Orange County
PROFILES
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DISCUSSING CONTEXT OF DEMOGRAPHIC CHANGE

INTRODUCTION

This issue of *Profiles* reviews some of the demographic changes in Orange County and its cities since their incorporation dates and discusses the importance of describing data context while reporting demographic statistics. When demographic data is reported, it is vital that clear descriptions are used. To say that Anaheim city has grown by 39,096% since incorporation is an impressive statement. To include in that statement that Anaheim is 130 years old and grew from 881 people at incorporation to 345,317 in 2005 is more descriptive. Further description would add that the city of Anaheim has annexed 47.7 square miles of land since incorporating, resulting in an increase of 1835% in land area (Map 1). This example shows how much detail can be left out when reporting data and why it is important to report demographic statistics in the most clear and descriptive manner possible.

This issue of *Profiles* is intended as an introduction piece on the importance of contextual awareness in demography. It will be expanded upon in future issues with topics such as spatial analysis, i.e. the importance of examining demographic data in a geographic context, with topics such as the growing use and capabilities of Geographic Information Systems (GIS) technologies in relation to demographics and how visual tools assist in reporting demographic data.

HOW MUCH? WHEN? and WHERE?

The purpose of the *Orange County Profiles* is to discuss demographic issues, such as population growth, in Orange County. This is because people ask *how much?* Demographers, those who study characteristics of populations, answer this question by investigating and reporting on how much growth there has been in a particular population. Most often, the question is *how much population growth has there been*? We begin with the statement: Orange County has grown by three million people.

The next question is *when*? There should be a time period associated with the amount of growth. *When* did this population growth occur? Orange County's population has grown by three million people since *when*? Statement: Since incorporation, Orange County has grown by three million people. More specifically, since Orange County separated from Los Angeles County and became a county on its own 116 years ago, the population has grown by three million. The resulting annual growth rate is 26,235 people, which is akin to adding a Laguna Beach or Seal Beach every year.

Where did this growth occur? This question brings forth the topic of spatial context. Another way of saying this is: for what geography are you reporting? In the *Profiles,* the population reported on is Orange County. Thus, we will typically report on demographic characteristics of the geographic area that is known as Orange County, California, along with more detailed data when available for geographies such as each of the county's 34 cities. Statement: At the time of incorporation in 1889, Orange County had three cities (Anaheim, Santa Ana and Orange) and only 13,589 people; in January 2005, there were 34 cities and 3,056,865 people.

The question of *where* is critical when reporting past growth and projected growth in future years. A report on what the future population is projected to be should contain a time frame of when this growth will occur and for what geographic area. Population projections

Map 1
Anaheim City Boundary, 1876 and 2005

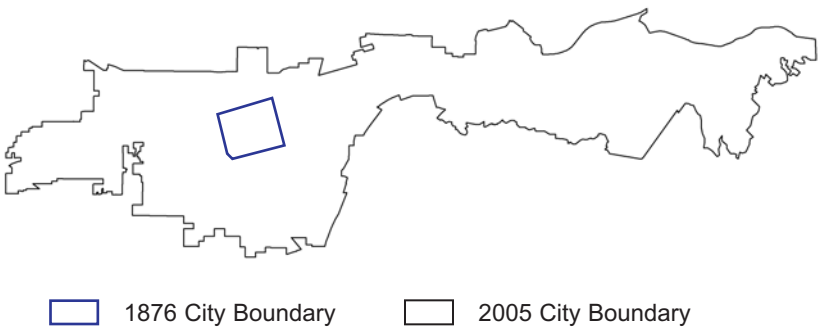


Table 1
Land Area, Population and Density of Orange County Cities at the Time of City Incorporation and 2005

