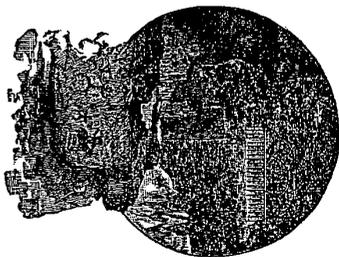


SMITHSONIAN INSTITUTION
BUREAU OF AMERICAN ETHNOLOGY
BULLETIN 197

AN ANALYSIS OF SOURCES OF
INFORMATION ON THE
POPULATION OF THE NAVAHO

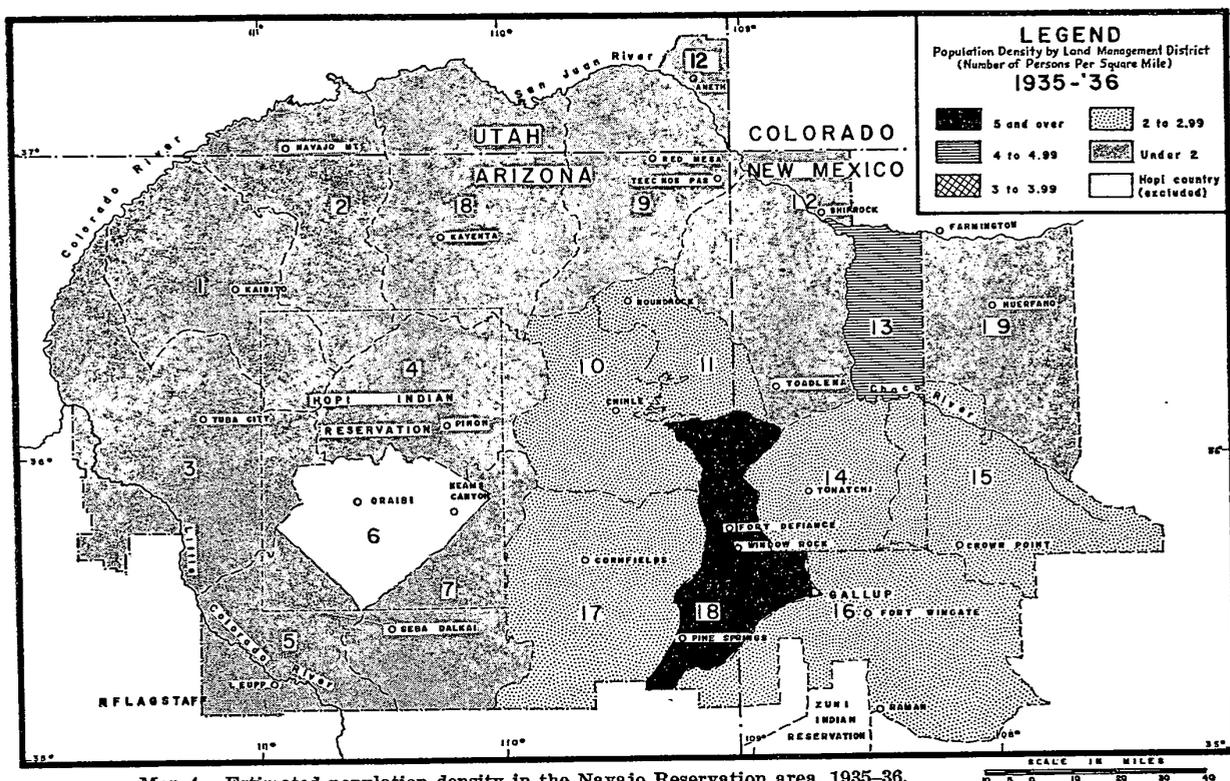
By DENIS FOSTER JOHNSTON



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MAP 4.—Estimated population density in the Navajo Reservation area, 1935-36.

