Sub-Indicator: Human Population

Note: The range of data assessed in this sub-indicator report remains unchanged since the State of the Great Lakes (SOGL) 2022 sub-indicator report, as a new census has not been conducted and published for either country since then. Therefore, this report once again analyzes United States census data from 1970-2020, and Canadian census data from 1971-2021. However, the following changes have been implemented in this report compared to the SOGL 2022 report:

1. This report includes final data from the 2021 Canadian census, whereas the SOGL 2022 report relied upon preliminary 2021 Canadian census data.

2. This report uses a different shapefile of the Great Lakes Basin compared to the 2022 report. Therefore, a slightly different area is assessed.

3. To conform with the definition of the Great Lakes Basin in the Great Lakes Water Quality Agreement[1], this report includes census data from the Upper St. Lawrence River Basin, up to the international border of Canada and the United States. The SOGL 2022 report, and prior SOGL reports, did not include the Upper St. Lawrence River Basin.

Due to these changes, the presented population numbers have increased in this report, although the same range of data are being used since the last report. See the Methods section of the report for greater details.

Overall Great Lakes Basin Assessment

Trends:

10-Year Trend (2010-2020 U.S. & 2011-2021 Canada): Increasing

30-Year Trend (1990-2020 U.S. & 1991-2021 Canada): Increasing

Long-term Trend (1970-2020 U.S. & 1971-2021 Canada): Increasing

Rationale: As shown in Table 1, the 2020 U.S. census and the 2021 Canadian census of population reported the resident population within the Great Lakes Basin was 36,600,830 (68.8 residents per km^2 (Table 2)). This is an increase of 2,293,307 residents (6.7%) since the 2010 U.S. census and 2011 Canadian census. Therefore, the 10-year trend is Increasing.

For the 30-year trend, the resident population increased by 5,878,670 (19.1%) from 30,722,160 residents (57.8 per km^2) in 1990/1991 to 36,600,830 residents (68.8 per km^2) in 2020/2021. Therefore, the 30-year trend is Increasing.

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[1] "Great Lakes Basin Ecosystem" means the interacting components of air, land, water and living organisms, including humans, and all of the streams, rivers, lakes, and other bodies of water, including groundwater, that are in the drainage basin of the Great Lakes and the St. Lawrence River at the international boundary or upstream from the point at which this river becomes the international boundary between Canada and the United States;
Great Lakes Water Quality Protocol of 2012, Article I(c). https://binational.net/wp-content/uploads/2014/05/1094_Canada-USA-GLWQA-_e.pdf

For the long-term (50-year) trend, the resident population increased by 8,132,845 (28.6%) from 28,467,985 residents (53.5 per km^2) in 1970/1971 to 36,600,830 residents (68.8 per km^2) in 2020/2021. Therefore, the long-term trend is Increasing.

Lake-by-Lake Assessment

Lake Superior Basin

10-Year Trend (2010-2020 U.S. & 2011-2021 Canada): Increasing

30-Year Trend (1990-2020 U.S. & 1991-2021 Canada): Increasing

Long-term Trend (1970-2020 U.S. & 1971-2021 Canada): Increasing

Rationale: The Lake Superior Basin is the least populous among the Great Lakes sub-basins (Table 1). Based on the 2020 U.S. census and the 2021 Canadian census of population, the resident population within the Lake Superior Basin was 638,981 (4.8 residents per km^2 (Table 2)). This is an increase of 31,363 residents (5.2%) since the 2010 U.S. census and 2011 Canadian census. Therefore, the 10-year trend is Increasing.

For the 30-year trend (Table 1), the resident population increased by 27,783 (4.5%) from 611,198 residents (4.5 per km^2) in 1990/1991 to 638,981 residents (4.8 per km^2) in 2020/2021. Therefore, the 30-year trend is Increasing.

For the long-term (50-year) trend (Table 1), the resident population increased by 22,008 (3.6%) from 616,973 residents (4.6 per km^2) in 1970/1971 to 638,981 residents (4.8 per km^2) in 2020/2021. Therefore, the long-term trend is Increasing.

Lake Michigan Basin

10-Year Trend (2010-2020 U.S. & 2011-2021 Canada): Increasing

30-Year Trend (1990-2020 U.S. & 1991-2021 Canada): Increasing

Long-term Trend (1970-2020 U.S. & 1971-2021 Canada): Increasing

Rationale: The Lake Michigan Basin is entirely within the United States and has no drainage area within Canada (Table 4). Based on the 2020 U.S. census, the resident population within the Lake Michigan Basin was 8,437,616 (73.1 residents per km^2 (Table 2)). This is an increase of 643,482 (8.3%) residents since the 2010 U.S. census (Table 1). Therefore, the 10-year trend is Increasing.

For the 30-year trend (Table 1), the resident population increased by 1,424,701 (20.3%) from 7,012,915 residents (60.8 per km^2) in 1990 to 8,437,616 residents (73.1 per km^2) in 2020. Therefore, the 30-year trend is Increasing.

For the long-term (50-year) trend (Table 1), the resident population increased by 1,958,403 (30.2%) from 6,479,213 residents (56.2 per km^2) in 1970 to 8,437,616 residents (73.1 per km^2) in 2020. Therefore, the long-term trend is Increasing.

Lake Huron Basin

10-Year Trend (2010-2020 U.S. & 2011-2021 Canada): Increasing

30-Year Trend (1990-2020 U.S. & 1991-2021 Canada): Increasing

Long-term Trend (1970-2020 U.S. & 1971-2021 Canada): Increasing

Rationale: Based on the 2020 U.S. census and the 2021 Canadian census of population, the resident population within the Lake Huron Basin was 3,201,799 (24.7 residents per km^2 (Table 2)). This is an increase of 138,332 (4.5%) since the 2010 U.S. census and 2011 Canadian census (Table 1). Therefore, the 10-year trend is Increasing.

For the 30-year trend (Table 1), the resident population increased by 481,596 (17.7%) from 2,720,203 residents (21.0 per km^2) in 1990/1991 to 3,201,799 residents (24.7 per km^2) in 2020/2021. Therefore, the 30-year trend is Increasing.

For the long-term (50-year) trend (Table 1), the resident population increased by 892,749 (38.7%) from 2,309,050 residents (17.8 per km^2) in 1970/1971 to 3,201,799 residents (24.7 per km^2) in 2020/2021. Therefore, the long-term trend is Increasing.

Lake Erie Basin

10-Year Trend (2010-2020 U.S. & 2011-2021 Canada): Increasing

30-Year Trend (1990-2020 U.S. & 1991-2021 Canada): Increasing

Long-term Trend (1970-2020 U.S. & 1971-2021 Canada): Increasing

Rationale: The Lake Erie Basin is the most populous among the Great Lakes sub-basins (Table 1). Based on the 2020 U.S. census and the 2021 Canadian census of population, the resident population within the Lake Erie Basin was 12,630,605 (164.8 residents per km^2 (Table 2)). This is an increase of 550,697 (4.6%) since the 2010 U.S. census and the 2011 Canadian census. Therefore, the 10-year trend is Increasing.

For the 30-year trend (Table 1), the resident population increased by 1,034,945 (8.9%) from 11,595,660 residents (151.3 per km^2) in 1990/1991 to 12,630,605 residents (164.8 per km^2) in 2020/2021. Therefore, the 30-year trend is Increasing.

For the long-term (50-year) trend (Table 1), the resident population increased by 796,291 (6.7%) from 11,834,314 residents (154.4 per km^2) in 1970/1971 to 12,630,605 residents (164.8 per km^2) in 2020/2021. Therefore, the long-term trend is Increasing.

Lake Ontario Basin (Including the international section of the St. Lawrence River Basin)

10-Year Trend (2010-2020 U.S. & 2011-2021 Canada): Increasing

30-Year Trend (1990-2020 U.S. & 1991-2021 Canada): Increasing

Long-term Trend (1970-2020 U.S. & 1971-2021 Canada): Increasing

Rationale: Of all the Great Lake Basins, the Lake Ontario Basin saw the largest increases for all three reference periods: 10-year, 30-year, and 50-year (Table 1). Based on the 2020 U.S. census and the 2021 Canadian census of population, the resident population within the Lake Ontario Basin was 11,691,829 (155.0 residents per km^2 (Table 2)). This is an increase of 929,433 (8.6%) since the 2010 U.S. census and 2011 Canadian census. Therefore, the 10-year trend is Increasing.

For the 30-year trend (Table 1), the resident population increased by 2,909,645 (33.1%) from 8,782,184 residents (116.4 per km^2) in 1990/1991 to 11,691,829 residents (155.0 per km^2) in 2020/2021. Therefore, the 30-year trend is Increasing.

For the long-term (50-year) trend (Table 1), the resident population increased by 4,463,394 (61.7%) from 7,228,435 residents (95.8 per km^2) in 1970/1971 to 11,691,829 residents (155.0 per km^2) in 2020/2021. Therefore, the long-term trend is Increasing.

Note: The international section of the St. Lawrence River Basin is included as part of the Lake Ontario Basin assessment in the lake-by-lake section, as well as the body of this report. However, it is separated as a distinct basin from the Lake Ontario Basin in Tables 1-4, and Figures 1-2. Therefore, the data reported for the Lake Ontario Basin here and in the body of the report represents the sum of the Lake Ontario Basin data *and* the Upper St. Lawrence River Basin data from Tables 1-4.

Trend Assessment Definitions

Human population information in the State of the Great Lakes indicator suite is not assessed in the same manner as other sub-indicators. The intent of this sub-indicator is to identify population fluctuations across the years and not to assess these conditions as Good, Fair, or Poor. The below definitions are used for the 10-year, 30-year, and long-term trend analyses. Note that these definitions compare the difference in population between the beginning and end of each period. Therefore, this could be considered as a "comparison" assessment rather than a "true" trend assessment. However, to be consistent with the terminology used throughout the SOGL reporting, these are called "trend" assessment definitions.

Increasing: Net increase of the human population in the Great Lakes Basin >1%

Unchanging: Net change in the human population in the Great Lakes Basin <1%

No Trend: With the current assessment methodology, an assessment of No Trend is not possible, as only two data points are being compared in this assessment.

Decreasing: Net decrease of the human population in the Great Lakes Basin >1%

Undetermined: A sufficient amount of data is not available to report on a trend

Endpoints and/or Targets

No endpoints are assessed for the Human Population sub-indicator because multiple factors would need to be considered, such as available infrastructure and sustainable practices, to determine the effects and set thresholds for population growth within the Great Lakes Basin, which goes beyond the purpose of this sub-indicator report.

Sub-Indicator Purpose

Human activities can stress the Great Lakes ecosystem and are often the driving force of environmental degradation. The purpose of this sub-indicator is to present the human population counts and changes within the Great Lakes Basin over time to provide context for understanding anthropogenic drivers of ecosystem trends.

Ecosystem Objective

The Human Population sub-indicator is related to all the General Objectives described in the 2012 Great Lakes Water Quality Agreement. However, this sub-indicator best supports work towards General Objective #9 of the 2012 Great Lakes Water Quality Agreement which states that the Waters of the Great Lakes should "be free from other substances, materials, or conditions that may negatively impact the chemical, physical or biological integrity of the Waters of the Great Lakes."

Methods

This sub-indicator includes analyses of changes in resident population across the Great Lakes Basin from 1970/1971 to 2020/2021 using census data reported by the U.S. Census Bureau and Statistics Canada.

Statistics Canada conducts the census of population every five years on the 1st and 6th year of each decade. Census surveys include population by geographic areas (e.g., census division, dissemination area, dissemination block), total private dwellings, and private dwellings occupied by usual residents. Our results included the resident population and excluded secondary residences (e.g., seasonal cottages). The most recent Canadian census was conducted in 2021, and the initial data release was in February 2022.

The U.S. Census Bureau (USCB) is the official federal office to perform the decennial census of the U.S. population and conducts the American Community Survey (ACS), which provides intercensal population estimates. The most recent census was conducted in 2020 and the initial data release was in April 2021.

Both nations' census agencies report census data by geographical areas, including reporting units of state/province, county/census division, census tracks, block groups/dissemination areas, and blocks (least granular to most granular). Statistics Canada has published population by watershed for each quinquennial census since 1971, and those data are used directly in this report. Additional analysis using geospatial software is not required for the Canadian data (see Table 3 footnote for greater details). Conversely, the U.S. Census Bureau does not calculate population by watershed. Therefore, population within the U.S. portion of the Great Lakes Basin must be calculated by the EPA.

To determine the U.S. resident population within the Great Lakes Basin and each individual Great Lake basin, we used the following methods in GIS software (ArcGIS Pro 3.3.1. Redlands, CA: Esri Inc., 2024). We used the geospatial layers from the Great Lakes Hydrography Dataset[2] of the Great Lakes Basin and included the upper St. Lawrence River watershed to conform with the definition of the Great Lakes Basin in the Great Lakes Water Quality Agreement (GLWQA).[1] The 'Clip (Analysis)' and 'Summarize Within (Analysis)' tools were used to identify the population within the Great Lakes Basin from the larger population of the eight Great Lakes states. Census block groups (smallest geographic unit published) that straddle the Great Lakes Basin boundaries were ratio adjusted by enabling geometric ratio with the 'Make Feature Layer (Data Management)' tool. Thus, only residents within the Great Lakes Basin were included in our population estimate. Geospatial layers of population at the census block group level for 2020 and 2010 were used and are publicly available on ArcGIS Online (esri_dm, 2021). The geospatial layers and tabular data of population at the census block group level for 1970, 1980, 1990, and 2000 are publicly available from IPUMS National Historical Geographic Information System (Manson et al., 2020). For a detailed methods document for ArcGIS procedures, please contact the authors.

The SOGL 2022 report used this same methodology to determine U.S. population within the Great Lakes Basin, however the 2022 report used geospatial layers from the Great Lakes Commission, which do not conform to the definition of the Great Lakes Basin in the GLWQA. The differences in areas included between these two shapefiles is generally only noticeable when comparing them at a very fine level; however, this change has resulted in an increase in the U.S. population presented in this report, when comparing to the U.S. population reported in the SOGL 2022 report.

