

Pima-Maricopa Irrigation Project

Education Initiative

2003-2004



Restoring water to ensure the continuity of the Akimel O’otham and Pee Posh tradition of agriculture

Fields of Wheat So Large: Adaptations to Agriculture

Part 43

Wheat had a great impact on the Pimas and the Maricopas, who lived further down the Gila near modern town of Gila Bend. Both tribes were growing wheat by the 1740s and were changing as a result. By the end of the 1700s, the Pimas, in particular, were well on the road to economic prosperity. Passing through Uturituc (west of modern Sacaton), in May of 1774, Juan Bautista de Anza Jr., described Pima wheat fields “so large that, standing in the middle of them, one cannot see the ends, because of their length. They are very wide, too, embracing the whole width of the valley on both sides [of the river].” Pima cornfields were described as being “of similar proportions.”

A day earlier, Anza passed through the village of Sutaquison (near modern Sweetwater) and described “sixty to eighty fanegas [530-705 acres] of wheat marvelously fine and about ready to harvest.” This particular field, Anza marveled, was “the smallest one they have.” Even Franciscan priest Juan Diaz, who traveled with Anza to California, admired how each village “planted in common so large a field of wheat, maize and other crops.” One field was over 1,000 acres in size—and this in spite of the drought and famine plaguing other Piman tribes further south.

The Pima villages were certainly not immune to the periodic drought and famine that could grip the Pimeria Alta, the name Spain gave to the Land of the Upper Pimas. Franciscan Missionary Pedro Font, traveling with Anza in the fall of 1775, observed the lack of rain affected the Pimas as well. While they were not without food, Font noted that “only in the time of floods is [the river] useful for the grain fields and corn fields of the Indians.” Pima crops required “much water” to ensure a bountiful harvest. Missionary Francisco Garces, traveling with Anza and Font, was more patronizing, noting that in spite of drought conditions, the Pimas still “raise large crops of wheat, some of corn, cotton, calabashes, etc.”

To raise such crops, the Pimas “constructed good irrigating canals” that surrounded their fields. One large canal carried water from the river in a circuit “surrounding the fields,” which were divided into smaller fields cared for by “different owners.” The large canal then branched into a series of smaller canals to irrigate all the fields. Unused water was returned to the river. Anza, no stranger to the Pima villages, agreed with Garces’ assessment of successful irrigation agriculture. Noting their fidelity and friendship, Anza argued the vast cultivated and irrigated fields of the Pimas made their villages an ideal location for both Spanish missions and a presidio (or military fort). While their fields were not then as extensive as they might have been due to the river being “so short of water,” Pima farmers assured Anza the winter rains would soon arrive and they would plant their crops as usual.

Pima farmers changed how they engaged in agriculture in the latter years of the 18th century. Irrigation canals were extended (mostly to lands on the south bank) and log and brush dams were used to raise the level of water in the river to insure a sufficient head of water would reach the fields located farther from the river. The villagers of Uturituc were observed fastening together “many logs in the middle of the river” and using brush to raise the water into canals that watered the fields.

Another new farm practice utilized by the Pimas was intensive agriculture. Rather than growing a little spread over a large area, they now grew a lot over smaller areas. Fields were flooded before planting, with the entire flow of the river “drained off.” Surplus tail waters were always turned back into the river to be used by the next field or village downstream. Increased and

widespread flood irrigation also helped aid in flushing the salts out of the soil and keeping the land productive.

To ensure their new fields were protected, the Pimas made new adaptations to their environment. In areas south of the Gila, and where the river flowed beneath the surface, they dug wells. Father Garces noted a large well south of the Pima village of Pitac and 30 miles further south found several more at Pozos Salados. By the mid 18th century Pima farmers were also constructing fences around their irrigated lands. Pedro Font described farms that were “fenced in with poles and laid off in divisions.” Garces was the first to note fences, in 1770, when he observed “their sowings of wheat [are] large, well set off and fenced.” While reporting fence building as a communal event, Garces observed individual Pima farmers had “their lands within divided” into rectangles about 200’ x 300’ for “convenience of irrigating.” By the close of the 18th century, “each proprietor fenced his [own] sowed fields.”

In addition to enjoying the fruit of their agricultural endeavors, the Pimas enjoyed the benefits of a thick riparian canopy of trees along the Gila River and its tributaries. Kino, for example, described “pleasant” and “very large cottonwood groves” lining both banks of the Gila River west of Casa Grande Ruins. Jacobo Sedelmayer noted “willow and cottonwood” lined the river all through the villages. Even Font described the Gila as one “continuous cottonwood grove.”