Maps 4 through 7 illustrate the changes which have occurred in the distribution of the population of the Navajo Reservation, together with the growth of this population in the period from 1935-36 to 1957. The estimated population of each land management district for the years 1935-36, 1947, and 1957, were supplied through the courtesy of J. Nixon Hadley of the Division of Indian Health, U.S. Public Health Service. A comparison of map 4 with maps 5 and 6 reveals the most significant movements of the population in this area at this time; to the southeast and to the northeast. The former movement reflects increasing participation of Navahos in off-reservation economic activities. The latter movement reflects their participation in the development of the oil resources of the Aneth region and the uranium and other mineral resources that are processed in the Shiprock region. The population increases shown in map 7 demonstrate the high growth rate that is characteristic of most of the districts on the reservation at the present time.⁷⁷

A SUMMARY OF NAVAHO POPULATION GROWTH

Despite the three centuries of Spanish hegemony in the Southwest, contacts between the Spanish and the Navaho appear to have remained extremely tenuous. In his account of the first century of Spanish colonial activity in this region, Fray Zarate-Salmeron refers to the "populous, warlike, and valiant nation of the Apaches," said to occupy the vast reaches of a mythical land, the "Gran Tegunayo." His report contained no population estimates, but it did refer to a stretch of mountains to the west of Santa Fe as the "Casa fuerte o Nabajtu" (Zarate-Salmeron, 1949, pp. 67-71).⁷⁸

The first known explicit estimate of the Navaho population to be found by me is that of Fray Alonso de Benavides, who, with disarming simplicity, estimated their number as "over 200,000 souls." His painfully naive account of the procedure whereby he arrived at

⁷⁷ It should be noted that, since 1957, the construction of the Glen Canyon Dam on the Colorado River just below the Utah boundary has attracted large numbers of Navaho and Hopi workers. This construction, together with the development of improved roads in the western part of the reservation, will undoubtedly result in the establishment of a larger population in this area.

⁷⁸ It is apparent that the range of mountains referred to here as the "Casa fuerte o Nabajtu" was the southeastern tip of the San Juan Mountains, an area about 70 miles northwest of Santa Fe, N. Mex., between the Chama and Rio Grande Rivers. This same region is identified as "Old Navajo country" on a map of Navaho country in 1776, based on a map of the expedition of Fathers Dominguez and Escalante in that year (Van Valkenburg and McPhee, 1938, p. 6). It is interesting to note, albeit in a speculative vein, that the first outsider actually to come into contact with Navahos may have been an African. Fray Marcos de Niza, reporting on his discovery of Cibola (Zuni Pueblo) in 1539, mentions the fact that he ordered Stephen Dorantez, the Negro, to proceed northward from the vicinity of Zuni, where he obtained an abundance of "turquoise and hides of catel." (See Baudeller, 1890, pp. 207 and 214.)

Sixty years later, in 1599, Don Juan de Oñate completed an extensive journey throughout the region (the provinces of Teguas or Tegunayo), visiting the Hopi, Zuni, Taos, and other pueblos. He estimated that the entire region contained 70,000 Indians, which would not be much less than its present Indian population (Bolton, 1915, p. 216).

this figure is a dismal foreshadow of the many fanciful estimates that were to follow:

"... They [the Navaho Apaches] assembled more than 30,000 [warriors, presumably] to go to war in less than 8 days. This is a very conservative estimate, because the Sergeant Major of the Spanish soldiers told me that once when he had fought them in a war he had seen more than 200,000 as near as he could estimate (sic)." [Benavides, 1945, p. 85.]

In an earlier annotation to Benavides' report, Hodge and Lummis express doubt that the Navaho could actually have numbered as much as 4,000 at this time. Later in the 17th century, Padres Delgado and Irigoyen were reported to have "interviewed" some 4,000 Navahos, suggesting the existence of a much larger population (Benavides, 1916, pp. 44 and 59 f.). These early estimates should generally be viewed in the light of similar statements by missionaries elsewhere in the Americas. Their proselytizing zeal apparently prompted them to frequently exaggerate the number of potential converts to Christianity.

