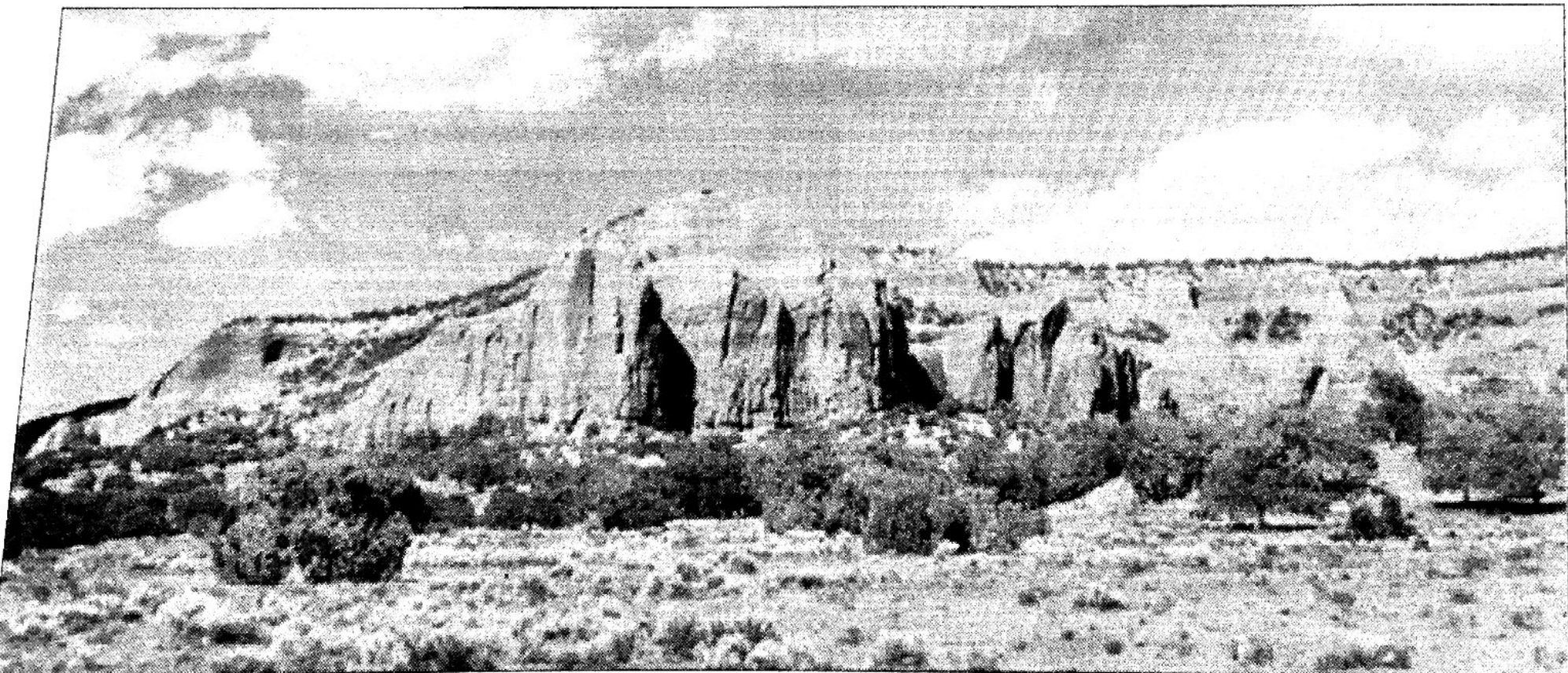


## Part I – Survival in a Harsh Environment

*The Justice Department team huddled in the hallway of the U.S. Court of Claims. Judith sat in the judge's chambers, nervously eyeing the curious mix of Harvard Law teak and leather furniture and government grey steel. Today was "decision day" on the settlement, and she had brought the cell phone that the firm had just given its associates, pleased that this new one fit in her purse. The rolling attaché at her side was packed with depositions from anthropologists, engineers, economists and soil scientists. As she sat waiting, her mind drifted to the black rock and the red sandstone bluffs, the sweet smell of juniper and piñon, and the tears of the Pueblo's elders.*

