

POINTS, PATTERNS AND PEOPLE: DISTRIBUTION OF THE DESERT SIDE-NOTCHED POINT IN SAN DIEGO COUNTY

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The spread of the Desert Side-notched point (DSN) style offers an important window into culture change as an ongoing process at the time of European contact. In the northern portion of California the DSN point style has been seen as a Numic or Shoshonean cultural marker, while in San Diego County it has been viewed as a Takic or Yuman cultural marker. Existing models for the introduction of this point style developed by Rogers, True, and others are summarized and tested against DSN distribution data for San Diego County. Issues of culture change, ethnic identification, and diffusion of ideas are addressed.

Even though the technology associated with the DSN is much broader than specific ethnic groups, the distribution of the DSN at the time of European contact can illuminate more localized cultural relationships and provide an opportunity to examine broader cultural patterns. While the DSN has been seen as a Numic or Shoshonean marker in some regions of California, in San Diego County it has been viewed as a Takic or Yuman marker. Malcolm Rogers (1945) felt that traits such as the DSN were being introduced to the Kumeyaay of San Diego County from the east. D. L. True (1966) used the near absence of DSN points in Luiseño territory and the higher percentage of DSNs in his sample from Kumeyaay territory as one of the cultural markers to archaeologically differentiate the two ethnographic groups. True's model would have the DSN as a trait whose diffusion was impeded by the ethnic differences between the Kumeyaay and the Luiseño. My initial hypothesis, based on my own field experience, was that DSN distribution was not shaped by the Luiseño/Kumeyaay boundary. DSNs were introduced from the southeast as suggested by Rogers and had a more gradual falloff pattern from both east to west and south to north irrespective of ethnicity. By building on a wider database than True had available to him a more complete picture of DSN distribution in San Diego County comes into view. The distribution of the DSN point in San Diego County has important implications for models of mobility and cultural unity. This distribution requires not only a reevaluation of previous models but also suggests important new avenues of research.

BACKGROUND

Two major ideas have long provided foundations for much of the Late Prehistoric archaeology of San Diego County. The first idea developed by Rogers (1945), and supplemented by Moriarty (1966), May (1974) and others, is that cultural traits from the east expanded with populations eventually making their way to the Kumeyaay of western San Diego County. Rogers (1945) saw three waves of population expansion from the lower Colorado River area correlated with the dispersion of cultural elements, particularly ceramics. The third wave or his Yuman III was initiated by the final drying of Lake Cahuilla. Rogers (1945) felt that the final drying of Lake Cahuilla brought an influx of people and ideas migrating west because abundant Lake Cahuilla resources were replaced by less productive desert. Rogers saw the expansion of Yuman III traits, including DSNs, being born by the migration of people and not through diffusion (1945). He did suggest diffusion was the means by which ceramics and other traits were acquired by Shoshonean groups such as the Luiseño.

Moriarty built on Rogers' work, and defined his preceramic and Diegueño I periods (Moriarty 1966). The preceramic period was a period where Cottonwood Triangular points existed without DSNs and ceramics. May (1974) also built on Rogers' idea with his interpretation of sites in the Table Mountain area. May suggested that the Table Mountain area was occupied by Lake Cahuilla migrants (May 1980), additionally he finds Hohokam-like attributes at Kitchen Creek and Cottonwood Creek in the

southwestern mountains (May 1974). His contributions to Rogers ideas suggested that the intrusion of people into the western part of the county came from the southeastern part of the county.

On a somewhat different front, True (1966) focused his dissertation on the archaeological differentiation of the Luiseño and the Kumeyaay. One of the aspects True examined was projectile point types. Using his sample of data primarily from the San Luis Rey drainage and the Cuyamaca area, he identified distinct differences between the two areas (Figure 1). True noted that:

it is possible to state that the Luiseño did not prefer side-notched points. In contrast, side notched forms enjoyed a reasonable popularity among the Diegueño (True 1966:209).

True found that the Luiseño sites in his sample all had less than 10 percent side-notched points while Diegueño or Kumeyaay sites in his sample produced more than 20 percent side-notched points. True limited his generalization to interior mountain and desert regions of San Diego County (True 1966) and as Robbins-Wade (1988) has pointed out, much of this

early work based on mountain providence data does not entirely apply to the coastal zone. Looking at Figure 1 it is also important to note that True did not distinguish between the Ipai and Tipai dialect areas of the Kumeyaay. The sample he used basically compared the Luiseño and the Tipai while he lacked a sample from the Ipai area.