City	Year of Incorporation	Total Land Area (Square Miles)				Population				Population Per Square Mile (Density)	
		At Incorporation	6/30/2005	Numerical Change	Percent Change	At Incorporation	1/1/2005	Numerical Change	Percent Change	At Incorporation	2005
Aliso Viejo	2001	6.9	6.9	0.0	0.0%	40,116	45,017	4,901	12%	5,814	6,524
Anaheim	1876	2.6	50.3	47.7	1,834.6%	881	345,317	344,436	39,096%	339	6,865
Brea	1917	1.8	11.0	9.2	511.1%	732	39,584	38,852	5,308%	407	3,599
Buena Park	1953	2.3	10.1	7.8	339.1%	5,483	81,066	75,583	1,378%	2,384	8,026
Costa Mesa	1953	3.5	15.5	12.0	342.9%	16,840	113,440	96,600	574%	4,811	7,319
Cypress	1956	4.0	6.9	2.9	72.5%	1,500	48,863	47,363	3,158%	375	7,082
Dana Point	1989	6.4	6.8	0.4	6.2%	29,972	36,765	6,793	23%	4,683	5,407
Fountain Valley	1957	6.8	9.6	2.8	41.2%	597	57,353	56,756	9,507%	88	5,974
Fullerton	1904	16.6	22.5	5.9	35.5%	1,719	135,672	133,953	7,792%	104	6,030
Garden Grove	1956	11.2	17.9	6.7	59.8%	42,000	172,042	130,042	310%	3,750	9,611
Huntington Beach	1909	3.7	27.3	23.6	637.8%	915	200,763	199,848	21,841%	247	7,354
Irvine	1971	28.5	55.5	27.0	94.7%	14,231	180,803	166,572	1,170%	499	3,258
La Habra	1925	0.5	7.3	6.8	1,360.0%	2,100	61,771	59,671	2,841%	4,200	8,462
La Palma	1955	1.4	2.0	0.6	42.9%	500	16,112	15,612	3,122%	357	8,056
Laguna Beach	1927	1.1	7.8	6.7	609.1%	1,900	24,969	23,069	1,214%	1,727	3,201
Laguna Hills	1991	5.2	6.6	1.4	26.9%	22,938	33,253	10,315	45%	4,411	5,038
Laguna Niguel	1989	14.7	14.8	0.1	0.6%	42,998	66,126	23,128	54%	2,925	4,471
Laguna Woods	1999	3.0	3.02	0.02	0.6%	18,000	18,371	371	2%	6,000	6,090
Lake Forest	1991	10.2	16.8	6.6	64.7%	56,065	78,020	21,955	39%	5,497	4,644
Los Alamitos	1960	3.7	4.3	0.6	16.2%	1,750	12,003	10,253	586%	473	2,791
Mission Viejo	1988	16.4	17.4	1.0	6.1%	70,293	98,197	27,904	40%	4,286	5,644
Newport Beach	1906	3.2	25.2	22.0	687.5%	445	83,120	82,675	18,579%	139	3,298
Orange	1888	3.1	23.6	20.5	661.3%	600	137,751	137,151	22,859%	194	5,837
Placentia	1926	0.2	6.6	6.4	3,200.0%	800	50,323	49,523	6,190%	4,000	7,625
Rancho Santa Margarita	2000	13.1	13.1	0.0	0.0%	42,296	49,249	6,953	16%	3,229	3,759
San Clemente	1928	6.5	18.0	11.5	176.9%	650	65,338	64,688	9,952%	100	3,630
San Juan Capistrano	1961	11.4	14.1	2.7	23.7%	1,287	36,078	34,791	2,703%	113	2,559
Santa Ana	1886	1.9	27.3	25.4	1,336.8%	2,000	351,697	349,697	17,485%	1,053	12,883
Seal Beach	1915	1.6	12.2	10.6	662.5%	250	25,334	25,084	10,034%	156	2,077
Stanton	1956	0.9	3.1	2.2	244.4%	1,500	38,812	37,312	2,487%	1,667	12,520
Tustin	1927	0.3	11.0	10.7	3,566.7%	500	70,871	70,371	14,074%	1,667	6,443
Villa Park [1]	1962	2.10	2.11	0.01	0.5%	830	6,230	5,400	651%	395	2,967
Westminster	1957	5.8	10.2	4.4	75.9%	10,755	92,270	81,515	758%	1,854	9,046
Yorba Linda	1967	2.5	19.9	17.4	696.0%	11,433	65,621	54,188	474%	4,573	3,298
Orange County Total [2]	1889	786.0	798.3	12.3	1.6%	13,589	3,056,865	3,043,276	22,395%	17	3,829

Blue Cells indicate largest five in column ranking; Yellow Cells indicate smallest five in column ranking.

[1] Villa Park has annexed only a few acres since incorporation. Totals are estimated.

[2] Total square miles converted from total acres. Columns may not add due to rounding.