The first apparently realistic estimate of the Navaho population was reported over a century later, when, in 1776, a Spanish official returned from a visit to "all" of the Navaho hogans. His report to the governor of New Mexico stated that the Navaho consisted of some 700 families totaling about 3,500 people. At about this time, the total body of "Apaches" was estimated to number some 5,000 warriors. This latter estimate, reported at the Council of Mondova, was accompanied by the statement that the "Ijpanes, Gilenos, and Nabajos [Navaho]" were among the most numerous tribes in the Apache group (Bolton, 1914, vol. 2, p. 153).⁷⁹

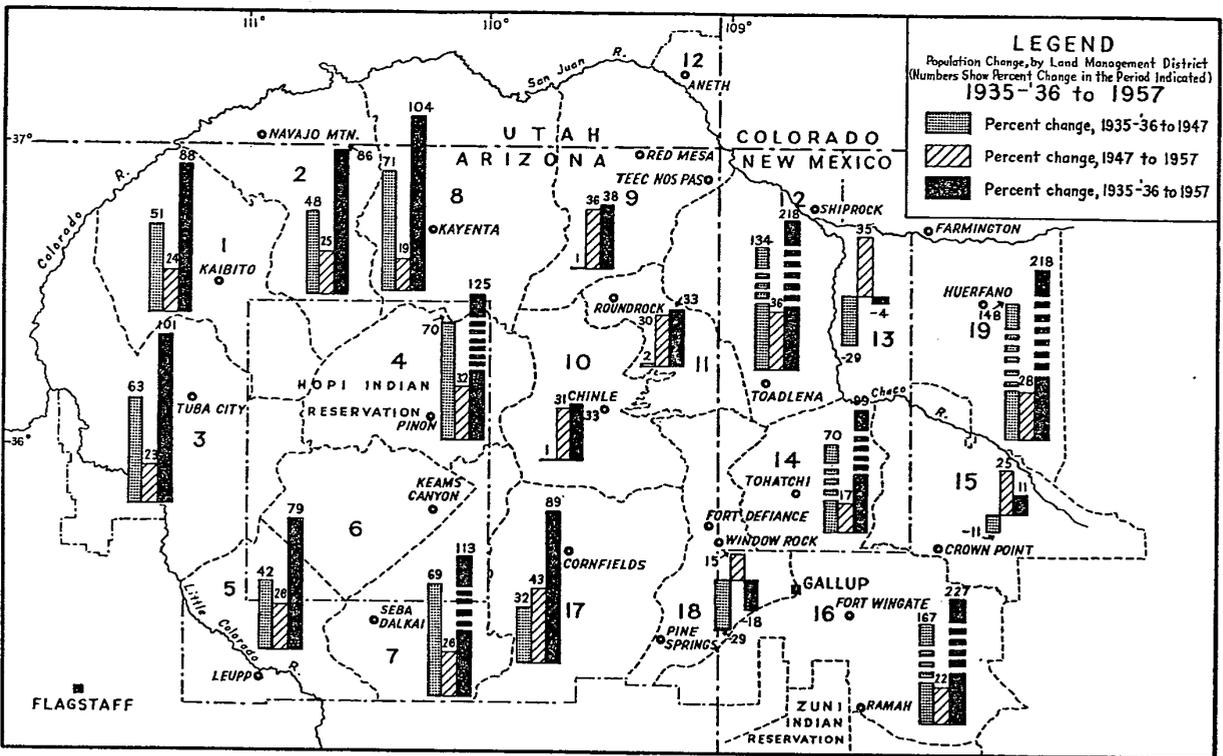
In his account of his exploration of the southwest region in 1805-07, Zebulon Pike (1811, p. 337) makes the following brief reference to the Navaho:

The 'Nanahaws' are situated to the Northwest of Santa Fe, and are frequently at war with the Spaniards. They are supposed to be some 2,000 warriors strong.

On the basis of this figure, Schermerhorn (1814, vol. 2, p. 29) estimated the total Navaho population at 6,500 persons.⁸⁰ From this time until the rounding up of the bulk of the tribe at Fort Sumner, the several estimates of the Navaho population serve merely to indicate the prevailing ignorance with regard to this tribe. For example, Gregg's (1855) estimate, pertaining to the decade of the 1830's, was

⁷⁹ Van Valkenburgh and McPhee, 1938, p. 5, refers to the same survey as having been conducted by Fathers Dominguez and Escalante.

⁸⁰ The assumption that the total population of an Indian tribe would number 3.5 times its warrior force is not unrealistic, but neither is it precise. Wissler (1936 c, p. 6) found: on the average, 8 to 10 persons, including 2 to 3 warriors, per tent or "lodge." This would imply a warrior population somewhere between 20 and 37 percent of the total population, or about 28 percent, on the average. Considering the probable age-sex distribution of these aboriginal populations (with a median age not much over 17 years), it seems unlikely that their warrior population could greatly have exceeded one-fourth of their total population.



