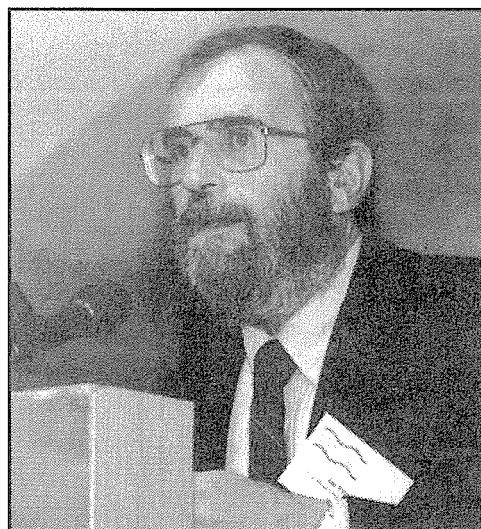


Jim Peach has been on the faculty at New Mexico State University since 1980. His specialties include economic development, regional economics and population. In addition to his teaching duties, he serves as editor of the Journal of Borderlands Studies. In collaboration with a colleague, James Williams of the NMSU Sociology Department, he has been involved in population projections for many years. Jim was an expert witness in the infamous El Paso-New Mexico water case.



POPULATION PROJECTIONS FOR DOÑA ANA, EL PASO AND HUDSPETH COUNTIES AND CIUDAD JUÁREZ

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I always like to start any talk about population with a quote from Adam Smith, the founder of the economics profession. He said, among other things, that the most decisive mark of the prosperity of any country is an increase in the number of its inhabitants. That statement has been debated for more than 200 years. What is not debatable, of course, is that population growth is an important determinant of water demand.

I have been asked to present some population projections this morning for what is called the Lower Rio Grande Valley. It consists of four areas: Doña Ana County in New Mexico, El Paso County and Hudspeth County in Texas and Ciudad Juárez (Figure 1).

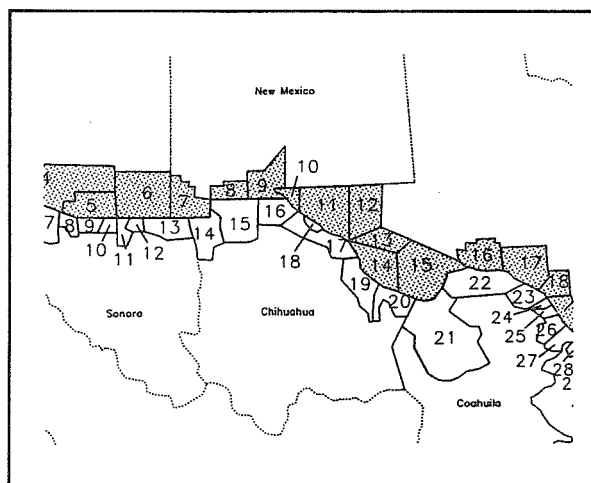


Figure 1. Population projection areas include Doña Ana County (9), El Paso County (10), Hudspeth County (11), and Ciudad Juárez.

Table 1 presents historical rates of population growth in the four areas. What I would like to emphasize is the extreme variability of growth rates and population from decade to decade. In Doña Ana County, for example, a traditionally high population growth rate county, we have growth rates during the 1930s and 1960s that were very low, somewhere around ten percent, as opposed to the 1980s at 41 percent. El Paso County even had a slight decline in population during the 1930s. Its rate of population growth has declined a little bit during the 1980s from its high levels during the 1970s. Hudspeth County has population growth rates scattered all over the place including some decades with negative growth rates. My point is that anyone doing long-range projections should be well aware of the variability of growth rates, and not simply project past patterns into the future. Figure 2 presents a comparison of percent change in population from 1940-1990 for each of the four areas.

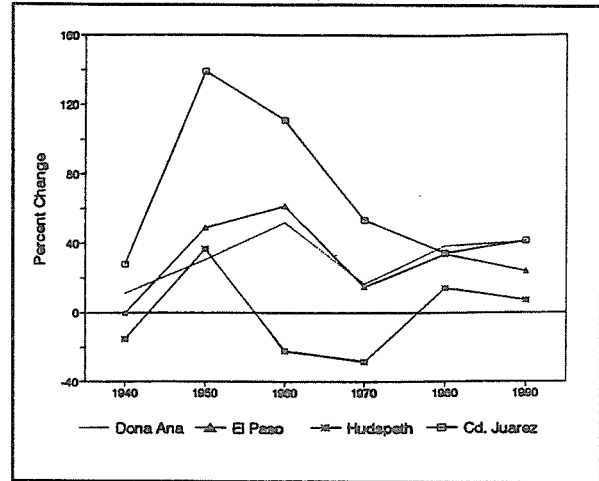


Figure 2. Percent change in population from 1940-1990.

TABLE 1. TOTAL POPULATION DATA FOR THE PROJECTION REGION

Year	Doña Ana County, NM		El Paso County, TX		Hudspeth County, TX		Cd. Juárez	
	Population	Percent Change	Population	Percent Change	Population	Percent Change	Population	Percent Change
1900	10,187	na	24,886	na	na	na	na	na
1910	12,893	26.56	52,599	111.36	0	na	na	na
1920	16,548	28.35	101,877	93.69	962	na	na	na
1930	27,455	65.91	131,597	29.17	3,728	287.53	43,138	na
1940	30,411	10.77	131,067	-0.40	3,149	-15.53	55,024	27.55
1950	39,557	30.07	194,968	48.75	4,298	36.49	131,308	138.64
1960	59,948	51.55	314,070	61.09	3,343	-22.22	276,995	110.95
1970	69,773	16.39	359,291	14.40	2,392	-28.45	424,135	53.12
1980	96,340	38.08	479,899	33.57	2,728	14.05	567,365	33.77
1990	135,510	40.66	591,610	23.28	2,915	6.85	798,499	40.74
1994	155,469	14.73	664,813	12.37	2,912	-0.10		

