

POPULATION ANALYSIS:
ESTIMATES AND PROJECTIONS FOR THE
TOWN OF QUALICUM BEACH, AND THE
PARKSVILLE CENSUS AGGLOMERATION,
1996 TO 2041

By
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WM Population Analysis
September 2012

POPULATION ANALYSIS: ESTIMATES AND PROJECTIONS, FOR
THE TOWN OF QUALICUM BEACH, AND THE PARKSVILLE
CENSUS AGGLOMERATION, 1996 TO 2041

With Maps, Charts, and Tables

BY

W. W. MUNROE

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POPULATION ANALYSIS: ESTIMATES AND PROJECTIONS
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POPULATION ANALYSIS: ESTIMATES AND PROJECTIONS, TOWN OF QUALICUM BEACH, AND THE PARKSVILLE CENSUS AGGLOMERATION, 2011 to 2041

PURPOSE

Understanding population change is important when considering opening or closing of public and private facilities, including schools, health care, ambulance / fire, as well as for real estate / development, official community plans, water works management, transportation etc.

The purpose of this report is to provide a population analysis of the Town of Qualicum Beach, including an examination of estimates to be used to create population projections.

Consideration is given to migration / economic cycles relevant to development, housing, the real estate market, and official community plans.

METHODS AND DATA

The population analysis for the Town of Qualicum Beach, includes an analysis of the Parksville Census Agglomeration (PCA) (See maps, Appendix N, pp. 40-42) . The PCA is considered to be a socially and economically integrated area. It includes the Town of Qualicum Beach, the City of Parksville, and census subdivision Nanaimo Area G.

The near, medium and long term population projections to 2041, are based on Statistics Canada's Census counts from 1996, 2001, 2006, and 2011.¹

The Annual Demographics Estimates Compendium from the Demography Division of Statistics Canada, providing components of population change since 1986, along with BC Vital Statistics births and deaths 1996 to 2010, were also utilized.

Referring to these datasets, coefficients are calculated to project the number of those under four years of age; as well, coefficients are calculated to project population changes due to net migration and mortality.

This projection ages the number of people per five year age group by five years from 2011 to 2041.²

The number of people under one to four years of age (0 to 4) were projected in relation to the number of females 20 to 39. (see Appendix M)

The differences between the number of people per five year age group from one census aged five years to compare with the next census are used to create "Population

¹ Statistics Canada qualifies the accuracy of the counts as having between 5 % to 10% error, and do not include a calculation of undercount.

² Five year age groups are used because single year of age for small populations is too spurious and is unduly impacted by random rounding imposed on the census outputs; nonetheless, tests were run using both datasets confirming they performed similarly.

Signatures” and calculate coefficients to project net migration and mortality. These Population Signatures are then used to calculate population change into the future. An average of the Population Signatures is used to create a central tendency, while the highs and lows are used to calculate economic cycles.

For the ratio between males and females, the projection uses an average of ratios calculated using 1996 to 2011 census counts.

SCENARIOS AND VARIATIONS

Four scenarios were considered: high, medium, and low growth, as well as economic cycles (relevant to real estate) with two variations 1) with parameters set for *those 20 to 29 years of age* and 2) no parameters for *those 20 to 29 years of age*.

This projection focuses on a scenario that reflects the fourth scenario - economic and migration cycles, referring to the population changes that occurred between 1996 and 2011.

In an effort to best approximate population change in terms of economic cycles, changes in *migration cycles*, as seen in historical data, were projected into the future.

The medium, or average growth scenario is used as a central tendency and to make comparisons with the economic / migration cycle scenario.

High population growth between 2011 to 2016 is considered unlikely due to several indicators. In particular, the return to negative interprovincial migration for BC in 2011 reflecting a down turn in economic activity since 2007-08; and lower house prices in BC core areas, the Greater Vancouver and Capital Regional Districts (the sources of the majority of in-migrants to this area); therefore, low growth is assumed for this time period.

Low growth to 2041 is considered to be less likely than a scenario that reflects economic / migration cycles. If migration follows patterns seen in the past, declines will likely be followed by increases.

Economic / Migration Cycles

Cycles of migration are used as indicators of variations in economic activity. Changes for migration can be seen in the Population Signatures between 1996 to 2011.

The migration cycle projection assumes that the magnitude of the decline in net migration from 1996 to 2001 will occur again between 2011 and 2016. Net migration is then assumed to increase between 2016 and 2021 reflecting the net migration between 2001 and 2006. The change in net migration between 2021 and 2026 is assumed to reflect the changes that occurred between 2006 and 2011. These changes are assumed to be repeated between 2026 and 2041.

This assumption reflects the increases and decreases in net interprovincial migration, roughly following a fifteen year cycle, seen since 1971³

³ “BC’s Annual Net Interprovincial Migration is negative for the first time since 2002”, W. W. Munroe, April 2012, www.wminfomatics.com/WMAalytics/Articles/120406/PopBC2011a.html

Parameters for those 20 to 29 years of age

This projection examines results of two variations for handling those 20 to 29 years of age. In smaller communities, more of those in this age group tend to move out than in. This age group is important because it includes females of reproductive age.

Variation # 1 assumes the number of people whose age is 20 to 29 will stay at values between the high and low numbers for this age group between 1996 to 2011.

In other words, although a high proportion of 20 to 29 year olds moved out of these areas between 1996 to 2011, it is assumed that the absolute numbers will not drop below previous lows between 1996 to 2011. The absolute numbers for this age group vary between the numbers from 1996 to 2011.

If the model did not build in this parameter, the projection would allow the number of 20 to 29 year olds to decline well below current levels, followed by all younger age groups and eventually by all age groups; therefore, this variation assumes the region provides enough economic, education, and social and other activity opportunities to sustain a minimum number of people in this age group.

Variation # 2 allows the number of those in the 20 to 24, and the 25 to 29 year age groups to decline past the low numbers seen between 1996 and 2011.

This scenario calculates the change in the number of those in the 20 to 24, and the 25 to 29 year age groups as a proportion of the 15 to 19 and the 20 to 24 year age groups respectively.

Due to the boundary change for Qualicum Beach between 2001 and 2006 coefficients for this time period were replaced with those from the Parksville CA. The PCA boundaries did not change between 1996 and 2011.

Due to the low numbers for those 100+, coefficients from BC's 100+ numbers were utilized for the 2001 to 2006 time period.

All else is assumed to remain within recent (1996 to 2011) parameters; therefore, shocks (e.g. disruptions to access to oil – e.g. Arab oil embargo in 1973) are not taken into consideration.

FINDINGS

The Town of Qualicum Beach, and the Parksville CA, have a dynamic, high turn over population rather than a stable population. A high proportion of young adults leave, while deaths increasingly exceed births. Both areas are attractive families as well as retirees.

Total Population

Town of Qualicum Beach

- Between 1996 and 2001, the total population for the Town of Qualicum Beach rose by approximately 190 people (to 6,911) or 2.7 %. Annual average increase was ~ + 38, mostly due to positive net migration. See Figure 20.

- During the economic and migration up-turn between 2001 and 2006, the population rose by approximately 690 people (taking out the increase of an estimated 900 people due to boundary changes that included a subdivision known as Chartwell), an 8.1 % increase. Annual average net migration was ~ +138.
- Between 2006 and 2011, the population increased by ~190, or 2.2%, to 8,691. Annual average net migration was ~ + 38.
- Without parameters set for those 20 to 29 years of age, the total population is calculated to peak in 2021; with parameters, the total population is calculated to peak in 2026. Thereafter, positive net migration would have to be higher than between 2001 to 2006 to compensate for the increasing number of deaths. See Table 3.

Parksville CA

- Total Population for the Parksville CA rose by approximately 1,665 people between 1996 and 2001 (to 24,295). See Figure 18.
- During the economic and migration up turn between 2001 and 2006 the population rose by approximately 2,230 people, to an estimated 26,525, an 8.4 % increase.
- Between 2006 and 2011, the population increased by ~1300, or 4.7 %, to an estimated 27,830.
- With or without parameters, the total population is calculated to peak in 2026.

Age Distribution (see Appendix A and B)

The median age (with an equal number of people above and below) for 2011 for the Parksville Census Agglomeration is among the highest in Canada, at approximately 60 years of age and the median age for the Town of Qualicum Beach, at approximately 64 is the highest in Canada.

The changes in the age distribution between the census years from 1996 to 2011 show that the number of those of working age, 20 to 64, is declining as they age and are not being replaced, at least not fully.

The decline in the number of children 0 to 4 slowed by 2011; however, with low fertility along with pregnancies occurring later in life, the number of those under 15 has declined markedly since 1996. Some what surprisingly, the number of those under 4 has recovered more quickly between 2006 and 2011 for the Town of Qualicum Beach than for the Parksville CA as a whole.

Population Signatures (see Appendix C and D)

By aging the census counts by 5 years to compare with the next census year, the difference can be seen in the population signatures. If no one moved or died, the age distribution five years later would be exactly the same, but due to migration and mortality, the age distribution is not the same.

The Population Signatures show that during each census period (from one census year to the next) both areas are attractive to families, including children under 15 and adults between 30 and 55 years of age; however, the area loses young adults, and increasingly so.

The area is particularly attractive to the elderly, with the 50 to 69 year age groups rising well above the others; nonetheless, when those under 20 are added to those 30 to 54, families contribute a surprising 4 for every 5 retirees (those over 55).⁴

For those over 75 years of age, there are fewer than expected when aged five years due to mortality, which is also increasing with a growing number of elders aging into their late 70s and 80s.

Population Pyramids (Appendix E and F) and Dependency Ratios (Appendix J and K)

Three population pyramids are provided for each area (Town of QB and the PCA): 1996 to 2011; 1996 to 2026; 1996 to 2041, all with parameters for those 20 to 29; and 1996 to 2041, with an additional population pyramid for the Town of QB based on no parameters set for those ages 20 to 29.

The differences between the variants increase most notably toward the later portion of the long term projections, 2026 to 2041.

1996 to 2011

For the Parksville CA,

- the numbers of those under 19 declined by approximately 800 to an estimated 3,845.
- the number of those of working age, calculated here as those 20 to 64 increased by only 11.6 %, to an estimated 13,225 people.
- the number of those 65+ has increased by 4,350, from an estimated 6,410 to 10,760, or ~ 40%.

For the Town of Qualicum Beach,

- the numbers of those under 19 declined by approximately 250 to an estimated 955 people.
- the number of those 20 to 64 increased by 11%, to an estimated 3,645 people.
- the number of those 65+ increased by ~ 1,775, from ~ 2,300 to 4,100, or ~ 43%.

2011 to 2026 with parameters for those 20 to 29

For the Parksville CA,

- the numbers of those under 19 are projected to decline by approximately 595, to 3,518.
- the number of those 20 to 64 are projected to decline by approximately 1860 to just under 12,000.

⁴ “2011 Census, What to Look For”, W. W. Munroe, January 2012, www.wminformatics.com/WMAAnalytics/Articles/120108/PopSigSD.html

- the number of those 65+ are projected to increase by 6,344, up by another 60%, to approximately 16,500, over one half of the total population, pushing the median age above current values for the Town of Qualicum Beach.

For the Town of Qualicum Beach,

- the numbers of those under 19 are projected to decline by another 280, to an estimated 677 people (-30%).
- the numbers of those 20 to 64 are projected to continue to decline, by approximately 800, to an estimated 2,840 people (-22%).
- the numbers of those 65+ are projected to increase by approximately 1,317 people to ~5,400 (+32%).

2026 to 2041 with and without parameters for those 20 to 29

For the Parksville CA,

- total population: with parameters for those ages 20 to 29 declines to ~ 31,400; without parameters to ~ 29,300
- dependency ratio: with parameters rises to ~ 20 dependents to 10 working age; without parameters to ~ 22 dependents to 10 working age.

For the Town of Qualicum Beach,

- total population: with parameters declines to ~ 7,500; without parameters to ~ 6,700 by 2041.
- dependency ratio: with parameters rises in 2031 to ~ 21.3 dependents to 10 working age, declining to ~18 in 2041; without parameters to ~ 25 dependents to 10 working age in 2036.

Natural Change, Births, Deaths, Qualicum Beach (Appendix L)

The low number of births due to the relatively low number of females of reproductive age, and the low fertility rate, along with the growing number deaths due to aging continues to contribute to declines in natural change, (births minus deaths).

The number of deaths exceeded the number of births in the Town of Qualicum Beach since at least 1996 (the years data is available online from BC Vital Statistics), earlier than the Regional District of Nanaimo as a whole where deaths began to exceed births in 1999.

The ratio of the number of deaths to births has increased over this time period 1996 to 2010 (the last full year available) from 2.5 times as many death to births in the late 1990s, to close to 6 times as many deaths using the 3 year running average, 2008 to 2010. In 2009 the ratio was 7.9 times as many deaths as births. In 2010 the number of births rose markedly, while deaths declined marginally, for the first time since 2004.

BC Vital Statistics counted 189 deaths in 2009. The number of deaths per year could surpass 200 in the near future.

Net Migration

As with many communities in regions outside high density core areas, many more young adults 20 to 29 (using the five year age groups) move out, than in. If the portion of those 15 to 19, and 20 to 24 years of age who move out remains as high as was seen between 1996 and 2011, then their numbers will decline well below the absolute numbers since 1996.

The area does attract more people of working family ages, those 5 to 19 and those 30 to 54 years of age, likely including people who had moved out when they were 20 to 29. A look at single year of age data shows negative net migration from 17 to 28 years of age.

The area also attracted more people of retirement age, 55 plus; however, with the rising number of deaths and low births, positive net migration would have to increase above the numbers seen between 1996 and 2011 to compensate for the declining natural change (births minus deaths). See Appendix C & D, Population Signatures.

SUMMARY

The total population to 2041, based on the changes seen between the 1996 2001, 2006, and 2011 census counts, for both areas, is projected to decline.

In both scenarios, average growth and economic/migration cycles, the projection shows modest change in the total population for the Town of Qualicum Beach between 2006 to 2026.

In the cyclical scenario, a modest decline appears to be taking place between 2011 and 2016, (referring to the 1996 to 2001 numbers) followed by a slight increase assuming a recovery in economic activity should occur between 2016 and 2021 similar to that experienced between 2001 and 2006.

After 2021, both variations, parameters and no parameters for those 20 to 29 years of age, project declines, with greater declines with no parameters for those 20 to 29 years of age.

The projections show that mortality will continue to increase while the number of children under 4 years of age will likely stay relatively low, well below replacement.

It will likely take 5 more years for the Parksville CA as a whole to match the Town of Qualicum Beach median age; and yet another 10 years for the Nanaimo Regional District.

By comparison, the population growth for BC, projected using the average scenario method, slows markedly by 2036 due to increasing number of deaths due to aging along with the low fertility (below replacement). The population growth for BC between 2026 and 2031, using the average growth between 1996 and 2011, is calculated to be less than half the growth seen between 2006 and 2011. Between 2036 and 2041, the total population growth, is calculated to be less than 10,000 per year, or less than one fifth of the growth between 2006 and 2011.

As mentioned previously, the Town of Qualicum Beach provides an early insight into population dynamics and resulting consequences that will likely follow in communities

across Canada and North America. Many communities in Japan and Europe are also already experiencing similar changes.

CONSIDERATIONS

As mentioned, this projection does not take into consideration shocks. Shocks that have impacted population change include disruptions to access to energy (Arab oil embargo in 1973) and war. Nor does it take into consideration substantive changes to transportation or rapid changes in environmental conditions.

Possible changes to transportation, such as increased costs, and or reduced ferry services would impact the projection. A proper study of the impact of rising ferry fees on population change for Coastal communities has yet to be done.⁵

Since 1996, the average price of multi-unit dwellings has increased more quickly than the average price for single family dwellings. The anticipated increase in the number of people aged 55 +, along with the low fertility, will likely result in diminishing price differences between multi-unit and single family dwellings.

Migration may increase above recent historical levels if the decline in natural change (births minus deaths) and internal residential mobility (elders moving out of single family dwellings in preference for multi-unit dwellings results in an increase in the availability of dwellings, and therefore a decline in housing prices. If this occurs, migration may increase, filling the vacated dwellings with more families and / or more retirees.

Changes to international migration could also impact the projection; for example, high outflows from Europe as was the case in the early and mid 1900s may reoccur but are considered unlikely with the population growth there slowing and in some countries such as Germany, declining.

Migration from Asia may increase to levels experienced from Europe, but this is considered less then likely due to the rapid economic growth particularly in China. Indeed, in the last quarter of 2010, international migration for BC was negative with the increase in out-migrants.⁶

The number of females aged 20 to 29 have a noticeable impact on the population numbers. If their numbers drop below values seen in the 1996 to 2011 census counts, there may be more in-migration of those 30 to 54 years of age, some with children, thereby providing services that would otherwise be met by the 20 to 29 year olds. This cohort will be interesting to watch.