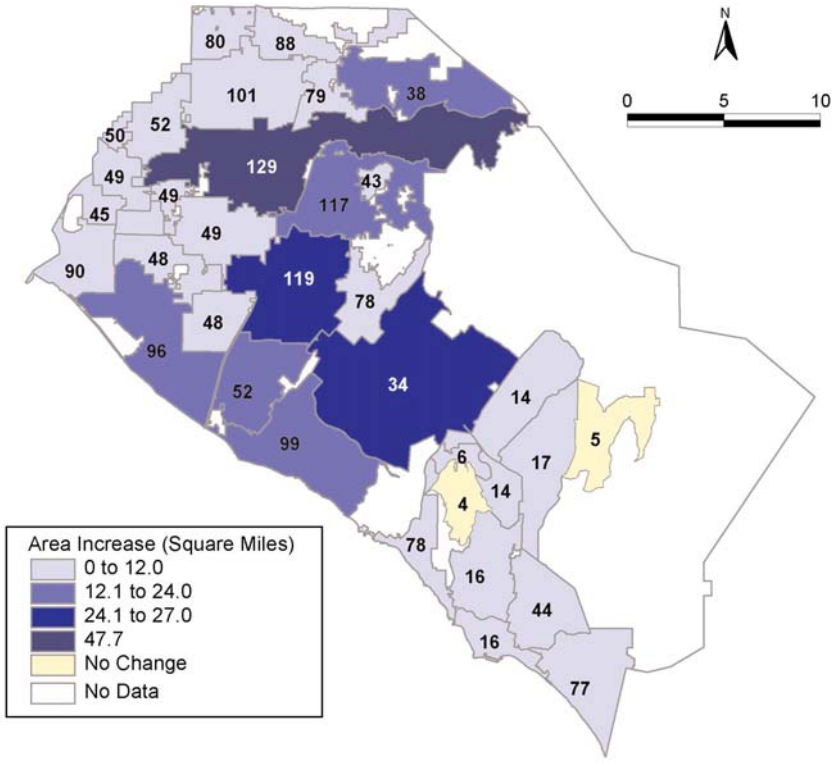
Source: O.C. Geomatics / Land Information Systems, Boundary Unit.

will normally contain a set of assumptions that describe a fixed set of jurisdictional boundaries for a specified point in time and this information should be reported. In reality, jurisdictional boundaries can and do change over time and this is why projected growth is continuously revised. Therefore, if a city's boundary changes through an annexation at a future date, the population projections reported only represent a fixed set of past city boundaries. At a later time, those projections will be updated to include the new set of jurisdictional boundaries.

The questions of how much, when and where enable the reader to put the data in context. What can be more useful is translating data into an image by creating a map of the different geographies with colors and shapes that visually report the data. This is the premise for reporting data through the visual tool of mapping. The map creates a spatial display of the data.

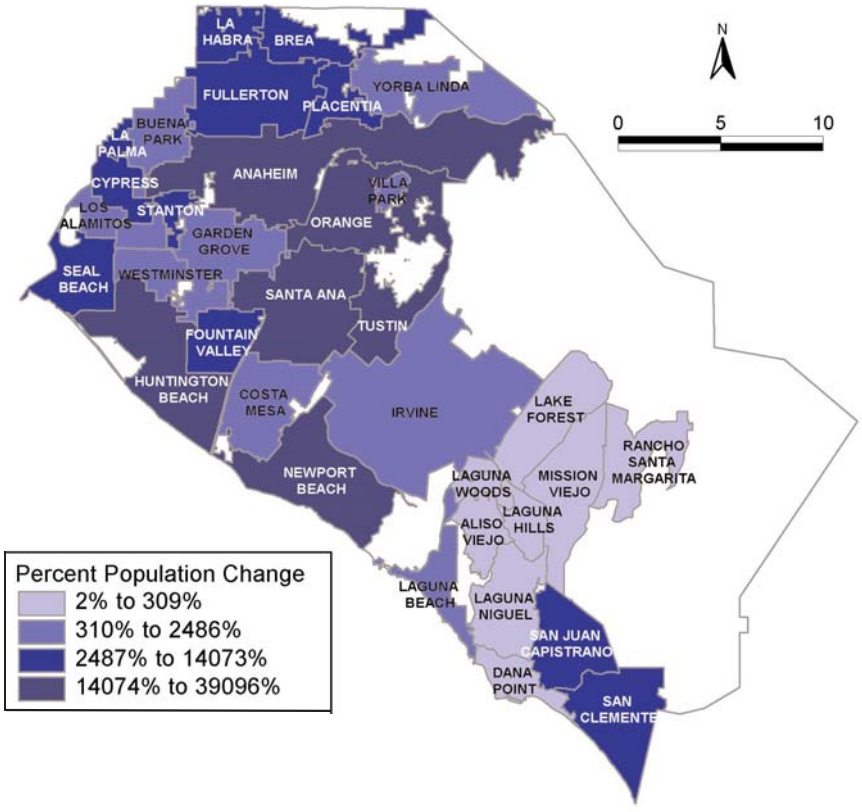
Map 2 is an example of this and shows the amount of land area annexed by each Orange County city since its incorporation. The number associated with each city is the number of years since the city incorporated. Map 3 shows the percent of population growth for each city since its incorporation. The older the city, the more likely it had a small population at incorporation. Cities that incorporated in the County's first 30 years had fewer than 2,200 people at incorporation. Cities that incorporated more recently, within the last 30 years, tended to have populations over 18,000 at the time of incorporation (Table 1).