Sources: 1900 through 1990 U.S. data are census counts
 1994 U.S. data are estimates from the U.S. Bureau of the Census
 Mexican data are from Instituto Nacional de Estadística, Geografía y Informática

The differences in population growth rates, that is, from the 1940s until 1990 for those four areas, become more variable the smaller the county. This is easy to see if you look at a map of New Mexico's population growth (Figure 3 and Table 2). The counties in the middle of Figure 3 that are lightly shaded

are counties that grew very rapidly from 1980 to 1990. The counties darkly shaded lost population between 1980 and 1990, and most of those counties have been losing population since the 1930s.

I also would like to emphasize the importance of the age distribution of the population. Figure 4 de-

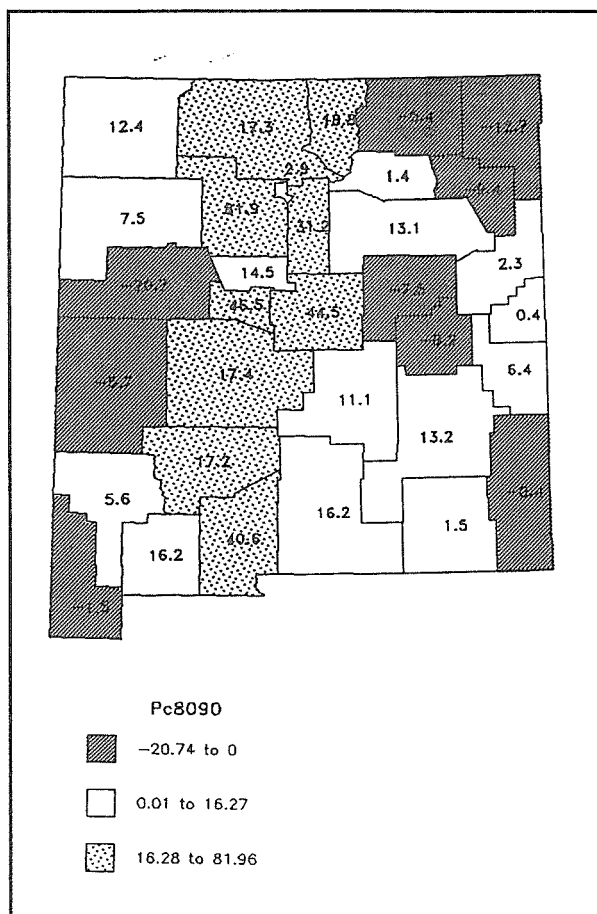


Figure 3. Percent change in population, 1980-1990, New Mexico counties.

picts a population pyramid for the United States in 1950. On the left-hand side are males, on the right-hand side are females, and going up the vertical axis is age. You can see at the bottom of the graph very easily what is called the baby boom and the rapid increase in the number of people right after World War II. You can also see the effects of the Depression with the lower birth rates of about the 20-year olds. What I want to emphasize with this figure is that demographic events last a long time.

To show you extreme variability, look at Los Alamos County (Figure 5). It is a very strange looking population pyramid. The very small group about one-third of the way up are 20-24 year olds. Many of those people who should have been in Los Alamos County are in fact in Doña Ana County attending New Mexico State University. About 25 percent of the population that you would have expected in that age group in Los Alamos are actually here on the

NMSU campus. The lesson from all of this is that the age distribution is an important variable in its own right. It helps to determine water demand. In terms of population projections, the age distribution clearly is an important variable.

When looking at methods used to determine population projections, there are five basic categories. The first is *Purely Subjective* and sometimes I refer to it as the “Chamber of Commerce” method. Second are *Naive Models*—that sounds like a negative name but it really is not—a naive model in the literature means that you project a current growth rate, say a percentage change, into the future. In *Econometric* models, the idea is very simple though the models can be fairly complex. The idea is that people move in response to economic conditions. People move from areas of high unemployment to areas of low unemployment. Another projection method is called *Cohort-Component*, which is a method that demographers use a lot and the method we will be using today. The last category of population projection methods is referred to as *Hybrid*—a method that combines the econometric and cohort-component approaches.

Population in one time period is a function of the population of the base period plus the number of births minus the number of deaths plus in-migration minus out-migration:

$$Pop_{t+1} = Pop_t + Births_t - Deaths_t + Inmig_t - Outmig_t$$

Where

- Pop_{t+1} = Population in time period t+1 (e.g., 2000)
- Pop_t = Population in time period t (e.g., 1990)
- Births_t = Births from time period t to time period t+1
- Deaths_t = Deaths from time period t to time period t+1
- Inmig_t = In-migration from time period t to time period t+1
- Outmig_t = Out-migration from time period t to time period t+1

For the projections I present this morning, we have separately projected the components: births, deaths, and net migration. The cohorts are by five-year age groups, sex and ethnicity—Hispanic and non-Hispanic.

Starting with base year 1990, the population of Doña Ana County was about 135,500 (Table 3). I am not suggesting that our projections will be this accurate, but our earlier projections done during the 1980s missed that number by about 90 people when the 1990 census came around. I swore I would never do predictions any more after that. In the year 2000, the

TABLE 2. NEW MEXICO TOTAL POPULATION AND PERCENT CHANGE FROM 1980-2010 BY COUNTY (1980 AND 1990 ARE CENSUS COUNTS, 2000 AND 2010 ARE P/W PROJECTIONS). (Source: Peach, J.T. and J.D. Williams. 1994. "Population Projections to 2010 for New Mexico Counties by Age, Sex and Ethnicity." New Mexico State University Cooperative Extension Handbook No. 9, Las Cruces, NM.)