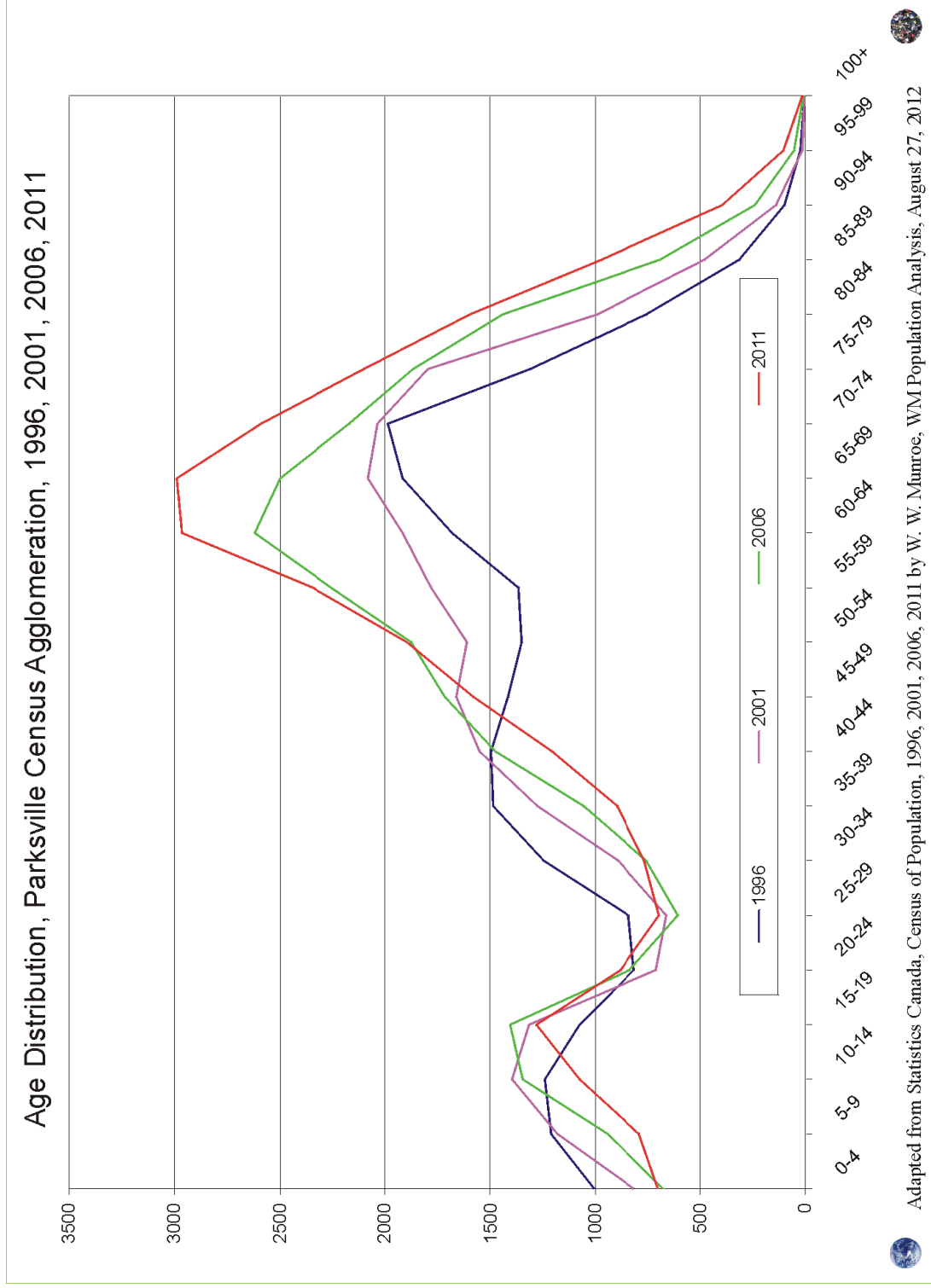
Alternatively, the 30 to 54 year olds, some of whom will likely return with post secondary education, maybe able to work via the internet, thereby bringing relatively higher incomes than those derived from tourism, accommodation, and services for pensioners.

⁵ From the Review of the Coastal Ferry Act – January 2012, “Traffic forecasting has been a serious challenge, and has not been a reliable tool for predicting future demand.”

⁶ “Quarterly BC Population Change for 2010: Net International Migration is negative in the last quarter of 2010”, Munroe, April 2011

Appendix A: Age Distribution: Population Counts, Parksville CA

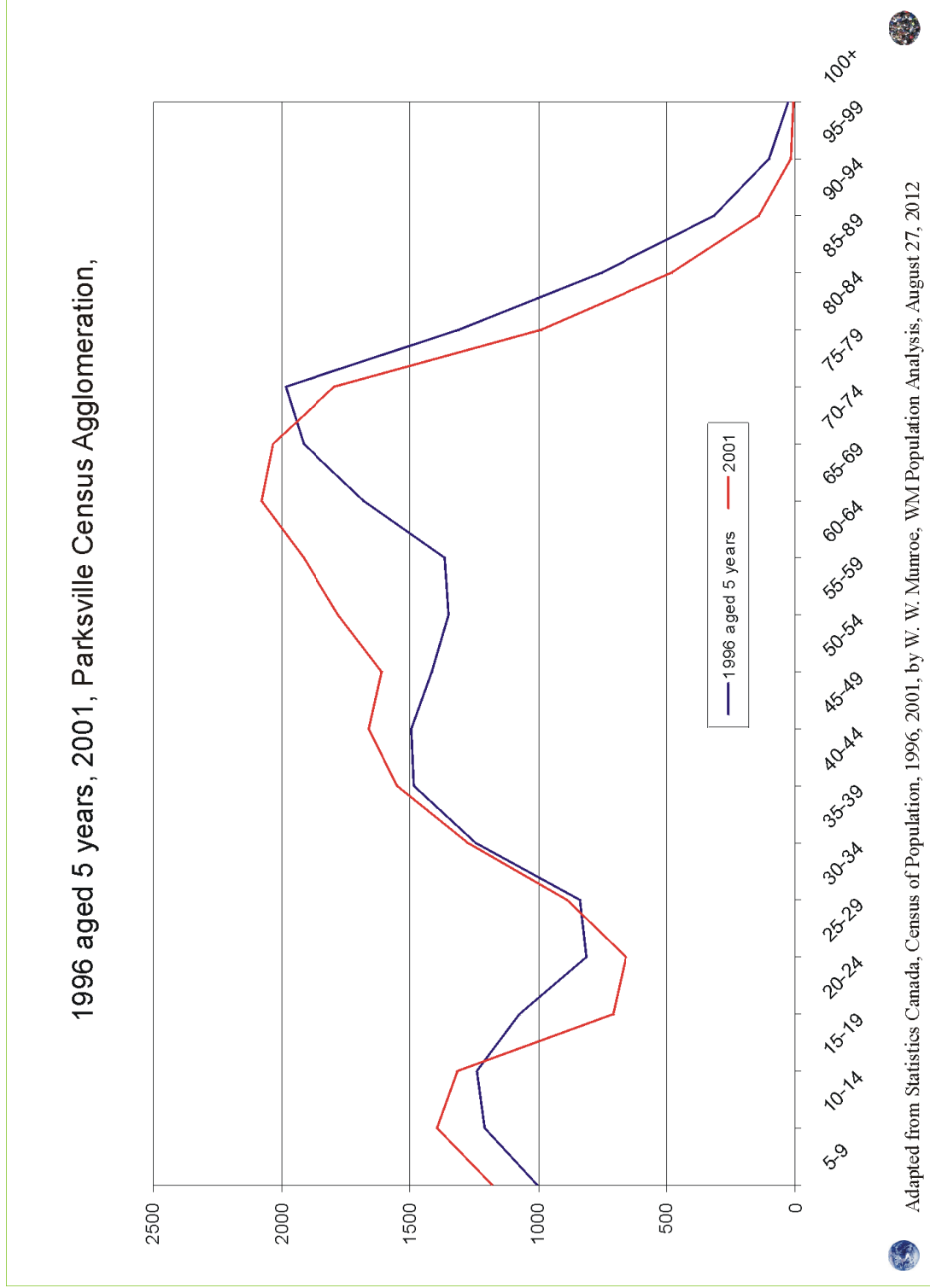
Figure 1. Census counts, 1996, 2001, 2006, 2011, Age Distribution by 5 year age groups Parksville CA,



Adapted from Statistics Canada, Census of Population, 1996, 2001, 2006, 2011 by W. W. Munroe, WM Population Analysis, August 27, 2012

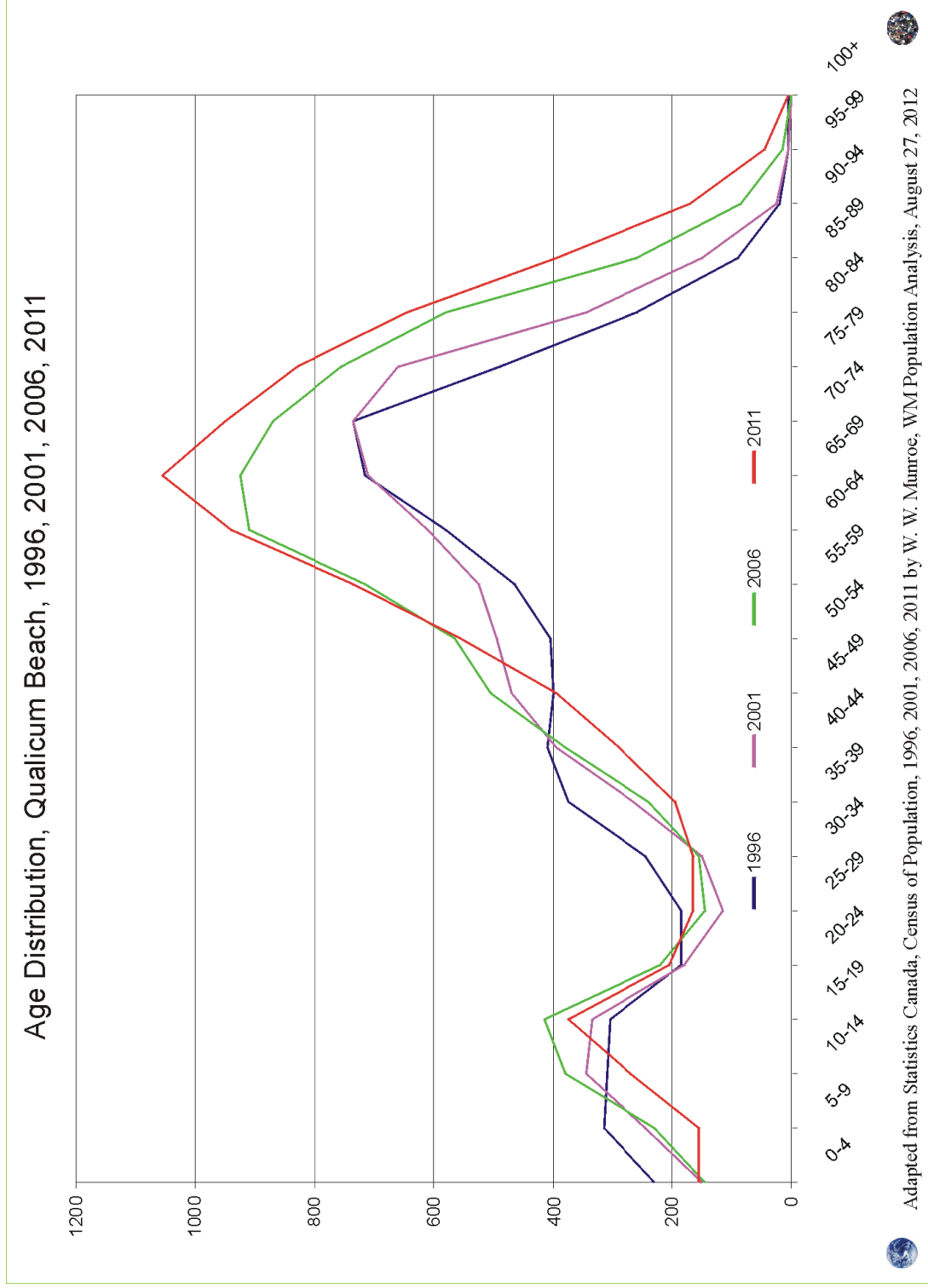
Appendix A: Age Distribution: Population Counts, Parksville CA

Figure 2. 1996 Aged 5 years, 2001 Census Counts Aged Five Years to Compare with Next Census Year Counts, Parksville CA



Appendix B: Age Distribution: Population Counts, Qualicum Beach

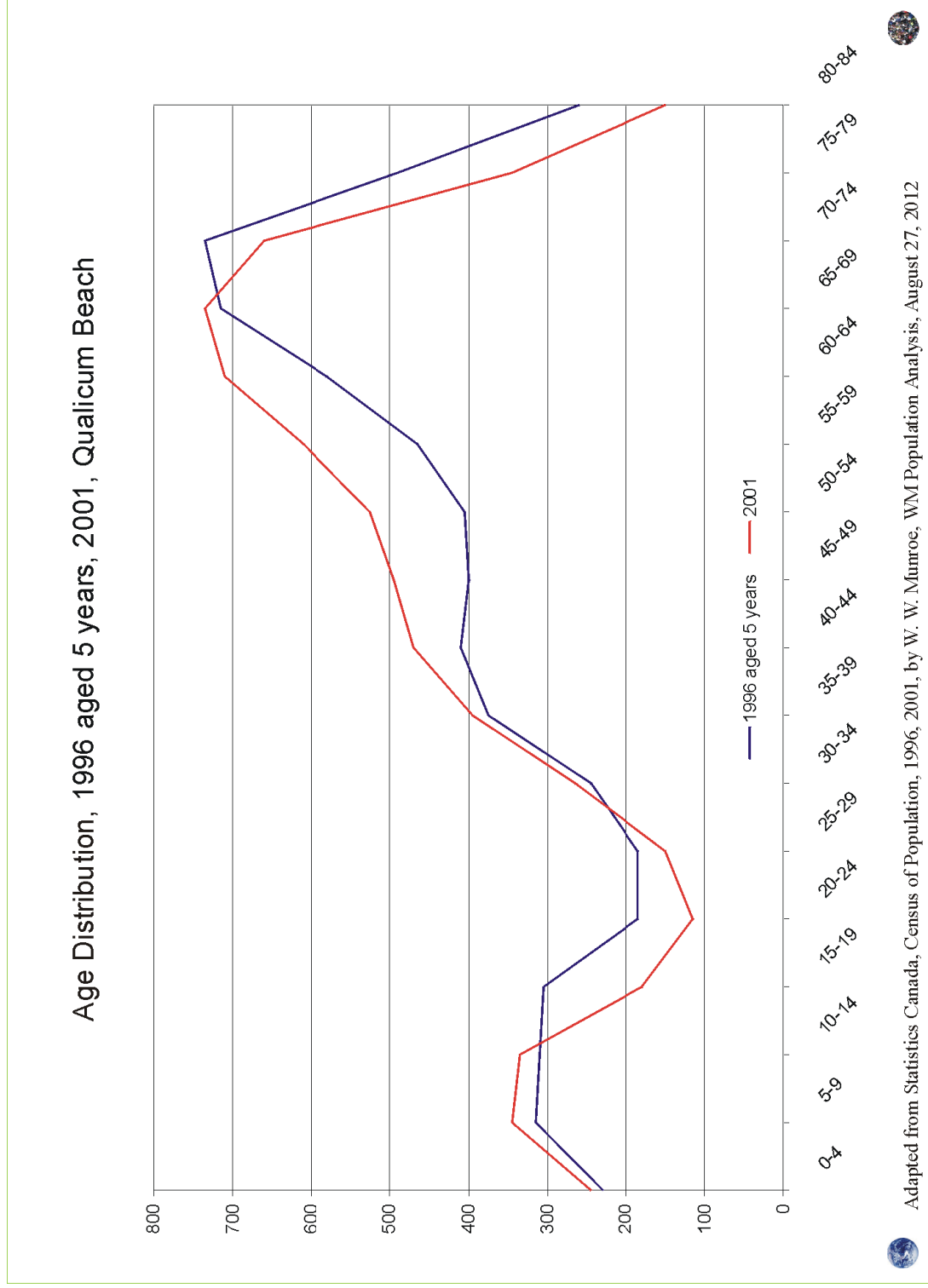
Figure 3. Census Counts, Population counts, 1996, 2001, 2006, 2011, Age Distribution by 5 year age groups, Qualicum Beach



Adapted from Statistics Canada, Census of Population, 1996, 2001, 2006, 2011 by W. W. Munroe, WM Population Analysis, August 27, 2012

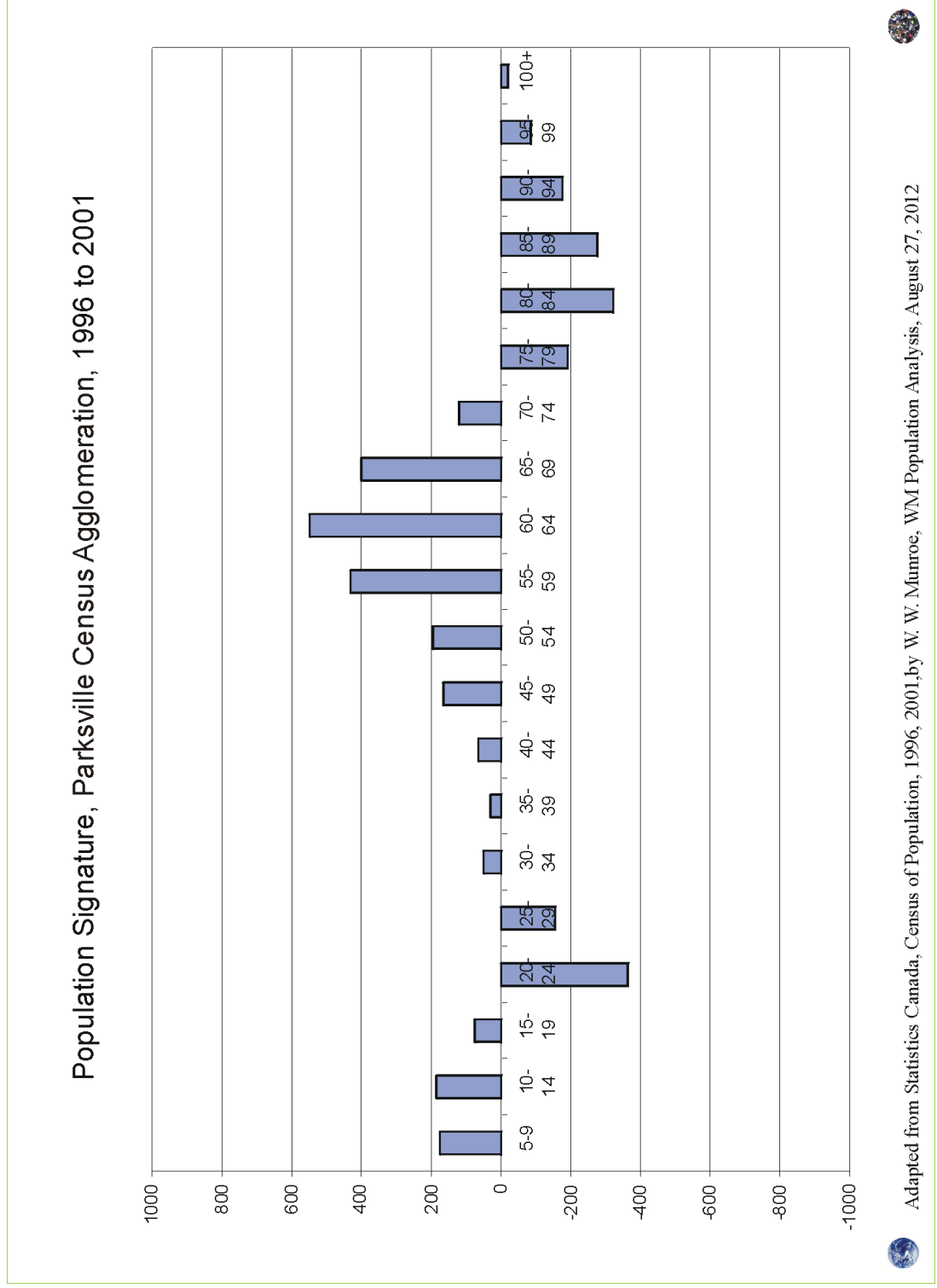
Appendix B (continued): Age Distribution: Population Counts, Qualicum Beach