MAP 7.—Estimated population changes in the Navajo Reservation area, 1935-36 to 1957.

10,000, while Parker (1844, p. 32) in 1838, gives an estimate of only 2,000.

After 1846, the increased number of population estimates and other reports on the Navaho reflect the growing interest of the American authorities in this area. The several population estimates of this period vary from a low of 5,000 reported in 1849 to a high of 15,000 as estimated in 1860. Most of the estimates are in the range 8,000 to 10,000 (table 27, p. 136).

The removal of the majority of the tribe to Fort Sumner in 1864 made possible the first actual enumeration of at least the captive portion of the Navaho population. One of the first of these enumerations is summarized in a letter dated August 27, 1864.⁸¹ At this time, 5,911 Navahos had already arrived at the fort, and an additional 1,309 were en route thereto, making a total population of 7,220. Periodic enumerations were made throughout the Fort Sumner period, usually in connection with the distribution of ration tickets. The results of these counts were included in the regular monthly reports submitted by General Carleton to his superiors in Washington. It is evident from these enumerations that the later arrivals at the fort were compensated by the deaths and escapes that occurred there, so that the total captive population remained between 7,000 and 8,500 in number. Thus, the enumeration of May 31, 1867, produced a total of 7,406 Navahos while the report a month later estimated the total captive population as about 7,500 at this time (Dodd, 1868, p. 203).⁸²

The decade of the 1860's was unquestionably a period of great hardship for the Navaho. In his report of the hostilities immediately preceding the surrender of the Navaho tribe, Brigadier General Carleton noted that 301 Indians had been killed. Although some of these casualties were Apaches, the loss to the Navaho was not inconsiderable. The "long walk" to Fort Sumner, a journey of some 300 miles, also took its toll; Carleton mentions the death of 197 out of a single group of about 2,600 Navahos who undertook this journey. These losses, together with the severe privations experienced during the 4 years at Fort Sumner itself, appear to have halted, at least temporarily, the increase in the Navaho population.⁸³

⁸¹Carleton (MS.) expressed the opinion that no more than 1,000 Navahos remained at large at this time and that most of these had fled beyond the Little Colorado River to the west. Cf. Underhill, 1966, p. 119.

⁸²The Navaho population at Fort Sumner apparently reached a peak of well over 8,000 by the end of 1864, and declined somewhat thereafter. On Dec. 31, 1864, Capt. Francis McCabe of the First New Mexico Volunteer Cavalry conducted an enumeration of the Navahos at Fort Sumner, arriving at a total of 8,354. McCabe's reported age distribution suggests a peculiar decadency of children under age 5. See Keleher, 1952, p. 502, footnote 106.

⁸³General Carleton's order to Col. Christopher Carson regarding hostilities against the Navaho and Apache is contained in a letter from Carleton to Col. Joseph R. West, Santa Fe, dated Oct. 11, 1862 (U.S. Congress, 1867, appendix p. 99). His summary of the results of these operations is contained in General Order No. 3, dated Feb. 24, 1864 (ibid., pp. 247-257).

The question of the number of Navahos who were never brought into captivity at Fort Sumner remains controversial. Two groups of Navahos must be considered in this connection: those who escaped captivity by moving into the farther reaches of the Navaho hinterland, and those who had previously been taken captive by Mexican and other settlers in the region. Chief Justice Kirby Benedict, testifying in 1866, estimated the number of the latter group as "considerably exceeding 2,000," of whom a large proportion were Navahos. The size of the former group was a matter of disagreement between General Carleton and Colonel Carson. General Carleton, who hoped to create at Fort Sumner a kind of model community for the transformation of hostile Indians into peaceful agriculturalists, arrived at the understandably optimistic conclusion that fewer than 500 Navahos escaped captivity. On the other hand, Carson, whose familiarity with Navaho country was probably unequalled, asserted that the Navaho numbered at least 12,000, implying that only about half of them had surrendered to his troops.⁸⁴