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[2] Forsyth, D. K., Riseng, C. M., Wehrly, K. E., Mason, L. A., Gaiot, J., Hollenhorst, T., Johnston, C. M., Wyrzykowski, C., Annis, G., Castiglione, C., Todd, K., Robertson, M., Infante, D. M., Wang, L., McKenna, J. E., & Whelan, G. (2016). The Great Lakes Hydrography Dataset: Consistent, Binational Watersheds for the Laurentian Great Lakes Basin. *JAWRA Journal of the American Water Resources Association*, *52*(5), 1068–1088. https://doi.org/10.1111/1752-1688.12435

There are two additional factors that caused an increase in the population reported in this report compared to the SOGL 2022 report. First, this report relies on *final* 2021 Canadian Census data whereas the last report relied on *preliminary* data. This change resulted in an additional 4,161 Canadians being reported in the Great Lakes Basin compared to the 2022 report. Second, this report includes the international section of the St. Lawrence River Basin, whereas the SOGL 2022 report did not. This resulted in an additional 449,737 individuals being reported within the Great Lakes Basin binationally that were not included in the 2022 report.

The area included in the assessment for this sub-indicator may be revised in the SOGL 2028 report to also include the Ogaki and Long Lac diversions in the Canadian portion of the Lake Superior Basin. Census data within the areas of these two diversions are not included in Tables 1-3, and therefore are not currently factored into the assessment.

The results of population within the Great Lakes Basin are presented in 'Table 1. Population Trends within the Great Lakes Basin: 10-year trend, 30-year trend, & 50-year trend' and 'Table 2. Population within the Great Lakes Basin, 1970-2020, every 10 years.' Because Canada conducts a census every five years, the results are shown in 'Table 3. Population within the Great Lakes Basin in Canada, 1971-2021, every 5 years.' The land drainage areas for the Great Lakes Basin and each of its sub-basins, which were used to calculate population density, are reported in Table 4.

Beginning in the early 1800s, the Chicago diversion, located in Chicago, Illinois, diverts water from the Lake Michigan watershed to the Upper Mississippi River Basin, reducing the land drainage area of the Lake Michigan watershed. Consequently, the Lake Michigan Basin is narrow through Chicagoland, resulting in much of the densely populated Chicago Metro Area falling outside the Lake Michigan Basin and in the Upper Mississippi River watershed instead. Thus, aiming to include only the residents strictly within the Great Lakes Basin, the metro Chicago residents outside of the Lake Michigan Basin were excluded from these results. For the United States population served drinking water sourced from the surface waters of the Great Lakes and connecting rivers, see the Drinking Water sub-indicator report.

Discussion

Overall Great Lakes Basin

The Great Lakes Basin lies within part of eight U.S. states – Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin – and the Province of Ontario, Canada (Figure 1). Based on our analysis of the 2020 U.S. census and the 2021 Canadian census of population, the population within the Great Lakes Basin was 36,600,830 residents (68.8 per km^2). As shown in Table 1, this represents an increase of 2,293,307 (6.7%) residents since the 2010 U.S. census and 2011 Canadian census. By nation, the U.S. resident population increased by 1,076,265 (4.7%) to 23,879,241 residents (80.1 per km^2) in 2020, and the Canadian resident population increased by 1,217,042 (10.6%) to 12,721,589 residents (54.4 per km^2) in 2021, which represents 65.2% and 34.8% of the basin population, respectively (Table 2).

Considering the land drainage area, the Great Lakes Basin is 531,656 square kilometers (205,273 square miles) (Table 4). The average binational population density across the Great Lakes Basin was 68.8 residents per square kilometer (178.3 residents per square mile) (Table 2). By nation, the U.S. portion of the Great Lakes Basin is 297,961 square kilometers (115,043 square miles) and the Canadian portion of the basin is 233,695 square kilometers (90,230 square miles), encompassing 56.0% and 44.0% of the basin area, respectively (Table 4). In 2020, the average U.S. population density was 80.1 residents per square kilometer (207.6 residents per square mile) whereas the average Canadian population density in 2021 was 54.4 residents per square kilometer (141.0

residents per square mile) (Table 2). Maps of the distribution of the 2020 U.S. and 2021 Canadian population across the Great Lakes Basin and Great Lakes Region are shown in Figure 1 and Figure 2, respectively.

There are currently more residents in the U.S. side of the basin, and U.S. population density is greater despite having slightly more land drainage area than the Canadian portion of the basin. However, Canada's population within the Great Lakes Basin grew faster than the U.S. population within the basin, both in terms of population count and percent change, over the short-term (10-year), 30-year, and long-term (50-year) time frames.

The Great Lakes Basin population has continued to increase over the 30-year and long-term (50-year) periods. Since the 1990/1991 census reports, the resident population within the Great Lakes Basin increased by 5,878,670 (19.1%) from 30,722,160 residents (57.8 per km^2) in 1990/1991 to 36,600,830 residents (68.8 per km^2) in 2020/2021, which is an average increase of 195,956 residents annually over those 30 years (Table 1). By nation, the U.S. resident population increased by 2,105,744 (9.7%) from 21,773,497 residents (73.1 per km^2) in 1990 to 23,879,241 residents (80.1 per km^2) in 2020, an average increase of 70,191 residents per year (Table 1). The Canadian resident population increased by 3,772,926 (42.2%) from 8,948,663 residents (38.3 per km^2) in 1991 to 12,721,589 residents (54.4 per km^2) in 2021 – an average increase of 125,764 residents per year (Table 1).

Since the 1970/1971 census reports, the Great Lakes Basin resident population increased by 8,132,845 (28.6 %) from 28,467,985 residents (53.5 per km^2) in 1970/1971 to 36,600,830 residents (68.8 per km^2) in 2020/2021, which was an increase of 162,657 residents annually over those 50 years (Table 1). By nation, the U.S. resident population increased by 2,220,529 (10.3%) from 21,658,712 residents (72.7 per km^2) in 1970 to 23,879,241 residents (80.1 per km^2) in 2020 – an average increase of 44,411 annually (Table 1). The Canadian resident population increased by 5,912,316 (86.8 %) from 6,809,273 residents (29.1 per km^2) in 1971 to 12,721,589 residents (54.4 per km^2) in 2021 – an average increase of 118,246 residents per year (Table 1).

Maps of the distribution of the 2020 U.S. and 2021 Canadian population across the Great Lakes Basin and Great Lakes Region are shown in Figure 1 and Figure 2, respectively.

The larger Great Lakes Region, comprised of eight U.S. states – Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin – and the Province of Ontario, has also experienced a substantial population increase (Table 5). According to the 2020 U.S. Census, of the 331,449,281-resident population of the United States,[3] 86,278,976 (26.0%) resided within the eight Great Lakes states (USCB, 2021e). Of those Great Lakes states' residents, 23,879,241 (27.7%) resided within the Great Lakes Basin, which comprise 7.2 percent of the nationwide population (Table 2 and Figure 2). According to the 2021 Canadian census of population, of the 36,991,981-resident population of Canada, 14,223,942 (38.5%) resided in the Province of Ontario, and 12,721,589 (89.4%) of Ontarians resided within the Great Lakes Basin, which comprise 34.4 percent of the nationwide population (Statistics Canada, 2022a) (Table 2 and Figure 2).

Lake Superior Basin

The Lake Superior Basin is shared by the Province of Ontario and the states of Minnesota, Wisconsin, and Michigan (Figure 1), and is the least populous among the five Great Lakes sub-basins. Based on the 2020 U.S. census and the 2021 Canadian census of population, the resident population within the Lake Superior Basin was 638,981 (4.8 residents per km^2), an increase of 31,363 residents (5.2%) since 2010 U.S. census and 2011 Canadian census (Table 1). By nation, the U.S. resident population increased by 25,986 (5.9%) to 465,167 residents (10.7 per km^2)

[3] Includes the resident population of the 50 states and the District of Columbia and excludes the 3,641,780-resident population of the five U.S. Territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and U.S. Virgin Islands), as ascertained by the 2020 U.S. Census.

in 2020 and the Canadian resident population increased by 5,377 (3.2%) to 173,814 residents (1.9 per km^2) in 2021, which represent basin population proportions of 72.8% and 27.2%, respectively (Table 1; Table 2).

Considering the land drainage area, the Lake Superior Basin is 134,463 square kilometers (51,916 square miles), which is the largest of all individual Great Lake Basins. Note that in this report, the Canadian side of the Lake Superior Basin includes the Ogoki diversion, but not the Long Lac diversion. Efforts are underway to include the Long Lac diversion in the next SOGL report. Based on the 2020/2021 population counts, the binational population density across the Lake Superior Basin was 4.8 residents per square kilometer (12.3 residents per square mile), which was the least dense among the Great Lakes sub-basins (Table 2). By nation, the U.S. portion of the basin is 43,363 square kilometers (16,743 square miles) and the Canadian portion of the basin is 91,100 square kilometers (35,174 square miles), which are 32.2% and 67.8% of the basin land drainage, respectively. In 2020, the U.S. population density was 10.7 residents per square kilometer (27.8 residents per square mile) whereas the Canadian population density was 1.9 residents per square kilometer (4.9 residents per square mile) in 2021. This demonstrates that not only are there more residents in the U.S. portion of the basin, but also the U.S. population density was nearly five times greater than that of Canada's population density within the basin. This difference in population density is due in part to the smaller portion of the land drainage area within the U.S compared to Canada.

For the 30-year trend, the resident population increased by 27,783 (4.5%) from 611,198 residents (4.5 per km^2) in 1990/1991 to 638,981 residents (4.8 per km^2) in 2020/2021 (Table 1). By nation, the U.S. resident population increased by 36,826 (8.6%) from 428,341 residents (9.9 per km^2) in 1990 to 465,167 residents (10.7 per km^2) in 2020. Comparatively, the Canadian resident population decreased by 9,043 (-4.9%) from 182,857 residents (2.0 per km^2) in 1991 to 173,814 residents (1.9 per km^2) in 2021.

For the long-term (50-year) trend, the resident population increased by 22,008 (3.6%) from 616,973 residents (4.6 per km^2) in 1970/1971 to 638,981 residents (4.8 per km^2) in 2020/2021 (Table 1). The Lake Superior Basin population decreased from 616,973 residents (4.6 per km^2) in 1970/1971 and to 611,198 residents (4.5 per km^2) at 1990/1991 census surveys. Between the 1990/1991 and 2020/2021 census surveys, the population increased from 611,198 residents (4.5 per km^2) to 638,981 residents (4.8 per km^2). By nation, the U.S. resident population within the Lake Superior Basin decreased from 446,230 residents (10.3 per km^2) in 1970 to 428,341 residents (9.9 per km^2) in 1990, and then increased to 465,167 residents (10.7 per km^2) in 2020. The Canadian resident population increased from by 170,743 residents (1.9 per km^2) in 1971 to 182,857 residents (2.0 per km^2) in 1991, and then declined to 173,814 residents (1.9 per km^2) in 2021 (Table 2).

Lake Michigan Basin

The Lake Michigan Basin is shared by the states of Wisconsin, Illinois, Indiana, and Michigan, and is the third most populous among the Great Lakes sub-basins. Uniquely, the Lake Michigan Basin lies wholly within the United States and has no drainage area within Canada (Table 4 and Figure 1). Based on the 2020 U.S. census, the resident population within the Lake Michigan Basin was 8,437,616 people (73.1 residents per km^2), which is an increase of 643,482 (8.3%) residents since the 2010 U.S. census (Table 1).

Considering land drainage area, the Lake Michigan Basin is 115,368 square kilometers (44,544 square miles), which ranks third among the Great Lakes sub-basins (Table 4). In 2020, the population density was 73.1 residents per square kilometer (189.4 residents per square mile), which also ranks third among the Great Lakes sub-basins (Table 2).

For the 30-year trend, the resident population increased by 1,424,701 (20.3%) from 7,012,915 residents (60.8 per km^2) in 1990 to 8,437,616 residents (73.1 per km^2) in 2020, which was an average increase of 47,490 residents

annually over those 30 years (Table 1). This was the second largest increase in population count over this time frame, trailing only the increase of 2.9 million residents within the Lake Ontario Basin.

For the long-term (50-year) trend, the resident population increased by 1,958,403 (30.2%) from 6,479,213 residents (56.2 per km^2) in 1970 to 8,437,616 residents in 2020 (73.1 per km^2), which was an average increase of 39,168 residents annually over those 50 years (Table 1). This was the second largest increase in population count over this time frame, trailing only the increase of 4.4 million residents within the Lake Ontario Basin.

In summary, these trends demonstrate that the growth of the U.S. resident population within the Lake Michigan Basin has slowed slightly since 1970 yet maintains steady growth with an average of 64,000 new residents annually over the past decade.

Notably, the Chicago diversion, located in Chicago, Illinois, diverts water from the Lake Michigan watershed into the Upper Mississippi River Basin, reducing the land drainage area of the Lake Michigan watershed. The Chicago diversion began in the early 1800s and increased in 1900 after the Chicago Sanitary and Ship Canal was completed.[4] Consequently, the Lake Michigan Basin is narrow to the surface water of Lake Michigan in northeast Illinois, northwest Indiana, and southeast Wisconsin, which include parts of several densely populated metro areas, such as Chicago, Illinois, and Milwaukee, Wisconsin. Geospatial methods were used to determine population, which only included the residents within the basin and excluded the surrounding metro population outside the basin (Figure 1).

Lake Huron Basin (including St. Marys River)

The Lake Huron Basin is shared by the Province of Ontario and the State of Michigan, and is the second least populous among the Great Lakes sub-basins, greater than only the resident population within the Lake Superior Basin (Figure 1). Based on the 2020 U.S. census and the 2021 Canadian census of population, the population within the Lake Huron Basin was 3,201,799 residents (24.7 per km^2), which is an increase of 138,332 (4.5%) since the 2010 U.S. census and 2011 Canadian census (Table 1). By nation, the U.S. resident population decreased 10,900 (-0.7%) to 1,565,703 residents (37.7 per km^2) whereas the Canadian resident population increased 149,232 (10.0%) to 1,636,096 residents (18.5 per km^2), which represent basin population proportions of 48.9% and 51.1%, respectively. The 2021 Canadian census of population marks the first time that the Canadian population within the Lake Huron Basin is more than the U.S. population.

