

INDIAN GROUPS OF THE CALIFORNIA-BAJA CALIFORNIA BORDER REGION: ENVIRONMENTAL ISSUES

PROJECT NUMBER: IT97-1

ALAN KILPATRICK, SAN DIEGO STATE UNIVERSITY

MIKE WILKEN, INSTITUTO DE CULTURAS NATIVAS DE BAJA CALIFORNIA

MIKE CONNOLLY, CAMPO ENVIRONMENTAL PROTECTION AGENCY

INTRODUCTION

There are approximately 25 Indian tribes living in the United States section of the U.S.-Mexican border zone (100 kilometers north and south of the international boundary as defined by the 1983 La Paz Agreement). There are a similar number of indigenous groups living in the Mexican section of the border zone.

On the U.S. side, many of these tribes have an autonomous governmental structure and established internal decision-making processes and function as sovereign nations within the legal framework of the U.S. federal government. On the Mexican side of the border, the Indian groups form *ejidos* or *comunidades indígenas*. These communities enjoy certain specific rights under the Mexican Constitution, but are not considered sovereign nations. However, legislation now being considered in the Mexican Congress could provide a more autonomous status for these indigenous groups in the future.

The principal government agency that oversees the needs of these Indian communities in Mexico is the National Indian Institute (Instituto Nacional Indigenista, or INI), which is somewhat comparable to the Bureau of Indian Affairs in the United States. INI is currently undergoing structural changes as a result of Mexican federal policies aimed at decentralizing governmental institutions and shifting powers (and presumably funding) from federal to state agencies. Although the specific mechanisms of this new relationship remain unclear, INI's federal funding has already been greatly reduced while state funding for matters relating to the native tribes has still not materialized.

While Southern California-Baja California border tribes appear to be spatially separated, their history, language, and culture remain closely linked. Virtually all of these tribes speak a dialect that belongs either to the Hokan or Uto-Aztecan language family. The original territory of many of these groups was the region now bisected by the international boundary and, as a result, many of the Indians living on the U.S. side still maintain strong cross-border ties with their Mexican counterparts. The Kumeyaay is an example of a tribe in the United States who has a linguistic counterpart, the Kumiai, in Mexico. Often, this bifurcated arrangement results in those Indians living north of the border having achieved greater economic development and increased acculturation, while those Indians living south of the border having kept much of their traditional culture, but having remained severely marginalized in an economic sense.

The border tribes of the Southern California-Baja California region have enjoyed a long and intimate knowledge of their environment. The earliest native people probably entered this area 12,000–15,000 years ago under wetter climatic conditions that encouraged lush vegetation attractive to big game. Archaeological remains recovered from the sites of former lakes, streams, and lagoons suggest that these early paleoindians were highly mobile hunters of now extinct megafauna. Over time, the climate became increasingly arid and native people adapted to the changes in their immediate environment by focusing more on the collection and processing of plant foods and smaller game such as rabbits, birds, deer, bighorn sheep, and antelope. Their lifestyles were based on seasonal cycles of interaction within a series of distinct eco-zones (e.g., coast, inland valley, mountains, and desert) requiring an intimate knowledge of the natural environment inherited from generations of habitation in the land (Anderson 1993; Bendimez Patterson 1989; Laylander 1987; and Shipek 1991, 1993).

Due to territorial and cultural conflicts with invading European cultures, these indigenous people eventually settled permanently into the inland valley and mountain enclaves where many of their remaining communities are found today. Forced into a market economy, most of these surviving border tribes have sought to manage the few remaining natural and cultural resources available to them through economic activities as diverse as agriculture, handicrafts, and gaming enterprises.

RESEARCH OBJECTIVES

In June 1996, the Mexican Secretaría de Medio Ambiente, Recursos Naturales y Pesca (SEMARNAP) or Ministry of the Environment, Natural Resources, and Fisheries and the U.S. Environmental Protection Agency (U.S. EPA) released the U.S.-Mexican Border XXI Program Draft Framework Agreement. This draft document (which built upon the La Paz Agreement and the Integrated Plan for the Mexican-U.S. Border Area, First Stage, 1992–1994) outlined the Border XXI Program and identified general environmental objectives for the border region through the year 2000. It also described mechanisms and strategies for fulfilling those objectives and assuring sustainable development for the border region in the future.

The success of Border XXI was predicated on broad-based, binational participation by federal, state, and local governments as well as by nongovernmental organizations, academic institutions, the private sector, and concerned citizens and communities. Hearings were held throughout the border region prior to the release of the draft document and also during the public comment period.

According to the groups and individuals who participated in outreach activities associated with Border XXI, these efforts to obtain input and feedback from U.S. border communities were successful. However, it is clear that U.S. Indian tribes did not actively participate in this process. Information from Baja California also suggests that the indigenous communities did not participate in the Frontera XXI hearings. As a result, the environmental priorities of those Indian communities living in the border region have neither been well understood nor well studied.