METHODS

I developed a relatively extensive database of 95 sites with a total of more than 4,800 DSN and Cottonwood Triangular points to test and build upon True's DSN point distribution study within San Diego County. The main goal of the data collection was to define the distribution of DSN points within San Diego County. Data on the distribution of Cottonwood Triangular points was also collected in addition to material type, where it was available. The samples used were almost exclusively subsurface in case bias in surface collection might effect the data.

True simply divided his Late Prehistoric points into two categories: unnotched and notched. I hoped to refine this somewhat and Cottonwood leaf points

Cottonwood Triangular Points		
True Type	Equivalent/Form	Example
1	Cottonwood Triangle/Concave Base	
2	Cottonwood Triangle/Straight Base	
3	Cottonwood Triangle/Convex Base	
10	Cottonwood Triangle/Notched Base	
Desert Side-notched Points		
True Type	Equivalent/Form	Example
4	Desert Side-Notched/Incipient Notches	
5	Desert Side-Notched/Concave Base	
6	Desert Side-Notched/Straight Base	
7	Desert Side-Notched/Convex Base	
8	Desert Side-Notched/Concave Notched Base	
9	Desert Side-Notched/Straight Notched Base	

Figure 2: Concordance of True's types with Cottonwood and DSN points.

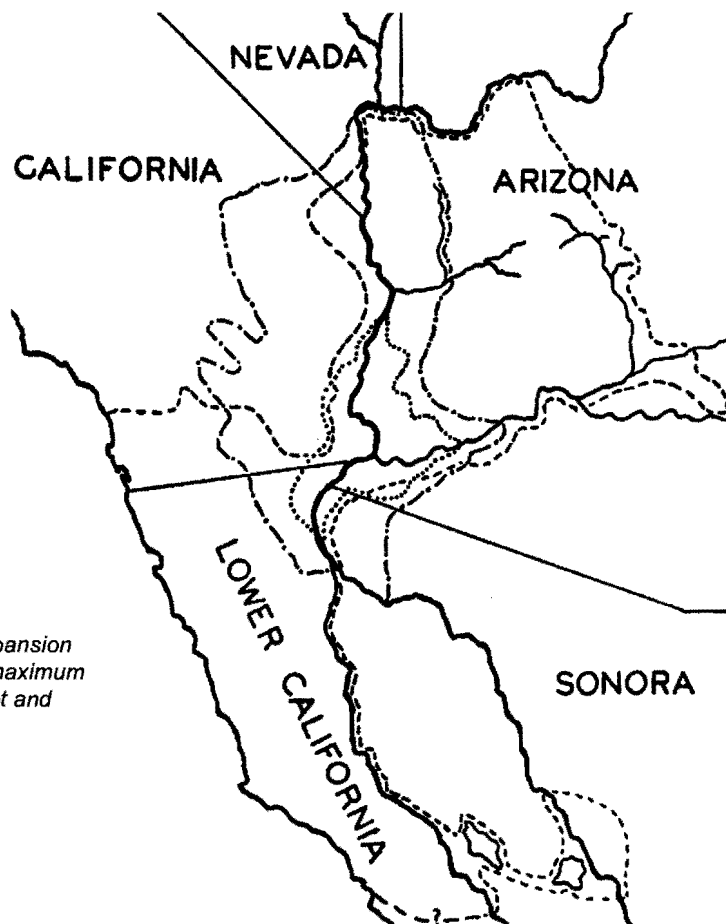


Figure 1: Rogers's map of Yuman cultural expansion (adapted from Rogers 1948). Boundaries of maximum areas of Yuman I, dotted line; of Yuman II, dot and dash line; of Yuman III, dashed line.

and Sonoran or Dos Cabezas Serrated points were separated out where ever possible. The removal of these categories did not effectively change the results as was confirmed by tracking the distribution of Sonoran points. Many reports in the San Diego area utilize True's point typology. True's types were grouped in order to translate True's typology into simple DSN and Cottonwood Triangular point categories. True's Types 1, 2, 3, and 10 were grouped to form the Cottonwood Triangular category. True's Types 4, 5, 6, 7, 8, and 9 were grouped to form the DSN category. Differences in straight, concave, convex, or notched bases were not considered as separate categories for this study (Figure 2).

Potential errors, such as potential Sonoran points being mis-typed as DSNs or serrated Cottonwoods may exist, but should be rare when relying on True's typology. Where ever possible illustrations were used to confirm point types.

Another potential error is related to preforms. True's typology is purely morphological and is based on shape only. More recently studies have focused on reduction sequences rejecting simple morphological classification and True's typology. Some of True's

types may represent point preforms. Simple morphological classification was used in this study to provide balance and more consistency with True's earlier work. This sometimes required reclassifying "unfinished arrow points" or rejecting site samples entirely when data could not be made consistent. Any mis-classification in the various sources drawn upon for this study should not affect the patters that may emerge by favoring one geographic are over another.