Considering land drainage area, the Lake Huron Basin is 129,759 square kilometers (50,100 square miles), which is the second largest among the Great Lakes sub-basins, after Lake Superior (Table 4). Based on the 2020/2021 population counts, the binational population density across the Lake Huron Basin was 24.7 residents per square kilometer (63.9 residents per square mile), which only surpassed the population density within the Lake Superior Basin (Table 2). By nation, the U.S. portion of the basin is 41,501 square kilometers (16,024 square miles) and the Canadian portion of the basin is 88,258 square kilometers (34,077 square miles), which are 32.0% and 68.0% of the basin land drainage area, respectively. In 2020, the U.S. population density was 37.7 residents per square kilometer (97.7 residents per square mile) whereas Canadian population density was 18.5 residents per square kilometer (48.0 residents per square mile) in 2021 (Table 2). This demonstrates that although the Canadian population within the basin is slightly more than the U.S. resident population, the U.S. population density is double the Canadian population density. This difference in population density is due to the U.S portion of the basin being half the land drainage area compared the Canadian portion of the basin.

[4] For an overview of Great Lakes diversions, see https://www.ijc.org/en/lsbc/watershed/great-lakes-diversions.

For the 30-year trend, the resident population across the Lake Huron Basin increased by 481,596 (17.7%) from 2,720,203 residents (21.0 per km^2) in 1990/1991 to 3,201,799 residents (24.7 per km^2) in 2020/2021, which was an average annual increase of 16,053 residents annually over those 30 years (Table 1). By nation, the U.S. resident population increased by 64,658 (4.3%) from 1,501,045 residents (36.2 per km^2) in 1990 to 1,565,703 residents (37.7 per km^2) in 2020 – an average increase of 2,155 residents annually. By contrast, the Canadian resident population increased 416,938 (34.2%) from 1,219,158 residents (13.8 per km^2) in 1991 to 1,636,096 residents (18.5 per km^2) in 2021 – an average increase of 13,898 residents annually. This demonstrates the Canadian population within the Lake Huron Basin grew nearly seven times faster than the population within the U.S portion of the basin over the past 30 years.

For the long-term (50-year) trend, the resident population across the Lake Huron Basin increased by 892,749 (38.7%) from 2,309,050 residents (17.8 per km^2) in 1970/1971 to 3,201,799 residents (24.7 per km^2) in 2020/2021, which was an average increase of 17,855 residents annually over those 50 years (Table 1). By nation, the U.S. resident population increased by 191,173 (13.9%) from 1,374,530 residents (33.1 per km^2) in 1970 to 1,565,703 residents (37.7 per km^2) in 2020 – an average increase of 3,823 residents annually. In contrast, the Canadian resident population increased by 701,576 (75.1%) from 934,520 residents (10.6 per km^2) in 1971 to 1,636,096 residents (18.5 per km^2) in 2021 – an average increase of 14,032 residents annually. This demonstrates the Canadian population within the Lake Huron Basin grew nearly four times faster than the population within the U.S portion of the basin over the past 50 years.

In summary, the growth of the U.S. resident population within the Lake Huron Basin has been slowing since 1970 and shrunk by nearly 1,100 residents annually since 2010, even as the State of Michigan's population grew by nearly 200,000 residents (Table 5). This decrease in U.S. population within the basin over the past decade may have been due to the Flint Water Crisis, driving the continued decline in Flint's population, the most populous city in the basin, among other factors (Figure 1). In contrast, the growth of the Canadian population within the basin has maintained steady growth since 1971, including a sharp increase of 93,967 new residents between 2016 and 2021 – the second greatest five-year population growth within the Canadian portion of the Lake Huron Basin since 1971, the earliest that population by watershed is reported (Table 3).

Lake Erie Basin

The Lake Erie Basin is shared by Ontario and the states of Indiana, Michigan, Ohio, Pennsylvania, and New York, and is the most populous among the Great Lakes sub-basins (Figure 1). Based on the 2020 U.S. census and the 2021 Canadian census of population, the population within the Lake Erie Basin was 12,630,605 residents (164.8 per km^2), which is an increase of 550,697 (4.6%) since the 2010 U.S. census and the 2011 Canadian census (Table 1). By nation, the U.S. resident population increased by 291,208 (2.9%) to 10,177,897 residents (188.7 per km^2) in 2020 and the Canadian resident population increased by 259,489 (11.8%) to 2,452,708 residents (108.1 per km^2) in 2021, which represent basin population proportions of 80.6% and 19.4%, respectively (Table 1; Table 2). This is the largest difference in population proportion between the two countries among the four binationally shared Great Lakes sub-basins. This difference is due to the heavily populated metro areas on the U.S. side of the basin (e.g., Detroit, Toledo, Cleveland) compared to substantially smaller cities on the Canadian side (e.g., Windsor, Kitchener, London) (Figure 1).

Considering land drainage area, the Lake Erie Basin is 76,638 square kilometers (29,590 square miles), which is the second smallest, superseding only the Lake Ontario Basin (Table 4). Based on the 2020/2021 population counts, the binational population density across the Lake Erie Basin was 164.8 residents per square kilometer (426.9 residents per square mile), which was the densest among the Great Lakes sub-basins (Table 2). By nation, the U.S. portion of the basin is 53,940 square kilometers (20,826 square miles) and the Canadian portion of the basin is 22,698 square kilometers (8,764 square miles), which are 70.4% and 29.6% of the basin's land drainage area,

respectively. In 2020, the U.S. population density was 188.7 residents per square kilometer (488.7 residents per square mile), which was the second most densely populated area of the Great Lakes Basin trailing only the Canadian portion of the Lake Ontario Basin. In comparison, the Canadian population density was 108.1 residents per square kilometer (279.9 residents per square mile) in 2021 (Table 2).

For the 30-year trend, the resident population increased by 1,034,945 (8.9%) from 11,595,660 residents (151.3 per km^2) in 1990/1991 to 12,630,605 residents (164.8 per km^2) in 2020/2021, which was an average increase of 34,498 residents annually over those 30 years (Table 1). By nation, the U.S. resident population increased by 407,072 (4.2%) from 9,770,825 residents (181.1 per km^2) in 1990 to 10,177,897 residents (188.7 per km^2) in 2020 – an average increase of 13,569 residents annually. Conversely, the Canadian resident population increased by 627,873 (34.4%) from 1,824,835 residents (80.4 per km^2) in 1991 to 2,452,708 residents (108.1 per km^2) in 2021 – an average increase of 20,929 residents annually.

For the long-term (50-year) trend, the resident population increased by 796,291 (6.7%) from 11,834,314 residents (154.4 per km^2) in 1970/1971 to 12,630,605 residents (164.8 per km^2) in 2020/2021, which was an average increase of 15,926 residents annually over those 50 years (Table 1). By nation, the U.S. resident population decreased by 174,728 (-1.7%) from 10,352,625 residents (191.9 per km^2) in 1970 to 10,177,897 residents (188.7 per km^2) in 2020 – an average decrease of 3,495 residents annually. In contrast, the Canadian resident population increased by 971,019 (65.5%) from 1,481,689 residents (65.3 per km^2) in 1971 to 2,452,708 residents (108.1 per km^2) in 2021 – an average increase of 19,420 residents annually over the past 50 years.

In summary, the U.S. resident population within the Lake Erie Basin has declined since 1970. Although the U.S. population within the basin has grown by approximately 29,121 new residents annually this past decade, it still has not returned to its 1970 population count. In contrast, the Canadian population within the basin has grown tremendously since 1971, including a sharp increase of 186,441 new residents between 2016 and 2021 – the greatest five-year population growth within the Canadian portion of the Lake Erie Basin in the 50-years of data included in this report (Table 3).

Lake Ontario Basin (including the international section of the St. Lawrence River Basin)

Note: The data reported in this section is a combination of population within the Lake Ontario Basin and the Upper St. Lawrence River Basin, as both basins are summarized as parts of the Lake Ontario Basin for the purpose of this sub-indicator report. However, these basins are separated in Tables 1-4 as well as Figures 1-2.

The Lake Ontario Basin experienced the greatest increase in growth among all the Great Lakes sub-basins, both in terms of population count and percent change, for the short-term (10-year), 30-year, and long-term (50-year) time frames.

The Lake Ontario Basin is shared by the province of Ontario and the states of Pennsylvania and New York and is the second most populous among the Great Lakes sub-basins, trailing only the population across the Lake Erie Basin (Figure 1). Based on the 2020 U.S. census and the 2021 Canadian census of population, the population within the Lake Ontario Basin was 11,691,829 residents (155.0 per km^2), which is an increase of 929,433 (8.6%) since the 2010 U.S. census and 2011 Canadian census of population (Table 1). By nation, the U.S. resident population increased by 126,489 (4.1%) to 3,232,858 residents (73.8 per km^2) in 2020 whereas the Canadian resident population increased by 802,944 (10.5%) to 8,458,971 residents (267.4 per km^2) in 2021, which represent basin population proportions of 27.7% and 72.3%, respectively (Table 1; Table 2). This is the second largest difference in population proportion between the two countries, trailing only the Lake Erie Basin.

Notably, the Lake Ontario Basin is one of only two sub-basins (joined by the Lake Huron Basin as of 2021) where there are more Canadian residents than U.S. residents. In fact, the Canadian population within the Lake Ontario

Basin has outnumbered the U.S. population since at least 1970/1971 – the earliest that populations by watershed are reported (Table 2).

Considering land drainage area, the Lake Ontario Basin is 75,428 square kilometers (29,123 square miles), which is the smallest among the five Great Lakes sub-basins (Table 4). Based on the 2020/2021 population counts, the binational population density across the Lake Ontario Basin was 155.0 residents per square kilometer 401.5 residents per square mile), which was the second densest among the five Great Lakes sub-basins, after Lake Erie (164.8 residents per square kilometer) (Table 2). By nation, the U.S. portion of the basin is 43,789 square kilometers (16,907 square miles) and the Canadian portion of the basin is 31,639 square kilometers (12,216 square miles), which are 58.1% and 41.9% of the basin's land drainage area, respectively. In 2020, the U.S. population density was 73.8 residents per square kilometer (191.2 residents per square mile). In comparison, the Canadian population density was 267.4 residents per square kilometer (692.5 residents per square mile) in 2021, which was the most densely populated area of the Great Lakes Basin (Table 2). The difference between the Canadian and U.S. population density is due to the more densely populated metro areas in the Canadian portion of the basin (e.g., Hamilton, Toronto) compared to the U.S. portion of the basin (e.g., Rochester, NY).

For the 30-year trend, the resident population increased by 2,909,645 (33.1%) from 8,782,184 residents (116.4 per km^2) in 1990/1991 to 11,691,829 residents (155.0 per km^2) in 2020/2021 (Table 1). By nation, the U.S. resident population increased by 172,487 (5.6%) from 3,060,371 residents (69.9 per km^2) in 1990 to 3,232,858 residents (73.8 per km^2) in 2020 – an average increase of 5,750 residents annually. In contrast, the Canadian resident population increased by 2,737,158 (47.8%) from 5,721,813 residents (180.8 per km^2) in 1991 to 8,458,971 residents (267.4 per km^2) in 2021 – an average increase of 91,239 residents annually.

For the long-term (50-year) trend, the resident population increased by 4,463,394 (61.7%) from 7,228,435 residents (95.8 per km^2) in 1970/1971 to 11,691,829 residents (155.0 per km^2) in 2020/2021 (Table 1). By nation, the U.S. resident population increased by 226,744 (7.5%) from 3,006,114 residents (68.6 per km^2) in 1970 to 3,232,858 residents (73.8 per km^2) in 2020 – an average increase of 4,535 residents annually. In contrast, the Canadian resident population increased 4,236,650 (100.3%) from 4,222,321 residents (133.5 per km^2) in 1971 to 8,458,971 in 2021 – an average increase of 84,733 annually. This demonstrates the Canadian population within the Lake Ontario Basin grew approximately 18 times faster than the population within the U.S portion of the basin over the past 50 years.

Linkages

Human population is related to many stressors around the Great Lakes Basin and tracking the resident population within the basin provides important context for many ecosystem changes. The following linkages are a few examples of possible connections between human population and the nine high-level indicators analyzed through State of the Great Lakes reporting.

- Drinking Water:
    - Rapid growth may strain water systems due to increased demand for water treatment infrastructure including wastewater and drinking water treatment systems (Mikovits et al., 2014).
- Beaches:
    - Increases in the human population are often associated with increases in impermeable surfaces, potentially leading to higher amounts of runoff that can cause combined sewer overflows and beach advisories (Chithra et al., 2015; Salerno et al., 2018).

- Fish Consumption:
    - Increases in human populations will likely increase recreational fishing within the Great Lakes (Hunt et al., 2021), leading to increased sport fish consumption.
- Toxic Chemicals:
    - Toxic Chemicals in the Atmosphere sub-indicator: Atmospheric deposition is a significant pathway of entry for pollutants within the Great Lakes, including persistent organic pollutants. Urban areas are a major source of persistent organic pollutants in the atmosphere due to increased use and emission rates (Melymuk et al., 2011).
- Habitat and Species:
    - Rapid population growth can lead to the development of naturalized areas causing habitat loss and increased anthropogenic stress on the species endemic to the Great Lakes. Additional stressors related to areas of high population density include increases in plastic pollution and other pollution sources (Baldwin et al., 2016; Jenny et al., 2020).
- Nutrients and Algae:
    - Activities such as agricultural production to feed a growing population, urbanization, wastewater discharge, and the use of fossil fuels and household products contribute to excess nutrients in the Great Lakes Basin that can spur the growth of algal blooms (Wurtsbaugh et al., 2019).
- Invasive Species:
    - Invasive species often exploit ecosystem disturbances such as those associated with the urban and suburban development that accompanies population growth. Increased human populations also increases the likelihood of non-native species introduction and spread through means of Organisms in Trade (e.g., garden and aquarium trade).
- Groundwater:
    - Highly populated areas can affect groundwater in various ways. Increased impervious areas can reduce natural aquifer replenishment through the soil-zone transfer of precipitation. At the same time, pollution from leakage from the water supply, sewage pipes, and septic systems may enter shallower groundwater systems. Other pollution sources associated with residential areas, such as the application of road salt and pesticides, can also make their way into shallow aquifers that may discharge directly into the Great Lakes (Howard and Gerber, 2018).
- Watershed Impacts and Changes in Physical Conditions:
    - Structures associated with densely populated areas, including dams, hardened stream channels, and increased impervious surfaces, can change the hydrology of streams and the transport of materials from the watershed into the Great Lakes (Graf, 1999; Trudeau et al., 2015; DeBues et al., 2019).
    - Hardened Shorelines and Land Cover sub-indicators: Increased populations may increase the development of natural land, which can lead to a decrease in biodiversity, overall species abundance, reductions in habitat, and alterations in the transport of shoreline sediments (Shear et al., 2003; Gittman et al., 2016).