Total Population: 1980 to 2010					Percent Change (Total Population)		
County	1980	1990	2000	2010	80 to 90	90 to 2000	00 to 2010
Bernalillo	419,700	480,577	532,307	573,112	14.50	10.76	7.67
Catron	2,720	2,563	2,365	2,166	-5.77	-7.73	-8.41
Chaves	51,103	57,849	65,752	74,864	13.20	13.66	13.86
Cibola	30,138	23,794	18,900	14,664	-21.05	-20.57	-22.41
Colfax	13,667	12,925	11,915	10,685	-5.43	-7.81	-10.32
Curry	42,019	42,207	42,113	41,941	0.45	-0.22	-0.41
DeBaca	2,454	2,252	2,054	1,862	-8.23	-8.79	-9.35
Dofia Ana	96,340	135,510	189,436	261,288	40.66	39.79	37.93
Eddy	47,855	48,605	48,288	47,146	1.57	-0.65	-2.36
Grant	26,204	27,676	28,319	28,275	5.62	2.32	-0.16
Guadalupe	4,496	4,156	3,874	3,519	-7.56	-6.79	-9.16
Harding	1,090	987	952	888	-9.45	-3.55	-6.72
Hidalgo	6,049	5,958	5,757	5,482	-1.50	-3.37	-4.78
Lea	55,993	55,765	56,065	57,831	-0.41	0.54	3.15
Lincoln	10,997	12,219	13,144	13,921	11.11	7.57	5.91
Los Alamos	17,599	18,115	18,155	16,883	2.93	0.22	-7.01
Luna	15,585	18,110	21,011	24,787	16.20	16.02	17.97
McKinley	56,449	60,686	64,352	66,452	7.51	6.04	3.26
Mora	4,205	4,264	4,500	4,708	1.40	5.53	4.62
Otero	44,665	51,928	58,956	65,892	16.26	13.53	11.76
Quay	10,577	10,823	10,983	11,005	2.33	1.48	0.20
Rio Arriba	29,282	34,365	39,859	45,003	17.36	15.99	12.91
Roosevelt	15,695	16,702	18,269	20,052	6.42	9.38	9.76
Sandoval	34,799	63,319	113,614	197,108	81.96	79.43	73.49
San Juan	81,433	91,605	100,082	106,798	12.49	9.25	6.71
San Miguel	22,751	25,743	29,334	33,127	13.15	13.95	12.93
Santa Fe	75,360	98,928	127,090	159,978	31.27	28.47	25.88
Sierra	8,454	9,912	11,626	13,609	17.25	17.29	17.06
Socorro	12,566	14,764	17,241	19,664	17.49	16.78	14.05
Taos	19,456	23,118	26,980	30,987	18.82	16.71	14.85
Torrance	7,491	10,285	14,124	19,353	37.30	37.33	37.02
Union	4,725	4,124	3,594	3,037	-12.72	-12.85	-15.50
Valencia	30,977	45,235	65,723	93,355	46.03	45.29	42.04
New Mexico	1,302,894	1,515,069	1,766,734	2,069,442	16.28	16.61	17.13

Population Projections for Doña Ana, El Paso and Hudspeth Counties and Ciudad Juárez