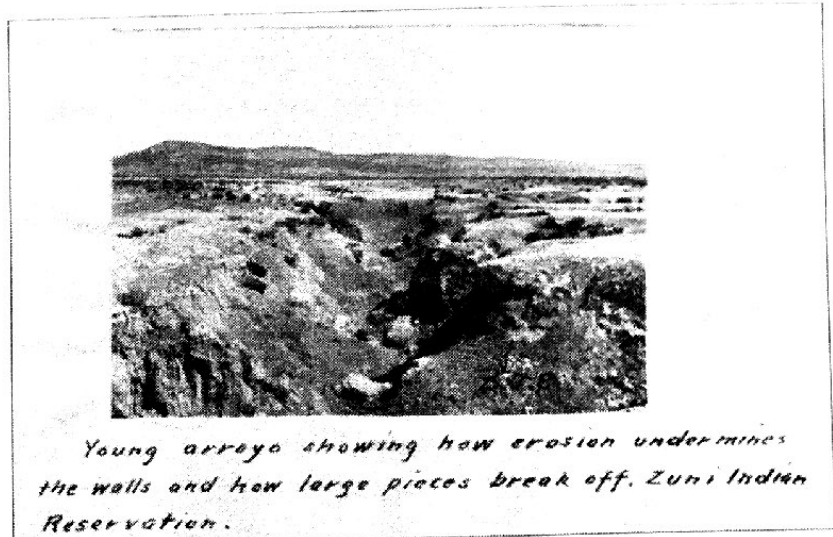
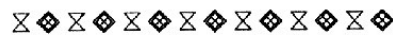
*Judith had first travelled to Zuni Pueblo a year ago, armed with only a rudimentary understanding of the issues. She arrived in Albuquerque, New Mexico, on a blazing hot, dry day in mid-August. The heat only intensified as she drove west from the airport towards Zuni Indian Reservation into the scorching sun, crossing a desert spotted with scraggly sagebrush and juniper. She drove onto the Zuni Reservation, arriving just minutes before her meeting with the Zuni tribal council. All she knew at that point was that Zuni Pueblo had brought a lawsuit against the U.S. government for desecration of trust land.*



When she left the town hall in Zuni Pueblo three hours later, the sun had fallen and the temperature had dropped dramatically. She grabbed a sweater, wrapped it around her shoulders, and set out in her rental car. She calculated that she could visit at least a few important sites before nightfall. As she drove, her mind raced, reviewing all that she had learned from the Zuni elders and citizens that evening. She headed toward the Black Rock Dam and Reservoir, the primary source of contention. The Zuni argued that the Black Rock Irrigation Project, constructed by the U.S. government, led to the social, economic, and environmental degradation of the reservation.

As she approached the dam, Judith pulled over onto the road's shoulder. She grabbed her camera bag and set out on foot. As she walked, she noticed for the first time since her arrival the deep gullies cutting into what was once prime Zuni grazing land. Was it possible that the gullies were a natural phenomenon or were they the result of land-management decisions by the U.S. government, as the Zuni argued? She stopped to snap a few photos that she might use as exhibits in the case. She continued on toward the dam, climbing the embankment to the shoreline of the reservoir. As she looked in the direction of the sacred spring of the Zuni people, now covered in water and silt, she wondered: What is the price of progress? It seemed unforgivable that the dam's engineers should have so callously ignored its effect on the Zuni culture. But perhaps she was being unfair. The costs of the project seemed clear now, but what were the purported benefits that motivated construction of the project in the first place? She turned and snapped a picture of the gauge at the dam face, hoping to later tie that to the 1910–1980 historical record showing declining reservoir capacity and declining volume of irrigation water supplied to Zuni farmers from the Black Rock Reservoir. She wondered whether the U.S. government engineers understood the impacts of their land and water policy decisions on erosion within the watershed. Not to mention the impact of those policies on the Zuni way of life, which could no longer revolve around agriculture closely tied to a system of sustainable land management that was designed to conserve scarce water.

A door banged shut in a nearby hallway, abruptly bringing Judith back into the present. She was on edge, waiting for the decision. Had she made her case? And was there a way back for the Zuni people?

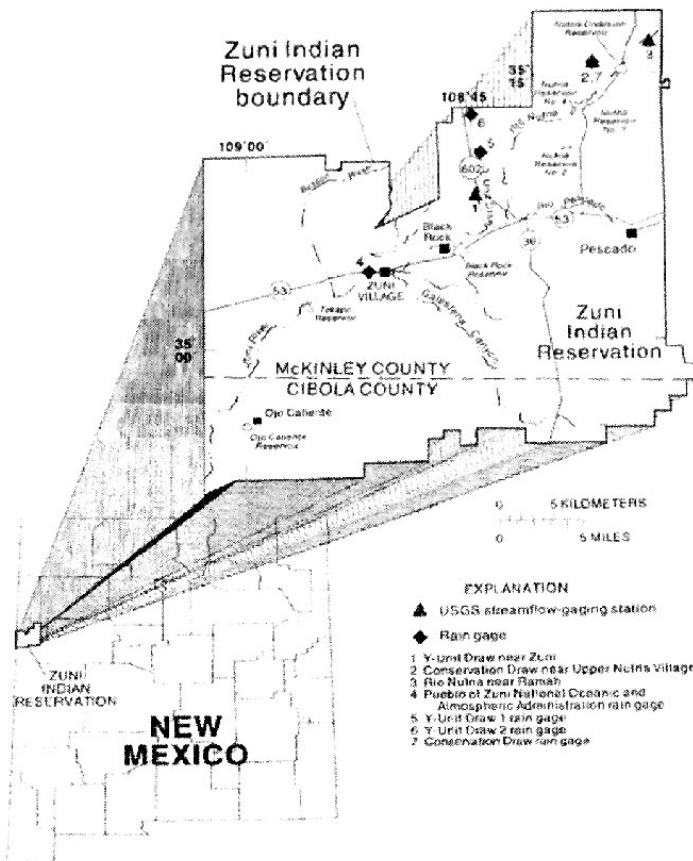


Photograph attached to "Report of the Conservation Advisory Committee for the Navajo Reservation, July 2, 1933." Accelerated rates of soil erosion and arroyo development on Zuni lands, pictured here in 1933, were of concern to the tribe, and attracted the attention of some federal officials, such as noted soil conservationist Hugh Hammond Bennett (Helms 2008).