The first report on the population of the Navaho following their return to their former homeland in 1868 estimates their number at about 8,000. Included in this figure were "several hundred that were never captured and brought to Fort Sumner" (Davis, 1869). About a year later, on October 2, 1869, the first distribution of sheep and goats at Fort Defiance was made the occasion for a general enumeration. In total, 8,181 Navahos were counted as they passed through the gates of the stockade to receive their allotment of animals (Bennett, 1870).⁸⁵

From that time until the present, information on the total population of the Navahos has been provided by two major sources: the Annual Reports of the Commissioner of Indian Affairs and the decennial censuses of the Bureau of the Census. The former source contains the annual reports of the several agents assigned to the various Indian agencies. In these reports, the Indian populations in their respective jurisdictions are estimated. The latter source provided important supplementary data on Indian population when special enumerations of Indians were undertaken in 1890, 1910, and 1930. In its other decennial enumerations, the Bureau of the Census

⁸⁴Carleton's estimate was evidently based upon his interview with Herrera, one of the Navaho chiefs at Fort Sumner. The pertinent figures are reported in a letter from Carleton to Capt. Erasmus W. Wood, dated Mar. 21, 1865 (U.S. Congress, 1867, appendix pp. 221 f.). Carson's estimate is reported in Dunn, 1958, p. 397. Mooney, 1928, p. 21, seems to have accepted Carson's estimate.

⁸⁵The annual report of the following year (Bureau of Indian Affairs, 1871, Doc. 124) mentions some 2,000 Navahos "roaming with other tribes," in addition to those enumerated at Fort Defiance. Even allowing for some duplication, this would imply a total population of close to 10,000 Navahos at this time. Other authorities regard even this figure as too low. For example, Laura Thompson, 1951, p. 30, footnote 9, argues that the present population of the Navaho implies that there must have been about 12,000 Navahos in all in 1868.

obtains some information on the Indian population, but does not classify the respondents according to their tribal affiliation (see pp. 98-121). The annual report of 1872 (Bureau of Indian Affairs, 1872, p. 52) is of particular interest in regard to the question of the number of Navahos who managed to escape captivity at Fort Sumner. This report gives the total number of Navahos as "9,114, an increase of 880 over last year's enumeration, . . . due mainly to the return of captives by the Mexicans." As previously mentioned, this report suggests that in estimating the true Navaho population at this time, it is necessary to consider three population groups: those at Fort Sumner, those who escaped to the West, and those who were enslaved by the Mexicans and others.

In 1875, the Navaho population was reported as 11,768. In 1884, the estimate had risen to 17,900. In 1885, the estimate jumped to 21,003. The 1884 estimate implies an average annual rate of increase of 5.44 percent between 1872 and 1884, while the 1885 estimate implies a similar rate of 6.63 percent from 1872 to 1885.⁸⁶ Either of these rates is clearly implausible for any population not receiving substantial accessions of immigrants from beyond its boundaries. The question remains, however, of deciding whether the earlier estimates are too low or the later ones too high. Unfortunately, neither the census enumeration of 1890 nor the subsequent annual reports of the Navaho agents shed much light on this question. In the special enumeration of Indians at the 1890 census, a total of 17,204 Navahos was reported. However, this enumeration was generally considered to have been faulty and incomplete.⁸⁷ Meanwhile, the estimates of the Navaho agents during this period varied between 15,000 and 20,000.⁸⁸ These estimates suggest that the figure reported for 1885 was too high, but their own precision can scarcely be relied upon.

Following the 1890 census, the annual reports of the Navaho agents contain little information on population. The reports for some years merely repeat the figures given at the previous year. Thus, for example, the report of 1896 gives the Navaho population as 20,500, and the reports of 1896-98 quote the same figure. In such a case, repetition scarcely increases credibility.

The report of the second special enumeration of Indians, conducted by the Bureau of the Census in 1910, gave the total Navaho population as 22,455. This enumeration was later criticized as having failed to locate many Navahos.⁸⁹ The figures given by the Bureau of Indian Affairs (Navajo Agency) for the subsequent years suggest that the 1910 census figure represented a serious underenumeration. The annual report of 1910 gives the Navaho population as 29,624. In 1911, the figure reported is 30,006, and remains close to 30,000 for several years. Thus the Bureau of the Census figure was about 32 percent lower than the Bureau of Indian Affairs figure for the Navaho population in 1910.