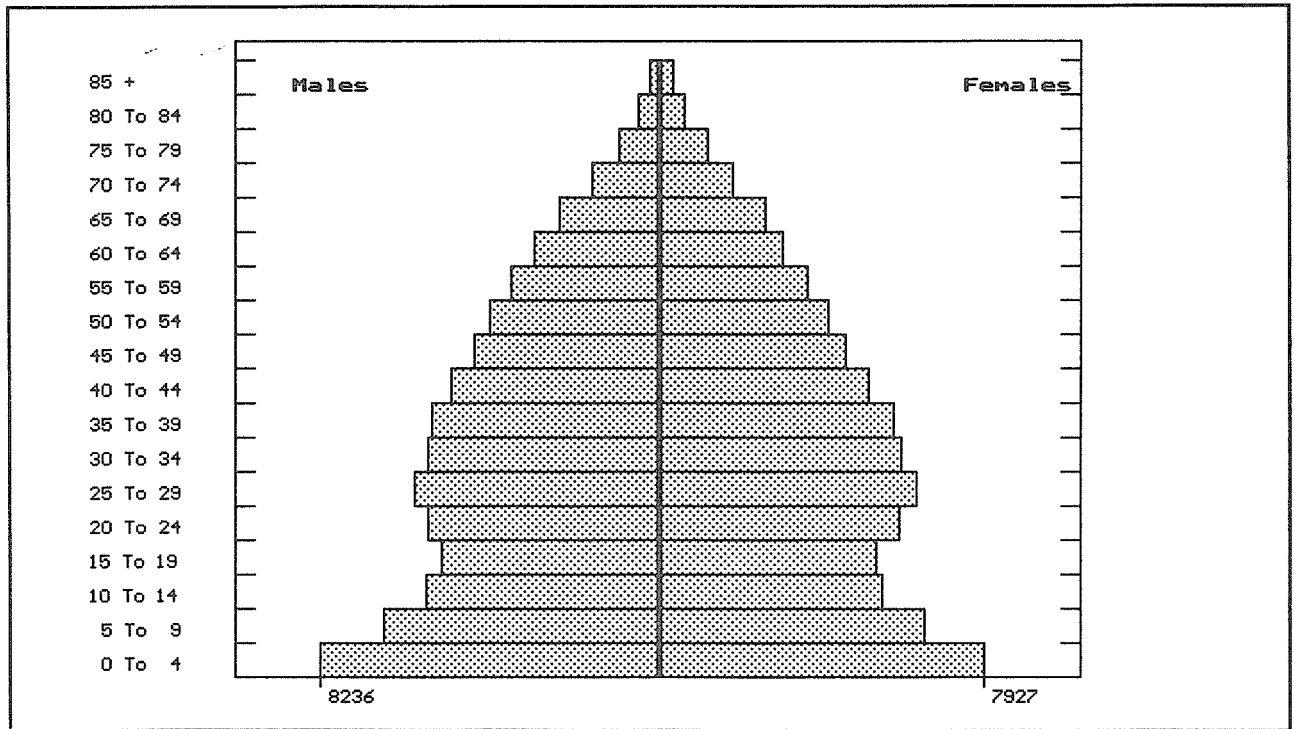


Figure 4. Population pyramid for the United States (1950).

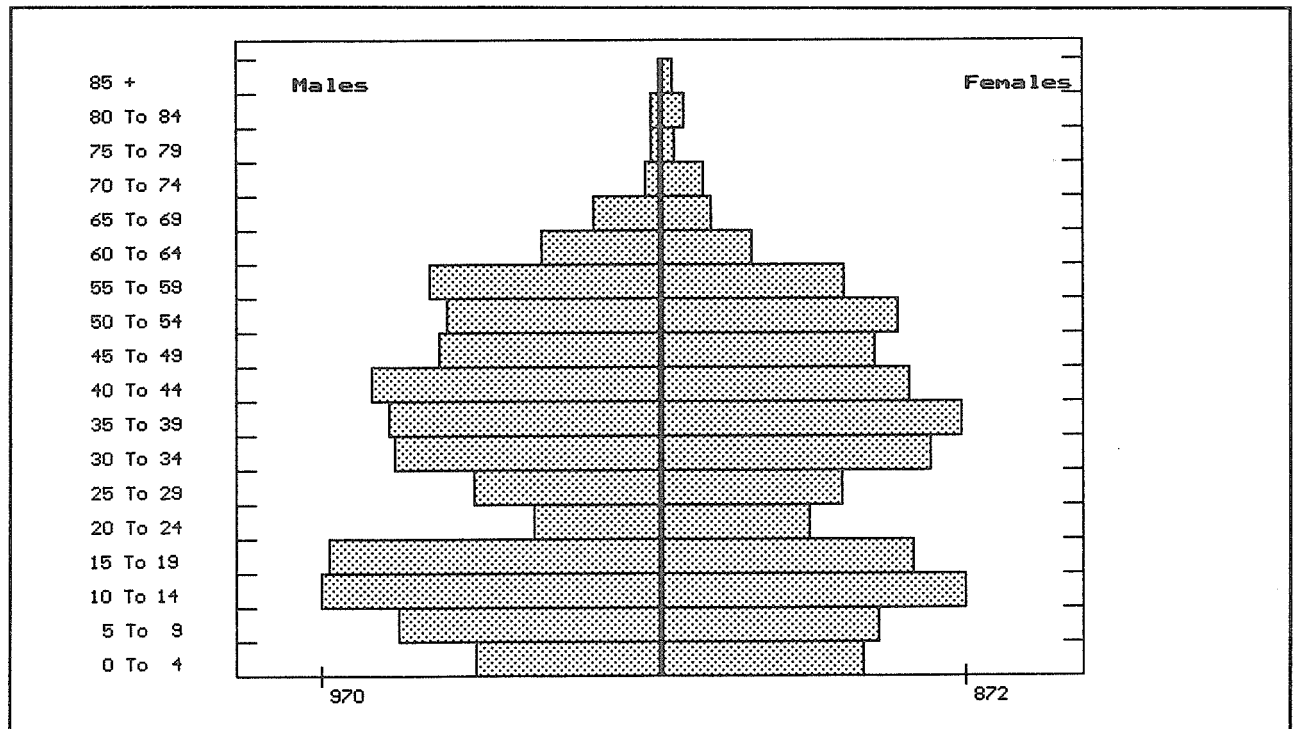


Figure 5. Population pyramid for Los Alamos County (1980).

TABLE 3. DOÑA ANA COUNTY. (Source: Peach, J.T. and J.D. Williams. 1994. "Population Projections to 2010 for New Mexico Counties by Age, Sex and Ethnicity." New Mexico State University Cooperative Extension Service Handbook No. 9, Las Cruces, NM.)

