the migration outflow, although somewhat diminished, did not stop and was still underway in 2002.

A comparison of the Russian censuses of 1989 and 2002 makes it possible to assess the migration losses in the Arctic regions. These amount to 650,000 people, or about one fourth of the total population in 1989. However, Russia's Arctic is far from being homogeneous in this respect. The greatest losses were in Chukotka, where about 70% of the population registered in 1989 was lost to migration. The Arctic part of the Republic of Sakha has lost almost one half of its population, while the Sakha as a whole lost only one fifth of its overall population. Almost 40% of the population in Vorkuta have been lost as a result of migration, and the rest of the districts have lost 20 to 30% of their populations. Only the Yamalo-Nenets Okrug stands out against the general background with its minimal losses of a mere 7% of the 1989 population.

Key conclusions and gaps in knowledge

The demography of the Arctic is diverse and thus challenging to describe. The diversity is observed not only across the circumpolar region, but also within the Arctic areas of individual countries such as Canada and Russia. Without specific data on the different ethnocultural groups, the overall population patterns and trends tend to hide important demographic differences within countries or regions. Furthermore, the demographics of the non-

indigenous populations in the circumpolar North are quite different from those of their indigenous counterparts. Depending on their weight in the overall population, this also can make a big difference demographically in assessing age structure and total population growth. This suggests that the diverse populations within the Arctic regions need to be more specifically identified in official data collection systems within each country.

That said, this chapter has attempted to highlight the overall demographic picture in the circumpolar regions of the world, with its population of about 4 million. Since World War II, the population has grown. The growth pattern has been somewhat sporadic, but, in general, growth was fairly rapid in the 1950s and 1960s, and in some countries into the 1970s. In recent years, this growth has slowed down and in some cases (e.g Russia) been replaced by population decline. However, some northern areas, such as Canada, Alaska, and Greenland, still show signs of growth. Much of the overall growth pattern appears to be dependent on resource development cycles. Nevertheless, for regions and/or countries where data are available for the indigenous populations, their growth rate is high. This is largely driven by natural increase rather than net migration. In some regions, such as in Canada, there is evidence that fertility rates among the Inuit are starting to decline, but they still remain more than double that of the country as a whole.

Age structures also vary and are very much affected by the relative shares of non-indigenous and indigenous populations in a particular region. Regions with high shares of non-indigenous populations tend to have an older population with more people in the labor-force age groups, while regions with large indigenous shares have younger populations. The latter includes Canada, Alaska and to some extent Greenland.

The size of communities varies greatly across the Arctic. Some regions (e.g. Alaska and Russia) have the vast majority of their population in large urban centers or cities, while others (e.g. Canada) have a large share of the population living in small or very small communities. In many of the circumpolar countries, the indigenous populations generally live in the smaller communities. To understand the demography of the North, it is thus necessary to take account of this variation in settlement patterns.

With this wide variation in demography, any cross-country comparisons need to control for a variety of key variables, such as the indigenous versus non-indigenous populations, different age structures across regions and groups, and community-size differences. Without more such data, we get a very disjointed picture of the overall demography of the circumpolar region.

References and notes

1. Incidentally, in Russia the inhabitants of this part of the country call it "the Norths" (in plural) while in the rest of the country, its southern part is referred to as "the mainland" ("continent"), though "the Norths" have, in fact, nothing to do with islands. This expression is an echo of the times when communication with the South used to be time-consuming and difficult, and the North was viewed as "an island" of sorts, isolated from the rest of the country).
2. Data for calculation of the growth rate for Canada's North exclude northern Quebec, as data for earlier years were not readily available.
3. Data for calculation of the percentage share in Canada's North excludes northern Quebec, as data for earlier years were not readily available for the time series comparison.
4. Source for world crude birth rate is http://www.phrasebase.com/countries/index.php?variable=people_birthrateperk&submit=Next+20+%26gt%3B%26gt%3B&action=rankorder&cat=0&counter=20&track=257]
5. The total fertility rate for the United States was 2.13 in 2000. Statistical Abstract of the United States 2002. P.62 http://www.census.gov/prod/2003pubs/02statab/vitstat.pdf
6. We have no data on the overall fertility in the Finnish North (Lapland), though it is likely to be higher than in the country as a whole judging by the fact that the share of children of the high order of births (third and more) here is steadily higher.
7. Incidentally, there are long statistical series of fertility rates in Greenland (http://www.statgreen.gl/).
8. Connected with the improvement of women's health and the spreading of manufactured baby's milk products instead of breastfeeding, similar to what was observed among Canadian Indians (A. Romaniuk, "Increase in Natural Fertility During Early Stages of Modernization: Canadian Indians Case Study" *Demography* 18, 1981).
9. See http://www.statgreen.gl/english/
10. L. Blackwood, "Alaska Native Fertility Trends, 1950-1978" *Demography* 18.2:173-179 (1981).
11. D. Bogoyavlenskiy, "The Demographic Problems of Non Numerous Northern Indigenous Populations" In: *Population of Russia ,A Second*