Assessing Data Quality

Data Characteristics	Agree	Neutral or Unknown	Disagree	Not Applicable
Data are documented, validated, or quality-assured by a recognized agency or organization	X			
Data are from a known, reliable and respected generator of data and are traceable to original sources	X			
Geographic coverage and scale of data are appropriate to the Great Lakes Basin	X			
Data obtained from sources within the U.S. are comparable to those from Canada		X		
Uncertainty and variability in the data are documented and within acceptable limits for this sub-indicator report	X			
Data used in assessment are openly available and accessible	No	**Canadian census data** 1971-2021: Statistics Canada: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710011701 Esri Canada: https://epa.maps.arcgis.com/home/item.html?id=ee280506886549569a4c1955fe56916a **U.S. census data** 1970-2000: D050.V15.0 | IPUMS 2010-2020: USA Census Block Group Boundaries - Overview (arcgis.com)		

Notes on Accessing Data

U.S. population counts were derived from authors' geospatial analyses of census block groups within the Great Lakes Basin from the above datasets listed as "U.S. Data". Contact the authors for the digital files of the Tables and Figures.

Data Limitations

- Census data from the United States and Canada do not perfectly align because their censuses are conducted in different years and at different frequencies. The United States conducts a decennial census on year zero of each decade (e.g., 2000, 2010, 2020). Canada conducts a census every five years on year 1 and 6 of the decade (e.g., 2011, 2016, 2021).
- Statistics Canada calculates population by watershed so the Canadian population within the Great Lakes Basin included in this report is reproduced without adjustment. Conversely, the U.S. Census Bureau does not report population by watershed, and thus the population within the U.S. portion of the Great Lakes Basin must be calculated by the EPA. See the Methods section for greater details.

Additional Information

According to the United Nations, key global demographic trends are population growth, population ageing, migration, and urbanization, which all hold important implications for economic and social development and environmental sustainability (United Nations, 2019). Due to the high impact urban areas may have on the surrounding environment – such as the development of natural or agricultural land (i.e., land-use change), increased demand on water infrastructure, and increased nutrient inputs (Furberg and Ban, 2012; Mikovits et al., 2014) – it is important to examine these changes across the population centers within the Great Lakes Basin. In the Province of Ontario, the Greater Toronto Area (GTA) – comprised of municipalities (i.e., census subdivision) along the northwestern shore of Lake Ontario – has been and is projected to continue to be the fastest growing region in the Great Lakes Basin. This area is projected to increase by 3.3 million residents (45.9% growth) to reach a population over 10.5 million by 2046 (Ministry of Finance, 2021). This means that nearly half of all Canadian residents within the Great Lakes Basin are anticipated to reside in the GTA by 2046.

Between 2010-2019, the population of most U.S cities (with populations greater than 50,000) within the Great Lakes Basin decreased, including Chicago, IL (-0.1%), Detroit, MI (-6.1%), Milwaukee, WI (-0.8%), Cleveland, OH (-4.0%), Toledo, OH (-5.0%), Buffalo, NY (-2.3%), Rochester, NY (-2.3%), Flint, MI (-6.7%), Erie, PA (-6.2%) and Gary, IN (-6.7%). Despite the decrease, Chicago remains the third most populous city in the United States followed by Detroit (24th) and Milwaukee (31st). Notably, all the other U.S. cities near the top of the population rankings are growing while the Great Lakes cities are shrinking (USCB, 2021d). However, this ranking is of the population of cities, which excludes the populations of the surrounding metro areas. Upon examining the metropolitan statistical areas (MSA) in the Great Lakes Basin between 2010-2019, the population of the Chicago-Naperville-Elgin (IL-IN-WI) metro area was unchanged and the population of the Detroit-Warren-Dearborn, MI metro area grew slightly (0.5%) (USCB, 2021c). These two examples demonstrate the migration of residents from cities into the surrounding metro areas (i.e., urban sprawl), which is consistent with the longer-term population shift away from "Rust Belt" cities – i.e., industrial cities along the Great Lakes whose populations peaked and sharply declined since the 1970s (Hartley, 2013).

Urban sprawl has also been documented in Canada as population growth between 2011 and 2016 was higher among peripheral municipalities (+6.9%) compared with central municipalities (+5.8%) (Statistics Canada, 2019). The binational urban sprawl observed in the past decade is consistent with previously reported trends within the basin (Great Lakes Science Advisory Board et al., 2009).

While increasing populations in urban areas can mean greater stress on the Great Lakes, this is not necessarily the case. Sustainable development requires that cities expand and grow in an environmentally sensitive way and not compromise the environment for future generations. Adapting sustainable practices such as stormwater treatment, sustainable waste management, and green infrastructure can limit anthropogenic pressures (Pickett et al., 2013). Determining the effects of population growth on the surrounding environment and tracking sustainable practices are complex issues beyond the purpose of this sub-indicator. Many of the other sub-indicators in the State of the Great Lakes report assess the effects of the human population on those specific topics. For example, the Land Cover sub-indicator analyzes the changes in urbanized areas around the Great Lakes, and the Toxic Chemicals sub-indicators assess the concentrations of chemicals within the Great Lakes resulting from human activity. This sub-indicator serves as a record of population change within the Great Lakes Basin and does not aim to assess the effects of those population changes.

Indigenous Populations

The first inhabitants of the Great Lakes Basin arrived over 10,000 years ago as the mile-high glaciers receded from the region. In 1620, when Étienne Brûlé became the first European to land at the site of Sault Ste. Marie, the population in present-day Michigan was about 15,000 Indigenous peoples. Other researchers have estimated the population of Indigenous peoples in the Great Lakes Basin – termed *Nayaano-nibiimaang Gichigamiin* in Anishinaabemowin, translating to *The Five Freshwater Seas* – was between 60,000 and 117,000 in the 16th century (Fuller, 1995).

In 2020, the 61 First Nation communities in the Canadian Great Lakes Basin accounted for approximately 153,000 residents (Government of Canada, 2021). While the exact population of Métis citizens in the Great Lakes Basin is unknown, 134,615 people in Ontario identified as Métis in the 2021 Canadian census of population (Statistics Canada, 2022b).

In the United States, there are 42 Indian Tribal Nations recognized by the U.S. Government whose reservations are across Minnesota, Wisconsin, Michigan, and New York, and/or who may retain treaty guaranteed rights to hunt, fish or gather in areas ceded to the United States in various treaties (Figure 5). In 2005, the total enrolled membership of these Tribal Nations was about 175,000 (GLRC, 2005).

U.S. Tribes in the Great Lakes Region

This list includes Tribes with present day reservations and/or ceded territory usufructuary rights and Inter-Tribal treaty resource/environmental organizations in the U.S. Great Lakes region (EPA, 2021a; EPA, 2021b; U.S. Caucus of the Traditional Ecological Knowledge Task Team, 2021).

Tribes in Michigan

- Bay Mills Indian Community
- Grand Traverse Band of Ottawa and Chippewa Indians
- Hannahville Indian Community
- Keweenaw Bay Indian Community
- Lac Vieux Desert Band of Lake Superior Chippewa Indians
- Little River Band of Ottawa Indians

- Little Traverse Bay Bands of Odawa Indians
- Match-E-Be-Nash-She-Wish Band of Potawatomi Indians (Gun Lake Tribe)
- Nottawaseppi Huron Band of Potawatomi
- Pokagon Band of Potawatomi
- Saginaw Chippewa Indian Tribe of Michigan
- Sault Ste. Marie Tribe of Chippewa Indians

Tribes in Minnesota

- Bois Forte Band of Chippewa
- Fond du Lac Band of Lake Superior Chippewa Indians
- Grand Portage Band of Lake Superior Chippewa Indians
- Leech Lake Tribe of Ojibwe
- Lower Sioux Community
- Mille Lacs Band of Ojibwe
- Prairie Island Indian Community
- Red Lake Band of Chippewa
- Shakopee Mdewakanton Sioux Community
- Upper Sioux Community
- White Earth Band of Chippewa

Tribes in New York

- Cayuga Nation
- Oneida Indian Nation
- Onondaga Nation
- Saint Regis Mohawk Tribe
- Seneca Nation of Indians
- Shinnecock Indian Nation
- Tonawanda Band of Seneca
- Tuscarora Nation

Tribes in Wisconsin

- Bad River Band of Lake Superior Chippewa Indians
- Forest County Potawatomi Community
- Ho-Chunk Nation
- Lac Courte Oreilles Band of Lake Superior Chippewa Indians
- Lac du Flambeau Band of Lake Superior Chippewa Indians
- Menominee Indian Tribe of Wisconsin
- Oneida Nation of Wisconsin
- Red Cliff Band of Lake Superior Chippewa Indians
- Saint Croix Chippewa Indians of Wisconsin
- Sokaogon Chippewa Community (Mole Lake)
- Stockbridge-Munsee Indian Community

First Nation Communities in Canada listed by Great Lakes Basin

Lake Superior

- Animbiigoo Zaagi'igan Anishinaabek First Nation
- Biinjitiwaabik Zaaging Anishinaabek First Nation
- Biigtigong Nishnaabeg
- Bingwi Neyaashi Anishinaabek
- Brunswick House First Nation
- Chapleau Cree First Nation
- Chapleau Ojibway First Nation
- Fort William First Nation
- Ginoogaming First Nation
- Kiashke Zaaging Anishinaabek First Nation
- Long Lake #58 First Nation
- Missanabie Cree First Nation
- Michipicoten First Nation
- Netmizaaggamig Nishnaabeg
- Pays Plat First Nation
- Red Rock Indian Band
- Whitesand First Nation

Lake Huron

- Aamijwnaang First Nation
- Atikameksheng Anishnawbek
- Aundeck Omni Kaning First Nation
- Batchewana First Nation
- Beausoleil First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of Rama First Nation
- Chippewas of Nawash Unceded First Nation
- Dokis First Nation
- Garden River First Nation
- Henvey Inlet First Nation
- M'Chigeeng First Nation
- Magnetawan First Nation
- Mississauga First Nation
- Moose Deer Point First Nation
- Nipissing First Nation
- Sagamok Anishnawbek First Nation
- Saugeen First Nation
- Serpent River First Nation
- Shawanaga First Nation
- Sheguiandah First Nation
- Sheshegwaning First Nation
- Thessalon First Nation

- Wahnapitae First Nation
- Wahta Mohawks
- Wasauksing First Nation
- Whitefish River First Nation
- Wikwemikong Unceded First Nation
- Zhiibaahaasing First Nation

Lake Erie

- Caldwell First Nation
- Chippewas of the Thames First Nation
- Delaware Nation of Moraviantown
- Mississaugas of the Credit First Nation
- Munsee-Delaware Nation
- Oneida Nation of the Thames
- Six Nations of the Grand
- Walpole Island First Nation

Lake Ontario

- Alderville First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Mississauga's of Scugog Island
- Mississaugas of the Credit First Nation
- Mohawks of Akwesasne
- Mohawks of the Bay of Quinte

From U.S. census records, data on race have been collected since the first U.S. decennial census in 1790. The 1860 Census was the first to enumerate American Indians as a separate race group, and the 1890 Census was the first to count American Indians throughout the country. Alaska Natives, in Alaska, have been counted in various respects since the 1880 Census, generally under the American Indian category, but were enumerated as a separate group starting with the 1940 Census. All states began collecting data separately for Eskimos and Aleuts in 1980. Since the 2000 Census, a combined response category – "American Indian or Alaska Native" – was used, and a dedicated write-in line to collect information on the American Indian and Alaska Native population. In 2010, there were 5,220,579 people across the U.S. who identified as American Indian or Alaska Native, which was 1.7 percent of the total U.S. population. Across the eight Great Lakes States, there were 870,686 American Indians and Alaska Natives, which was 16.7 percent of the U.S. American Indians and Alaska Natives population. By 2060, the projected U.S. American Indian and Alaska Native population is estimated to reach 10 million people, or approximately 2.4 percent of the U.S. population (Norris, 2012). Reported in the 2020 Census, 9.7 million people identified as American Indian and Alaska Native, which is 2.9 percent of the U.S. population (USCB, 2021a).

From Canadian census records, there were 1,807,250 Indigenous Peoples (i.e., First Nations people, Métis, and Inuit) counted in the 2021 Canadian census of population, accounting for 5.0 percent of the total population of Canada. This was up from 4.9 percent in 2016 and 3.8 percent in 2006. From 2016 to 2021, the Canadian Indigenous population grew by 9.4 percent. This surpassed the growth of the non-Indigenous population over the same period (+5.3 percent). According to population projections, the number of Indigenous peoples will continue to grow rapidly. In the next two decades, the population of Indigenous peoples could reach between 2.5 and 3.2 million people (Statistics Canada, 2017b).

Additional Methods Information

Previously reported estimates of U.S. population within the Great Lakes Basin were the sum of the populations of the 212 counties with any land area within the Great Lakes Basin, which included the resident population outside the Great Lakes Basin within counties that are only partially within the Great Lakes watershed (i.e., straddling counties). This method is precise because population counts at the county level have been recorded since the first U.S. census in 1790, but it produces less accurate results of the resident population strictly within the Great Lakes Basin. See Table 6 for the population of U.S. counties within the Great Lakes Basin from 1900 to 2020.