Males									
Ages	1980 Total	1980 Hispanic	1980 Non-Hisp	1990 Total	1990 Hispanic	2000 Total	2000 Hispanic	2010 Total	2010 Hispanic
0-4	4,266	2,713	1,553	5,951	4,057	8,057	5,895	10,642	8,233
5-9	4,244	2,757	1,487	6,086	4,187	8,251	6,084	10,912	8,497
10-14	4,282	2,722	1,560	5,715	3,969	8,065	5,935	11,055	8,624
15-19	5,721	3,218	2,503	6,089	3,914	8,722	5,944	11,808	8,637
20-24	6,016	2,778	3,238	7,060	3,634	9,133	5,299	12,600	7,924
25-29	4,177	2,011	2,166	6,065	3,326	6,425	4,045	9,183	6,144
30-34	3,314	1,499	1,815	5,448	2,965	6,506	3,879	8,596	5,655
35-39	2,545	1,229	1,316	4,887	2,573	7,182	4,255	7,719	5,176
40-44	2,203	1,012	1,191	4,049	1,978	6,746	3,912	8,116	5,118
45-49	2,300	1,094	1,206	3,086	1,447	5,911	3,029	8,655	5,010
50-54	2,099	1,042	1,057	2,582	1,211	4,751	2,367	7,943	4,682
55-59	1,884	831	1,053	2,610	1,191	3,504	1,575	6,689	3,298
60-64	1,509	556	953	2,393	1,120	2,953	1,302	5,415	2,544
65-69	1,201	411	790	2,102	883	2,908	1,266	3,906	1,674
70-74	865	304	561	1,471	501	2,305	1,009	2,854	1,173
75-79	526	214	312	945	307	1,644	660	2,272	945
80-84	278	128	150	524	197	890	325	1,409	654
85+	172	72	100	320	128	591	195	1,029	365
Total	47,602	24,591	23,011	67,383	37,588	94,543	56,976	130,802	84,352
Females									
Ages	1980 Total	1980 Hispanic	1980 Non-Hisp	1990 Total	1990 Hispanic	2000 Total	2000 Hispanic	2010 Total	2010 Hispanic
0-4	4,094	2,612	1,482	5,696	3,863	7,705	5,613	10,171	7,839
5-9	4,119	2,714	1,405	5,848	4,014	7,926	5,832	10,478	8,146
10-14	4,264	2,755	1,509	5,436	3,757	7,633	5,556	10,444	8,073
15-19	5,667	3,264	2,403	6,167	3,982	8,742	5,889	11,813	8,557
20-24	6,032	2,993	3,039	6,750	3,826	8,471	5,218	11,740	7,716
25-29	4,129	2,130	1,999	5,755	3,453	6,306	4,213	8,963	6,230
30-34	3,397	1,702	1,695	5,681	3,306	6,511	4,226	8,306	5,763
35-39	2,659	1,287	1,372	4,920	2,725	6,945	4,418	7,688	5,389
40-44	2,448	1,265	1,183	4,124	2,173	6,955	4,221	8,026	5,396
45-49	2,342	1,176	1,166	3,235	1,605	6,006	3,398	8,512	5,509
50-54	2,197	1,096	1,101	2,805	1,406	4,722	2,415	7,924	4,691
55-59	1,934	757	1,177	2,652	1,311	3,664	1,789	6,788	3,788
60-64	1,555	558	997	2,527	1,166	3,225	1,496	5,422	2,569
65-69	1,364	462	902	2,200	820	2,992	1,420	4,136	1,938
70-74	1,012	354	658	1,616	555	2,608	1,160	3,328	1,488
75-79	744	253	491	1,248	425	2,013	754	2,741	1,306
80-84	452	143	309	789	261	1,261	409	2,017	855
85+	329	92	237	678	212	1,207	390	1,990	675
Total	48,738	25,613	23,125	68,127	38,860	94,892	58,417	130,486	85,931
Total									
Ages	1980 Total	1980 Hispanic	1980 Non-Hisp	1990 Total	1990 Hispanic	2000 Total	2000 Hispanic	2010 Total	2010 Hispanic
0-4	8,360	5,325	3,035	11,647	7,920	15,762	11,507	20,812	16,072
5-9	8,363	5,471	2,892	11,934	8,201	16,177	11,916	21,390	16,643
10-14	8,546	5,477	3,069	11,151	7,726	15,698	11,492	21,498	16,697
15-19	11,388	6,482	4,906	12,256	7,896	17,463	11,833	23,621	17,193
20-24	12,048	5,771	6,277	13,810	7,460	17,604	10,516	24,341	15,640
25-29	8,306	4,141	4,165	11,820	6,779	12,731	8,258	18,146	12,374
30-34	6,711	3,201	3,510	11,129	6,271	13,017	8,105	16,902	11,419
35-39	5,204	2,516	2,688	9,807	5,298	14,127	8,673	15,406	10,565
40-44	4,651	2,277	2,374	8,173	4,151	13,700	8,133	16,142	10,514
45-49	4,642	2,270	2,372	6,321	3,052	11,917	6,428	17,167	10,519
50-54	4,296	2,138	2,158	5,387	2,617	9,473	4,782	15,867	9,373
55-59	3,818	1,588	2,230	5,262	2,502	7,168	3,365	13,477	7,086
60-64	3,064	1,114	1,950	4,920	2,286	6,178	2,797	10,837	5,114
65-69	2,565	873	1,692	4,302	1,703	5,901	2,686	8,042	3,612
70-74	1,877	658	1,219	3,087	1,056	4,913	2,169	6,182	2,661
75-79	1,270	467	803	2,193	732	3,657	1,414	5,013	2,252
80-84	730	271	459	1,313	458	2,151	734	3,427	1,509
85+	501	164	337	998	340	1,797	586	3,020	1,040
Total	96,340	50,204	46,136	135,510	76,448	189,436	115,393	261,288	170,282

Population Projections for Doña Ana, El Paso and Hudspeth Counties and Ciudad Juárez

TABLE 4. EL PASO COUNTY. (Source: Peach, J.T. and J.D. Williams. 1994. "Population Projections to 2010 for New Mexico Counties by Age, Sex and Ethnicity." New Mexico State University Cooperative Extension Service Handbook No. 9, Las Cruces, NM.)