A lush riparian canopy of cottonwood and willow was important for many reasons. Willow served an important cultural purpose, being used to make baskets. Trees also provided shady areas where the people could sit and enjoy the cool water. These riparian areas also attracted a variety of fish, birds and native plants, all of which added to the quality of life among the Pima. Away from the river Captain Manje described an abundance of grass, although in 1774 Diaz summed up the consensus of most Spanish explorers and writers in the 18th century when he described the lands along the Gila as “suffer[ing] from the scarcity of pasturage.” Garces, while noting the lack of pasturage on the south bank, was of the opinion the north bank had the best grass.

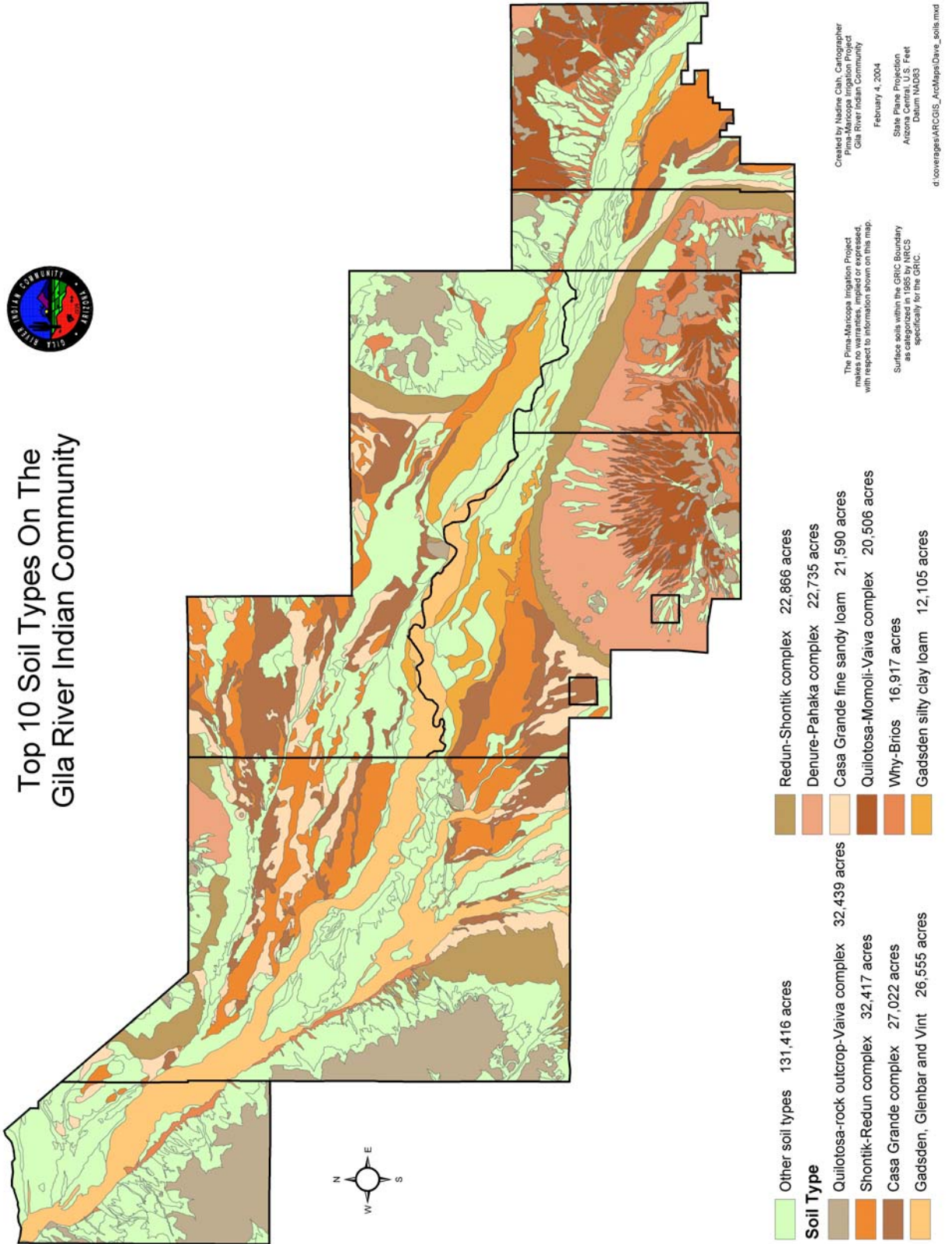
When Anza passed through the villages in November 1775—on the way to establish the village of Monterey, California—he found “abundant pasturage and water” near what became known as the Blackwater slough. This was an area near modern day McClellan Wash where an underground spring supported a small lake. The water in turn supported lush grassland and a variety of wildlife. It was also used for irrigation of crops.