Figure 4. 1996 Aged 5 years, 2001, Qualicum Beach



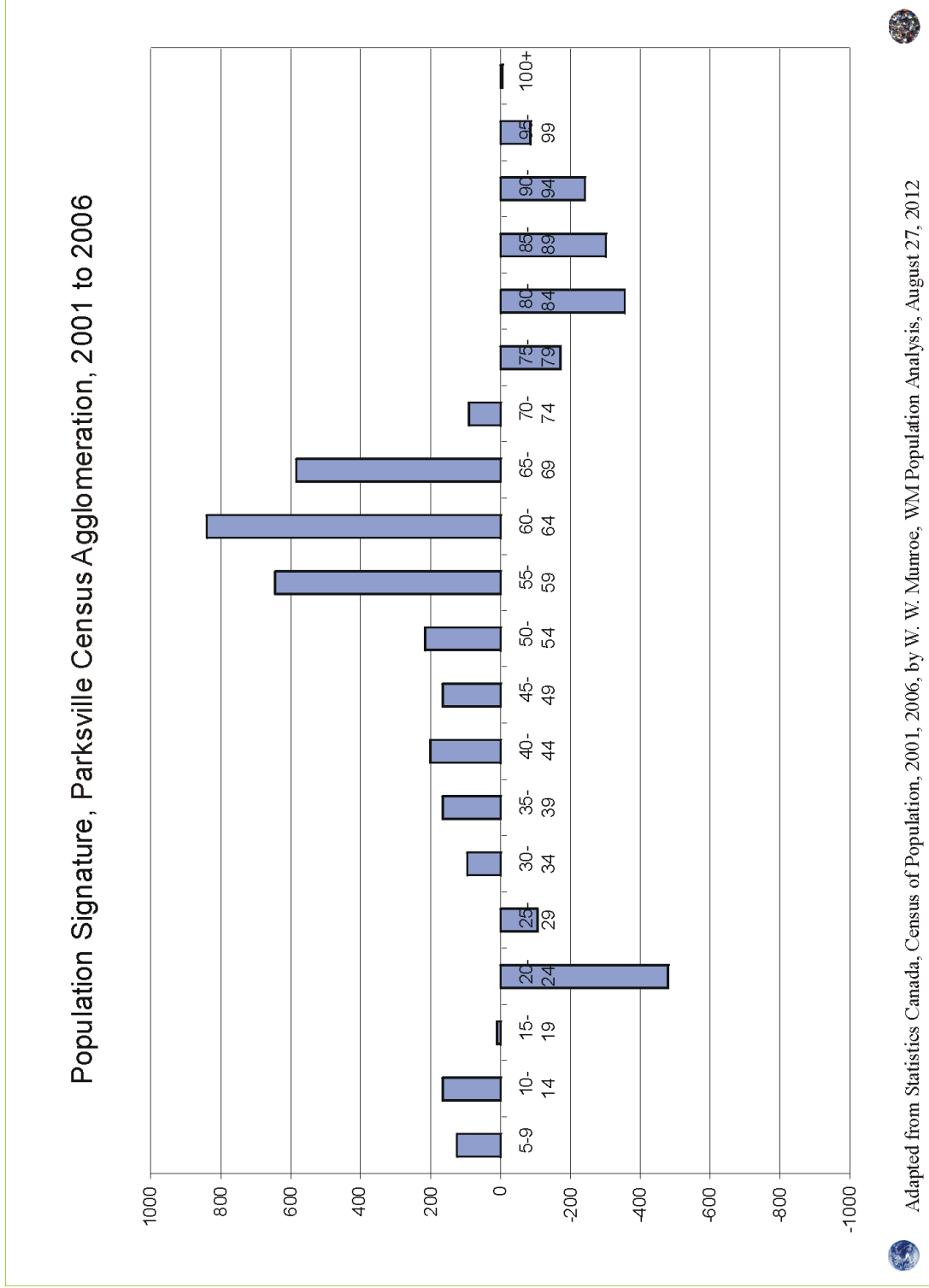
Appendix C: Population Signatures: Difference between Population Counts Aged Five Years and the Next Census Year Counts, Parksville CA

Figure 5. Population Signature, 96-01, Parksville CA



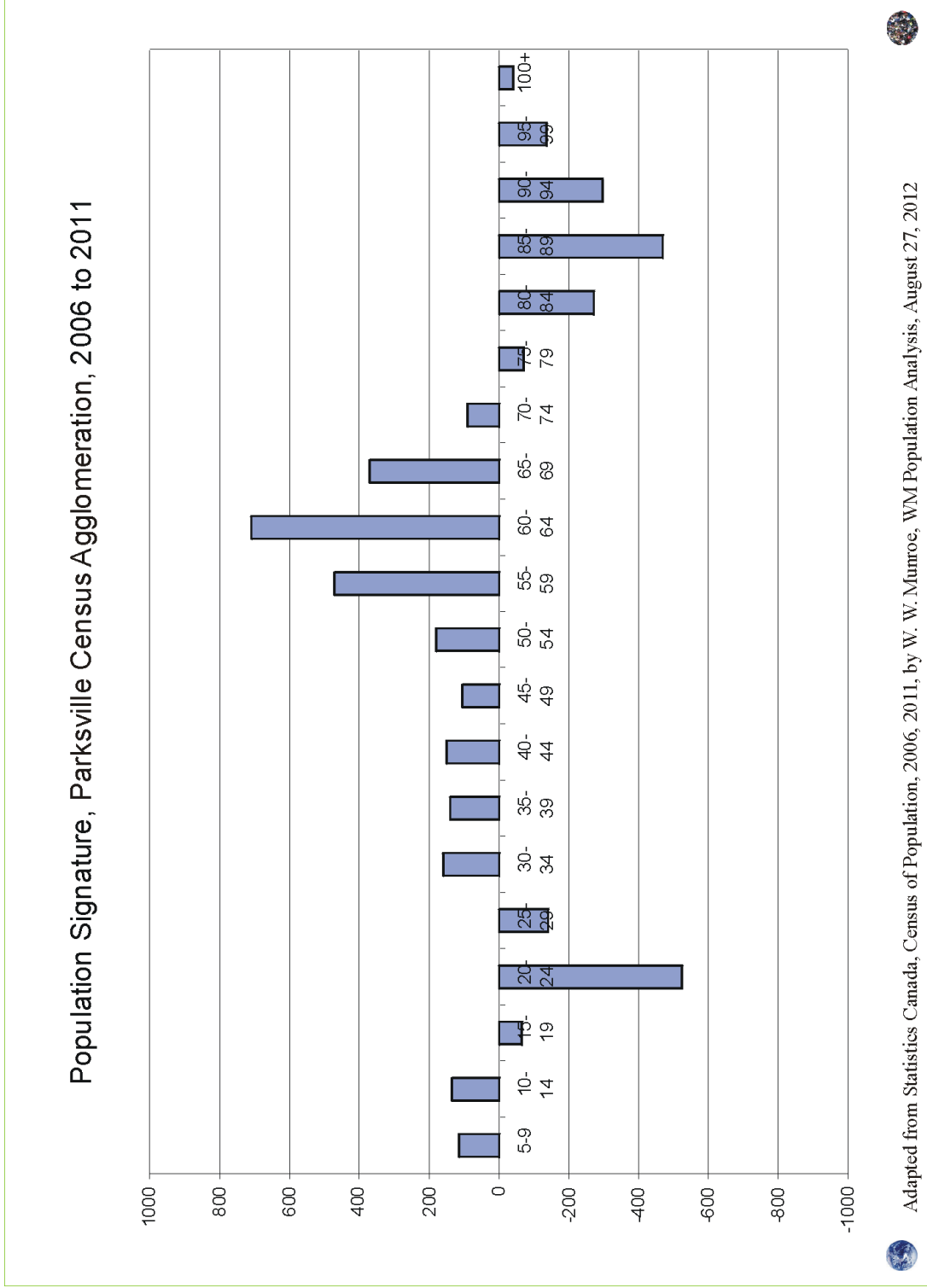
Appendix C (continued): Population Signatures: Difference between Population Counts Aged Five Years and the Next Census Year Counts, Parksville CA

Figure 6. Population Signature, 01-06, Parksville CA



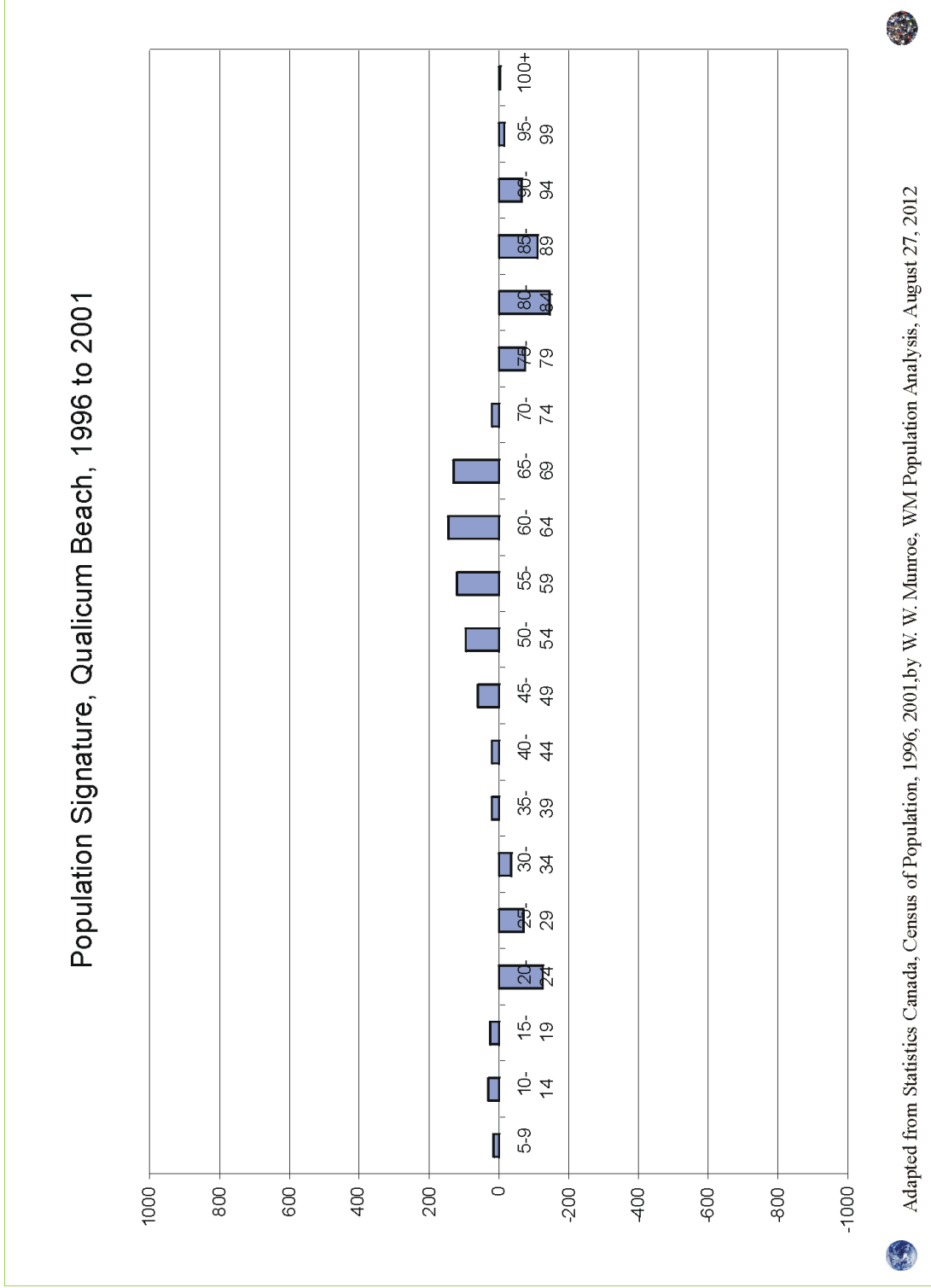
Appendix C (continued): Population Signatures: Difference between Population Counts Aged Five Years and the Next Census Year Counts, Parksville CA

Figure 7. Population Signature, 06-11, Parksville CA



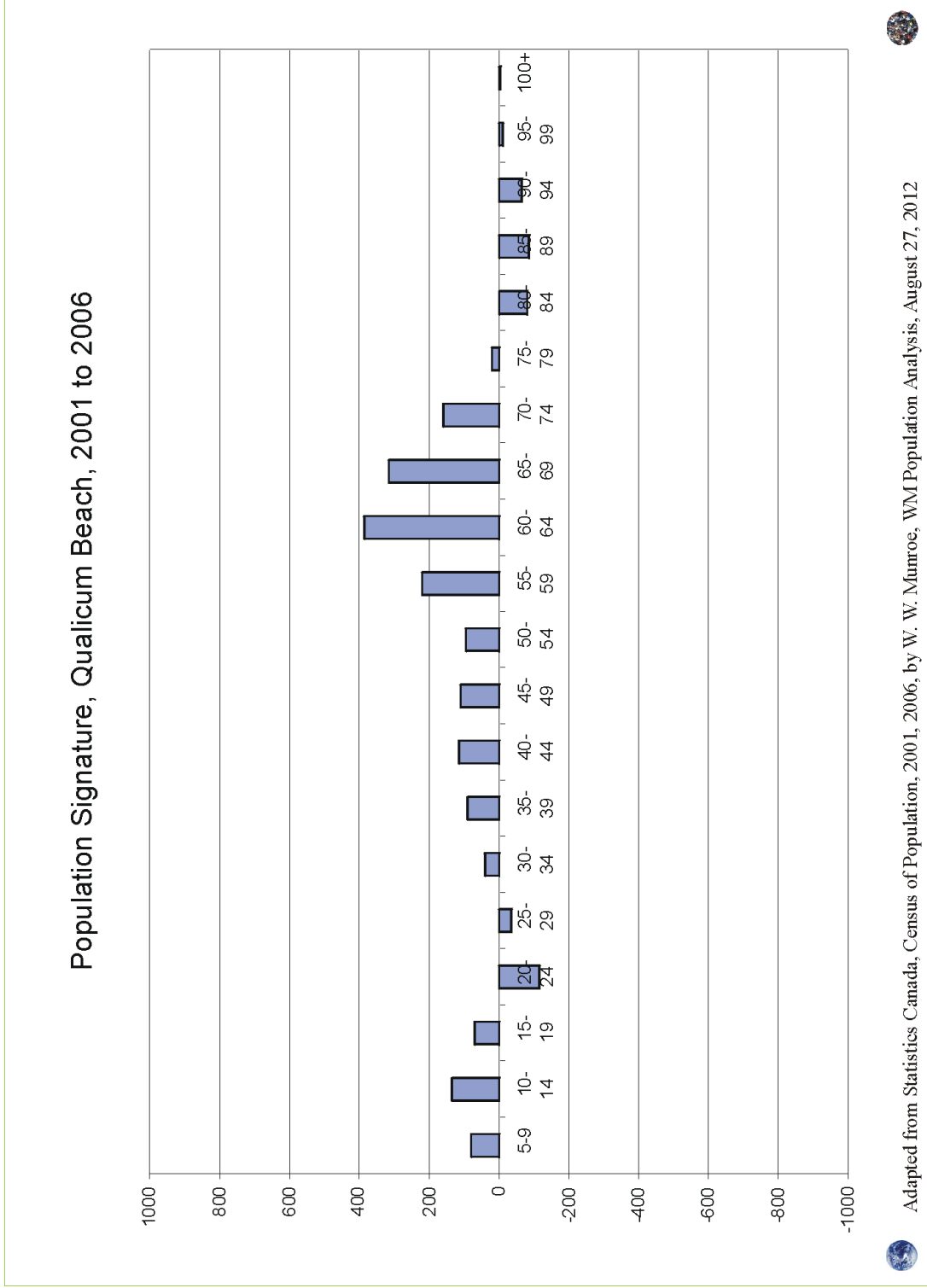
Appendix D: Population Signatures: Difference between Population Counts Aged Five Years and the Next Census Year Counts, Qualicum Beach