Figure 3 shows the locations of the sites used in this study. This study applied the current methodology to True's original sources (Figure 3A) and built upon this database by drawing from the large body of Cultural Resource Management (CRM) studies now available (Figure 3B). By using True's inland focused data and the other studies available for this area and adding the coastal focused CRM data a more balanced data set for the county emerges with coverage in all of the ethnographic regions of the county except for the Cahuilla. The more even coverage throughout the county provides a new look at the distribution of DSNs.

The raw number of DSN points within sites are a reflection of the size of the site and the amount of

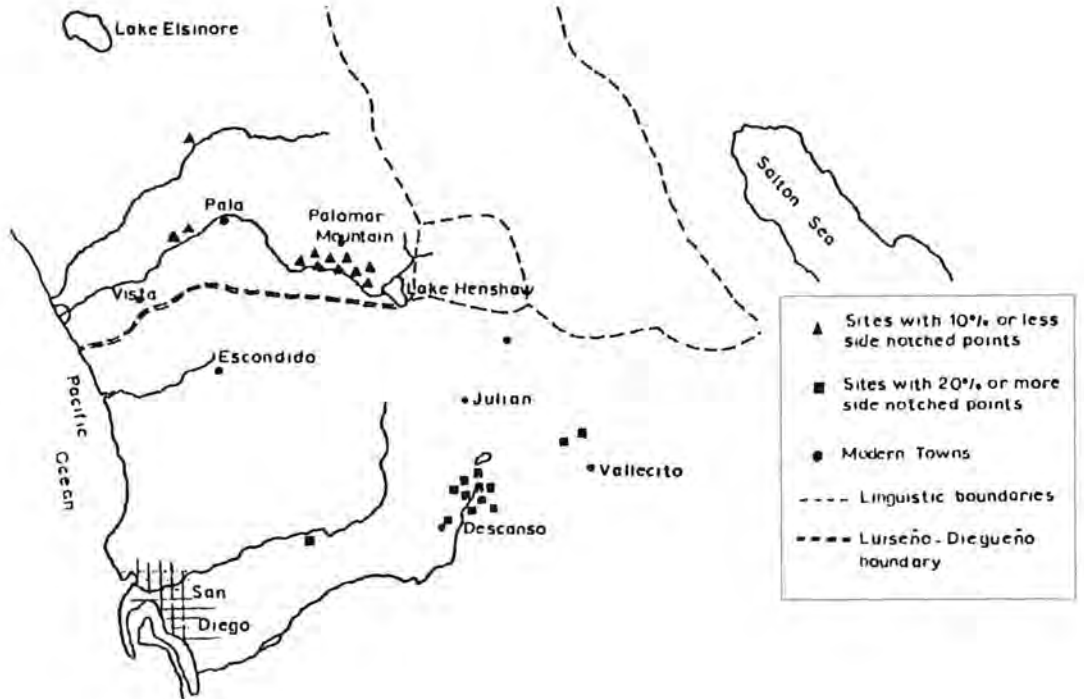
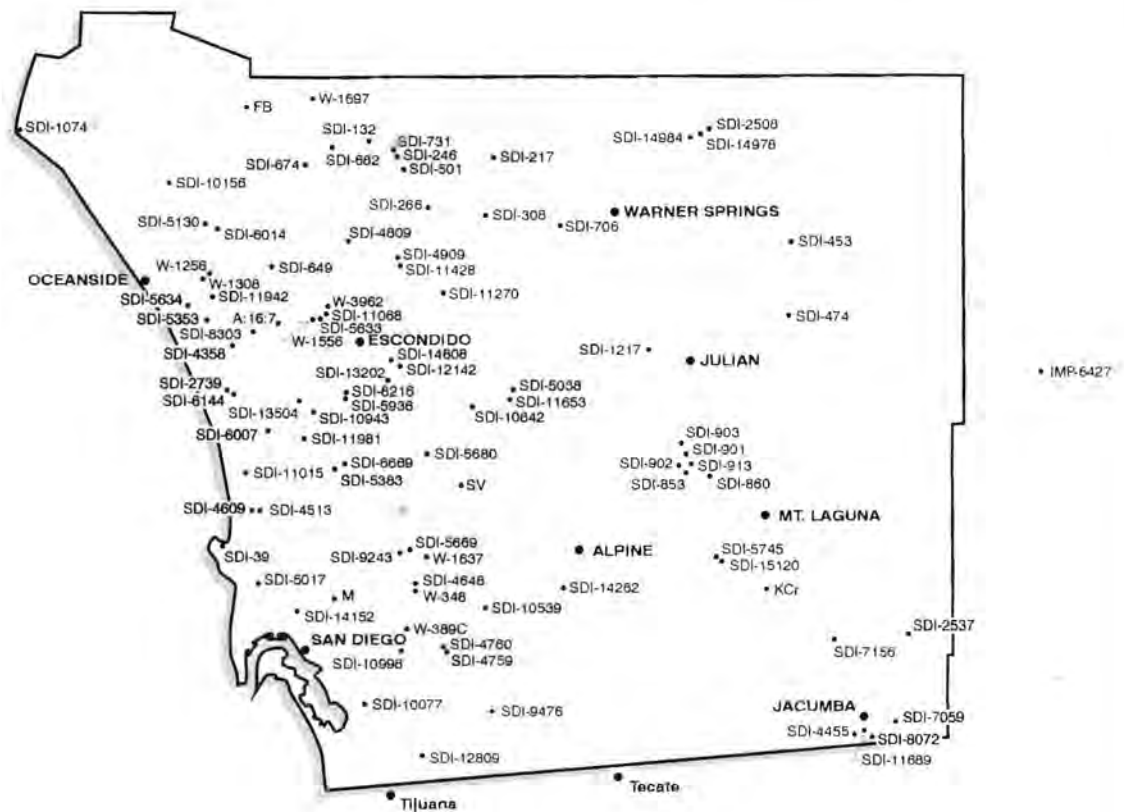