The reports following the census of 1910 indicated further substantial growth in the Navaho population. The only apparent decline was registered between 1918 and 1919, when a drop of 1,725 reflected the evident impact of the influenza pandemic after the First World War. By the time of the third special enumeration of Indians in 1930, the Navaho population estimates had risen to about 40,000. At this time, the report of the Bureau of the Census corresponded closely to that of the Bureau of Indian Affairs. The census reported 39,064 Navahos (Bureau of the Census, 1937, table 9) while the Bureau of Indian Affairs (1930, table 2) estimated the Navaho population at 40,858.

The outstanding feature of Navaho population since 1930 would appear to be its accelerated increase, from about 40,000 in 1930 to about 82,000 in 1957. This rise apparently results from relatively recent declines in mortality, accompanied by persistently high levels of fertility, and is therefore representative of the population increases presently occurring in several underdeveloped areas, notably Ceylon and Central America.

In table 27 are listed a number of Navaho population estimates dating from the earliest period of Spanish contact to the present time, arranged chronologically. The figures shown for 1890, 1910, 1930, 1950, and 1960, which are cited as "Bureau of the Census," are the results of the decennial census enumerations of those years.

On the basis of an examination of these population totals, the following tentative conclusions regarding the broad outlines of Navaho population growth during the past 350 years can be offered: The first two centuries of Spanish domination over the Southwest appear to have been a period of gradual but steady growth on the part of the Navaho population. This population evidently increased from less than 4,000 in A.D. 1600 to over 6,000 in A.D. 1800, as the Navaho

⁸⁶ The procedure for computing average annual rates of natural increase is described in the Appendix.

⁸⁷ Bureau of the Census, 1894, table V, pp. 82 ff. A criticism of this first Navaho enumeration is given in Hodge, 1910, p. 42.

⁸⁸ Patterson, 1886, gives the Navaho population as 17,358; Vandever, 1890, gives it as about 14,000 or 16,000; Bureau of Indian Affairs 1895, gives it as 20,500. The official estimate for 1890 of 14,000 to 15,000 apparently explains why Washington Matthews regarded the 1890 census figures for the Navaho as too high. (See Krzywicki, 1934.) The estimates cited for this period, however, suggest that the census figure for 1890 is as good as any.

⁸⁹ Bureau of the Census, 1915, table 9, pp. 17 ff. One criticism of this enumeration is given in Weber, 1914, p. 3. Weber stated that "to my own personal knowledge, a large number of Navahos were not enumerated in that [the 1910] census." In the discussion of the Navaho enumeration of 1910, Dr. Dixon expressed the view that the "true" population figure for the Navaho in 1910 was "somewhere between" the Bureau figure of 22,455 and the Bureau of Indian Affairs figure of 28,000 (Bureau of the Census, 1915, p. 79). Cf. Bureau of the Census, 1937, p. 40.

TABLE 27.—*Reported totals for the Navaho population—1826-1961*¹.—Continued

Date	Population	Source
1948.....	69,522	Young, 1954, p. 104.
.....	62,691	Bureau of Indian Affairs, 1950, p. 30. Felsman (1961) is a somewhat condensed version of this paper, emphasizing data for Navahos only.
1947.....	61,081	Young, 1954, p. 104.
.....	63,625	Young, 1954, p. 104.
1948.....	63,025	Felsman, 1961, table 4 b, p. 15.
.....	66,656	Young, 1954, p. 104.
1949.....	65,000	Young, 1954, p. 104.
.....	67,317	Young, 1954, p. 104.
1950.....	64,997 on reservation; 62,167 in service area; 69,187 total enrolled population.	Estimated from the number of deaths and the death rate reported for the year 1949 in Young, 1955, p. 154. Bureau of Indian Affairs, 1954 a, table 2, p. 18.
1953.....	64,274	Bureau of the Census, 1953 a, table 16, p. 62.
.....	74,597	Public Health Service files, Window Rock, Ariz., Cour- tesy Miss M. Blakeman.
1954.....	76,000	Young, 1954, p. 172.
.....	78,000	Public Health Service files, Albuquerque, N. Mex.
1955.....	80,500	Young, 1954, p. 104; 1965, p. 172.
1957.....	81,700	Public Health Service files, Albuquerque, N. Mex.
1960.....	80,016 on reservation	Estimated from unpublished 1960 census tabulations giving the number of non-Whites enumerated in enumeration districts falling within the Navajo Reservation bound- aries. Supplied through the courtesy of Francis Felsman and Everett White, Public Health Service.
1961-62.....	93,377 enrolled	From an adjusted count of IBM cards on file at the Data Processing Section, Gallup Area Office, Bureau of Indian Affairs, as of Dec. 1, 1961 (Young, 1961, p. 351).