Males Ages	1980	1980	1980	1990	1990	2000	2000	2010	2010
	Total	Hispanic	Non-Hisp	Total	Hispanic	Total	Hispanic	Total	Hispanic
0-4	22,791	16,337	6,454	27,247	20,793	32,524	26,809	38,221	33,359
5-9	24,305	17,781	6,524	27,660	21,210	33,058	27,347	38,887	34,028
10-14	23,311	16,616	6,695	26,536	20,786	32,205	26,455	39,202	34,110
15-19	26,806	16,696	10,110	28,432	21,848	32,571	26,061	39,366	33,602
20-24	25,701	13,728	11,973	25,657	16,813	28,628	21,032	34,365	26,769
25-29	20,480	11,784	8,696	25,163	16,554	27,269	21,662	31,383	25,840
30-34	16,959	9,464	7,495	24,051	15,950	25,518	19,534	29,576	24,437
35-39	12,666	6,983	5,683	20,910	13,646	26,361	19,170	29,768	25,085
40-44	11,210	6,199	5,011	17,680	10,737	25,600	18,095	27,705	22,162
45-49	10,806	5,689	5,117	13,073	7,846	22,014	15,332	28,153	21,539
50-54	10,586	5,601	4,985	10,975	6,499	17,458	11,257	25,674	18,971
55-59	9,272	4,723	4,549	10,299	5,908	12,633	8,148	21,656	15,923
60-64	7,223	3,020	4,203	9,617	5,565	10,095	6,457	16,225	11,184
65-69	5,144	2,265	2,879	8,158	4,583	9,184	5,733	11,432	7,907
70-74	3,618	1,667	1,951	5,531	2,645	7,656	4,874	8,154	5,655
75-79	2,320	1,220	1,100	3,466	1,738	5,662	3,517	6,470	4,399
80-84	1,113	507	606	1,956	1,037	3,005	1,645	4,343	3,032
85+	732	365	367	1,191	725	1,913	1,213	3,155	2,209
Total	235,043	140,645	94,398	287,602	194,883	353,355	264,343	433,733	350,211
Females Ages	1980	1980	1980	1990	1990	2000	2000	2010	2010
	Total	Hispanic	Non-Hisp	Total	Hispanic	Total	Hispanic	Total	Hispanic
0-4	22,130	15,789	6,341	25,794	19,737	30,811	25,447	36,228	31,665
5-9	23,610	17,460	6,150	26,372	20,450	31,611	26,367	37,270	32,809
10-14	22,542	16,325	6,217	25,768	20,275	30,592	25,345	37,324	32,678
15-19	25,015	17,205	7,810	27,590	21,972	31,144	25,735	37,971	33,180
20-24	23,984	15,470	8,514	24,410	18,271	28,116	22,692	33,547	28,366
25-29	21,470	13,510	7,960	26,335	18,891	29,480	24,125	33,413	28,257
30-34	18,002	11,216	6,786	25,993	18,553	27,277	21,912	31,954	27,214
35-39	14,216	8,694	5,522	22,977	16,241	29,009	22,710	33,533	29,002
40-44	12,814	8,039	4,775	19,222	12,956	28,301	21,431	30,265	25,312
45-49	12,093	7,304	4,789	14,751	9,843	24,374	18,387	31,310	25,711
50-54	12,288	7,300	4,988	12,894	8,698	19,524	14,018	29,225	23,188
55-59	10,436	5,443	4,993	11,957	7,800	14,772	10,511	24,833	19,636
60-64	7,538	3,671	3,867	11,980	7,726	12,784	9,206	19,532	14,836
65-69	6,453	3,069	3,384	9,868	5,635	11,599	8,075	14,494	10,882
70-74	4,876	2,454	2,422	6,669	3,599	10,952	7,574	11,866	9,025
75-79	3,664	1,855	1,809	5,221	2,770	8,152	5,086	9,841	7,288
80-84	2,055	886	1,169	3,406	1,840	4,683	2,699	7,863	5,679
85+	1,670	666	1,004	2,801	1,479	4,416	2,643	6,792	4,527
Total	244,856	156,356	88,500	304,008	216,736	377,598	293,964	467,260	389,255
Total Ages	1980	1980	1980	1990	1990	2000	2000	2010	2010
	Total	Hispanic	Non-Hisp	Total	Hispanic	Total	Hispanic	Total	Hispanic
0-4	44,921	32,126	12,795	53,041	40,530	63,335	52,256	74,448	65,024
5-9	47,915	35,241	12,674	54,032	41,660	64,669	53,713	76,157	66,837
10-14	45,853	32,941	12,912	52,304	41,061	62,797	51,800	76,526	66,787
15-19	51,821	33,901	17,920	56,022	43,820	63,715	51,796	77,337	66,782
20-24	49,685	29,198	20,487	50,067	35,084	56,744	43,724	67,912	55,135
25-29	41,950	25,294	16,656	51,498	35,445	56,749	45,787	64,795	54,096
30-34	34,961	20,680	14,281	50,044	34,503	52,795	41,447	61,530	51,651
35-39	26,882	15,677	11,205	43,887	29,887	55,370	41,879	63,302	54,087
40-44	24,024	14,238	9,786	36,902	23,693	53,901	39,527	57,970	47,473
45-49	22,899	12,993	9,906	27,824	17,689	46,388	33,720	59,463	47,250
50-54	22,874	12,901	9,973	23,869	15,197	36,983	25,275	54,899	42,159
55-59	19,708	10,166	9,542	22,256	13,708	27,405	18,659	46,489	35,559
60-64	14,761	6,691	8,070	21,597	13,291	22,880	15,663	35,757	26,020
65-69	11,597	5,334	6,263	18,026	10,218	20,783	13,808	25,926	18,789
70-74	8,494	4,121	4,373	12,200	6,244	18,608	12,448	20,020	14,680
75-79	5,984	3,075	2,909	8,687	4,508	13,814	8,603	16,311	11,687
80-84	3,168	1,393	1,775	5,362	2,877	7,688	4,344	12,206	8,711
85+	2,402	1,031	1,371	3,992	2,204	6,329	3,856	9,947	6,736
Total	479,899	297,001	182,898	591,610	411,619	730,953	558,306	900,993	739,466

TABLE 5. HUDSPETH COUNTY. (Source: Peach, J.T. and J.D. Williams. 1994. "Population Projections to 2010 for New Mexico Counties by Age, Sex and Ethnicity." New Mexico State University Cooperative Extension Service Handbook No. 9, Las Cruces, NM.)