Figure 3: (A) True's map of DSN distribution (adapted from True 1966), and (B) sites used in this study.



archaeological excavation conducted. The data was therefore adjusted for variation in sample size by using the percent of DSN points to the total DSN/Cottonwood count. These data were combined with data on material type variation, and overall distribution patterns were then examined.

RESULTS

A quick examination of Figure 4 indicates that there is a clear falloff to the north and the Luiseño territory as suggested by the work of True. Luiseño territory has no samples with more than 20 percent DSNs as indicated in True's earlier study. Although True lacked data for the coastal plain, the coastal Luiseño area shows a consistent pattern of near absence of DSN points.

The larger pattern does not completely support True's hypothesis, however. Mountain and coastal Kumeyaay point types differ. There is a distinct falloff in DSN point counts between the mountain and the coastal Kumeyaay areas. Coastal Kumeyaay sites, similar to the Luiseño, contain no data sets with greater than 20 percent DSNs. An absence of any kind

of boundary differentiating the coastal Luiseño and the coastal Kumeyaay suggests that DSNs are not a critical differentiating marker between these groups.

Another look at Figure 4 suggests that Rogers's and May's model may provide a better explanation of the data pattern. The greatest densities of DSNs occur in the southeastern portion of the county and there seems to be a gradual falloff pattern from southeast to northwest. This would suggest that DSNs were introduced from the southeast and were spreading in popularity to the northwest. Again, the differences in distribution within Kumeyaay territory suggest that the ethnic boundary between the Kumeyaay and the Luiseño is not the critical factor controlling the distribution of DSNs.

Although the general pattern indicated by Figure 4 suggests that DSN distribution is characterized by a gradual falloff from the southeast, a closer look at the data is warranted. Two cross sections of the data were developed to look more closely at the falloff pattern in relation to ethnicity (Figure 5). This study included consideration of the dialect differences between the Ipai and the Tipai based on Kroeber's (1925) boundaries (Figure 5A).