The following "Briefing Document: The Zuni Land and People" describes the Zuni landscape and people as they existed prior to western U.S. expansion into the region. Read the document and then spend 10 minutes discussing each of the questions that follow with your group. Designate a group member to record the main points from your discussion to share with the class.

## Briefing Document: The Zuni Land and People

The Zuni are a federally recognized American Indian tribe with approximately 12,679 members according to the 2010 Census (U.S. Census Bureau 2013). At the time of first Spanish contact in 1539, the Zuni occupied six or seven large pueblos in what is now western New Mexico (James 1997). Archaeological evidence indicates the Zuni had been living in this area for over 3,000 years, although they did not move from farming villages into very large pueblos until the mid-13<sup>th</sup> century (Ferguson 1996). Although Europeans explored the region earlier in the 16<sup>th</sup> century, they had little direct contact with the Zuni. The Zuni continued to have little contact with the Spanish for the remainder of the 16<sup>th</sup> century, yet it is likely that they lost much of their population due to the spread of introduced European diseases. During the 17<sup>th</sup> and 18<sup>th</sup> centuries, the Zuni revolted against Spanish incursions into their territory, and at times the Hopi (pueblo Indians from northeastern Arizona) moved in with the Zuni (James 1997). The U.S. government took control of Zuni territory in 1846, and in 1877 the first acreage was set aside to form the Zuni Reservation.



Map of the Zuni Indian Reservation. Image source: Gellis (1998).

The Zuni live in an area known as “Zuni Pueblo,” located in the southeastern portion of the Colorado Plateau, a scenic, arid, 140,000 square mile (360,000 square kilometer) region with an average elevation of 5,200 feet (1,585 meters). The region is roughly centered on the “Four Corners” area, where Arizona, New Mexico, Colorado, and Utah meet. The vegetation in this area is classified as Colorado Plateau shrublands. To the untrained eye, the landscape looks rather bleak, with low trees and shrubs scattered among sparse grass and herbs. However, the Colorado Plateau ranks within the top five ecoregions in continental North America in terms of species richness in plants, mammals, and a number of insects (Nabhan et al. 2002).

The Zuni live in an area with very little surface water. New Mexico ranks 4<sup>th</sup> lowest among the 50 states in terms of annual average precipitation. Unpredictable and scattered rainfall amounts to about 10 inches (25 cm) per year (the average from 1901–2000 in the contiguous U.S. is 29.14 inches per year, NCDC 2013). The rain and snow that fall within the Zuni River watershed run off, feeding the Zuni River, or infiltrate the soil and recharge the groundwater system. Soils are derived from a variety of “parent materials,” the term soil scientists use to describe the igneous and sedimentary rocks of the region that give rise to the soils by weathering. The soils that result from that process vary in porosity and their ability to retain water.

The Zuni language is an isolate, meaning that it is unlike any other North American Indian language. As of 2000, nearly 73% of the Zuni people still use their language in the home, but the majority are also conversant in English (Ethnologue 2013). Like other southwestern puebloan societies, the Zuni were matrilineal, tracing descent through the female lineage. They also were matrilineal, meaning that a newly married couple lived with the wife’s family (James 1997).

At European contact, the Zuni traditional way of life relied on farming to raise crops such as maize, beans, squash, and cotton; collecting wild plant foods such as piñon nuts; and hunting wild game such as deer. The Zuni kept caged wild eagles and raised turkeys to supply feathers for religious purposes (Ford 1985:81,122). They eventually adopted livestock from the Spanish, particularly sheep and, to a lesser extent, goats (Ford 1985:116). Sheep were raised mostly by men for wool (woven into articles by women) and meat. The Zuni likewise adopted the field and orchard crops of peaches, watermelons, and muskmelons from the Spanish, along with the garden plants of coriander, onions, and chili peppers (Ford 1985).

Zuni religious beliefs affected their management of resources, including cultivation of crops and hunting wild game (Ford 1985). For example, the Zuni believed that "ritual is necessary to produce water" (Ford 1985:59). The Zuni used every portion of their extensive territory to collect plants for food, medicine, ceremonies, fuel, and construction (Ford 1999:82). Traditionally, Zuni men managed the agricultural fields, often located far from the Pueblo, and women managed smaller gardens located near the villages (Ford 1985,1999:79). Zuni men traditionally employed three methods of watering fields, sometimes using more than one method in the same field (Ford 1999). The Zuni practiced many techniques to reduce or lessen the risk of crop failure. For example, the practice of planting smaller fields in various locations lessened the risk that any one large field in one particular location would not receive enough water that year.

### Questions

1. Identify, as best you can, the traditional elements of survival in this harsh environment in terms of food, clothing, and shelter.
2. Describe at least three methods you imagine the Zuni may have traditionally used for watering their fields.

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