Annual Analytical Report, pp. 144-160. Eurasia, Moscow (1994). (in Russian)

12. For data on Alaska Natives see L. Blackwood, 1981; Alaska Bureau of Vital Statistic Annual Report 1988-89, 1995-2000; for data on Greenland see Statistisk Aarbog 1950-1980, http://www.statgreen.gl; for Russia, data are available only on indigenous peoples of the Yamalo-Nenets Autonomous Okrug (Area) calculated on the basis of unpublished statistical data of natural movement of population and censuses, while those covering 1998-1999 are based on the author's estimates.
13. According to the Mortality Stratum A used by WHO. World health report 2004. P.156 "List of member states by WHO regions and mortality stratum". http://www.who.int/whr/2004/annex/topic/en/annex_member_en.pdf
14. According to the Mortality Stratum C used by WHO. World health report 2004. P.156 "List of member states by WHO regions and mortality stratum". http://www.who.int/whr/2004/annex/topic/en/annex_member_en.pdf
15. It reached 13.2 in 2000. Demography Yearbook (2002). The Demographic Yearbook of Russia, 2001 Moscow: 2002. P.105 (In Russian/English)
16. B. S. Gurananjappa, "Life Tables for Alaska Natives" *Public Health Report*. 84:65-70 (1969).
17. Infant mortality was 101 among the indigenous population compared to 24 for the non-indigenous population, Alaska HSS, 1991.
18. B. S. Gurananjappa, "Life Tables for Alaska Natives" *Public Health Report*. 84:65-70 (1969).
19. Alaska Bureau of Vital Statistics, 1998 Annual Report http://health.hss.state.ak.us/dph/bvs/publications/1998ar.htm
20. Statistics Aarbog, 1970. Danmark.
21. The indicator of life expectancy is for all the indigenous peoples of Russia's North (over 150,000 in 1979), and not just the Arctic region alone (about 65,000 in 1979).
22. This later indicator of life expectancy is for all indigenous peoples of Russia's North (about 180,000), and not the Arctic region alone (about 77,000).
23. According to some data, life expectancy of Chukotkan indigenous population in 1995 was 50 years (Y. D. Chernukha et al. *The medical-and-social as well as medical-and-demographic problems of peoples in the Asian North. Problems of social hygiene, health service and history of medicine*. 2003. 2:16-18), 2003. (in Russian).
24. Data of 1989
25. Sources: Life Expectancy (USA-Alaska): Middaugh et al., 1991. Middaugh J.P., Miller J., Dunaway C.E., Jenkerson S.A., Kelly T., Ingle D., Perham K., Fridley D., Hlady W.G. and V.Hendrickson. Causes of Death in Alaska 1950, 1980-89.; Gurananjappa, 1969. Bale S. Gurananjappa Life Tables for Alaska Natives. Public Health Report.84:65-70; Williams, 1986. Greg Williams, Life Tables 1977-83. Alaska Departament of Labor. Research and Analysis. Demographic Report No 1, Dec.; Goldsmith S. et al., 2004. Goldsmith S., Angvik J., Howe L., Hill A. and L. Leask. The Status of Alaska Natives Report 2004. http://iser.uaa.alaska.edu/Home/ResearchAreas/statusaknatives.htm. Source for Life Expectancy in Greenland: Statistics Greenland. Source for Life Expectancy in Russia: Goskomstat of Russia.