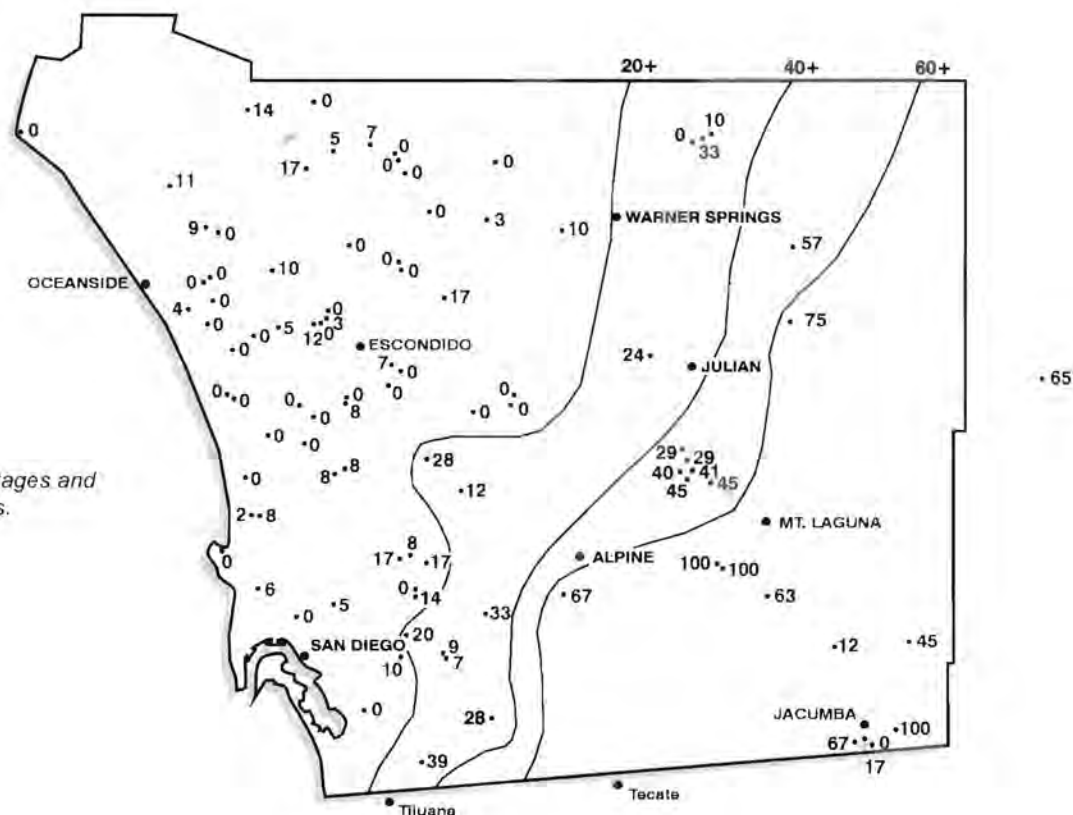


Figure 4: DSN percentages and falloff contours.

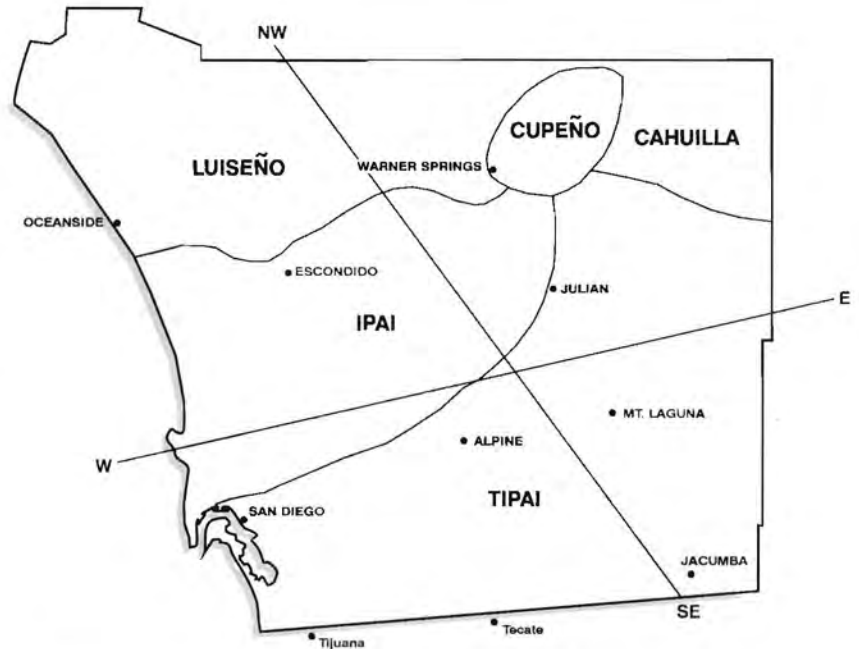


Figure 5A: Culture groups distribution and cross-section key.