In more recent SOGL reports, to estimate the resident population strictly within the Great Lakes Basin, the populations of straddling counties were ratio adjusted based on the counties' land drainage area within the Great Lakes Basin. However, smaller geographic units of population (e.g., block groups) are published and allow for a more accurate estimate of the population strictly within the Great Lakes Basin.

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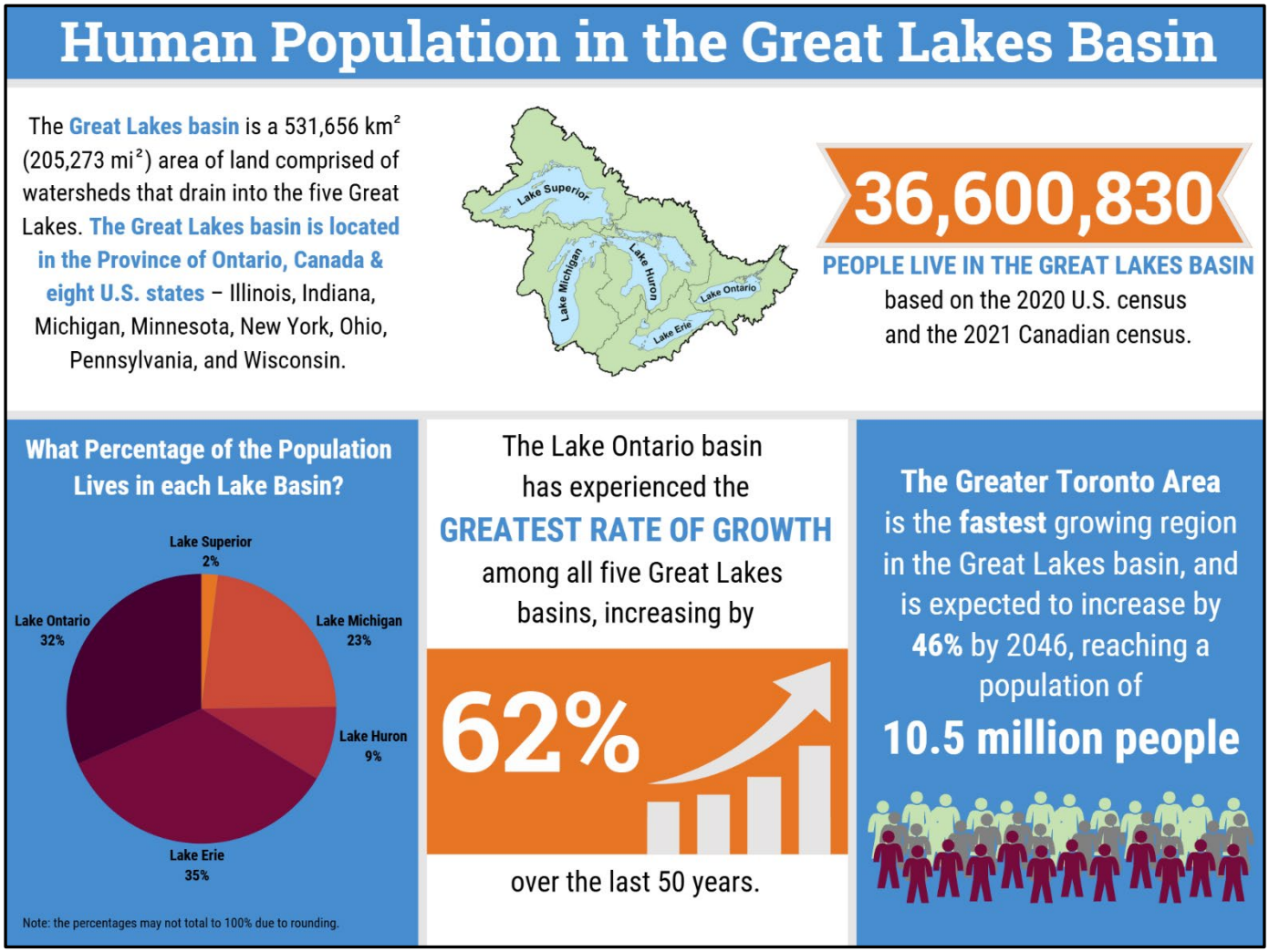
Graphical Abstract



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State of the Great Lakes 2025 Report

Table 1. Population Trends within the Great Lakes Basin: 10-year trend, 30-year trend, & 50-year trend
Note: The '10-year Δ', '30-year Δ' and '50-year Δ' is the change from the census years indicated in parentheses compared with the 2020/2021 population. This table is a subset from 'Table 2. Population within the Great Lakes Basin, 1970-2020, every 10 years'. See Table 2 for more information and data sources.

			Current Data	Short-term (10-year) Trend (2010-2020 U.S. & 2011-2021 Canada)				30-year Trend (1990-2020 U.S. & 1991-2021 Canada)				Long-term (50-year) Trend (1970-2020 U.S. & 1971-2021 Canada)			
			2020/2021 Population Count	2010/2011 Population Count	10-Year Δ	10-Year % Δ	Avg Δ per annum	1990/1991 Population Count	30-Year Δ	30-Year % Δ	Avg Δ per annum	1970/1971 Population Count	50-Year Δ	50-Year % Δ	Avg Δ per annum
Great Lakes Basin		Binational	**36,600,830**	**34,307,523**	**2,293,307**	**6.7%**	**229,331**	**30,722,160**	**5,878,670**	**19.1%**	**195,956**	**28,467,985**	**8,132,845**	**28.6%**	**162,657**
		Ontario	12,721,589	11,504,547	1,217,042	10.6%	121,704	8,948,663	3,772,926	42.2%	125,764	6,809,273	5,912,316	86.8%	118,246
		USA	23,879,241	22,802,976	1,076,265	4.7%	107,627	21,773,497	2,105,744	9.7%	70,191	21,658,712	2,220,529	10.3%	44,411
Sub-Basins	Superior	Binational	638,981	607,618	31,363	5.2%	3,136	611,198	27,783	4.5%	926	616,973	22,008	3.6%	440
		Ontario	173,814	168,437	5,377	3.2%	538	182,857	-9,043	-4.9%	-301	170,743	3,071	1.8%	61
		USA	465,167	439,181	25,986	5.9%	2,599	428,341	36,826	8.6%	1,228	446,230	18,937	4.2%	379
	Michigan	Binational	8,437,616	7,794,134	643,482	8.3%	64,348	7,012,915	1,424,701	20.3%	47,490	6,479,213	1,958,403	30.2%	39,168
		Ontario	-	-	-	-	-	-	-	-	-	-	-	-	-
		USA	8,437,616	7,794,134	643,482	8.3%	64,348	7,012,915	1,424,701	20.3%	47,490	6,479,213	1,958,403	30.2%	39,168
	Huron	Binational	3,201,799	3,063,467	138,332	4.5%	13,833	2,720,203	481,596	17.7%	16,053	2,309,050	892,749	38.7%	17,855
		Ontario	1,636,096	1,486,864	149,232	10.0%	14,923	1,219,158	416,938	34.2%	13,898	934,520	701,576	75.1%	14,032
		USA	1,565,703	1,576,603	-10,900	-0.7%	-1,090	1,501,045	64,658	4.3%	2,155	1,374,530	191,173	13.9%	3,823
	Erie	Binational	12,630,605	12,079,908	550,697	4.6%	55,070	11,595,660	1,034,945	8.9%	34,498	11,834,314	796,291	6.7%	15,926
		Ontario	2,452,708	2,193,219	259,489	11.8%	25,949	1,824,835	627,873	34.4%	20,929	1,481,689	971,019	65.5%	19,420
		USA	10,177,897	9,886,689	291,208	2.9%	29,121	9,770,825	407,072	4.2%	13,569	10,352,625	-174,728	-1.7%	-3,495
	Ontario	Binational	11,242,092	10,339,209	902,883	8.7%	90,288	8,386,656	2,855,436	34.0%	95,181	6,864,625	4,377,467	63.8%	87,549
		Ontario	8,169,420	7,379,162	790,258	10.7%	79,026	5,471,125	2,698,295	49.3%	89,943	3,995,376	4,174,044	104.5%	83,481
		USA	3,072,672	2,960,047	112,625	3.8%	11,263	2,915,531	157,141	5.4%	5,238	2,869,249	203,423	7.1%	4,068
	Upper St. Lawrence River	Binational	449,737	423,187	26,550	6.3%	2,655	395,528	54,209	13.7%	1,807	363,810	85,927	23.6%	1,719
		Ontario	289,551	276,865	12,686	4.6%	1,269	250,688	38,863	15.5%	1,295	226,945	62,606	27.6%	1,252
		USA	160,186	146,322	13,864	9.5%	1,386	144,840	15,346	10.6%	512	136,865	23,321	17.0%	466

Table 2. Population within the Great Lakes Basin, 1970-2020, every 10 years (continued next page)

Basin	Portion	1970/1971 Population						1980/1981 Population					
		Count	% Basin	Decadal Δ	% Δ	Density		Count	% Basin	Decadal Δ	% Δ	Density	
						SQKM	SQMI					SQKM	SQMI
Superior	Binational	616,973	2.2%	-	-	4.6	11.9	630,492	2.1%	13,519	2.2%	4.7	12.1
	Ontario	170,743	27.7%	-	-	1.9	4.9	177,599	28.2%	6,856	4.0%	1.9	5.0
	USA	446,230	72.3%	-	-	10.3	26.7	452,893	71.8%	6,663	1.5%	10.4	27.1
Michigan	Binational	6,479,213	22.8%	-	-	56.2	145.5	6,750,588	23.0%	271,375	4.2%	58.5	151.5
	Ontario	-	-	-	-	-	-	-	-	-	-	-	-
	USA	6,479,213	100%	-	-	56.2	145.5	6,750,588	100%	271,375	4.2%	58.5	151.5
Huron	Binational	2,309,050	8.1%	-	-	17.8	46.1	2,577,641	8.8%	268,591	11.6%	19.9	51.4
	Ontario	934,520	40.5%	-	-	10.6	27.4	1,058,199	41.1%	123,679	13.2%	12.0	31.1
	USA	1,374,530	59.5%	-	-	33.1	85.8	1,519,442	58.9%	144,912	10.5%	36.6	94.8
Erie	Binational	11,834,314	41.6%	-	-	154.4	399.9	11,599,482	39.5%	-234,832	-2.0%	151.4	392.0
	Ontario	1,481,689	12.5%	-	-	65.3	169.1	1,623,278	14.0%	141,589	9.6%	71.5	185.2
	USA	10,352,625	87.5%	-	-	191.9	497.1	9,976,204	86.0%	-376,421	-3.6%	185.0	479.0
Ontario	Binational	6,864,625	24.1%	-	-	111.1	287.7	7,395,172	25.2%	530,547	7.7%	119.7	309.9
	Ontario	3,995,376	58.2%	-	-	142.8	369.8	4,550,906	61.5%	555,530	13.9%	162.6	421.2
	USA	2,869,249	41.8%	-	-	84.8	219.7	2,844,266	38.5%	-24,983	-0.9%	84.1	217.8
Upper St. Lawrence River	Binational	363,810	1.3%	-	-	26.7	69.2	376,487	1.3%	12,677	3.5%	27.6	71.6
	Ontario	226,945	62.4%	-	-	62.1	160.7	236,942	62.9%	9,997	4.4%	64.8	167.8
	USA	136,865	37.6%	-	-	13.7	35.6	139,545	37.1%	2,680	2.0%	14.0	36.3
Overall		**28,467,985**	**100%**	**-**	**-**	**53.5**	**138.7**	**29,329,862**	**100%**	**861,877.0**	**3.0%**	**55.2**	**142.9**
Ontario portion		6,809,273	23.9%	-	-	29.1	75.5	7,646,924	26.1%	837,651.0	12.3%	32.7	84.7
USA portion		21,658,712	76.1%	-	-	72.7	188.3	21,682,938	73.9%	24,226.0	0.1%	72.8	188.5

Table 2. Population within the Great Lakes Basin, 1970-2020, every 10 years (continued next page)

Basin	Portion	1990/1991 Population						2000/2001 Population					
						Density						Density	
		Count	% Basin	Decadal Δ	% Δ	SQ KM	SQMI	Count	% Basin	Decadal Δ	% Δ	SQKM	SQMI
Superior	Binational	611,198	2.0%	-19,294	-3.1%	4.5	11.8	611,214	1.9%	16	0.0%	4.5	11.8
	Ontario	182,857	29.9%	5,258	3.0%	2.0	5.2	173,716	28.4%	-9,141	-5.0%	1.9	4.9
	USA	428,341	70.1%	-24,552	-5.4%	9.9	25.6	437,498	71.6%	9,157	2.1%	10.1	26.1
Michigan	Binational	7,012,915	22.8%	262,327	3.9%	60.8	157.4	7,590,756	23.0%	577,841	8.2%	65.8	170.4
	Ontario	-	-	-	-	-	-	-	-	-	-	-	-
	USA	7,012,915	100%	262,327	3.9%	60.79	157.4	7,590,756	100%	577,841	8.2%	65.8	170.4
Huron	Binational	2,720,203	8.9%	142,562	5.5%	21.0	54.3	2,952,464	8.9%	232,261	8.5%	22.8	58.9
	Ontario	1,219,158	44.8%	160,959	15.2%	13.8	35.8	1,358,006	46.0%	138,848	11.4%	15.4	39.9
	USA	1,501,045	55.2%	-18,397	-1.2%	36.2	93.7	1,594,458	54.0%	93,413	6.2%	38.4	99.5
Erie	Binational	11,595,660	37.7%	-3,822	0.0%	151.3	391.9	12,142,805	36.8%	547,145	4.7%	158.4	410.4
	Ontario	1,824,835	15.7%	201,557	12.4%	80.4	208.2	2,018,716	16.6%	193,881	10.6%	88.9	230.3
	USA	9,770,825	84.3%	-205,379	-2.1%	181.1	469.2	10,124,089	83.4%	353,264	3.6%	187.7	486.1
Ontario	Binational	8,386,656	27.3%	991,484	13.4%	135.7	351.4	9,294,832	28.2%	908,176	10.8%	150.4	389.5
	Ontario	5,471,125	65.2%	920,219	20.2%	195.5	506.4	6,354,843	68.4%	883,718	16.2%	227.1	588.2
	USA	2,915,531	34.8%	71,265	2.5%	86.2	223.3	2,939,989	31.6%	24,458	0.8%	86.9	225.1
Upper St. Lawrence River	Binational	395,528	1.3%	19,041	5.1%	29.0	75.2	410,243	1.2%	14,715	3.7%	30.1	78.0
	Ontario	250,688	63.4%	13,746	5.8%	68.6	177.5	263,556	64.2%	12,868	5.1%	72.1	186.7
	USA	144,840	36.6%	5,295	3.8%	14.5	37.6	146,687	35.8%	1,847	1.3%	14.7	38.1
Overall		**30,722,160**	**100%**	**1,392,298**	**4.7%**	**57.8**	**149.7**	**33,002,314**	**100%**	**2,280,154**	**7.4%**	**62.1**	**160.8**
Ontario portion		8,948,663	29.1%	1,301,739	17.0%	38.3	99.2	10,168,837	30.8%	1,220,174	13.6%	43.5	112.7
USA portion		21,773,497	70.9%	90,559	0.4%	73.1	189.3	22,833,477	69.2%	1,059,980	4.9%	76.6	198.5