Figure 8. Population Signature, 96-01, Qualicum Beach



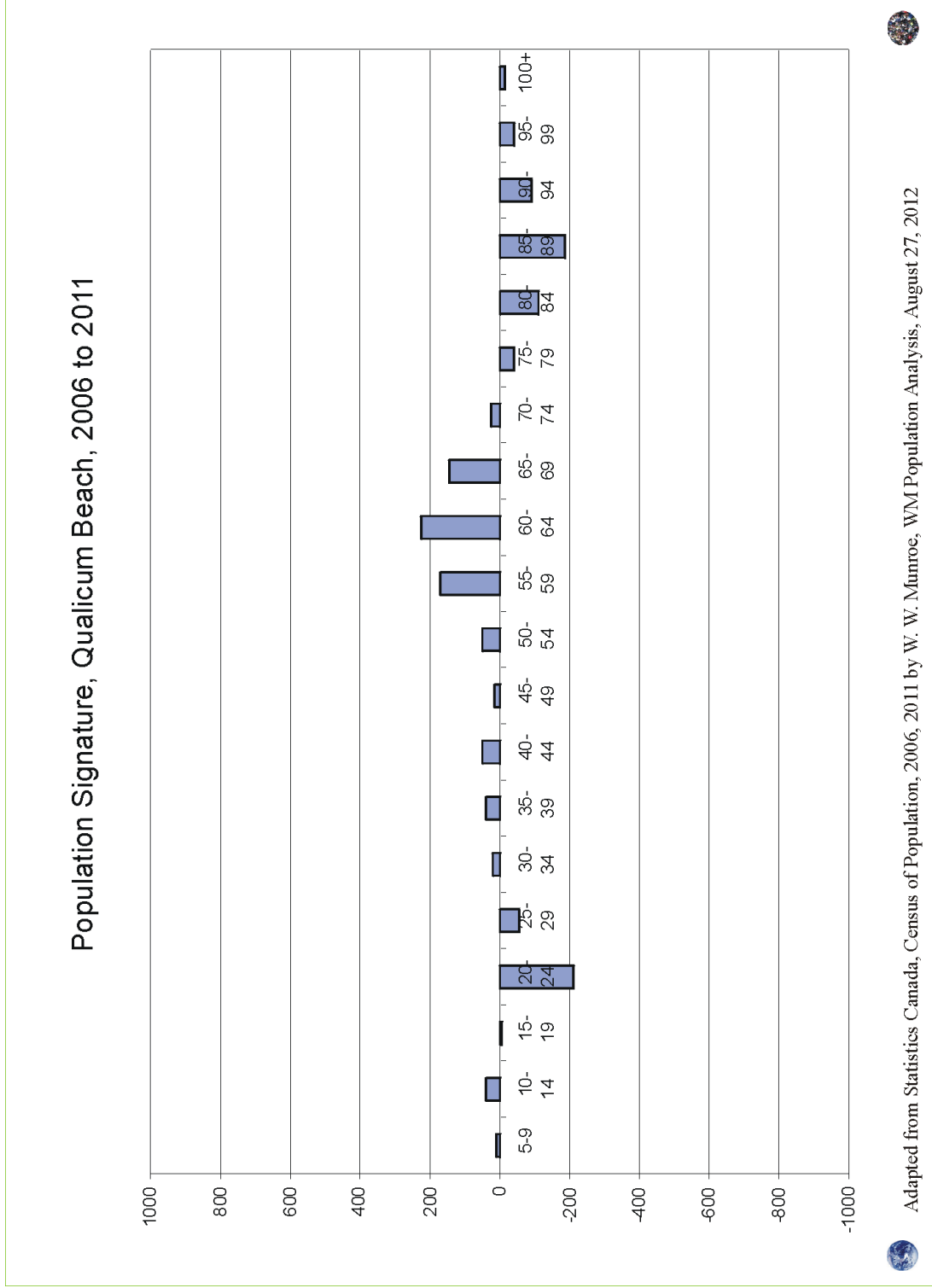
Appendix D (continued): Population Signatures: Difference between Population Counts Aged Five Years and the Next Census Year Counts, Qualicum Beach

Figure 9. Population Signature, 01-06, Qualicum Beach



Appendix D (continued): Population Signatures: Difference between Population Counts Aged Five Years and the Next Census Year Counts, Qualicum Beach

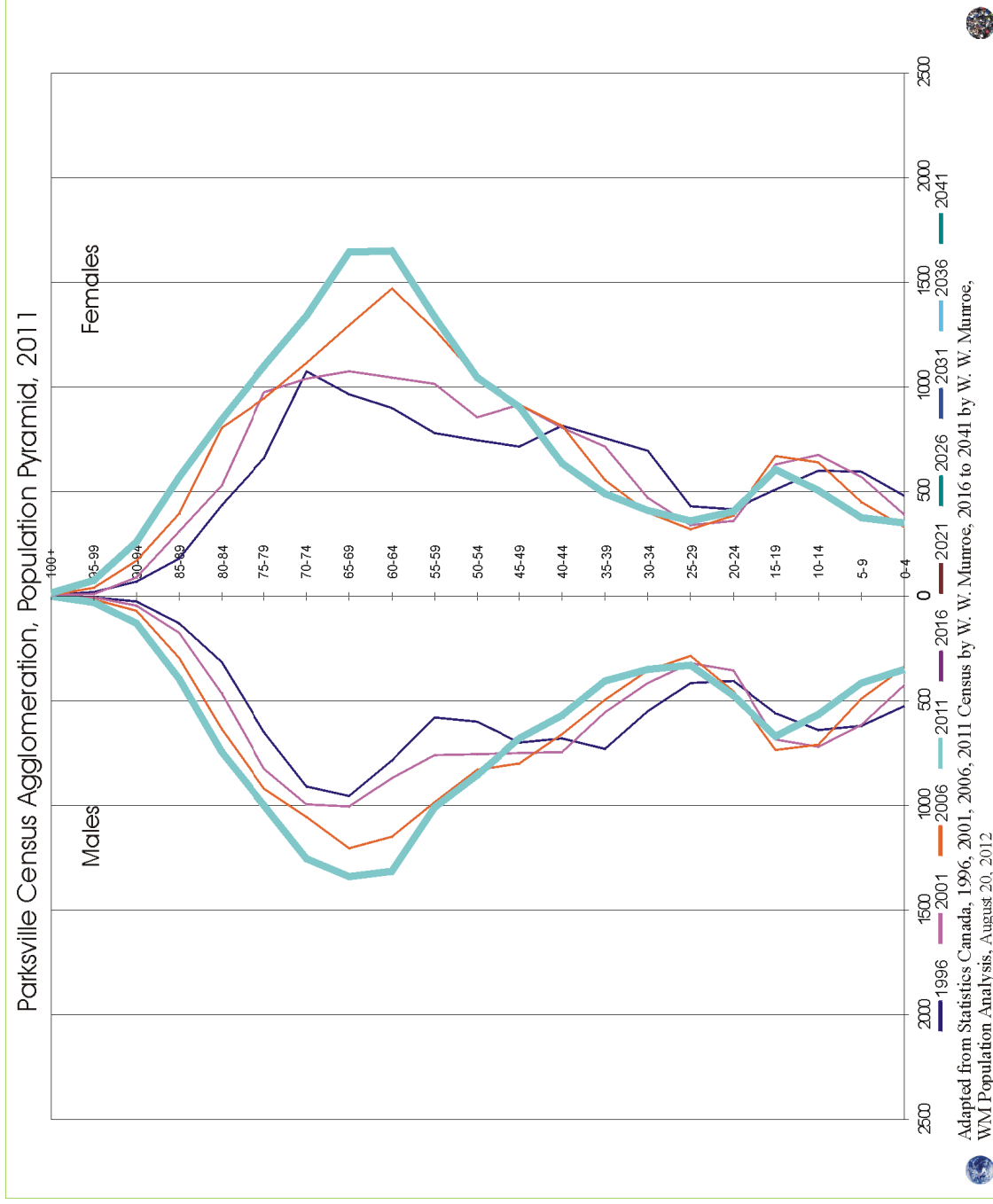
Figure 10. Population Signature, 06-11, Qualicum Beach



Adapted from Statistics Canada, Census of Population, 2006, 2011 by W. W. Munroe, WM Population Analysis, August 27, 2012

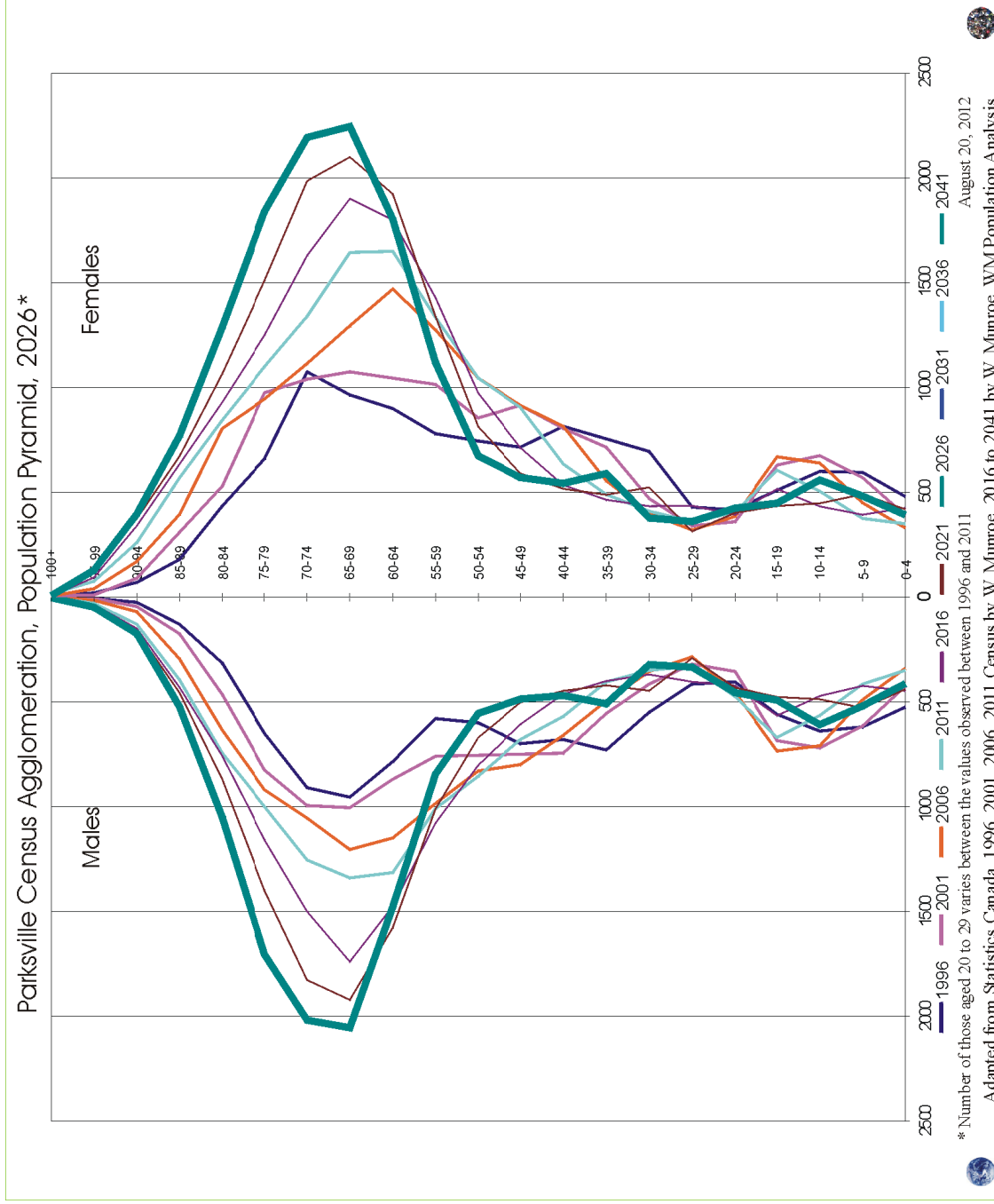
Appendix E: Population Pyramids, Parksville CA

Figure 11. Population Pyramid, 1996, 2001, 2006, 2011 Parksville CA,



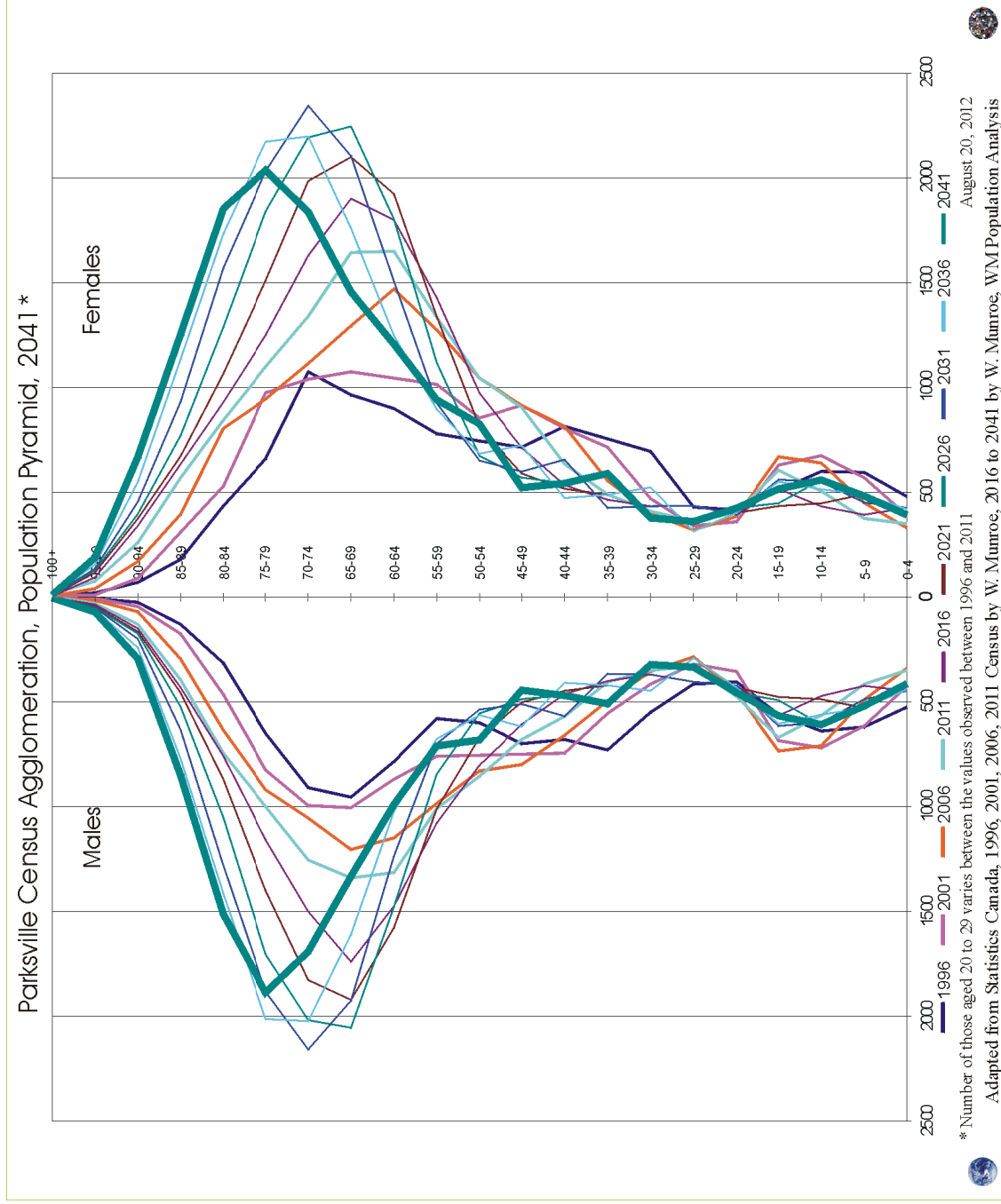
Appendix E (continued): Population Pyramids, Parksville CA

Figure 12. Population Pyramid, 1996 to 2026, Parameters for those 20 to 29 years of age, Parksville CA



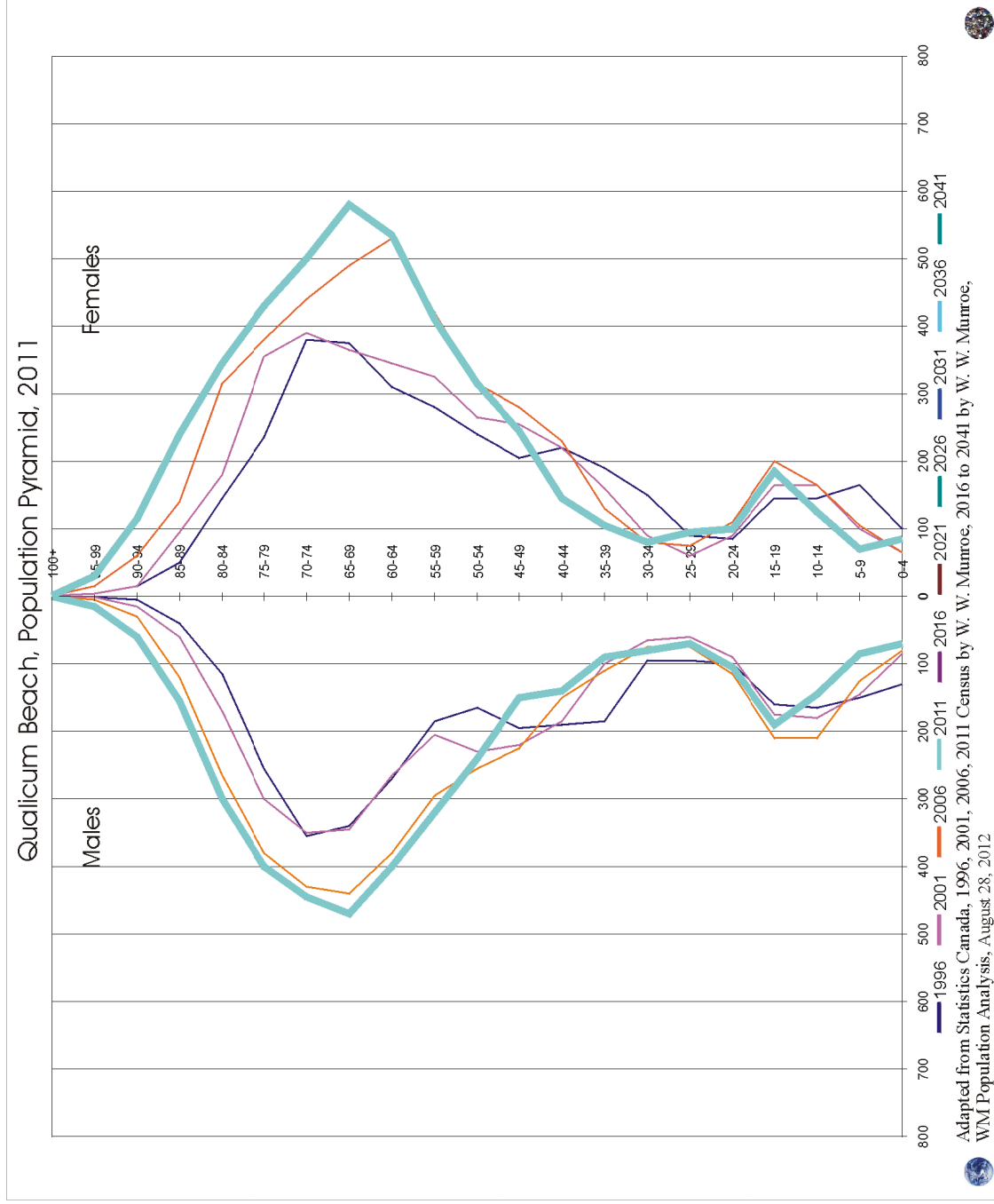
Appendix E (continued): Population Pyramids, Parksville CA