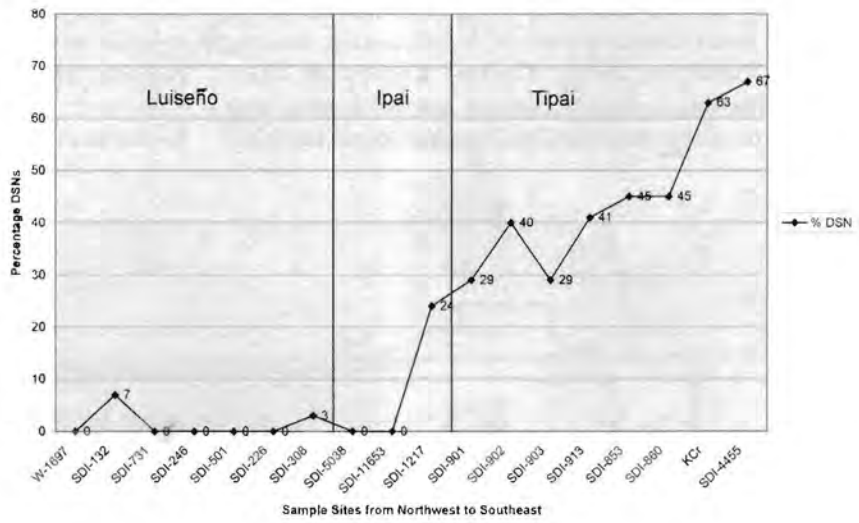


Figure 5B: Northwest-southeast profile.

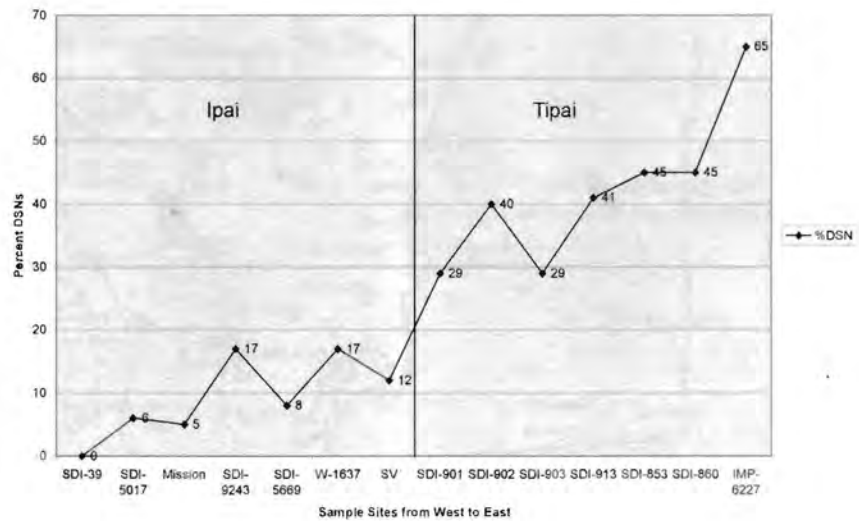


Figure 5C: West-east profile.

Figure 5B provides a sample cross section of DSN data from the northwestern portion of the county to the southeastern. It shows the relationship between the Kumeyaay and the Luiseño by providing a cross section of the DSN falloff that includes the Cuyamaca area where True focused his studies of the Kumeyaay to the center of the Luiseño territory. It verifies True's assertion that there is a strong difference in DSN point abundance between the two endpoints of Kumeyaay and Luiseño areas. What is important to note about this falloff is that the cultural boundary is not indicated by a dramatic drop in DSN points. It clearly shows that DSN percentages within Luiseño territory are low. This supports True's original hypothesis. Data from the Cuyamaca area within Tipai territory is also high suggesting that the pattern observed by True is supported by the current data set. True, however, lacked data from the Ipai area leaving an important hole in his data set. An important aspect of the northwest to southeast profile pattern is that it is the Ipai area that marks this change in DSN use.

Figure 5C provides a west to east profile across the Kumeyaay area. The falloff within Kumeyaay territory between the mountains and the coast is nearly as

severe as the falloff between the Kumeyaay and Luiseño ethnographic areas. A demarcation between the Ipai and Tipai dialect areas is apparent regardless of the north/south relationship. This suggests again that True's hypothesis is not supported by the use of a broader data set. This falloff is perhaps more critical than the difference between the Kumeyaay and the Luiseño areas because of its implications for the whole pattern of DSN falloff and for Kumeyaay band interaction. With few exceptions the Ipai and Tipai areas can be distinguished by the line marking 20 percent DSNs.

Because ethnicity, including the dialect differences within the Kumeyaay group, appear to be important factors affecting DSN distribution the data was summarized by ethnic group (Figure 6). It is clear that True was correct when he saw a significant difference between the Luiseño and Tipai areas in the sample he had available to him. The differences between a mean of 5 percent for the Luiseño as opposed to a mean of 39 percent for the Tipai clearly indicates that DSN use was distinctly different between the two groups. An important pattern absent in True's data was the similarity between the Luiseño