Anza arrived on the eastern slope of the Sacaton Mountains on October 31 and remained for two days, suspending travel to allow his 1,000 plus head of cattle, mules and horses to fatten on the native grasses and drink from the abundant source of water. As he traveled west, Anza specifically noted Uturituc had “a good piece of pasturage.”

Further west, was an area of reed and willow in a meadow near the Santa Cruz River in modern District Six. Sedelmayer gave the area the name Santa Teresa, although it was better known as Maricopa Wells. Here a “very copious spring” emanated from near the Santa Cruz River to water the land. Still further west, near the confluence of the Gila and Salt Rivers, “the eye is regaled with creeks, marshes, fields of reed grass and an abundant growth of alders [willows?] and cottonwood.”

Having year-around crops assured the Pimas of a dependable source of food. By cultivating and trading large quantities of wheat and other crops, they were able to become increasingly wealthy, living in well-built villages. Sutaquison, the principle Pima village and seat of government, was described as “a pleasant, abundantly tree-covered country fourteen miles long and irrigated by aqueducts.” The Maricopa, living west of the Pimas on a “pleasant level country of arable land,” also raised “all kinds of grain and plants.” By the early 19th century, the Pimas and Maricopas were employing all the “advantages offered them by the Gila River.” The Pimas were even holding annual trade fairs in the villages to trade with residents of Tucson, Tubac and other villages along the Santa Cruz River.

Soil Characteristics in the Gila River Indian Community



Teacher Plan for "Fields of Wheat so Large: Pima Adaptations to Agriculture"

Terms to know and understand

- Prosperity
- Periodic
- Quality of life
- Fidelity
- Proprietor

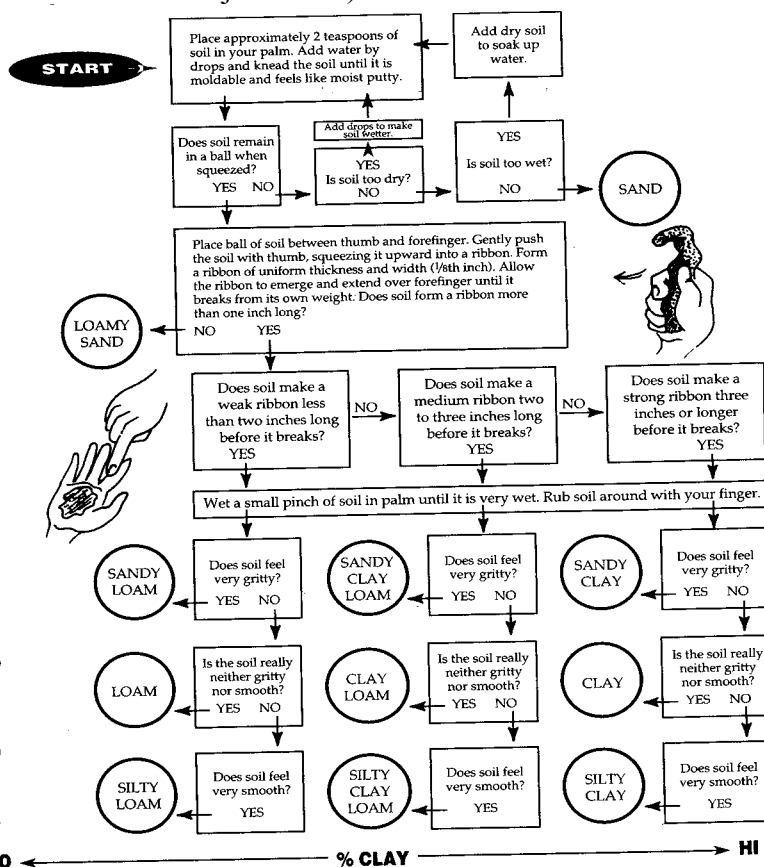
Activities

- Have students determine the texture of the soil around the school. Or have them bring soil in from their homes and test them based on the flow chart below (used with permission of Arizona Project WET).

Students will be able to:

1. Identify specific measures undertaken by the Pimas to modify and enhance their agricultural production in the 17th century.
2. Determine the texture of soils around their school and determine whether they are suitable for agriculture.

Objectives



About P-MIP

The Pima-Maricopa Irrigation Project is authorized by the Gila River Indian Community to construct all irrigation systems for the Community. When fully completed, P-MIP will provide irrigation for up to 146,330 acres of farmland. P-MIP is dedicated to three long-range goals:

- Restoring water to the Akimel O’otham and Pee Posh.
- Putting Akimel O’otham and Pee Posh rights to the use of water to beneficial use.
- Demonstrating and exercising sound management to ensure continuity of the Community’s traditional economy of agriculture.