Figure 13. Population Pyramid 1996 to 2041 (parameters for those 20 to 29 years of age), Parksville CA



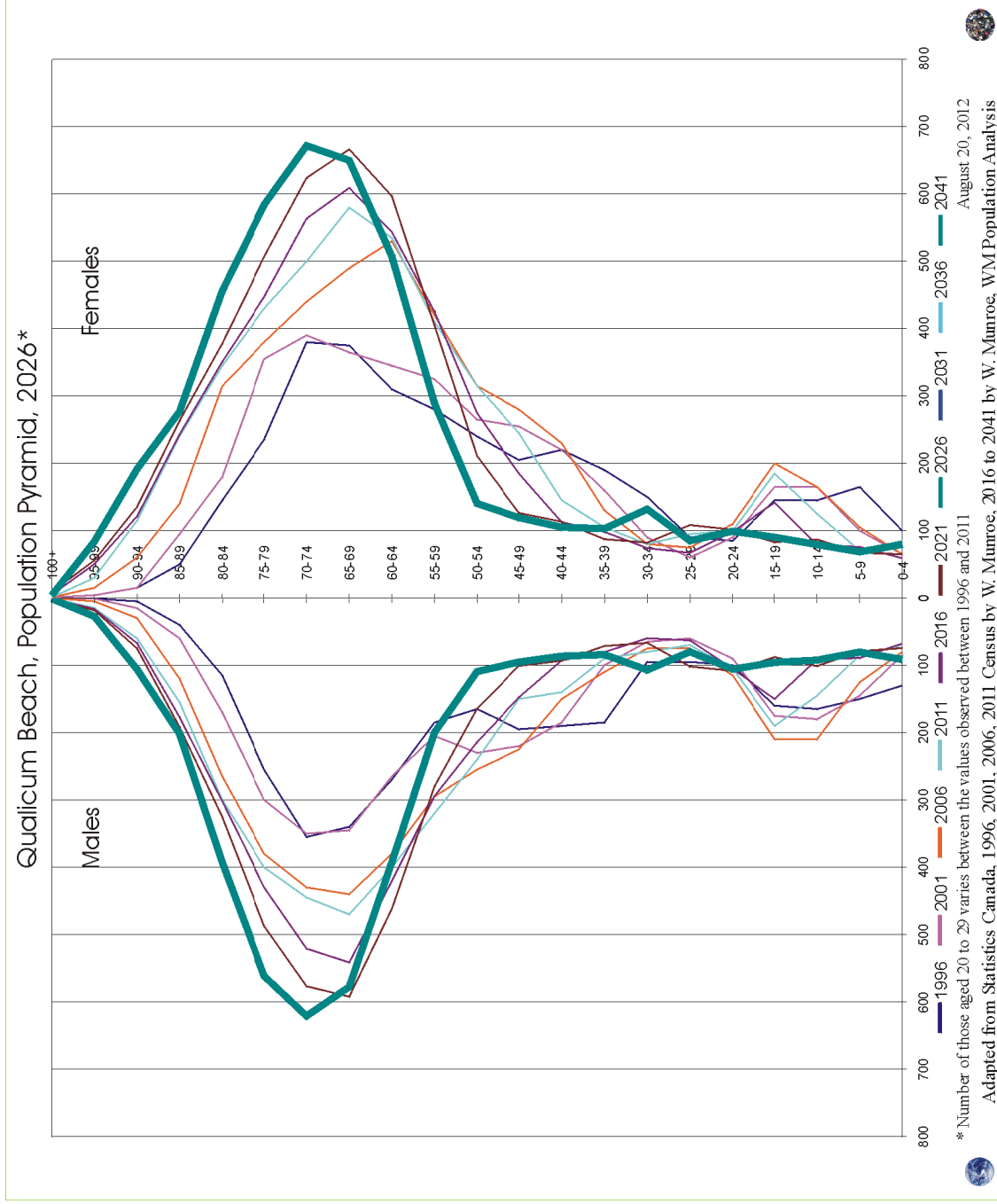
Appendix F: Population Pyramids, Qualicum Beach

Figure 14. Population Pyramid, 1996, 2001, 2006, 2011, Qualicum Beach



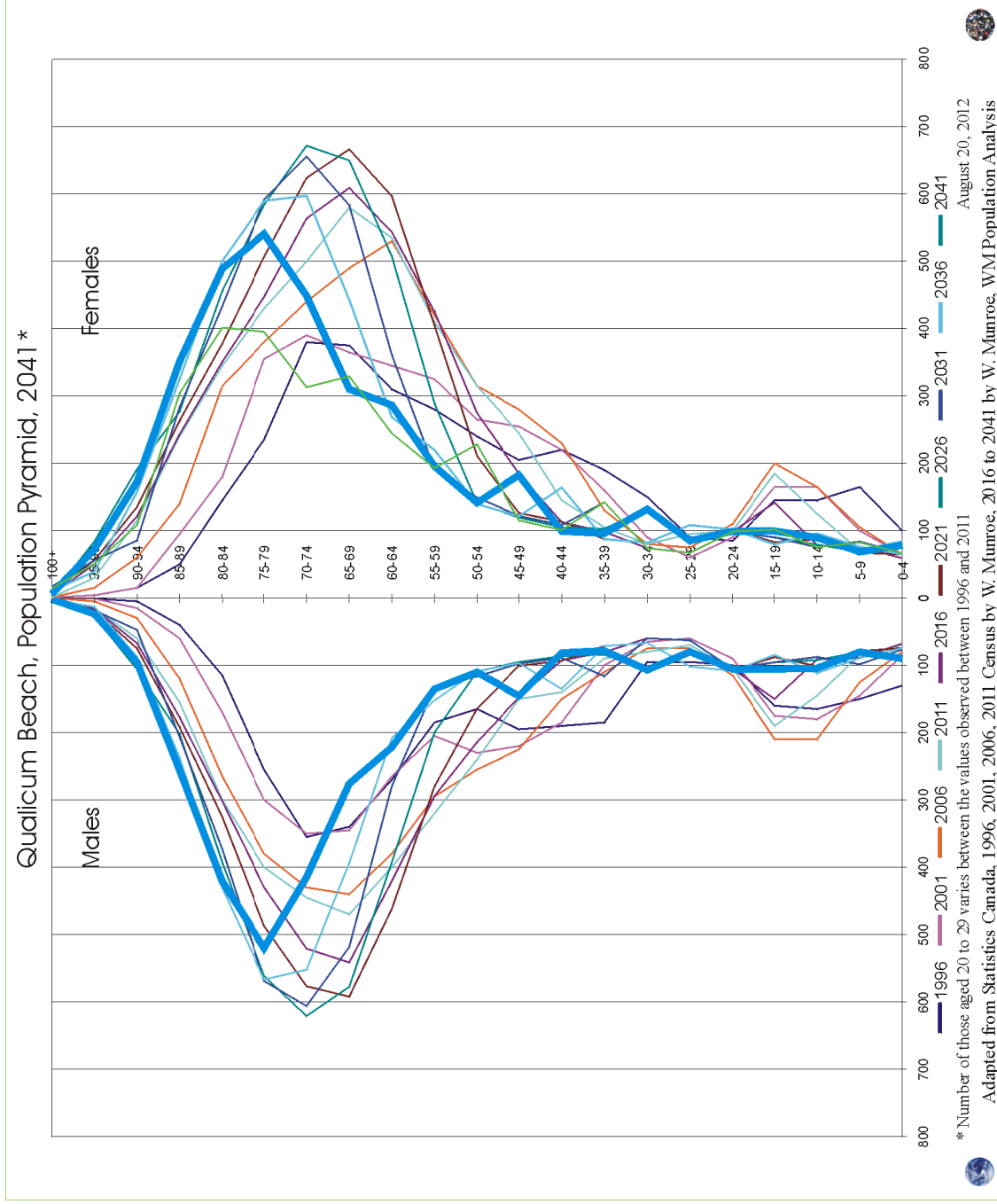
Appendix F (continued): Population Pyramids, Qualicum Beach

Figure 15. Population Pyramid, Parameters for those 20 to 29 years of age, 1996 to 2026, Qualicum Beach



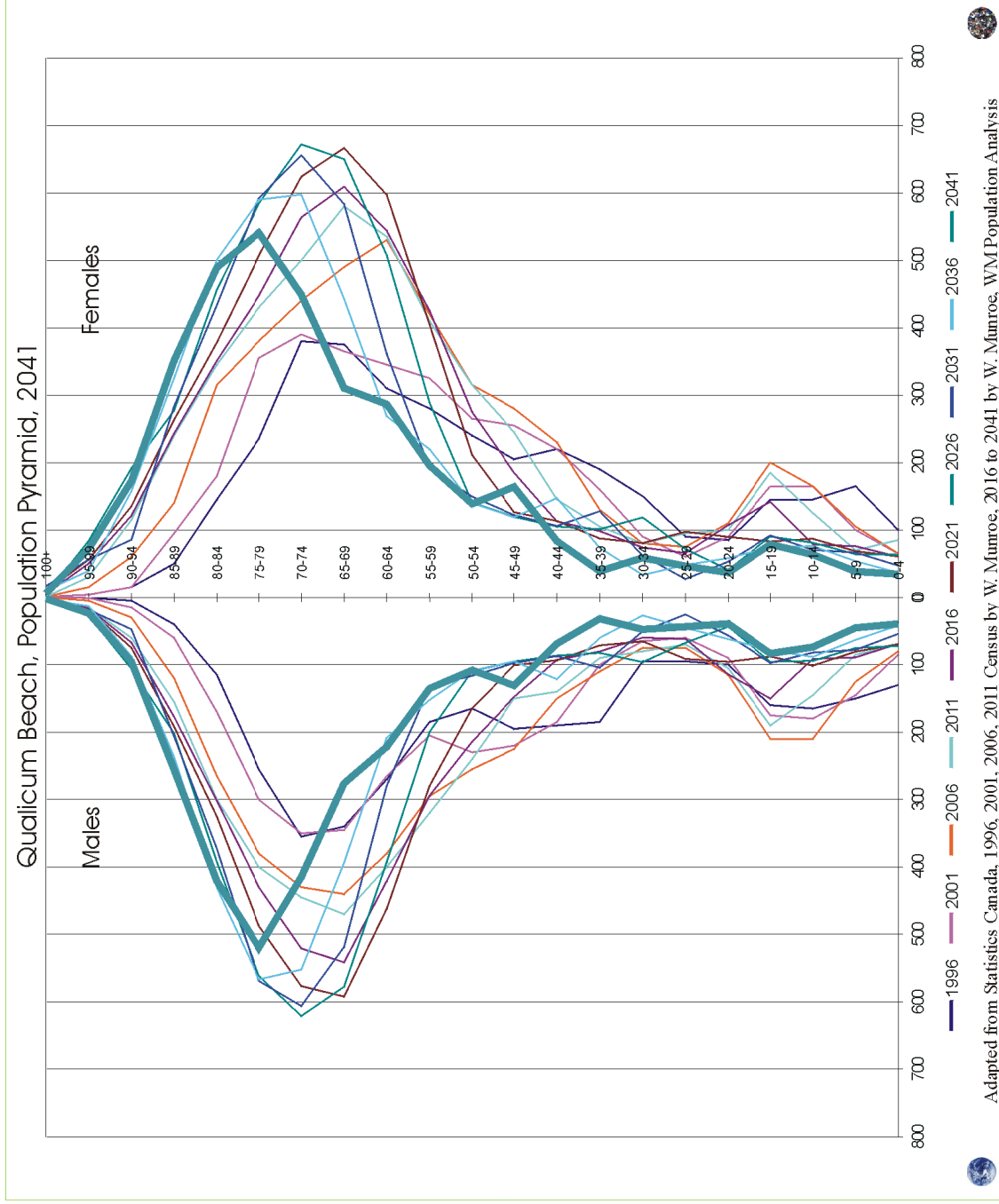
Appendix F (continued): Population Pyramids, Qualicum Beach

Figure 16. Population Pyramid, Parameters for those 20 to 29 years of age, 1996 to 2041, Qualicum Beach



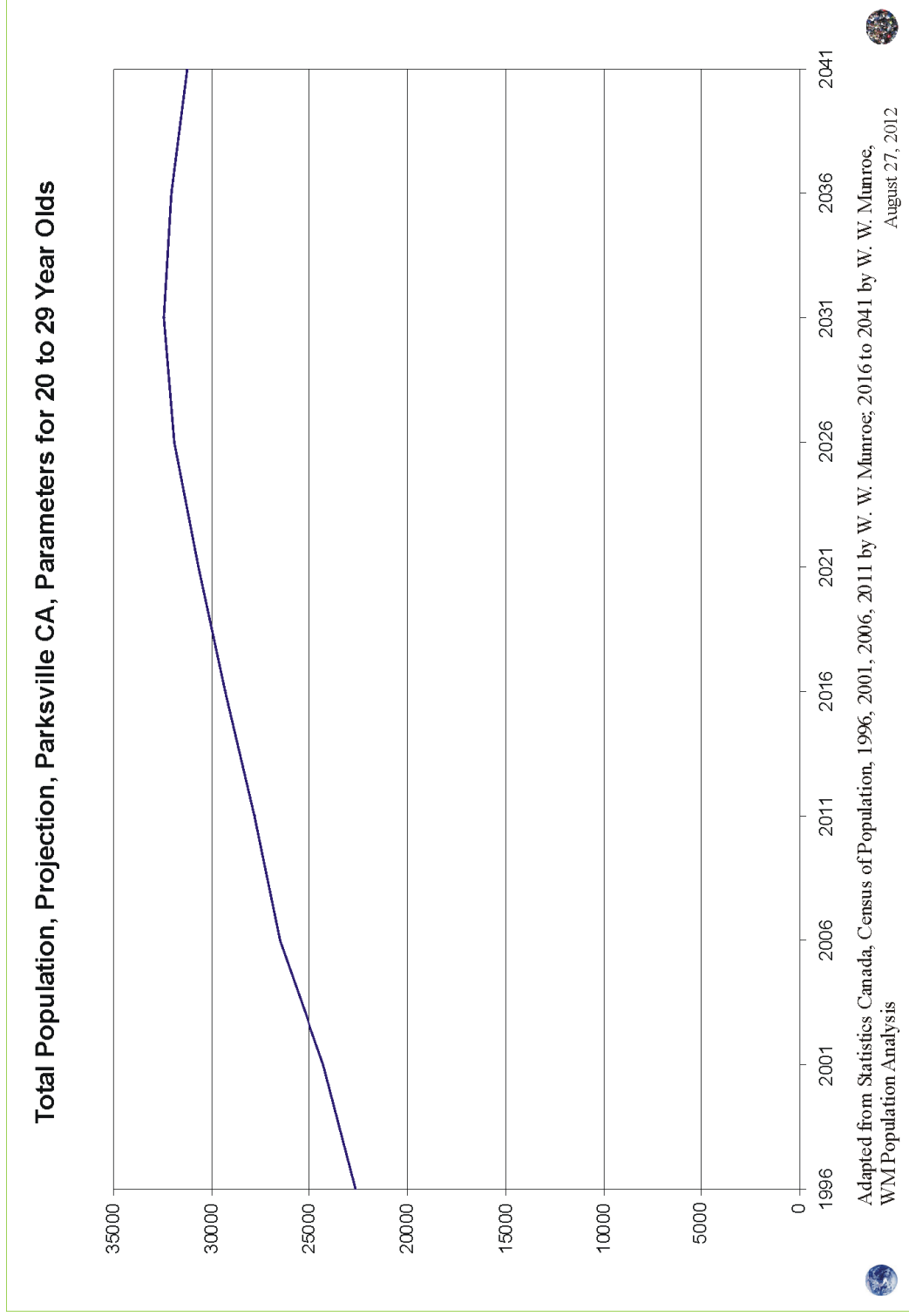
Appendix F (continued): Population Pyramids, Qualicum Beach

Figure 17. Population Pyramid, No parameters for those 20 to 29 years of age, 1996 to 2041, Qualicum Beach