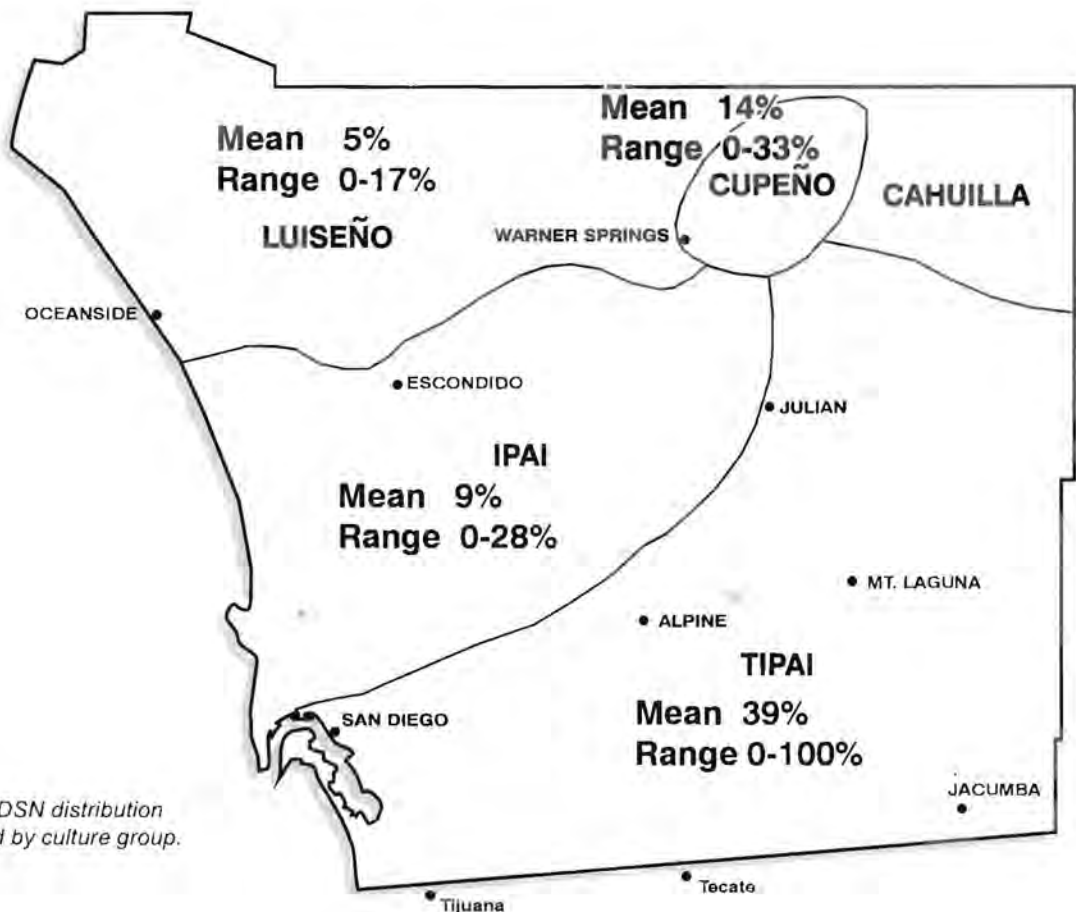


Figure 6: DSN distribution summarized by culture group.

mean of 5 percent and the Ipai mean of 9 percent. This suggests that the Luiseño and Ipai were similar in their low use of DSN points. It also suggests that True's treatment of the Kumeyaay as a single unit may not have been warranted and his distinction between the Luiseño and Kumeyaay when treated as a single unit, is incorrect.

What emerges from Figure 6 is the sharp distinction between the Ipai and the Tipai based on DSN distribution. The difference between the mean of 9 percent for the Ipai and 39 percent for the Tipai clearly suggests a lack of homogeneity between the two dialect groups.

An examination of lithic materials used to manufacture projectile points was seen as a means of providing supporting evidence for general patterns of DSN distribution because lithic materials are not distributed evenly across the landscape of San Diego County and the use of quartz was another element used by True (1966) to archaeologically distinguish between the Luiseño and the Kumeyaay. Material type patterns are also important for examination of relationships outside the county. Rogers and May suggested that DSNs along with other traits moved in with people from the east. The materials used for DSN points may reflect desert sources supporting this movement related hypothesis. Table 1 summarizes the data by material type and point type. Although too general to address the Ipai/Tipai issue, the data does indicate important patterns by showing significant differences in the material types used to produce the two types of projectile points.