Males	1980	1980	1990	1990	2000	2000	2010	2010
Ages	Total	Hispanic	Total	Hispanic	Total	Hispanic	Total	Hispanic
0-4	151	108	115	105	126	118	130	130
5-9	146	91	134	89	134	100	115	110
10-14	154	104	126	98	102	95	130	107
15-19	142	88	138	104	130	102	119	114
20-24	106	55	105	79	89	74	94	72
25-29	96	59	137	99	141	117	118	114
30-34	89	46	119	81	135	116	129	110
35-39	64	37	115	67	161	112	144	133
40-44	67	30	81	48	114	85	152	121
45-49	76	36	71	48	128	87	161	146
50-54	79	41	81	46	105	74	172	130
55-59	85	39	76	40	74	53	124	97
60-64	46	22	69	36	70	40	101	65
65-69	41	19	50	20	44	21	54	27
70-74	36	19	33	14	49	23	39	26
75-79	25	10	23	13	28	14	38	14
80-84	8	3	16	13	13	10	26	16
85+	5	3	16	6	22	12	18	13
Total	1,416	810	1,505	1,006	1,666	1,253	1,864	1,545
Females	1980	1980	1990	1990	2000	2000	2010	2010
Ages	Total	Hispanic	Total	Hispanic	Total	Hispanic	Total	Hispanic
0-4	141	96	101	76	104	85	107	94
5-9	131	91	163	124	169	139	173	153
10-14	134	103	130	86	93	68	95	76
15-19	139	81	116	95	150	129	161	145
20-24	100	63	86	67	83	56	59	44
25-29	91	65	121	89	116	104	154	142
30-34	98	47	93	63	82	67	78	56
35-39	71	39	97	58	127	79	111	93
40-44	72	36	81	47	83	63	77	67
45-49	66	34	79	46	109	68	143	94
50-54	75	39	65	41	76	54	85	72
55-59	55	30	68	41	83	55	116	82
60-64	30	11	56	30	49	32	58	41
65-69	50	25	55	30	68	41	83	55
70-74	24	6	24	7	42	19	36	20
75-79	20	7	39	16	42	19	51	26
80-84	10	4	24	9	25	11	48	29
85+	5	2	12	4	26	9	31	12
Total	1,312	779	1,410	929	1,527	1,100	1,666	1,303
Total	1980	1980	1990	1990	2000	2000	2010	2010
Ages	Total	Hispanic	Total	Hispanic	Total	Hispanic	Total	Hispanic
0-4	292	204	216	181	230	203	236	224
5-9	277	182	297	213	303	239	288	263
10-14	288	207	256	184	195	163	225	184
15-19	281	169	254	199	280	231	280	260
20-24	206	118	191	146	172	130	153	117
25-29	187	124	258	188	257	221	271	257
30-34	187	93	212	144	217	183	207	166
35-39	135	76	212	125	288	192	254	226
40-44	139	66	162	95	197	148	230	188
45-49	142	70	150	94	237	155	304	240
50-54	154	80	146	87	181	127	257	201
55-59	140	69	144	81	157	109	241	179
60-64	76	33	125	66	119	72	159	106
65-69	91	44	105	50	112	62	138	83
70-74	60	25	57	21	91	42	75	46
75-79	45	17	62	29	70	33	89	40
80-84	18	7	40	22	38	20	74	44
85+	10	5	28	10	48	21	49	25
Total	2,728	1,589	2,915	1,935	3,193	2,352	3,530	2,848

Population Projections for Doña Ana, El Paso and Hudspeth Counties and Ciudad Juárez

TABLE 6. JUÁREZ. (Source: Williams, J., C. Eastman and J. Peach. 1994. "Population Projections to 2010 for U.S.-Mexico Border Counties and Municipios." Border Research Institute, Technical Report No. 4, Las Cruces, NM.)