Map 2
Land Area Change for Orange County Cities Since Incorporation, 1876-2005



Source: Orange County Geomatics / Land Information Systems Boundary Unit

Map 3
Rate of Population Growth for Orange County Cities Since Incorporation 1876-2005



Source: Orange County Geomatics / Land Information Systems Boundary Unit

CITIES: HOW MUCH? WHEN? and WHERE?

Change in a city's "size" can refer to two things: population or land area. Irvine incorporated in 1971 with more land area than any other city had at the time of their incorporations. At incorporation, Irvine covered 28.5 square miles and remains the largest today (55.5 sq. mi.). Placentia incorporated with the smallest land area, 0.2 square miles and is now the sixth smallest city in land area. Today, La Palma is Orange

Table 2
Orange County's Five Oldest and Youngest Cities, 2005

	Oldest Cities	Year Incorporated
1	Anaheim	1876
2	Santa Ana	1886
3	Orange	1888
4	Fullerton	1904
5	Newport Beach	1906

	Youngest Cities	Year Incorporated
1	Aliso Viejo	2001
2	Rancho Santa Margarita	2000
3	Laguna Woods	1999
4	Laguna Hills	1991
5	Lake Forest	1991
	County of Orange	**1889**

Source: Orange County Geomatics / Land Information Systems Boundary Unit

County's smallest city at 2.0 square miles. Anaheim has annexed the most land since incorporation in 1876 (47.7 sq. mi.) but has only the third largest percent increase in land area (1834%). Tustin has the largest percent change in land area at 3566%, increasing from 0.3 square miles at incorporation in 1927 to 11.0 square miles in 2005. Only two Orange County cities have not changed their city boundaries since incorporation: Aliso Viejo and Rancho Santa Margarita.

There are three ways population change can occur: births, deaths and migration. Populations can increase by people having babies or people moving into an area; population can decrease by deaths or people moving out of an area. The statement 5,000 people were added to a city that annexed one square mile is very different from saying 5,000 people were added to a city that annexed five square miles of land. The first is equal to 5,000 people per square mile, the second is 1,000 people per square mile.

A land annexation may also result in additional population growth for a city if there are already people living in the area annexed. This provides context for reporting past population growth. A city with a population of 10,000 people doubling to 20,000 people over the course of a year, would be less surprising if at the same time the city doubled its land area through an annexation. Most often, a statement such as "the city grew by 10%" refers to population growth. If a small city such as Villa Park (population 6,230) were to add 5,000 people in two years with no land change, it is considered a large change. For a larger city such as Anaheim (population 345,317), adding 5,000 people in two years with no land change may be considered normal. In order to compare the two examples more easily, reporting the rates of growth can be used: hypothetically, Villa Park's population grew over the past two years by 80% and Anaheim's grew by 1.4%. Rates of growth reported along with raw numbers provide comparative context.

Determining how much population growth there has been along with reporting the rate of growth for a specified amount of time allows more accurate comparisons to other geographies, especially when factoring in land change. This means comparing land and population change through reporting of density. Laguna Woods was the most densely populated city at the time of its incorporation at 6,000 people per square mile compared to other cities at the dates of their incorporations. Today, Santa Ana is the most densely populated city with more than double the density at 12,883 people per square mile. Stanton is a close second at 12,520 persons per square mile. In 1957, when Fountain Valley incorporated, it was the least dense of any Orange County city at their incorporation with only 88 people per square mile. Today, Seal Beach is the least dense at 2,077 people per square mile. Again, this particular statement should be clarified with addition that almost three-quarters (72%) of the city is a military installation and wildlife refuge, which are not populated or developed in the same way as the rest of the city. Seal Beach is densely populated outside the military station and wildlife refuge, but when factoring the area of these two within the city boundaries, the calculation results in Seal Beach as the least densely populated city in the county.

CONCLUSION

In sum, it is important to report demographic change while including time and spatial descriptions along with factors that enable the readers to put into context the statistics being reported when comparing the data.

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