Most of the differences seen in material use between the two point types can be explained by geographic differences in source availability. This provides additional support for the geographic patterns of DSN distribution indicated by the point data itself. As suggested by True (1966), and as would be expected by the natural distribution of quartz sources, quartz dominates the Cottonwood Triangular point materials at 44 percent. With quartz more available in the northern portion of the county and better quality alternative sources such as volcanics more available in the south only 24 percent of the DSNs were made from quartz. Other important area of distinction is in the areas of chert and obsidian. Although the Piedra de Lumbre source of chert is available in Luiseño territory the difference between 12 percent chert Cottonwood Triangular points and twice that much for DSNs (24 %) suggests an important influence from desert sources of chert to the east. This eastern influence in the DSN sample is also reflected in the three times more obsidian used for DSN points. This

Material Type	Cottonwood Triangular Points	Desert Side-Notched Points
Quartz	44%	24%
Volcanic	29%	24%
Chert	12%	24%
Obsidian	9%	27%
Quartzite	2%	<1%
Bedford Canyon Metasediment	3%	<1%
Wonderstone	<1%	1%
Total	100%	100%

Table 1. Material Type Comparison.

probably reflects the use of Obsidian Butte obsidian, a desert source within Kumeyaay territory. Other materials such as Bedford Canyon Metasediment and Wonderstone provide additional support for the geographic differentiation of DSN and Cottonwood Triangular points with most of the DSN points in the southeastern part of the county and most of the Cottonwood Triangular points in the northwestern part of the county.

DISCUSSION

The DSN distribution data illuminate a variety of important implications that reach well beyond the use of particular projectile point styles. As indicated by a more refined and expanded review of the point data in San Diego County the archaeological patterns indicated by both Rogers and True are generally supported. Rogers (1945) predicted that traits such as DSN points, most closely associated with the Hohokam, would be entering the San Diego County area from the east and May (1974, 1980) building on Rogers model specifically suggests that they were entering the area from the southeastern part of the county. The falloff pattern suggested by Figure 4 supports their model. DSNs appear to be was entering the western and northern parts of the county from the southeast. Distinct falloff patterns from east to west and from southeast to northwest emerge from the data. Materials such as obsidian and chert from desert sources also suggest an important eastern influence affecting the DSN point data set.

The data also provides support for True's idea that differences in DSN distribution help to differentiate the ethnographic Kumeyaay and the Luiseño areas

archaeologically. There is clearly distinction in the abundance of DSN points between the Tipai data used by True and the Luiseño area. This distinction clearly provides differentiation for these two groups.

Although the data provides strong support for the major assertions of these leaders in the development of regional models, the broader data set suggest that some important patterns were not identified by earlier work. The differences in DSN distribution within the Kumeyaay area itself has important implications for current models of Kumeyaay mobility and cultural integration. The most important pattern that emerges from the data is the sharp distinction between the Ipai and Tipai. The sharp distinction in the DNS means for these two areas cannot be ignored and suggest important cultural differences between these two dialect groups.

The data also has implications for patterns of diffusion, mobility and ethnic distinction. Looking again at Rogers' model. The data clearly suggest that the DSN points entered the county from the southeast. Unlike my hypothesis of a gradual falloff, ethnic boundaries, particularly the dialect boundary between the Ipai and the Tipai, affect the diffusion of this trait. The possibility certainly remains that migrating people from Lake Cahuilla brought the DSN with them as they were forced west. The heavy influence of desert materials in the manufacture of DSN points supports this model of movement from the east. If this is the case, the data suggests that it is the Tipai who were the refugees from Lake Cahuilla and moved toward the coast. The Ipai may represent the older Kumeyaay inhabitants of San Diego County more closely aligned with their Luiseño neighbors. Both the Ipai and Luiseño were beginning to adopt DSN points through diffusion from the Tipai at the time of European contact. If this scenario is correct, then Rogers final Yuman phase did not reach the entirety of Kumeyaay territory and differences in other traits such as the use of ceramics should also be examined.

Recent ethnohistoric work by Carrico (1997) examining the roles of different Kumeyaay groups in the sacking of the San Diego Mission in 1775 suggest that the Ipai and Tipai acted as two politically independent groups. The Ipai villages did not participate in the sacking while the Tipai groups led the revolt. Differences between the two groups are also supported by marriage relationships indicated in the mission records. The differences in DSN point frequency within Kumeyaay territory may be an archaeological reflection of the larger differences between Ipai and Tipai.

Significant archaeological differences between the Ipai and Tipai would have important implications for the amount of cultural integration and regional mobility. Models of high mobility within Kumeyaay territory may require reexamination in light of this data. Also assumptions of Kumeyaay cultural homogeneity require review. Reexamining the Kumeyaay as two distinct dialect, political, and marriage groups may indicate a greater complexity among both the human and the archaeological record for the region. It may be that True's Cuyamaca Complex describes the Tipai archaeological record only and has limited utility within Ipai territory. This would go far to explain the difficulties archaeologists have faced in attempting to apply True's criteria to archaeologically differentiate Ipai and Luiseño sites. As is often the case, the data directs light toward new avenues of research.

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