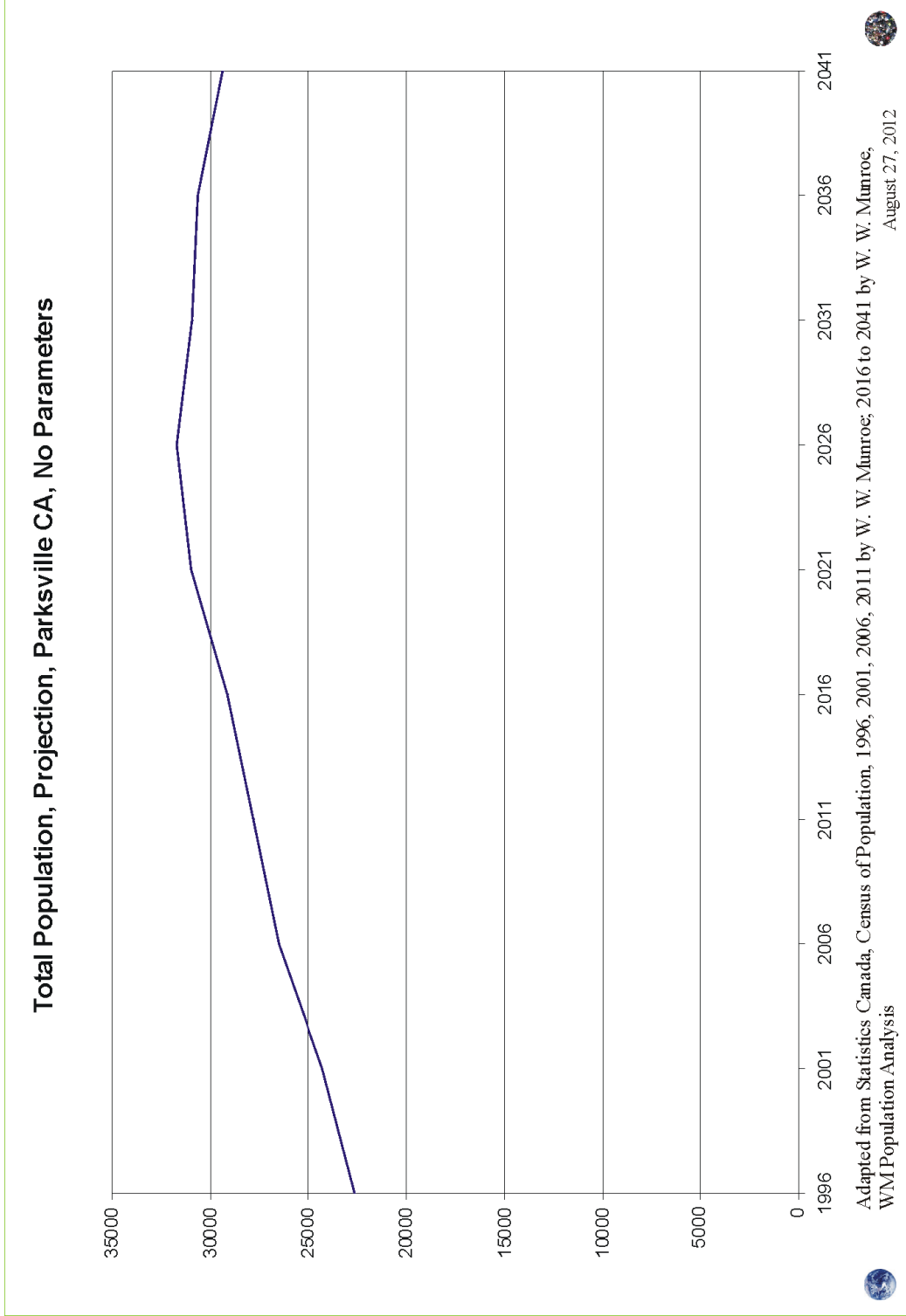
Appendix G: Total Population Estimates, 1996 to 2011, and Projections, 2016 to 2041, with Economic Cycles, Parksville CA

Figure 18. Total Population, Parameters for those 20 to 29 years of age, Parksville CA



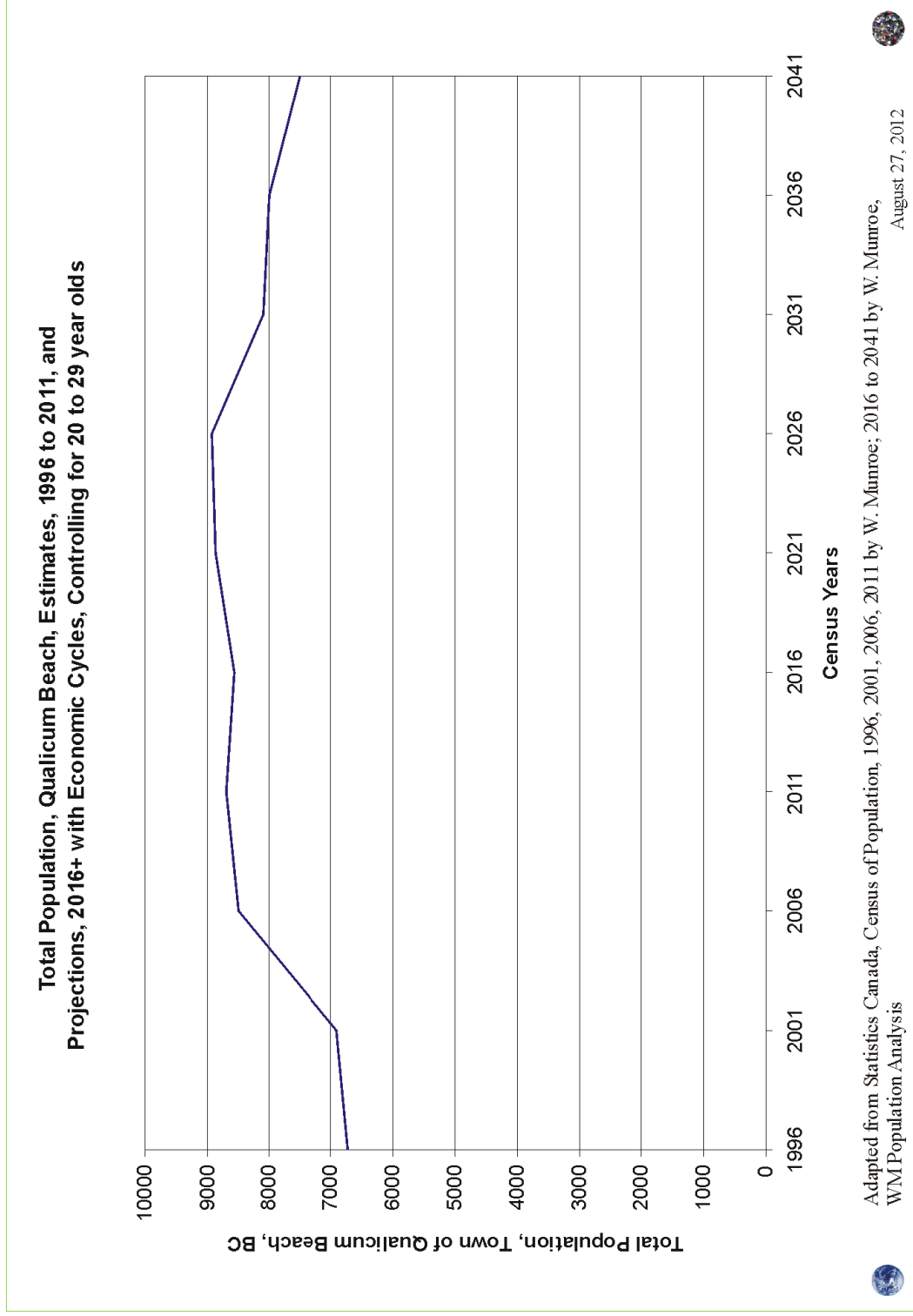
Appendix G (continued): Total Population Estimates, 1996 to 2011, and Projections, 2016 to 2041, with Economic Cycles, Parksville CA

Figure 19. Total Population, No parameters for those 20 to 29 years of age, Parksville CA



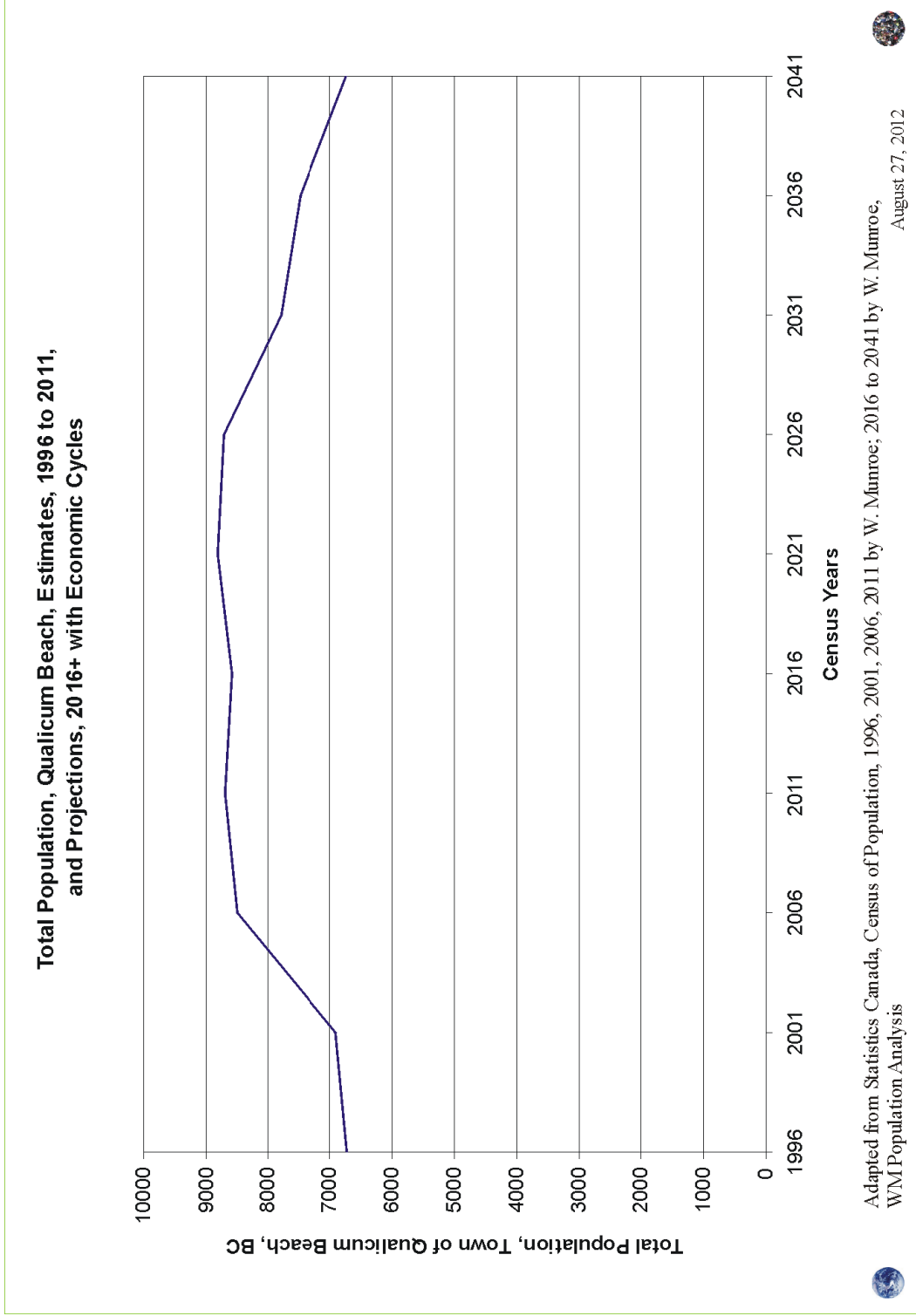
Appendix H: Total Population Estimates, 1996 to 2011, and Projections, 2016+ with Economic /Migration Cycles, Qualicum Beach

Figure 20. Qualicum Beach, Total Population, Parameters for those 20 to 29 years of age



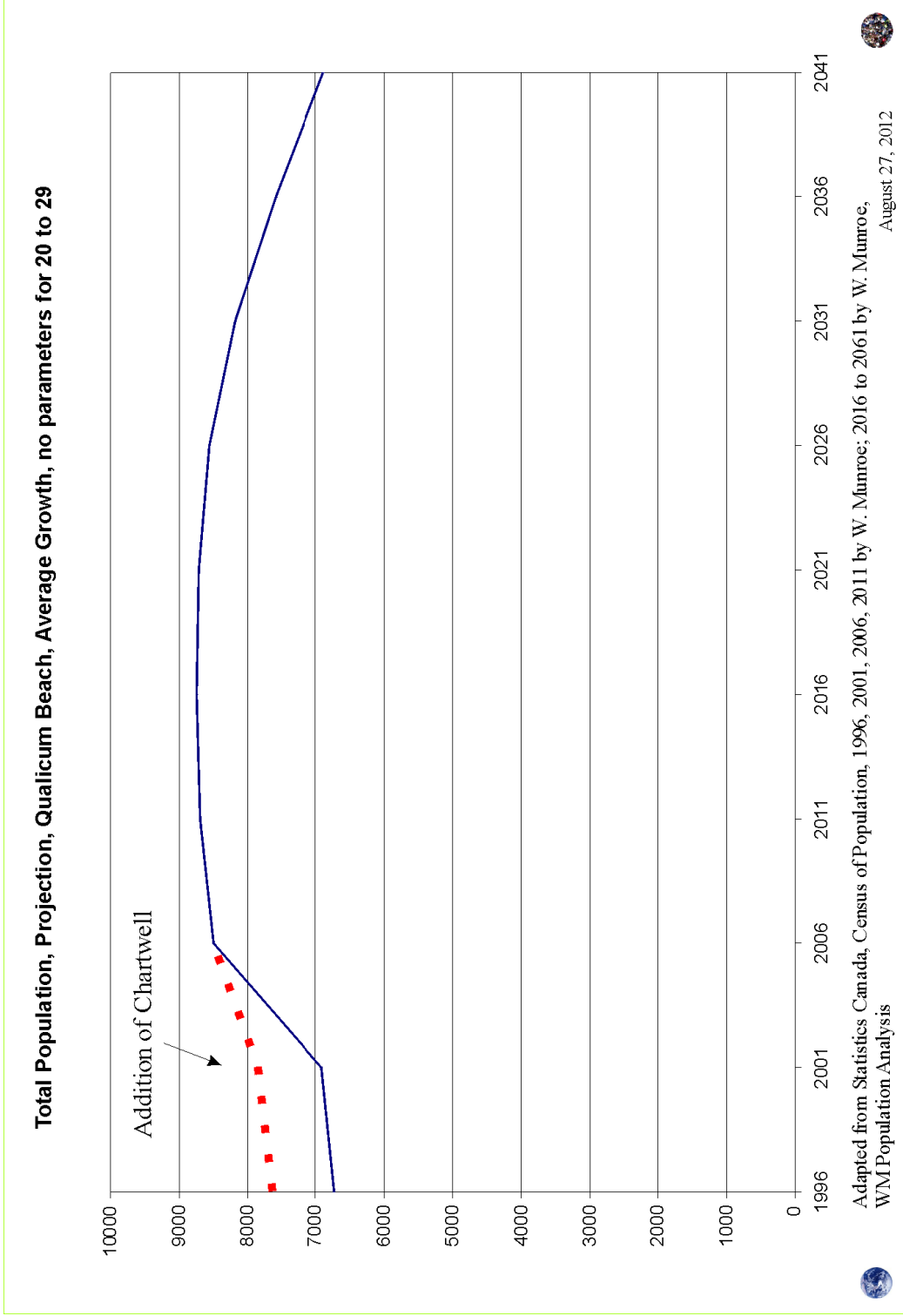
Appendix H: Total Population Estimates, 1996 to 2011, and Projections, 2016+ with Economic Cycles, Qualicum Beach

Figure 21. Qualicum Beach, Total Population, No parameters for those 20 to 29 years of age



Appendix I: Total Population Estimates, 1996 to 2011, and Projections, 2016+ Average Change, Qualicum Beach

Figure 22. Qualicum Beach, Total Population, No parameters for those 20 to 29 years of age



Appendix J: Dependency Ratios Tables, Parksville CA

Table 1. Dependency Ratios Tables: Migration Cycles, Parameters for those 20 to 29 years of age based on the 1996 to 2011 Census Counts, Parksville CA (see Figure 18)

Parksville CA, Dependency Ratios	1996	2001	2006	2011	2016	2021	2026	2031	2036	2041
Total Population counts	22630	24295	26525	27830	29272	31183	32296	31961	32025	31428
0-19, absolute	4530	4705	4365	3845	3585	3368	3402	3535	3473	3479
20-64, absolute	11690	12050	13190	13225	13033	12921	11790	10733	10510	10499
65+, absolute	6410	7540	8970	10760	12654	14894	17104	17693	18043	17450
Dependents, Total	10940	12245	13335	14605	16239	18262	20506	21228	21516	20929
Dependents per 10 working age	9.4	10.2	10.1	11.0	12.5	14.1	17.4	19.8	20.5	19.9
Children per 10 working age	3.9	3.9	3.3	2.9	2.8	2.6	2.9	3.3	3.3	3.3
Elders per 10 working age	5.5	6.3	6.8	8.1	9.7	11.5	14.5	16.5	17.2	16.6

Adapted from Statistics Canada, 1996, 2001, 2006, 2011 Census by W. W. Munroe. 2016 to 2041 by W. W. Munroe, WM Population Analysis, August 28, 2012

Table 2. Dependency Ratios Tables: Migration Cycles, No parameters for those 20 to 29 years of age, Parksville CA (see Figure 19)

Parksville CA, Dependency Ratios	1996	2001	2006	2011	2016	2021	2026	2031	2036	2041
Total Population counts	22630	24295	26525	27830	29153	30987	31719	30938	30648	29386
0-19, absolute	4530	4705	4365	3845	3562	3313	3250	3242	2993	2745
20-64, absolute	11690	12050	13190	13225	12936	12779	11365	10003	9613	9191
65+, absolute	6410	7540	8970	10760	12654	14894	17104	17693	18043	17450
Dependents, Total	10940	12245	13335	14605	16216	18207	20354	20935	21035	20195
Dependents per 10 working age	9.4	10.2	10.1	11.0	12.5	14.2	17.9	20.9	21.9	22.0
Children per 10 working age	3.9	3.9	3.3	2.9	2.8	2.6	2.9	3.2	3.1	3.0
Elders per 10 working age	5.5	6.3	6.8	8.1	9.8	11.7	15.0	17.7	18.8	19.0

Adapted from Statistics Canada, 1996, 2001, 2006, 2011 Census by W. W. Munroe. 2016 to 2041 by W. W. Munroe, WM Population Analysis, August 28, 2012

Appendix K: Dependency Ratios Tables, Qualicum Beach

Table 3. Dependency Ratios Tables: Migration Cycles, Parameters for those 20 to 29 years of age based on the 1996 to 2011 Census Counts, Qualicum Beach (re: Figure 20)

Qualicum Beach, Dependency Ratios	1996	2001	2006	2011	2016	2021	2026	2031	2036	2041
Total Population counts	6726	6911	8496	8691	8557	8832	8925	8098	7964	7499
0-19, absolute	1160	1075	1170	955	753	645	677	674	676	716
20-64, absolute	3250	3205	3835	3645	3357	3280	2841	2373	2341	2383
65+, absolute	2316	2631	3491	4091	4447	4908	5408	5051	4947	4399
Dependents, Total	3476	3706	4661	5046	5200	5552	6085	5724	5623	5115
Dependents per 10 working age	10.7	11.6	12.2	13.8	15.5	16.9	21.4	24.1	24.0	21.5
Children per 10 working age	3.6	3.4	3.1	2.6	2.2	2.0	2.4	2.8	2.9	3.0
Elders per 10 working age	7.1	8.2	9.1	11.2	13.2	15.0	19.0	21.3	21.1	18.5