Table 2. Population within the Great Lakes Basin, 1970-2020, every 10 years (continued next page)

Basin	Portion	2010/2011 Population						2020/2021 Population					
		Count	% Basin	Decadal Δ	% Δ	Density SQKM	Density SQMI	Count	% Basin	Decadal Δ	% Δ	Density SQKM	Density SQMI
Superior	Binational	607,618	1.8%	-3,596	-0.6%	4.5	11.7	638,981	1.7%	31,363	5.2%	4.8	12.3
	Ontario	168,437	27.7%	-5,279	-3.0%	1.8	4.8	173,814	27.2%	5,377	3.2%	1.9	4.9
	USA	439,181	72.3%	1,683	0.4%	10.1	26.2	465,167	72.8%	25,986	5.9%	10.7	27.8
Michigan	Binational	7,794,134	22.7%	203,378	2.7%	67.6	175.0	8,437,616	23.1%	643,482	8.3%	73.1	189.4
	Ontario	-	-	-	-	-	-	-	-	-	-	-	-
	USA	7,794,134	100%	203,378	2.7%	67.56	175.0	8,437,616	100%	643,482	8.3%	73.1	189.4
Huron	Binational	3,063,467	8.9%	111,003	3.8%	23.6	61.1	3,201,799	8.7%	138,332	4.5%	24.7	63.9
	Ontario	1,486,864	48.5%	128,858	9.5%	16.8	43.6	1,636,096	51.1%	149,232	10.0%	18.5	48.0
	USA	1,576,603	51.5%	-17,855	-1.1%	38.0	98.4	1,565,703	48.9%	-10,900	-0.7%	37.7	97.7
Erie	Binational	12,079,908	35.2%	-62,897	-0.5%	157.6	408.2	12,630,605	34.5%	550,697	4.6%	164.8	426.9
	Ontario	2,193,219	18.2%	174,503	8.6%	96.6	250.3	2,452,708	19.4%	259,489	11.8%	108.1	279.9
	USA	9,886,689	81.8%	-237,400	-2.3%	183.3	474.7	10,177,897	80.6%	291,208	2.9%	188.7	488.7
Ontario	Binational	10,339,209	30.1%	1,044,377	11.2%	167.3	433.3	11,242,092	30.7%	902,883	8.7%	181.9	471.1
	Ontario	7,379,162	71.4%	1,024,319	16.1%	263.7	683.0	8,169,420	72.7%	790,258	10.7%	292.0	756.2
	USA	2,960,047	28.6%	20,058	0.7%	87.5	226.7	3,072,672	27.3%	112,625	3.8%	90.8	235.3
Upper St. Lawrence River	Binational	423,187	1.2%	12,944	3.2%	31.1	80.5	449,737	1.2%	26,550	6.3%	33.0	85.5
	Ontario	276,865	65.4%	13,309	5.0%	75.7	196.1	289,551	64.4%	12,686	4.6%	79.2	205.1
	USA	146,322	34.6%	-365	-0.2%	14.7	38.0	160,186	35.6%	13,864	9.5%	16.1	41.6
Overall		**34,307,523**	**100%**	**1,305,209**	**4.0%**	**64.5**	**167.1**	**36,600,830**	**100%**	**2,293,307**	**6.7%**	**68.8**	**178.3**
Ontario portion		11,504,547	33.5%	1,335,710	13.1%	49.2	127.5	12,721,589	34.8%	1,217,042	10.6%	54.4	141.0
USA portion		22,802,976	66.5%	-30,501	-0.1%	76.5	198.2	23,879,241	65.2%	1,076,265	4.7%	80.1	207.6

Note: The 'Upper St. Lawrence River" is the international section of the St. Lawrence River, which is the drainage basin of the St. Lawrence River to the Canadian border. For the definition of the Great Lakes Basin, see Article I(c) of the Great Lakes Water Quality Agreement (2012 Protocol), available at https://binational.net/wp-content/uploads/2014/05/1094_Canada-USA-GLWQA-_e.pdf.

‘Decadal Δ’ is the decade-over-decade change in population count. ‘% Basin’ is the proportion of the resident population within each basin.

Sources:

Canadian data:

1971-2021 data: Statistics Canada, Table 17-10-0117-01 Selected population characteristics, Canada, major drainage areas and sub-drainage areas. https://doi.org/10.25318/1710011701-eng (accessed February 2, 2024).

U.S. data: (U.S. population counts were derived from authors’ geospatial analyses of census block groups within the Great Lakes Basin from the following datasets)

2010 to 2020 data: "USA Block Group Boundaries", esri_dm, May 13, 2021. https://esri.maps.arcgis.com/home/item.html?id=1c924a53319a491ab43d5cb1d55d8561.
1970 to 2000 data: Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0 [Database]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0

Table 3. Population within the Great Lakes Basin in Canada, 1971-2021, every 5 years (continued next page)

Basin	1971 Census					1976 Census					1981 Census				
	Count	5-year Δ	% Δ	Density SQKM	Density SQMI	Count	5-year Δ	% Δ	Density SQKM	Density SQMI	Count	5-year Δ	% Δ	Density SQKM	Density SQMI
Superior	170,743	-	-	1.9	4.9	175,602	4,859	2.8%	1.9	5.0	177,599	1,997	1.1%	1.9	5.0
Huron	934,520	-	-	10.6	27.4	1,018,331	83,811	9.0%	11.5	29.9	1,058,199	39,868	3.9%	12.0	31.1
Erie	1,481,689	-	-	65.3	169.1	1,578,664	96,975	6.5%	69.6	180.1	1,623,278	44,614	2.8%	71.5	185.2
Ontario	3,995,376	-	-	142.8	369.8	4,307,275	311,899	7.8%	153.9	398.7	4,550,906	243,631	5.7%	162.6	421.2
I-SLR	226,945	-	-	62.1	160.7	233,504	6,559	2.9%	63.9	165.4	236,942	3,438	1.5%	64.8	167.8
Overall	**6,809,273**	**-**	**-**	**29.1**	**75.5**	**7,313,376**	**504,103**	**7.4%**	**31.3**	**81.1**	**7,646,924**	**333,548**	**4.6%**	**32.7**	**84.7**

Basin	1986 Census					1991 Census					1996 Census				
	Count	5-year Δ	% Δ	Density SQKM	Density SQMI	Count	5-year Δ	% Δ	Density SQKM	Density SQMI	Count	5-year Δ	% Δ	Density SQKM	Density SQMI
Superior	178,858	1,259	0.7%	2.0	5.1	182,857	3,999	2.2%	2.0	5.2	180,086	-2,771	-1.5%	2.0	5.1
Huron	1,079,199	21,000	2.0%	12.2	31.7	1,219,158	139,959	13.0%	13.8	35.8	1,305,544	86,386	7.1%	14.8	38.3
Erie	1,679,536	56,258	3.5%	74.0	191.6	1,824,835	145,299	8.7%	80.4	208.2	1,921,043	96,208	5.3%	84.6	219.2
Ontario	4,885,860	334,954	7.4%	174.6	452.2	5,471,125	585,265	12.0%	195.5	506.4	5,887,739	416,614	7.6%	210.4	545.0
I-SLR	239,381	2,439	1.0%	65.5	169.5	250,688	11,307	4.7%	68.6	177.5	260,806	10,118	4.0%	71.3	184.7
Overall	**8,062,834**	**415,910**	**5.4%**	**34.5**	**89.4**	**8,948,663**	**885,829**	**11.0%**	**38.3**	**99.2**	**9,555,218**	**606,555**	**6.8%**	**40.9**	**105.9**

Basin	2001 Census					2006 Census					2011 Census				
	Count	5-year Δ	% Δ	Density SQKM	Density SQMI	Count	5-year Δ	% Δ	Density SQKM	Density SQMI	Count	5-year Δ	% Δ	Density SQKM	Density SQMI
Superior	173,716	-6,370	-3.5%	1.9	4.9	171,433	-2,283	-1.3%	1.9	4.9	168,437	-2,996	-1.7%	1.8	4.8
Huron	1,358,006	52,462	4.0%	15.4	39.9	1,444,504	86,498	6.4%	16.4	42.4	1,486,864	42,360	2.9%	16.8	43.6
Erie	2,018,716	97,673	5.1%	88.9	230.3	2,129,870	111,154	5.5%	93.8	243.0	2,193,219	63,349	3.0%	96.6	250.3
Ontario	6,354,843	467,104	7.9%	227.1	588.2	6,863,620	508,777	8.0%	245.3	635.3	7,379,162	515,542	7.5%	263.7	683.0
I-SLR	263,556	2,750	1.1%	72.1	186.7	271,218	7,662	2.9%	74.2	192.1	276,865	5,647	2.1%	75.7	196.1
Overall	**10,168,837**	**613,619**	**6.4%**	**43.5**	**112.7**	**10,880,645**	**711,808**	**7.0%**	**46.6**	**120.6**	**11,504,547**	**623,902**	**5.7%**	**49.2**	**127.5**

Table 3. Population within the Great Lakes Basin in Canada, 1971-2021, every 5 years

Basin	2016 Census					2021 Census				
	Count	5-year Δ	% Δ	Density		Count	5-year Δ	% Δ	Density	
				SQKM	SQMI				SQKM	SQMI
Superior	168,732	295	0.2%	1.9	4.8	173,814	5,082	0.7%	1.9	4.9
Huron	1,542,129	55,265	3.7%	17.5	45.3	1,636,096	93,967	6.1%	18.5	48.0
Erie	2,266,267	73,048	3.3%	99.8	258.6	2,452,708	186,441	8.2%	108.1	279.9
Ontario	7,780,152	400,990	5.4%	278.0	720.1	8,169,420	389,268	5.0%	292.0	756.2
I-SLR	283,439	6,574	2.4%	77.5	200.7	289,551	6,112	2.2%	79.2	205.1
Overall	**12,040,719**	**536,172**	**4.7%**	**51.5**	**133.4**	**12,721,589**	**680,870**	**5.7%**	**54.4**	**141.0**

Acronym: 'I-SLR' is the internation section of the St. Lawrence River, which is the drainage basin of the St. Lawrence River to the Canadian border. For the definition of the Great Lakes Basin, see Article I(c) of the Great Lakes Water Quality Agreement (2012 Protocol), available at https://binational.net/wp-content/uploads/2014/05/1094_Canada-USA-GLWQA-_e.pdf.

Sources:
1971-2021 data: Statistics Canada, Table 17-10-0117-01 Selected population characteristics, Canada, major drainage areas and sub-drainage areas. https://doi.org/10.25318/1710011701-eng (accessed February 2, 2024).
Note: The following sub-drainage areas reported in Table 17-10-0117-01 comprise the Great Lakes sub-basins in Canada:

Lake Superior

- 02A Northwestern Lake Superior
- 02B Northeastern Lake Superior

Lake Huron

- 02C Northern Lake Huron
- 02D Wanapitei and French, Ontario
- 02E Eastern Georgian Bay
- 02F Eastern Lake Huron

Lake Erie

- 02G Northern Lake Erie

Lake Ontario

- 02H Lake Ontario and Niagara Peninsula

International Section of the St. Lawrence River

- 02M Upper St. Lawrence

Table 4. Great Lakes Basin Land Drainage Area

			Land Drainage Area			
			SQKM	SQMI	% Sub-Basin	% Great Lakes Basin
Great Lakes Basin		**Binational**	**531,656**	**205,273**	N/A	**100%**
		Ontario	233,695	90,230	N/A	44.0%
		USA	297,961	115,043	N/A	56.0%
Sub-Basins	Superior	Binational	134,463	51,916	100%	25.3%
		Ontario	91,100	35,174	67.8%	17.1%
		USA	43,363	16,743	32.2%	8.2%
	Michigan	Binational	115,368	44,544	100.0%	21.7%
		Ontario	0	0	0%	0%
		USA	115,368	44,544	100.0%	21.7%
	Huron	Binational	129,759	50,100	100%	24.4%
		Ontario	88,258	34,077	68.0%	16.6%
		USA	41,501	16,024	32.0%	7.8%
	Erie	Binational	76,638	29,590	100%	14.4%
		Ontario	22,698	8,764	29.6%	4.3%
		USA	53,940	20,826	70.4%	10.1%
	Ontario	Binational	61,805	23,863	100%	11.6%
		Ontario	27,982	10,804	45.3%	5.3%
		USA	33,823	13,059	54.7%	6.4%
	Upper St. Lawrence River	Binational	13,623	5,260	100%	2.6%
		Ontario	3,657	1,412	26.8%	0.7%
		USA	9,966	3,848	73.2%	1.9%

Note: The 'Upper St. Lawrence River" is the internation section of the St. Lawrence River, which is the drainage basin of the St. Lawrence River to the Canadian border.

For the definition of the Great Lakes Basin, see Article I(c) of the Great Lakes Water Quality Agreement (2012 Protocol), available at https://binational.net/wp-content/uploads/2014/05/1094_Canada-USA-GLWQA-_e.pdf.