¹ Additional early estimates of the Navaho population are provided in Krzywicki, 1934, appendix II, pp. 462-463; Kinckohn and Spenser, 1940; and Worcester, 1940.

The interval from 1860 to 1870 can well be termed the Navaho "time of troubles." They undoubtedly suffered severe losses under the constant harassment of the Americans and their older enemies. It is impossible to determine their population at this time with any precision. The records indicate that as many as 9,000 Navahos made the "long walk" to Fort Sumner in 1864 and the years following. An additional 1,000 may have been taken captive by the Mexicans, Hops, Paiutes and others who carried on extensive raids into Navaho country in the early 1860's. Perhaps 2,000 more Navahos managed to evade both the American Cavalry and their other enemies by moving westward beyond the Little Colorado River and into the deep canyons of the upper Colorado. Additional hundreds undoubtedly found refuge among the Pueblo and other Indian groups in the area. However, the general disorganization that accompanied this profound dislocation must have brought about both increased mortality and reduced fertility. The high frequency of abortion noted among Navaho women at Fort Sumner has already been mentioned in this connection. It seems plausible to conclude that when the Navaho resumed their life on the reservation in 1868, they did not number over 10 or 12,000.

Since that time, their rapid and sustained population increase is clearly apparent, despite the vagaries of the estimates pertaining thereto. These estimates reveal a number of sudden increases which are unexplained in the original sources, but which seem to reflect

belated efforts on the part of the officials to bring their estimates into line with their own impressions of Navaho population growth. Thus, for example, the official estimates jump from 18 to 21,000 between 1888 and 1889, and again from 23 to 27,000 between 1903 and 1904. The figure of 22,455 reported in the 1910 census was widely regarded as an undercount, but the absence of significant increases in the population estimates of the subsequent 7 years is equally questionable.

A figure of 40,000 for 1930 enjoys the support of the close agreement between the Bureau of the Census and the Bureau of Indian Affairs figures for that year. The figures given by the Bureau of Indian Affairs for the years of the Second World War revealed a further large upward adjustment, from 49,000 to about 60,000 between 1942 and 1944-46. Subsequent estimates suggest that the figures given for 1940-42 were too low. The 1957 estimate shown in table 27 was compiled by adding births and subtracting deaths reported since 1953 to the estimated Navaho population in 1953. The resultant figure is an official estimate of the total Navaho population at midyear 1957. Assuming a population of 11,000 in 1870, the implied average annual rate of increase between 1870 and 1957 is 2.33 percent—a truly remarkable rate to have been sustained over so long a period.

The 1961-62 estimate, finally, represents an adjusted count of total Navaho population from IBM cards on which information from the original Navajo Agency rolls was transcribed. This estimate (93,377) yields practically the same average annual rate of increase since 1870—2.34 percent. Similarly, it implies an average annual increase of 2.56 percent since 1950, assuming the Navajo Agency estimate of 69,167 in 1950. It is therefore apparent that the Navaho have experienced at least three generations of very rapid population growth, and that their rate of increase has itself been rising in the recent past.

A COMPARATIVE ANALYSIS OF SELECTED DATA ON THE DEMOGRAPHIC CHARACTERISTICS OF THE NAVAHO POPULATION

The chief purpose of the following is to elucidate the apparent limitations or defects in the available data on the demographic characteristics of the Navaho population, in order to indicate corresponding defects among the major sources of this information. It is hoped that this will also shed light on the problems of data collection that are revealed by these limitations, and on the utility of alternative procedures designed to overcome these problems.

SELECTED AGE DISTRIBUTIONS

Summary characteristics of 25 Navaho age distributions, together with those of 6 additional distributions for other Indian populations, are presented in table 28.