

11-54

District #3  
MOENAVE DEMONSTRATION AREA

The Moenave Demonstration Area is located approximately one-fourth mile west of Tuba City, Arizona in the central part of District #3. The area fence runs parallel to the Tuba City-Flagstaff road for about five miles then swings northwest, and bisects the Tuba City-Highway 89 road one-half mile west of the Moenave Day School. The fence then makes a half circle to the north-east on the Kaibeto Plateau and meets the Tuba City area fence along the northwest boundary. The fence encloses an area of approximately 15,000 surface acres. About two-thirds of the area is on the Kaibeto Plateau, which is of a very light textured sandy soil subject to severe wind erosion. The remaining one-third of the area is below the Kaibeto Plateau escarpment, and is of a coarse clay and sandy soil, and extremely rough and rocky. This area is part of the painted desert. Along the base of the escarpment where the porous Navajo sandstone meets the hard Chinle sandstone formation, numerous springs are found. These springs extend from Blue Canyon through the Demonstration Area to Highway 89, a distance of about 25 miles. The area fence encloses several small watersheds, these drains south into the Moencopi Wash and on into the Little Colorado River at Cameron, Arizona.

The purpose of the Demonstration Area was manifold. First, to protect and develop the small farms and springs under the Kaibeto Plateau; second, to protect the Tuba City installations from being covered up by blow sand; third, to control the excessive over-grazing in the area surrounding Tuba City.

At the time the area was fenced, it was one of the most active sand dunes in the district. By agreement with the local Indians it was enclosed by fence in 1936. Attached is a copy of the original agreement between the Soil Conservation Service and the local Navajo Indians. The severe wind erosion was caused by the concentration of the livestock in the vicinity of the springs. When the area was fenced, all the stock was excluded and remained that way for a number of years. In 1942 each individual farmer was allowed to graze one team during the time that the team was used in their farming operations. In the winter of 1943 the Coal Mine Mesa ram herd was kept in the area, a total of 600 sheep units, for five months. A utilization survey was conducted the following summer, and the area was less than properly utilized. In the seven years that almost all the stock was excluded from the area the carrying capacity increased from 100 sheep units to 400 sheep units yearlong. The predominate grasses and browse in the area are: *Galleta saccaton*, sand dropseed, lukai, some red three awn, and blue grama; browse: grease wood, Mormon tea, salt bush, chamise and black brush.

T. C. 2085

The springs found along the base of the Kaibeto Plateau vary in size, some discharge water throughout the year, others only during the cool winter months. Below these springs, wherever sufficient soil was found, small farms were developed by the Indians. These farms vary from 1/10 of an acre on up to a large development at Moenave day school of 56 1/2 acres. There are three farming areas which were developed within the demonstration area by the S. C. S. and C. C. C. They are Sub-unit #1 (Moenave day school, 56 1/2 acres), Sub-unit #2 (Moenave white house, 30 acres) and Sub-unit #3 (little fields, 11 1/2 acres).

In all three sub-units the springs were developed, retention dams were built to store the spring water and masonry ditches were constructed from the springs to the dams and from the dams to the developed farms. In sub-unit #1, 56 1/2 acres were leveled and bordered, sub-unit #2 - 30 acres, sub-unit #3 - 11 1/2 acres. All the farm units were protected from flood damages by dikes and levees diverting the flood waters around the farms. Russian olives and tamaracks were planted in gullies and around the farm area to act as windbreaks. Wire and snow fences were built on the sand dunes in the vicinity of the farms to stabilize the dunes. A small fruit tree nursery of about two acres was started by the S.C.S. when the area was first developed. From this nursery the Navajo farmers were able to secure good variety of fruit trees. The nursery was discontinued after a few years.

At the present time the area fence is down in several places and covered with sand in other places. Sheep and horses are again using the area, in some seasons rather severely. In the past few years considerable work was done to control the watershed within the fenced area. The drainages within the area contribute to the flood water damage of the Moencopi farm area which is located south of the demonstration area. The damage done to Tuba City by wind blown sand has decreased tremendously since the area was fenced. This was brought about by the increase in ground cover, as seen by the great increase in carrying capacity.

In the developed areas the Mormon influence is still in evidence by the tall lombard poplars and cottonwood trees. Several apple and grape vines are still producing from the original Mormon plantings. Salt grass and lukai grass are the greatestst worry of the present day Indians. Several borders have been made virtually useless by the encroachment of these grasses. Many of the borders have been neglected and are in need of releveling. The fruit produced, from the S.C.S. nursery stock on these irrigated farms, is of excellent quality and is sufficient for the needs of the Indian farmers. These fruits are mainly apple, apricot, peach, grape and pear. The other crops grown on these farms are: squash, watermelon, tomatoes, carrot, cabbage and a few acres of alfalfa. In the past few years additional storage for spring water has been provided, with P.M.A. assistance. An improved

variety of fruit trees are made available and an increase in cover crops and fertilization is being used to improve the soil. Additional lands can be developed in sub-units #1 and #2, however, a concerted effort should be made to use properly the land that has been developed before undertaking additional development.

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