"% Sub-Basin' is the proportion of the lake basin in each nation. '% Great Lakes Basin' is the proportion of the sub-basin within the Great Lakes Basin.

These values were derived from our geospatial analysis by subtracting the surface area of the Great Lakes and connecting channels and inland waterbodies (lakes and streams) ≥5 mi2 (13 km2) from the whole watershed area (land and water).

These values were used to calculate population density reported in Table 2 & Table 3

Table 5. Great Lakes Region Population, 1900-2020, every 10 years (continued next page)

Census Year	1900				1910				1920			
State / Province	Count	Decadal Δ	% Δ	% Region	Count	Decadal Δ	% Δ	% Region	Count	Decadal Δ	% Δ	% Region
Illinois	4,821,550	995,199	26.0%	14.4%	5,638,591	817,041	16.9%	14.2%	6,485,280	846,689	15.0%	14.1%
Indiana	2,516,462	324,058	14.8%	7.5%	2,700,876	184,414	7.3%	6.8%	2,930,390	229,514	8.5%	6.4%
Michigan	2,420,982	327,093	15.6%	7.2%	2,810,173	389,191	16.1%	7.1%	3,668,412	858,239	30.5%	8.0%
Minnesota	1,751,394	449,568	34.5%	5.2%	2,075,708	324,314	18.5%	5.2%	2,387,125	311,417	15.0%	5.2%
New York	7,268,894	1,271,041	21.2%	21.7%	9,113,614	1,844,720	25.4%	23.0%	10,385,227	1,271,613	14.0%	22.6%
Ohio	4,157,545	485,229	13.2%	12.4%	4,767,121	609,576	14.7%	12.0%	5,759,394	992,273	20.8%	12.5%
Ontario	2,182,947	68,626	3.2%	6.5%	2,527,292	344,345	15.8%	6.4%	2,933,662	406,370	16.1%	6.4%
Pennsylvania	6,302,115	1,044,101	19.9%	18.8%	7,665,111	1,362,996	21.6%	19.3%	8,720,017	1,054,906	13.8%	19.0%
Wisconsin	2,069,042	382,162	22.7%	6.2%	2,333,860	264,818	12.8%	5.9%	2,632,067	298,207	12.8%	5.7%
Totals	**33,490,931**	**5,347,077**	**19.0%**	**100%**	**39,632,346**	**6,141,415**	**18.3%**	**100%**	**45,901,574**	**6,269,228**	**15.8%**	**100%**

Census Year	1930				1940				1950			
State / Province	Count	Decadal Δ	% Δ	% Region	Count	Decadal Δ	% Δ	% Region	Count	Decadal Δ	% Δ	% Region
Illinois	7,630,654	1,145,374	17.7%	14.3%	7,897,241	266,587	3.5%	14.0%	8,712,176	814,935	10.3%	13.8%
Indiana	3,238,503	308,113	10.5%	6.1%	3,427,796	189,293	5.8%	6.1%	3,934,224	506,428	14.8%	6.2%
Michigan	4,842,325	1,173,913	32.0%	9.0%	5,256,106	413,781	8.5%	9.3%	6,371,766	1,115,660	21.2%	10.1%
Minnesota	2,563,953	176,828	7.4%	4.8%	2,792,300	228,347	8.9%	4.9%	2,982,483	190,183	6.8%	4.7%
New York	12,588,066	2,202,839	21.2%	23.5%	13,479,142	891,076	7.1%	23.8%	14,830,192	1,351,050	10.0%	23.4%
Ohio	6,646,697	887,303	15.4%	12.4%	6,907,612	260,915	3.9%	12.2%	7,946,627	1,039,015	15.0%	12.6%
Ontario	3,431,683	498,021	17.0%	6.4%	3,787,655	355,972	10.4%	6.7%	4,597,542	809,887	21.4%	7.3%
Pennsylvania	9,631,350	911,333	10.5%	18.0%	9,900,180	268,830	2.8%	17.5%	10,498,012	597,832	6.0%	16.6%
Wisconsin	2,939,006	306,939	11.7%	5.5%	3,137,587	198,581	6.8%	5.5%	3,434,575	296,988	9.5%	5.4%
Totals	**53,512,237**	**7,610,663**	**16.6%**	**100%**	**56,585,619**	**3,073,382**	**5.7%**	**100%**	**63,307,597**	**6,721,978**	**11.9%**	**100%**

Table 5. Great Lakes Region Population, 1900-2020, every 10 years (continued next page)

Census Year	1960				1970				1980			
State / Province	Count	Decadal Δ	% Δ	% Region	Count	Decadal Δ	% Δ	% Region	Count	Decadal Δ	% Δ	% Region
Illinois	10,081,158	1,368,982	15.7%	13.6%	11,113,976	1,032,818	10.2%	13.6%	11,426,518	312,542	2.8%	13.6%
Indiana	4,662,498	728,274	18.5%	6.3%	5,193,669	531,171	11.4%	6.3%	5,490,224	296,555	5.7%	6.6%
Michigan	7,823,194	1,451,428	22.8%	10.6%	8,875,083	1,051,889	13.4%	10.9%	9,262,078	386,995	4.4%	11.1%
Minnesota	3,413,864	431,381	14.5%	4.6%	3,804,971	391,107	11.5%	4.7%	4,075,970	270,999	7.1%	4.9%
New York	16,782,304	1,952,112	13.2%	22.7%	18,236,967	1,454,663	8.7%	22.3%	17,558,072	-678,895	-3.7%	21.0%
Ohio	9,706,397	1,759,770	22.1%	13.1%	10,652,017	945,620	9.7%	13.0%	10,797,630	145,613	1.4%	12.9%
Ontario	6,236,092	1,638,550	35.6%	8.4%	7,703,106	1,467,014	23.5%	9.4%	8,625,107	922,001	12.0%	10.3%
Pennsylvania	11,319,366	821,354	7.8%	15.3%	11,793,909	474,543	4.2%	14.4%	11,863,895	69,986	0.6%	14.2%
Wisconsin	3,951,777	517,202	15.1%	5.3%	4,417,731	465,954	11.8%	5.4%	4,705,767	288,036	6.5%	5.6%
Totals	**73,976,650**	**10,669,053**	**16.9%**	**100%**	**81,791,429**	**7,814,779**	**10.6%**	**100%**	**83,805,261**	**2,013,832**	**2.5%**	**100%**

Census Year	1990				2000				2010			
State / Province	Count	Decadal Δ	% Δ	% Region	Count	Decadal Δ	% Δ	% Region	Count	Decadal Δ	% Δ	% Region
Illinois	11,430,602	4,084	0.04%	13.2%	12,419,293	988,691	8.6%	13.4%	12,830,632	411,339	3.3%	13.3%
Indiana	5,544,159	53,935	1.0%	6.4%	6,080,485	536,326	9.7%	6.6%	6,483,802	403,317	6.6%	6.7%
Michigan	9,295,297	33,219	0.4%	10.8%	9,938,444	643,147	6.9%	10.7%	9,883,640	-54,804	-0.6%	10.2%
Minnesota	4,375,099	299,129	7.3%	5.1%	4,919,479	544,380	12.4%	5.3%	5,303,925	384,446	7.8%	5.5%
New York	17,990,455	432,383	2.5%	20.8%	18,976,457	986,002	5.5%	20.5%	19,378,102	401,645	2.1%	20.0%
Ohio	10,847,115	49,485	0.5%	12.6%	11,353,140	506,025	4.7%	12.2%	11,536,504	183,364	1.6%	11.9%
Ontario	10,084,885	1,459,778	16.9%	11.7%	11,410,046	1,325,161	13.1%	12.3%	12,851,821	1,441,775	12.6%	13.3%
Pennsylvania	11,881,643	17,748	0.1%	13.8%	12,281,054	399,411	3.4%	13.2%	12,702,379	421,325	3.4%	13.1%
Wisconsin	4,891,769	186,002	4.0%	5.7%	5,363,675	471,906	9.6%	5.8%	5,686,986	323,311	6.0%	5.9%
Totals	**86,341,024**	**2,535,763**	**3.0%**	**100%**	**92,742,073**	**6,401,049**	**7.4%**	**100%**	**96,657,791**	**3,915,718**	**4.2%**	**100%**

Table 5. Great Lakes Region Population, 1900-2020, every 10 years

Census Year	2020			
State / Province	**Count**	**Decadal Δ**	**% Δ**	**% Region**
Illinois	12,812,508	-18,124	-0.1%	12.7%
Indiana	6,785,528	301,726	4.7%	6.8%
Michigan	10,077,331	193,691	2.0%	10.0%
Minnesota	5,706,494	402,569	7.6%	5.7%
New York	20,201,249	823,147	4.2%	20.1%
Ohio	11,799,448	262,944	2.3%	11.7%
Ontario	14,223,942	1,372,121	10.7%	14.2%
Pennsylvania	13,002,700	300,321	2.4%	12.9%
Wisconsin	5,893,718	206,732	3.6%	5.9%
Totals	**100,502,918**	**3,845,127**	**4.0%**	**100%**

Note: Population data for Ontario are from the 1901, 1911, 1921, 1931, 1941, 1951, 1961, 1971, 1981, 1991, 2001, 2011, and 2021 censuses. 'Decadal Δ' is the decade-over-decade change in population count. '% Region' is the proportion of each state/province's population compared to the Great Lakes Region's total population.

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Table 6. Population of U.S. Counties within the Great Lakes Basin, 1900-2020, every 10 years (continued next page)

Census Year	1900				1910				1920			
GLB Counties within State	Count	Decadal Δ	% Δ	% State Population	Count	Decadal Δ	% Δ	% State Population	Count	Decadal Δ	% Δ	% State Population
Illinois	1,873,239	657,082	54.0%	38.9%	2,460,291	587,052	31.3%	43.6%	3,127,302	667,011	27.1%	48.2%
Indiana	431,193	58,364	15.7%	17.1%	526,586	95,393	22.1%	19.5%	648,218	121,632	23.1%	22.1%
Michigan	2,420,982	328,088	15.7%	100%	2,810,173	389,191	16.1%	100%	3,668,412	858,239	30.5%	100%
Minnesota	121,275	62,487	106.3%	6.9%	233,637	112,362	92.7%	11.3%	295,910	62,273	26.7%	12.4%
New York	2,244,915	217,675	10.7%	30.9%	2,511,503	266,588	11.9%	27.6%	2,792,771	281,268	11.2%	26.9%
Ohio	1,764,942	287,093	19.4%	42.5%	2,108,311	343,369	19.5%	44.2%	2,814,328	706,017	33.5%	48.9%
Pennsylvania	192,737	18,561	10.7%	3.1%	206,811	14,074	7.3%	2.7%	235,292	28,481	13.8%	2.7%
Wisconsin	1,236,613	262,775	27.0%	59.8%	1,451,313	214,700	17.4%	62.2%	1,671,735	220,422	15.2%	63.5%
Totals	**10,285,896**	**1,892,125**	**22.5%**	**32.9%**	**12,308,625**	**2,022,729**	**19.7%**	**33.2%**	**15,253,968**	**2,945,343**	**23.9%**	**35.5%**

Census Year	1930				1940				1950			
GLB Counties within State	Count	Decadal Δ	% Δ	% State Population	Count	Decadal Δ	% Δ	% State Population	Count	Decadal Δ	% Δ	% State Population
Illinois	4,086,510	959,208	30.7%	53.6%	4,184,436	97,926	2.4%	53.0%	4,687,889	503,453	12.0%	53.8%
Indiana	860,609	212,391	32.8%	26.6%	919,770	59,161	6.9%	26.8%	1,116,819	197,049	21.4%	28.4%
Michigan	4,842,325	1,173,913	32.0%	100%	5,256,106	413,781	8.5%	100%	6,371,766	1,115,660	21.2%	100%
Minnesota	297,828	1,918	0.6%	11.6%	313,454	15,626	5.2%	11.2%	307,198	-6,256	-2.0%	10.3%
New York	3,137,250	344,479	12.3%	24.9%	3,214,866	77,616	2.5%	23.9%	3,577,960	363,094	11.3%	24.1%
Ohio	3,350,851	536,523	19.1%	50.4%	3,430,475	79,624	2.4%	49.7%	3,999,956	569,481	16.6%	50.3%
Pennsylvania	255,746	20,454	8.7%	2.7%	270,734	14,988	5.9%	2.7%	315,146	44,412	16.4%	3.0%
Wisconsin	1,937,506	265,771	15.9%	65.9%	2,061,375	123,869	6.4%	65.7%	2,281,231	219,856	10.7%	66.4%
Totals	**18,768,625**	**3,514,657**	**23.0%**	**37.5%**	**19,651,216**	**882,591**	**4.7%**	**37.2%**	**22,657,965**	**3,006,749**	**15.3%**	**38.6%**

Table 6. Population of U.S. Counties within the Great Lakes Basin, 1900-2020, every 10 years (continued next page)

Census Year	1960				1970				1980			
GLB Counties within State	**Count**	**Decadal Δ**	**% Δ**	**% State Population**	**Count**	**Decadal Δ**	**% Δ**	**% State Population**	**Count**	**Decadal Δ**	**% Δ**	**% State Population**
Illinois	5,423,381	735,492	15.7%	53.8%	5,875,007	451,626	8.3%	52.9%	5,694,027	-180,980	-3.1%	49.8%
Indiana	1,423,492	306,673	27.5%	30.5%	1,592,825	169,333	11.9%	30.7%	1,658,563	65,738	4.1%	30.2%
Michigan	7,823,194	1,451,428	22.8%	100%	8,875,083	1,051,889	13.4%	100%	9,262,078	386,995	4.4%	100%
Minnesota	343,771	36,573	11.9%	10.1%	329,293	-14,478	-4.2%	8.7%	345,644	16,351	5.0%	8.5%
New York	4,148,188	570,228	15.9%	24.7%	4,486,621	338,433	8.2%	24.6%	4,409,807	-76,814	-1.7%	25.1%
Ohio	4,934,886	934,930	23.4%	50.8%	5,397,075	462,189	9.4%	50.7%	5,316,425	-80,650	-1.5%	49.2%
Pennsylvania	345,121	29,975	9.5%	3.0%	361,391	16,270	4.7%	3.1%	386,375	24,984	6.9%	3.3%
Wisconsin	2,698,705	417,474	18.3%	68.3%	3,013,700	314,995	11.7%	68.2%	3,139,541	125,841	4.2%	66.7%
Totals	**27,140,738**	**4,482,773**	**19.8%**	**40.1%**	**29,930,995**	**2,790,257**	**10.3%**	**40.4%**	**30,212,460**	**281,465**	**0.9%**	**40.2%**