Males	1980	1990	1980	1990		
Ages	Unadi	Unadi	Adi	Adi	2000	2010
0-4	34,328	47,219	34,328	47,219	62,821	80,102
5-9	41,849	43,472	41,849	43,472	57,836	73,746
10-14	38,102	41,928	38,102	41,928	57,673	76,730
15-19	33,878	51,179	33,878	51,179	53,164	70,731
20-24	27,221	46,667	27,313	49,633	54,617	75,127
25-29	19,481	35,910	19,547	38,192	57,696	59,934
30-34	15,485	28,001	15,537	29,781	54,118	59,552
35-39	13,353	21,296	13,398	22,649	44,255	66,855
40-44	11,760	15,685	11,800	16,682	31,975	58,105
45-49	9,519	13,263	9,551	14,106	23,846	46,594
50-54	7,882	11,105	7,909	11,811	16,698	32,005
55-59	6,385	8,147	6,406	8,665	12,797	21,634
60-64	4,280	6,570	4,294	6,988	10,435	14,753
65-69	3,573	4,854	3,585	5,162	6,982	10,312
70-74	2,578	2,928	2,587	3,114	5,067	7,567
75-79	1,695	2,077	1,701	2,209	3,181	4,302
80-84	860	1,284	863	1,366	1,644	2,675
85+	539	948	541	1,008	1,488	2,050
Unknown	419	12,630				
Total	273,187	395,163	273,187	395,163	556,294	762,774
Females	1980	1990	1980	1990		
Ages	Unadi	Unadi	Adi	Adi	2000	2010
0-4	33,634	45,840	33,634	45,840	60,987	77,763
5-9	41,663	41,738	41,663	41,738	55,529	70,804
10-14	38,670	41,221	38,670	41,221	56,180	74,744
15-19	36,283	49,714	36,283	49,714	49,803	66,260
20-24	30,544	46,417	30,642	49,215	52,462	71,500
25-29	22,720	37,045	22,793	39,278	53,818	53,915
30-34	17,617	29,693	17,673	31,483	50,566	53,902
35-39	15,462	22,736	15,512	24,107	41,542	56,920
40-44	13,071	17,365	13,113	18,412	32,798	52,678
45-49	11,127	14,573	11,163	15,451	24,013	41,381
50-54	9,314	12,327	9,344	13,070	18,352	32,691
55-59	7,088	9,343	7,111	9,906	13,712	21,310
60-64	4,934	8,014	4,950	8,497	11,886	16,689
65-69	4,381	5,458	4,395	5,787	8,062	11,160
70-74	3,096	3,375	3,106	3,578	6,143	8,593
75-79	2,153	2,564	2,160	2,719	3,580	4,987
80-84	1,160	1,679	1,164	1,780	2,051	3,521
85+	801	1,452	804	1,540	2,252	2,941
Unknown	460	12,782				
Total	294,178	403,336	294,178	403,336	543,736	721,757
Total	1980	1990	1980	1990		
Ages	Unadi	Unadi	Adi	Adi	2000	2010
0-4	67,962	93,059	67,962	93,059	123,808	157,865
5-9	83,512	85,210	83,512	85,210	113,366	144,550
10-14	76,772	83,149	76,772	83,149	113,853	151,474
15-19	70,161	100,893	70,161	100,893	102,967	136,990
20-24	57,765	93,084	57,954	98,848	107,078	146,627
25-29	42,201	72,955	42,339	77,470	111,514	113,849
30-34	33,102	57,694	33,211	61,263	104,683	113,453
35-39	28,815	44,032	28,909	46,756	85,797	123,775
40-44	24,831	33,050	24,912	35,094	64,773	110,783
45-49	20,646	27,836	20,714	29,557	47,859	87,975
50-54	17,196	23,432	17,252	24,881	35,049	64,696
55-59	13,473	17,490	13,517	18,571	26,509	42,944
60-64	9,214	14,584	9,244	15,485	22,321	31,442
65-69	7,954	10,312	7,980	10,949	15,044	21,472
70-74	5,674	6,303	5,693	6,693	11,210	16,160
75-79	3,848	4,641	3,861	4,928	6,761	9,289
80-84	2,020	2,963	2,027	3,146	3,695	6,196
85+	1,340	2,400	1,344	2,548	3,741	4,991
Unknown	879	25,412				
Total	567,365	798,499	567,365	798,499	1,100,030	1,484,531

projection is 189,000 and in the year 2010 it is 260,000. You can also see El Paso County (Table 4) continuing to grow, Hudspeth County (Table 5) hardly growing at all, and Ciudad Juárez (Table 6) with a 1990 population of 750,000, but according to the projections, growing to well over one million by the year 2010.

I would like to mention that you will hear very wild numbers about the population of Ciudad Juárez. You may hear that in 1990, they were claiming 1.5 million people. No one has done a census count that suggests anything near that number. These census numbers could be criticized, and they have been, by Mexican and American demographers, but the burden of proof is on somebody else to show that those numbers are wildly wrong. My own guess would be that these are approximately correct within 10-15 percent of the actual population.

Table 7 presents alternative county population projections produced by the U.S. Department of Commerce Bureau of Economic Analysis (BEA) in 1992. For those of you who have been in the water game for awhile, these were the old Office of Business Economics and Agricultural Research Service projections. Our NMSU 1994 projections are contained in Table 8. BEA projections are economic projections, which use a very different methodology. In Doña Ana County, in 2000, the population was projected to be 155,100. That BEA population projection for the year 2000 was passed in 1994 according to the most recent census estimates. These projections are always low when you are talking about an area that is growing rapidly. In similar fashion, El Paso is likely to grow much beyond the numbers that are presented on the chart. Hudspeth County is about the only one where our projections coincided with BEA projections. In Hudspeth County, a good guess is that its population will remain relatively constant at about 3,000 people. We have no comparable data for Ciudad Juárez.

TABLE 7. U.S. DEPARTMENT OF COMMERCE BUREAU OF ECONOMIC ANALYSIS COUNTY PROJECTIONS (1992) (POPULATION IN THOUSANDS OF PERSONS AS OF 1/1/92).

Year	Area		
	Doña Ana Cty (New Mexico)	El Paso Cty (Texas)	Hudspeth Cty (Texas)
1990	135.5	591.6	2.9
1995	146.5	617.3	2.9
2000	155.1	636.5	2.9
2005	162.6	652.8	2.9
2010	169.1	667.9	2.8
2020	178.5	694.3	2.9
2040	184.8	706.6	2.8

TABLE 8. NMSU PROJECTIONS (APRIL 1994) (1990 FIGURES ARE FROM THE 1990 CENSUS; POPULATION IN THOUSANDS OF PERSONS).

Year	Doña Ana Cty (New Mexico)	El Paso Cty (Texas)	Hudspeth Cty (Texas)	Cd. Juárez (Mexico)
1990	135.5	591.6	2.9	798.5
2000	189.4	731.0	3.2	1100.0
2010	261.3	901.0	3.5	1484.5