Adapted from Statistics Canada, 1996, 2001, 2006, 2011 Census by W. W. Munroe. 2016 to 2041 by W. W. Munroe, WM Population Analysis, August 28, 2012

Table 4. Dependency Ratios Tables: Migration Cycles, No parameters for those 20 to 29 years of age, Qualicum Beach (re: Figure 21)

Qualicum Beach, Dependency Ratios	1996	2001	2006	2011	2016	2021	2026	2031	2036	2041
Total Population counts	6726	6911	8496	8691	8574	8777	8709	7788	7446	6732
0-19, absolute	1160	1075	1170	955	756	639	635	587	513	457
20-64, absolute	3250	3205	3835	3645	3371	3231	2666	2150	1986	1875
65+, absolute	2316	2631	3491	4091	4447	4908	5408	5051	4947	4399
Dependents, Total	3476	3706	4661	5046	5203	5546	6043	5638	5460	4856
Dependents per 10 working age	10.7	11.6	12.2	13.8	15.4	17.2	22.7	26.2	27.5	25.9
Children per 10 working age	3.6	3.4	3.1	2.6	2.2	2.0	2.4	2.7	2.6	2.4
Elders per 10 working age	7.1	8.2	9.1	11.2	13.2	15.2	20.3	23.5	24.9	23.5

Adapted from Statistics Canada, 1996, 2001, 2006, 2011 Census by W. W. Munroe. 2016 to 2041 by W. W. Munroe, WM Population Analysis, August 28, 2012

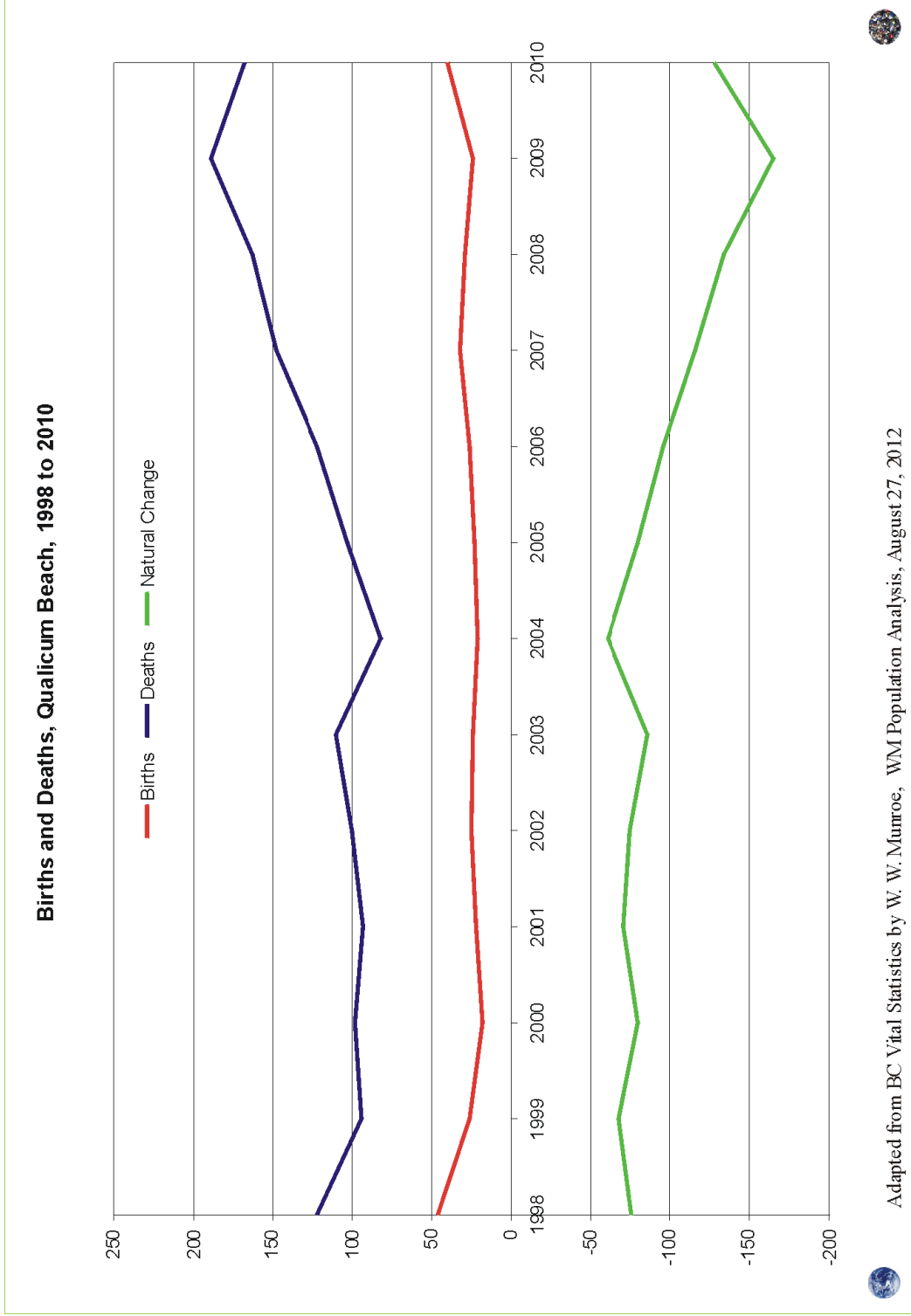
Table 5. Dependency Ratios Tables: Average Change, No parameters for those 20 to 29 years of age, Qualicum Beach (re: Figure 22)

Qualicum Beach, Dependency Ratios	1996	2001	2006	2011	2016	2021	2026	2031	2036	2041
Total Population counts	6726	6911	8496	8691	8743	8712	8556	8179	7586	6886
0-19, absolute	1160	1075	1170	955	814	753	762	721	621	547
20-64, absolute	3250	3205	3835	3645	3471	3125	2642	2289	2070	1972
65+, absolute	2316	2631	3491	4091	4457	4833	5152	5169	4895	4368
Dependents, Total	3476	3706	4661	5046	5271	5587	5914	5890	5515	4915
Dependents per 10 working age	10.7	11.6	12.2	13.8	15.2	17.9	22.4	25.7	26.6	24.9
Children per 10 working age	3.6	3.4	3.1	2.6	2.3	2.4	2.9	3.1	3.0	2.8
Elders per 10 working age	7.1	8.2	9.1	11.2	12.8	15.5	19.5	22.6	23.6	22.1

Adapted from Statistics Canada, 1996, 2001, 2006, 2011 Census by W. W. Munroe. 2016 to 2041 by W. W. Munroe, WM Population Analysis, August 28, 2012

Appendix L: Natural Change, Births, Deaths, Qualicum Beach

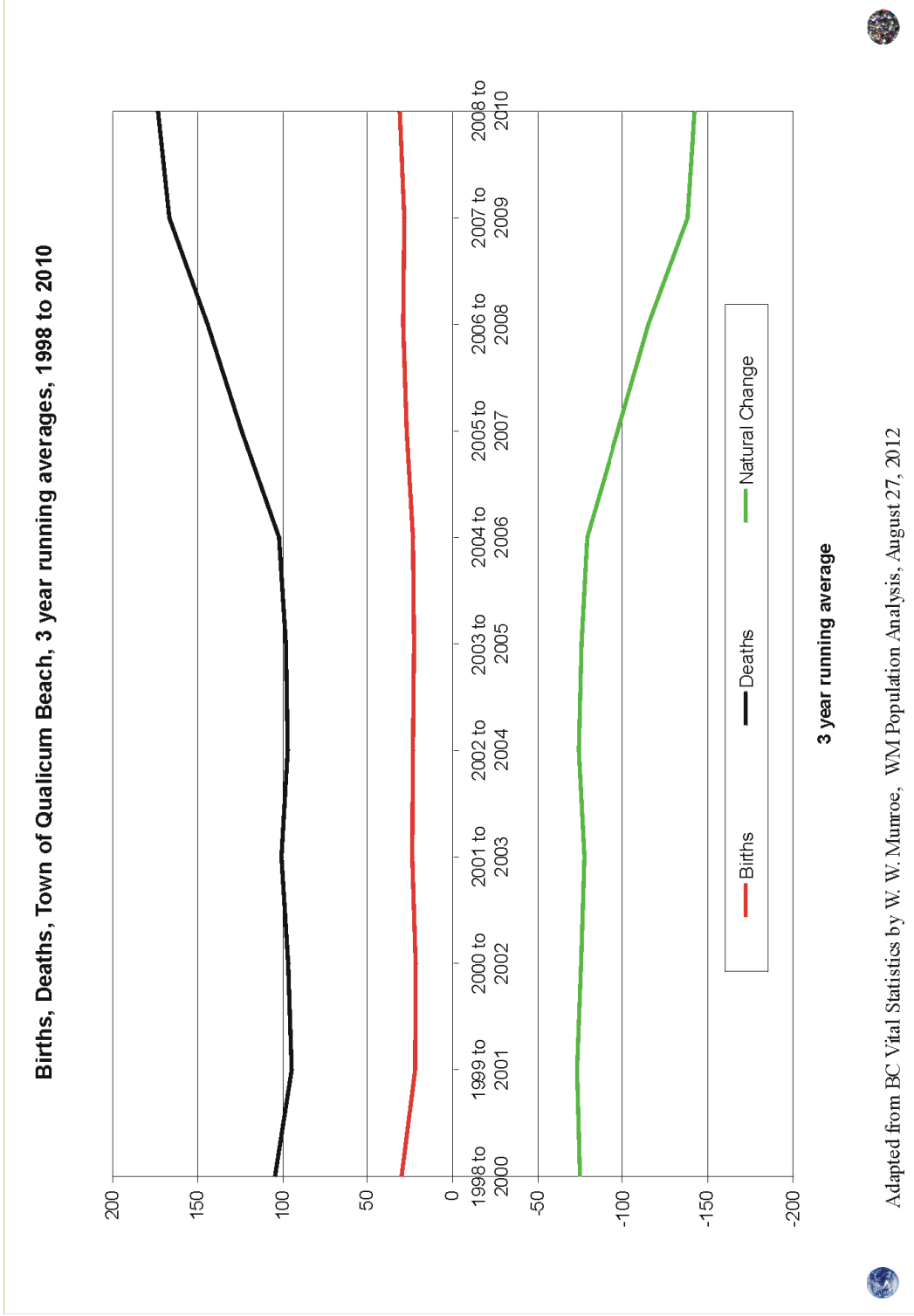
Figure 23. Natural Change, Births, Deaths, 1998 to 2010, Qualicum Beach



Adapted from BC Vital Statistics by W. W. Munroe, WM Population Analysis, August 27, 2012

Appendix L (continued): Natural Change, Births, Deaths, Qualicum Beach

Figure 24. Natural Change, Births, Deaths, 3 Year Running Average, 1998 to 2010, Qualicum Beach



Appendix L (continued): Natural Change, Births, Deaths, Qualicum Beach

Table 6. Natural Change, Births, Deaths, 1998 to 2010, Qualicum Beach, with Percent of Births to Deaths, and Ratio of the Number of Deaths to Births

Year	Births	Deaths	Marriages	Natural Change	Percent	Ratio
1998	46	122	47	-76	38%	2.7
1999	26	94	55	-68	28%	3.6
2000	18	98	63	-80	18%	5.4
2001	22	93	56	-71	24%	4.2
2002	25	100	52	-75	25%	4.0
2003	24	110	55	-86	22%	4.6
2004	21	82	51	-61	26%	3.9
2005	23	103	57	-80	22%	4.5
2006	26	122	60	-96	21%	4.7
2007	32	148	57	-116	22%	4.6
2008	29	163	64	-134	18%	5.6
2009	24	189	62	-165	13%	7.9
2010	40	168	50	-128	24%	4.2

Adapted from BC Vital Statistics by W. W. Munroe, August 27, 2012

Appendix L (continued): Natural Change, Births, Deaths, Qualicum Beach

Table 7. Natural Change, Births, Deaths, 3 Year Running Average, 1998 to 2010, Qualicum Beach, with Percent of Births to Deaths, and Ratio of the Number of Deaths to Births

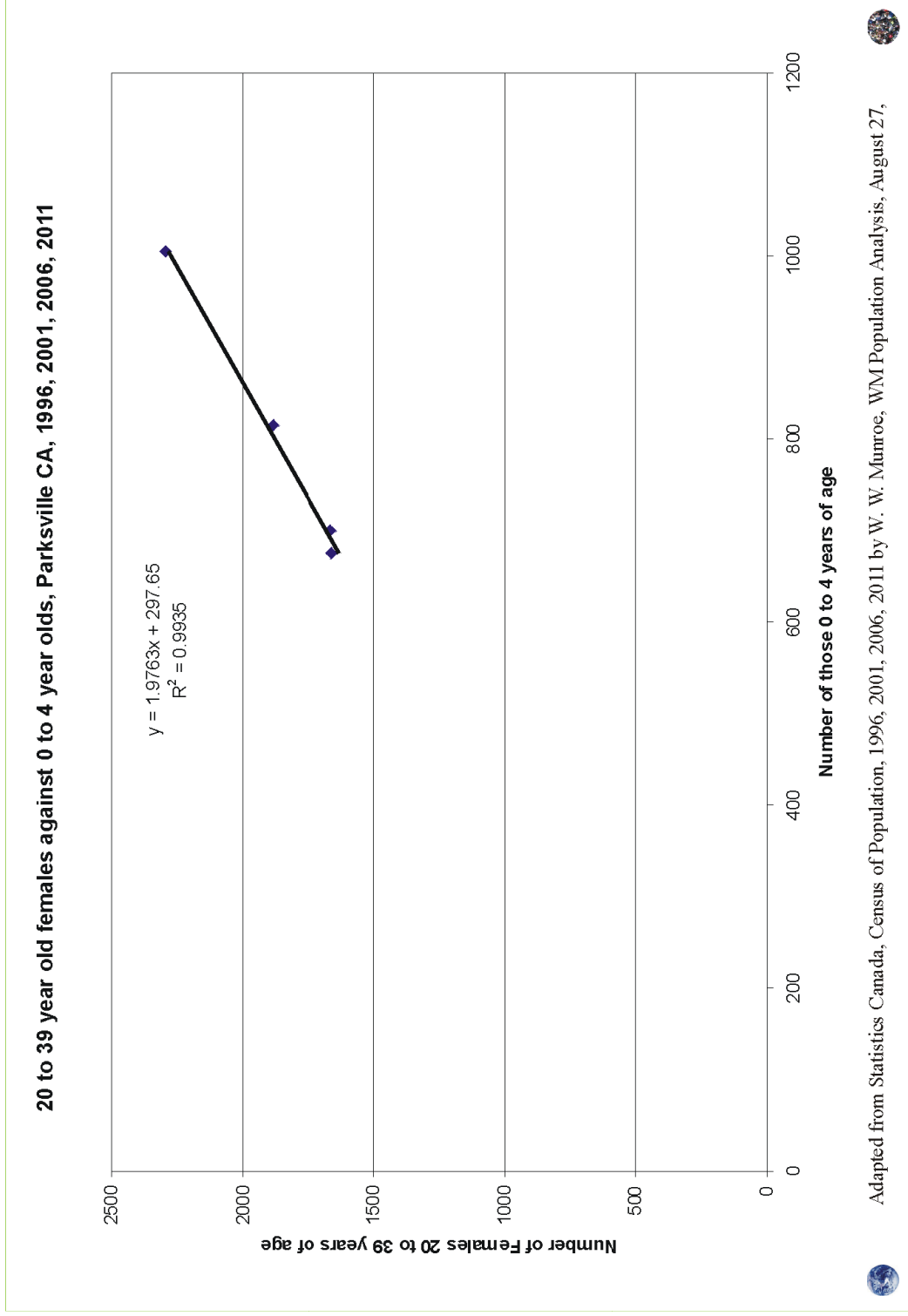
Births and Deaths - 3 year running averages for the Town of Qualicum Beach BC Canada (e.g. the average for the 3 years)

Year	Births	Deaths	Natural Change	Percent	Ratio
1998 to 2000	30	105	-75	28.7%	3.5
1999 to 2001	22	95	-73	23.2%	4.3
2000 to 2002	22	97	-75	22.3%	4.5
2001 to 2003	24	101	-77	23.4%	4.3
2002 to 2004	23	97	-74	24.0%	4.2
2003 to 2005	23	98	-76	23.1%	4.3
2004 to 2006	23	102	-79	22.8%	4.4
2005 to 2007	27	124	-97	21.7%	4.6
2006 to 2008	29	144	-115	20.1%	5.0
2007 to 2009	28	167	-138	17.0%	5.9
2008 to 2010	31	173	-142	17.9%	5.6