Census Year	1990				2000				2010			
GLB Counties within State	**Count**	**Decadal Δ**	**% Δ**	**% State Population**	**Count**	**Decadal Δ**	**% Δ**	**% State Population**	**Count**	**Decadal Δ**	**% Δ**	**% State Population**
Illinois	5,621,485	-72,542	-1.3%	49.2%	6,021,097	399,612	7.1%	48.5%	5,898,137	-122,960	-2.0%	46.0%
Indiana	1,668,139	9,576	0.6%	30.1%	1,811,632	143,493	8.6%	29.8%	1,892,087	80,455	4.4%	29.2%
Michigan	9,295,297	33,219	0.4%	100%	9,938,444	643,147	6.9%	100%	9,883,640	-54,804	-0.6%	100%
Minnesota	316,307	-29,337	-8.5%	7.2%	334,248	17,941	5.7%	6.8%	342,664	8,416	2.5%	6.5%
New York	4,433,193	23,386	0.5%	24.6%	4,427,225	-5,968	-0.1%	23.3%	4,418,086	-9,139	-0.2%	22.8%
Ohio	5,197,486	-118,939	-2.2%	47.9%	5,324,946	127,460	2.5%	46.9%	5,221,280	-103,666	-1.9%	45.3%
Pennsylvania	378,458	-7,917	-2.0%	3.2%	389,289	10,831	2.9%	3.2%	386,788	-2,501	-0.6%	3.0%
Wisconsin	3,246,927	107,386	3.4%	66.4%	3,525,047	278,120	8.6%	65.7%	3,685,228	160,181	4.5%	64.8%
Totals	**30,157,292**	**-55,168**	**-0.2%**	**39.5%**	**31,771,928**	**1,614,636**	**5.4%**	**39.1%**	**31,727,910**	**-44,018**	**-0.1%**	**37.9%**

Table 6. Population of U.S. Counties within the Great Lakes Basin, 1900-2020, every 10 years

Census Year	2020			
GLB Counties within State	**Count**	**Decadal Δ**	**% Δ**	**% State Population**
Illinois	5,989,883	91,746	1.6%	46.8%
Indiana	1,959,533	67,446	3.6%	28.9%
Michigan	10,077,331	193,691	2.0%	100%
Minnesota	342,530	-134	-0.04%	6.0%
New York	4,409,979	-8,107	-0.2%	21.8%
Ohio	5,196,537	-24,743	-0.5%	44.0%
Pennsylvania	371,210	-15,578	-4.0%	2.9%
Wisconsin	3,770,046	84,818	2.3%	64.0%
Totals	**32,117,049**	**389,139**	**1.2%**	**37.2%**

Notes: This table shows the population of the 212 U.S. counties with any land area within the Great Lakes Basin (as defined in the Clean Water Act and Great Lakes Water Quality Protocol of 2012), including straddling counties with population outside the Great Lakes Basin.

'Decadal Δ' is the decade-over-decade change in population count. '% State Population' is the proportion of the State's resident population within Great Lakes Basin counties compared to the State's total population (displayed in Table 5).

See Figure 1 for a map of the U.S. counties with any land area in the Great Lakes Basin.

For the table of population for all 212 U.S. counties within the Great Lakes Basin from the 1790 census to the 2020 census, contact Ryan Graydon (graydon.ryan@epa.gov).

Sources:

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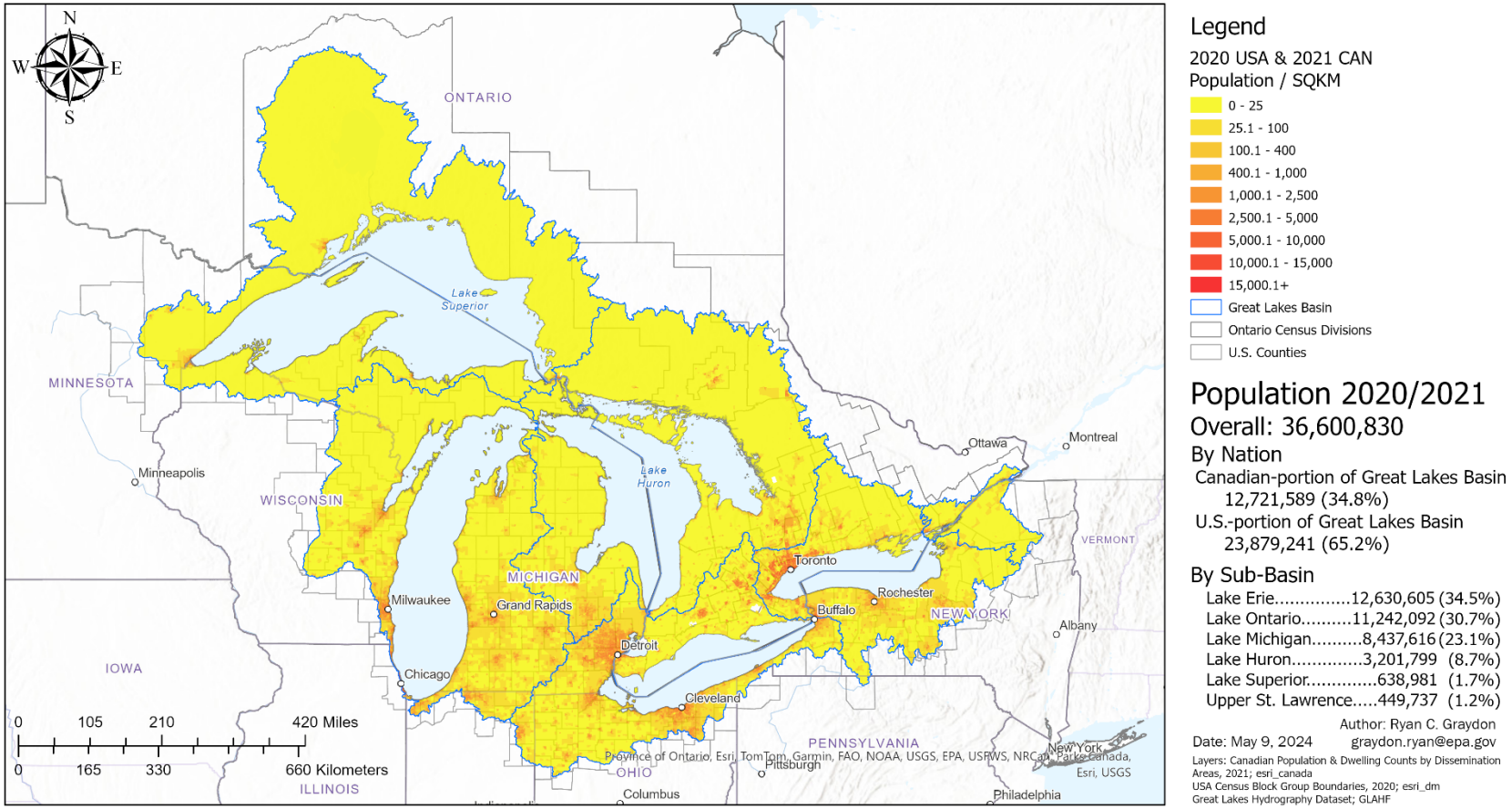
Great Lakes Basin Population 2020/2021



Legend

2020 USA & 2021 CAN
Population / SQKM

- 0 - 25
- 25.1 - 100
- 100.1 - 400
- 400.1 - 1,000
- 1,000.1 - 2,500
- 2,500.1 - 5,000
- 5,000.1 - 10,000
- 10,000.1 - 15,000
- 15,000.1+
- Great Lakes Basin
- Ontario Census Divisions
- U.S. Counties

Population 2020/2021

Overall: 36,600,830

By Nation

Canadian-portion of Great Lakes Basin
12,721,589 (34.8%)
U.S.-portion of Great Lakes Basin
23,879,241 (65.2%)

By Sub-Basin

Lake Erie.....12,630,605 (34.5%)
Lake Ontario.....11,242,092 (30.7%)
Lake Michigan.....8,437,616 (23.1%)
Lake Huron.....3,201,799 (8.7%)
Lake Superior.....638,981 (1.7%)
Upper St. Lawrence.....449,737 (1.2%)

Author: Ryan C. Graydon
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Date: May 9, 2024

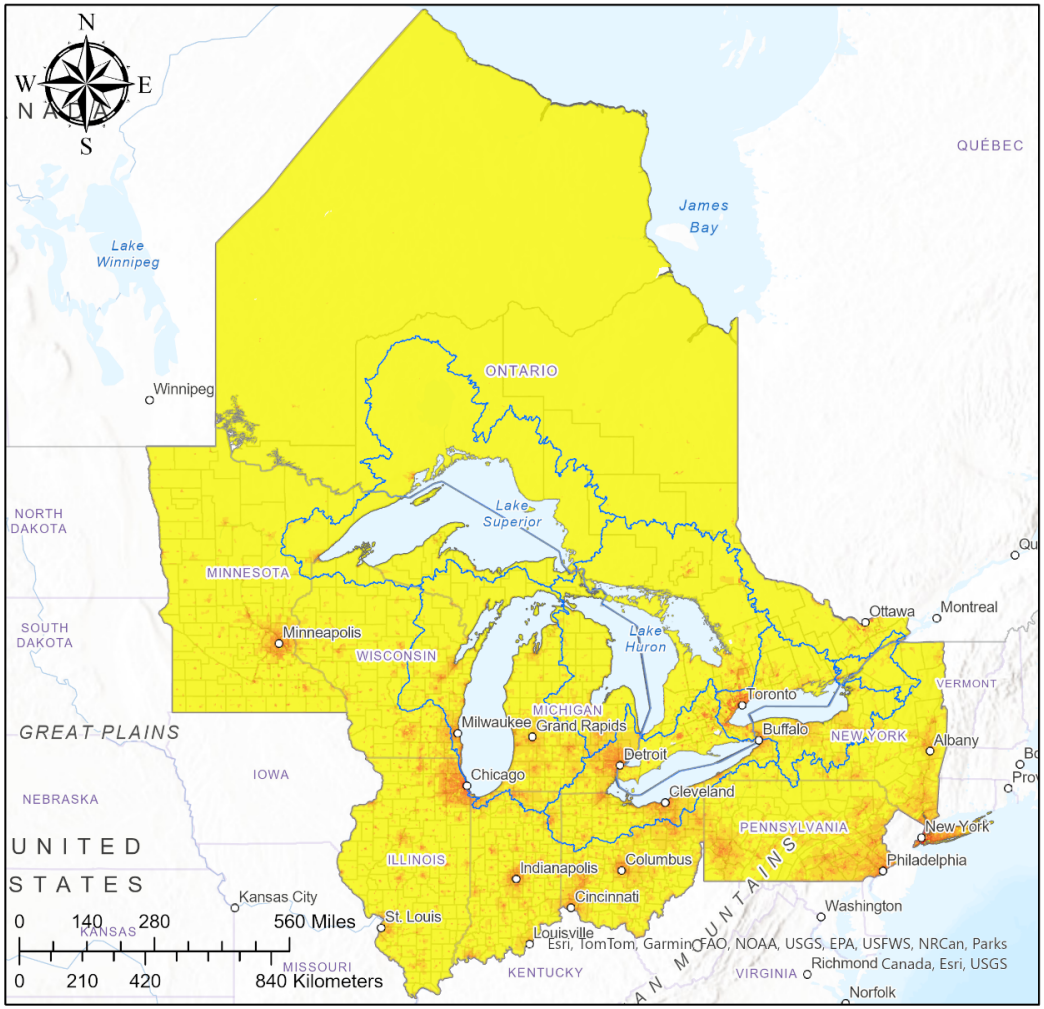
Layers: Canadian Population & Dwelling Counts by Dissemination Areas, 2021; esri_canada
USA Census Block Group Boundaries, 2020; esri_dm
Great Lakes Hydrography Dataset; GLAHF

Figure 1. Geographic Distribution of Population Across the Great Lakes Basin (2020/2021)

Note: The symbology displays the population density (per square kilometer) by census block group in the U.S. and by dissemination area in Canada.

This map also includes the Ogoki diversion within the Canadian Lake Superior Basin for the density analysis; however, population data from within this area are not included as part of the Lake Superior Basin population summary as is it is not included as part of the Northwestern Lake Superior sub-drainage area (see Table 3 description for further details).

Great Lakes Region Population 2020/2021



Legend

2020 USA & 2021 CAN
Population / SQKM

- 0 - 25
- 25.1 - 100
- 100.1 - 400
- 400.1 - 1,000
- 1,000.1 - 2,500
- 2,500.1 - 5,000
- 5,000.1 - 10,000
- 10,000.1 - 15,000
- 15,000.1+
- Great Lakes Basin
- Ontario Census Divisions
- U.S. Counties

Population 2020/2021

Overall: 100,502,918

By State/Province

New York	20,201,249	(20.1%)
Ontario	14,223,942	(14.2%)
Pennsylvania	13,002,700	(12.9%)
Illinois	12,812,508	(12.7%)
Ohio	11,799,448	(11.7%)
Michigan	10,077,331	(10.0%)
Indiana	6,785,528	(6.8%)
Wisconsin	5,893,718	(5.9%)
Minnesota	5,706,494	(5.7%)

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Date: May 9, 2024

Layers: Canadian Population & Dwelling Counts by Dissemination Areas, 2021; esri_canada
USA Census Block Group Boundaries, 2020; esri_dm
Great Lakes Hydrography Dataset; GLAHF

Figure 2. Geographic Distribution of Population Across the Great Lakes Region (2020/2021)

Note: The symbology displays the population density (per square kilometer) by census block group in the U.S. and by dissemination area in Canada.