Adapted from BC Vital Statistics by W. W. Munroe, August 27, 2012

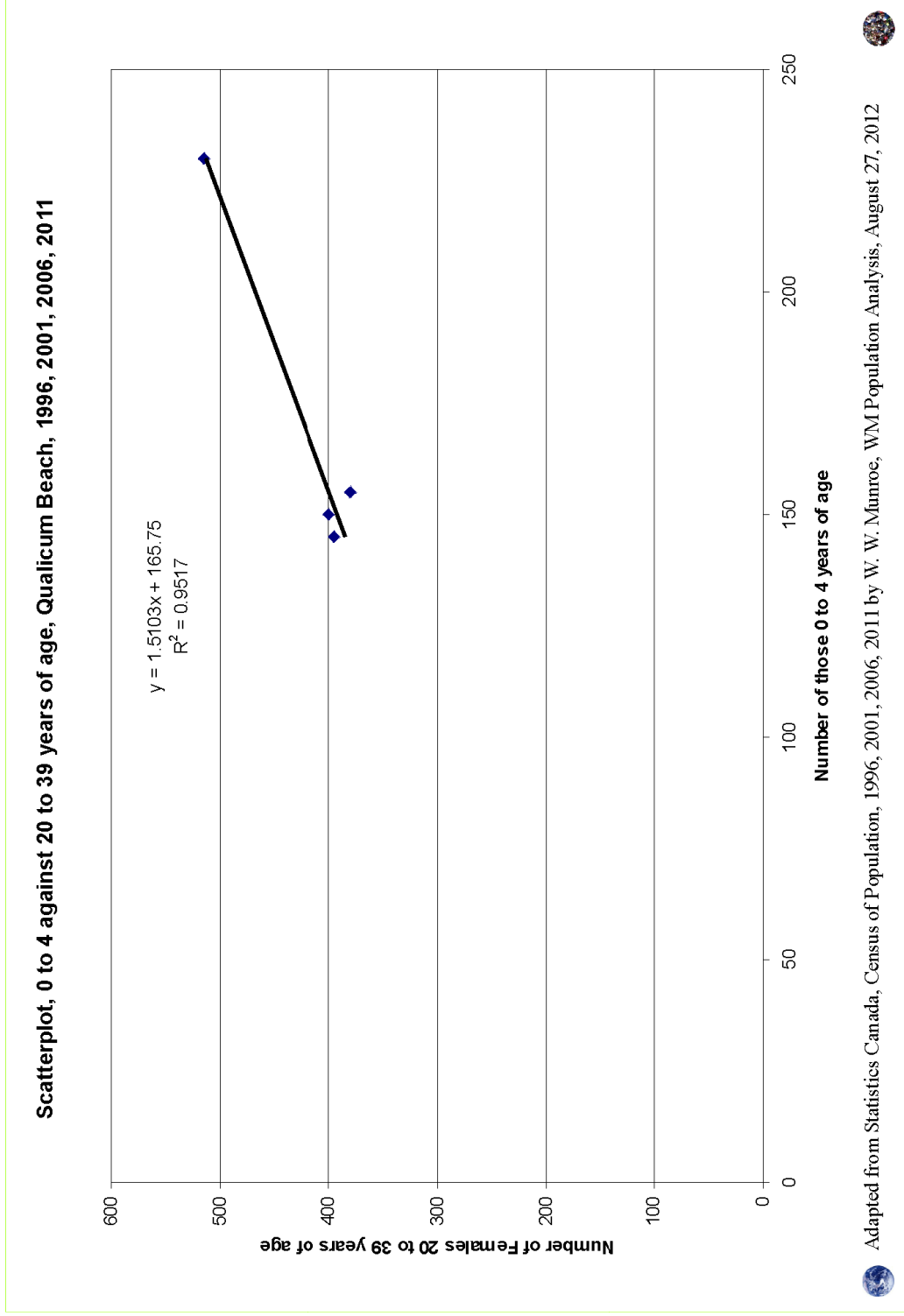
Appendix M: 0 to 4 Year Olds

Figure 25. 20 to 39 Year Old Females against 0 to 4 Year Olds, 1996, 2001, 2006, 2011, Parksville CA



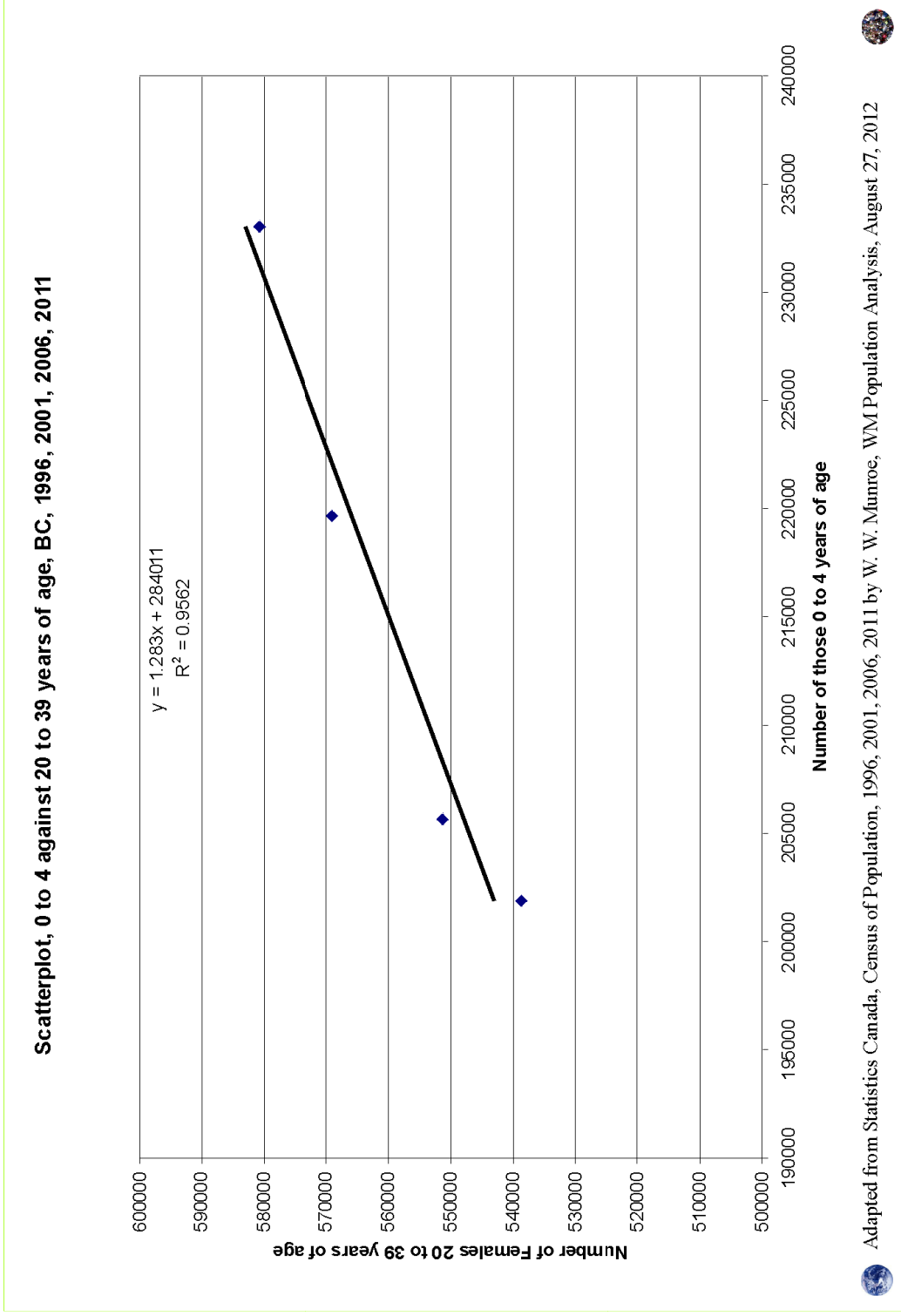
Appendix M (continued): 0 to 4 Year Olds

Figure 26. 20 to 39 Year Old Females against 0 to 4 Year Olds, 1996, 2001, 2006, 2011, Qualicum Beach



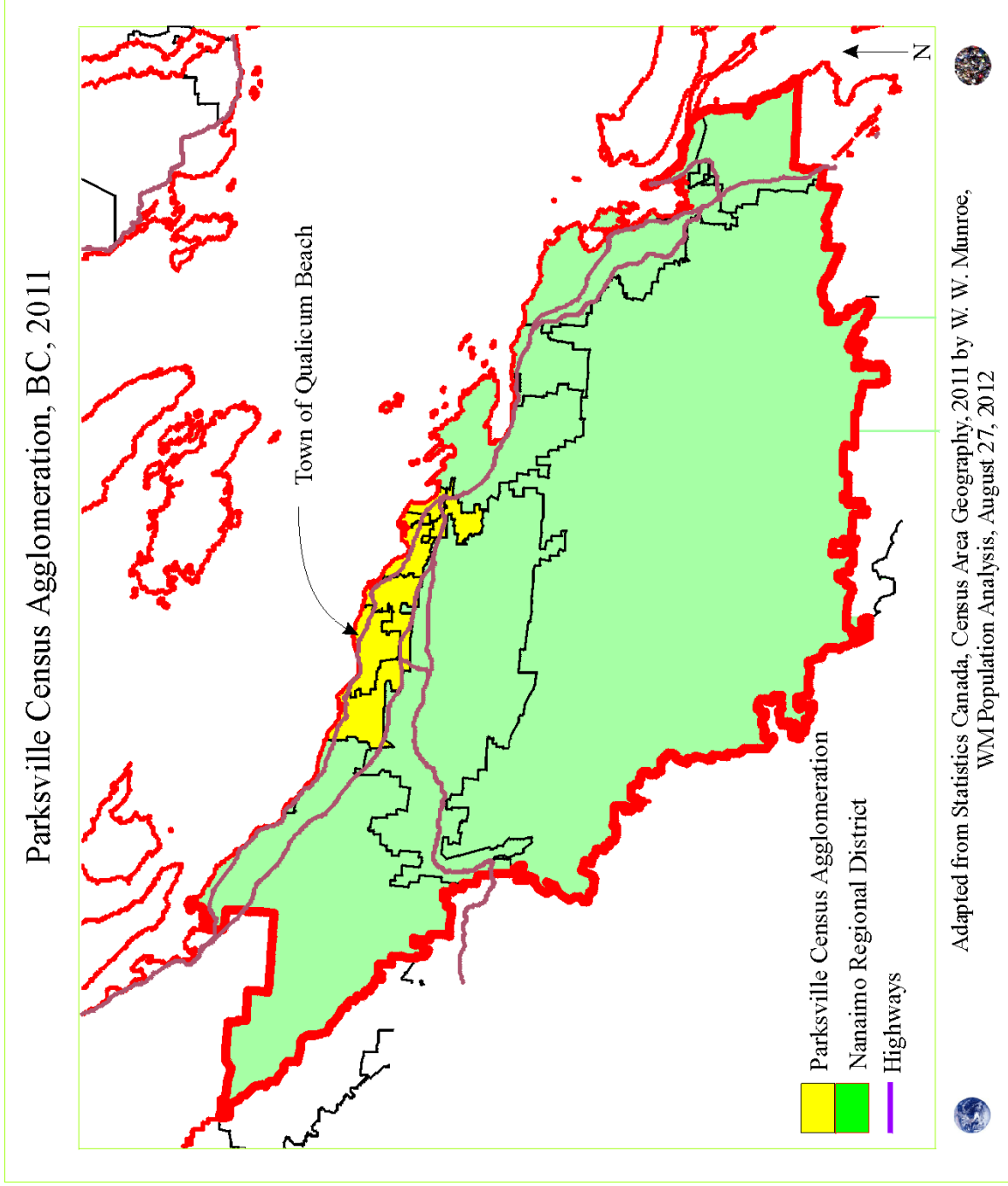
Appendix M (continued): 0 to 4 Year Olds

Figure 27. 20 to 39 Year Old Females against 0 to 4 Year Olds, 1996, 2001, 2006, 2011, British Columbia

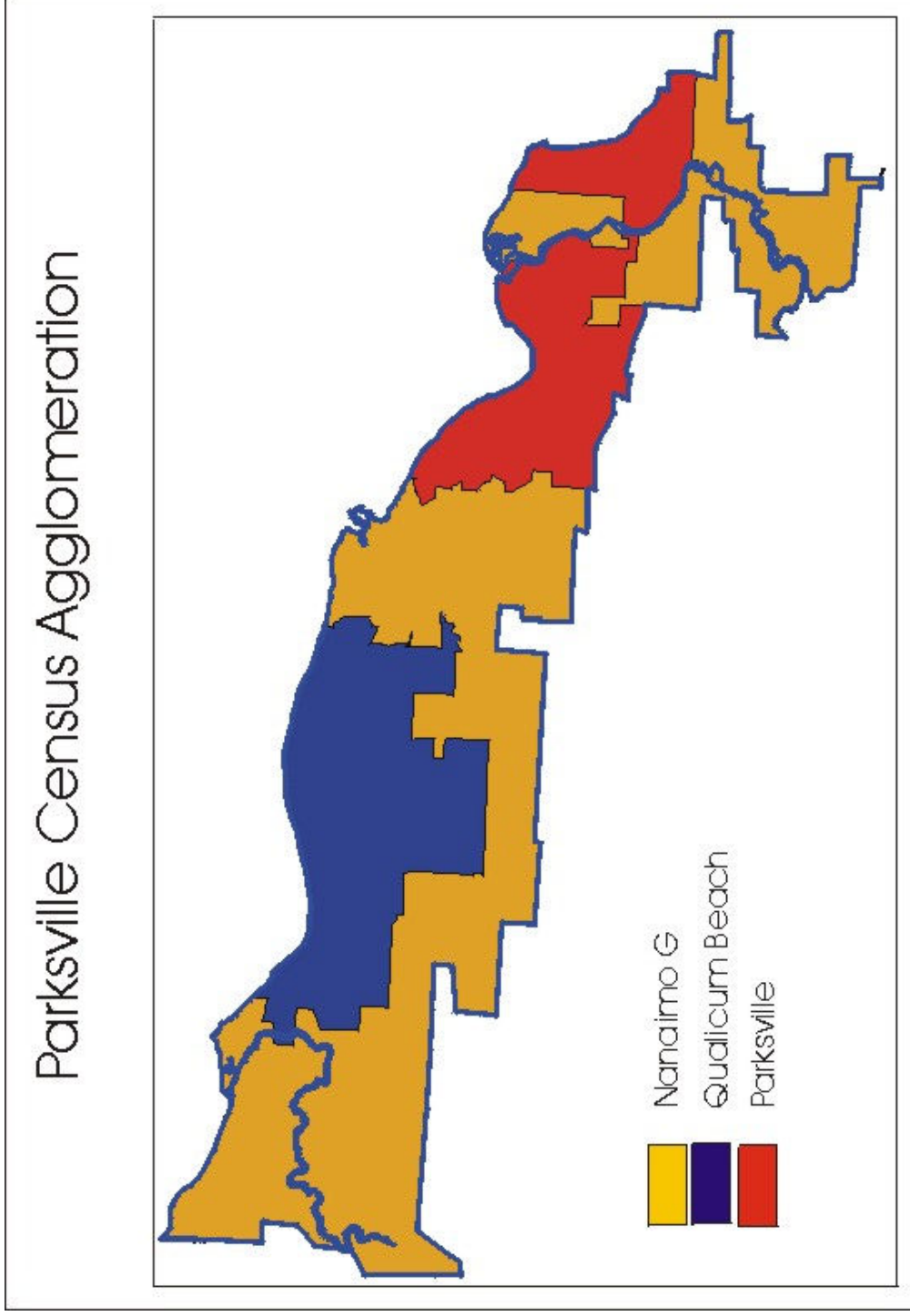


Appendix N: Maps

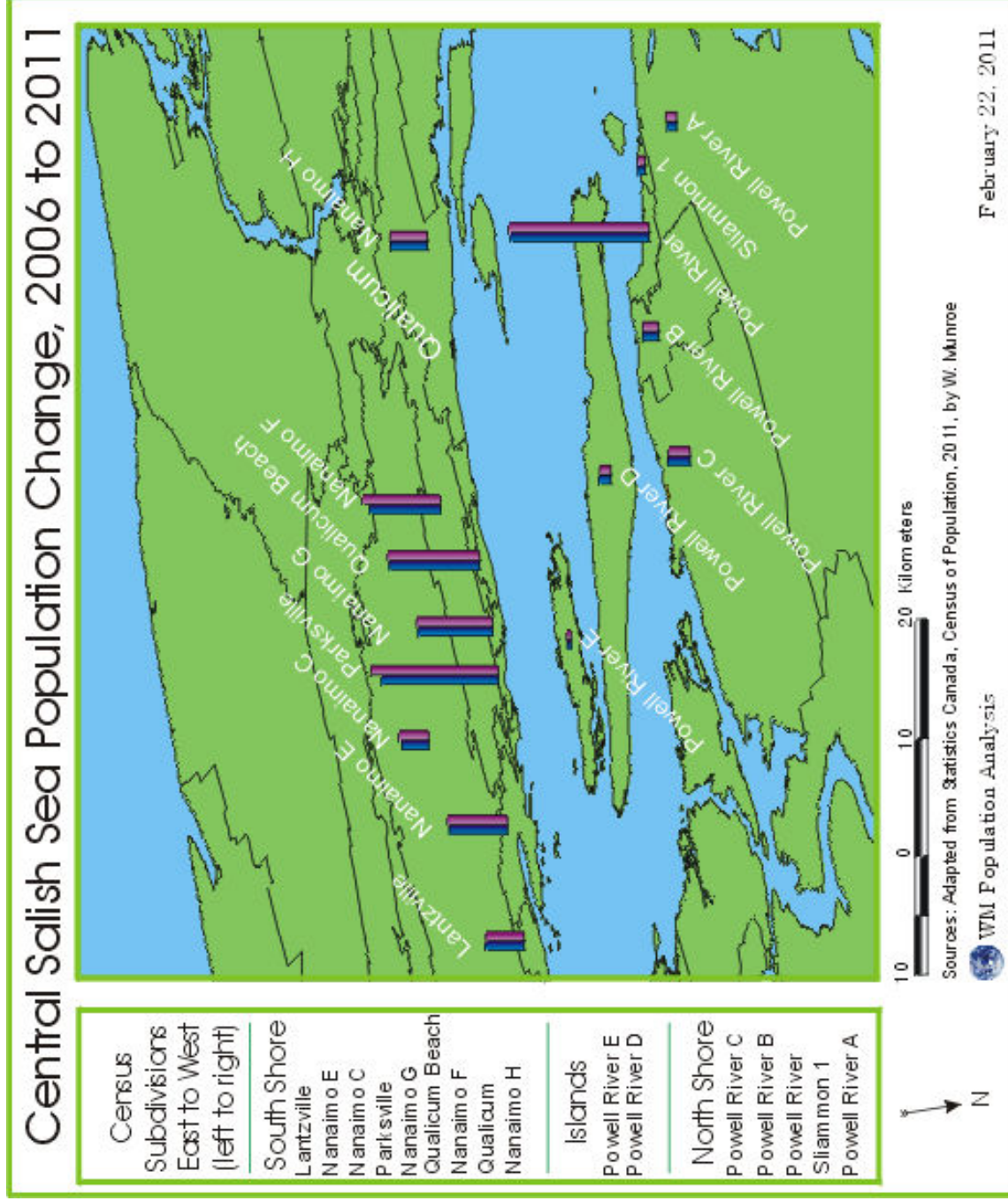
Map 1. Nanaimo Census Division, Parksville Census Agglomeration



Map 2. Parksville Census Agglomeration



Map 3. Qualicum Beach and Surrounding Census Subdivisions, Population Change, 2006, 2011



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