The main goal of the this project was to develop information and analysis that would have a practical application related to border environmental issues while at the same time facilitate the participation of both California and Baja California Indian tribes to develop dynamic approaches and resolutions to these problems. Specifically, the authors sought to create a summary document that would inventory the various environmental concerns and activities of each tribal entity in the area of investigation. They also sought to analyze the decision-making process within each native community and to identify for outside agencies key personnel contacts at each reservation.

RESEARCH METHODOLOGY

San Diego County is home to at least two distinct tribal entities. In the southern part of the county, Kumeyaay (sometimes divided into Tipai and Ipai) is the predominant language, belonging to the Yuman family of languages of the Hokan phylum. In the northern part of the county, they are Takiic branch speakers of the Uto-Aztecan phylum (Cupeño, Luiseño, and Cahuilla). However, because of historical circumstances (i.e., forced removal and intermarriage) these linguistic divisions are no longer geographically definitive. Thus, Cupeño speakers can also be found living on Cahuilla tribally held land (Morongo) and some Luiseño speakers cohabiting with the Kumeyaay on the San Pasqual reservation. In fact, both Cupeño and Luiseño speakers reside at the Pala reservation and a somewhat similar picture exists in Baja California where Kiliwa speakers live at the Pai Pai Ejido of Santa Catarina.

From June to December 1997, Dr. Alan Kilpatrick, Principal Investigator, and members of his research team conducted interviews with tribal members or officials of seven Kumeyaay reservations (Campo, Viejas, Sycuan, La Posta, Cuyapaipe, San Pasqual, and Santa Ysabel) in southern San Diego County. In northern San Diego County, they conducted interviews with tribal members from four Luiseño-Cupeño reservations in the same county (La Jolla, Pala, Pauma, and Pechanga). Finally, in Riverside County, they conducted an interview with a tribal official of the Torres-Martinez Reservation.

Concurrently, Mike Wilken, Director of Instituto de Cultural Nativas de Baja California, A.C. (CUNA), and a team of researchers conducted a series of similar interviews in Baja California with tribal members in eight native communities but inhabited by four separate groups of the Yuman linguistic family (Kumiai, Paipai, Kiliwa, and Cucupa). The communities surveyed included: Juntas de Neji, San José de la Zorra, San Antonio Necua, and La Huerta (Kumiai); Santa Catarina and San Isidora (Paipai); Tribu Kiliwas (Kiliwa); and El Mayor Cucupa (Cucupa).

Some of the more than 50 interviews were tape recorded. Others were transcribed by hand. All of the interviews were then edited into a summary document.

PROBLEMS ENCOUNTERED

Because the research teams were dealing with isolated, rural communities scattered across international boundaries, maintaining a steady line of communication with the investigators in

Mexico proved to be a continual challenge. To overcome these communication issues, a series of monthly meetings was initiated to better coordinate the research efforts.

RESEARCH FINDINGS

If you use something too much—it doesn't matter what it is—bad luck will come to you. We've survived many, many years by paying the respect that is due to plant and animal life. We are not apart from it. We are part of it. We even look at rocks and dirt as the living, breathing Mother Earth and we're all part of her.

(Ron Chrisman, Spiritual Leader, Santa Ysabel Reservation, *San Diego Union-Tribune*, June 11, 1995)

The information gathered from the fieldwork was compiled into a 60-page document that was augmented with an appendix of 10 regional maps. To make the document more accessible, it appeared in both English- and Spanish- language versions. The document was organized around the specific goals of the research. Part one outlined the most important environmental concerns of the U.S. and Mexican border tribes.

ENVIRONMENTAL PROBLEMS

From the survey, it was clear that water quantity and quality remain overarching issues throughout the region. A dramatic case in point involves the Torres-Martinez Reservation where the lives of 1,600 tribal members are intimately connected with the fate of the Salton Sea. The water in the area is high in salts and nitrates. The groundwater at the level of 100 feet contains arsenic and arsenic levels rise closer to the Salton Sea. The New River and the Alamo River both flow into this source. Every year some 3,000–7,000 more people move into Mexicali and use the New River as a sewage source. Even if the sewage problem could be stemmed, there would still be ongoing pollution (one million gallons per day in California) caused by the use of farming pesticides.

A pressing issue for the Torres-Martinez Indians is an extensive survey of the Salton Sea with an effort to preserve the wildlife habitat and ecosystems. The Salton Sea boasts some 300 varieties of wildlife. Some of the species affected are corvina sportfish, sea bass, and sunfish. In August 1998, 25,000 birds were killed by an undetermined form of aviary botulism. In addition, there has been attrition of rare species such as the Brown Pelican. The source of this pollution has been contaminated fish.

Another major environmental concern cited by Indian respondents in northern San Diego County (e.g., La Jolla, Pala, Pauma, and Pechanga) involved water and solid waste management. The high incidence of bacterial contamination experienced here was thought to be the result of a lack of chlorination disinfection, inadequate flushing capabilities due to undersized pipelines, and pump failures at well heads. Clearly, there is a need to develop a comprehensive wastewater collection and treatment system.

The transportation of hazardous materials from Tecate to San Diego along Highway 94, Highway 80, and Interstate 8 have serious implications for Indian groups living in southeastern San Diego County. An estimated 11,000 cars travel the Interstate 8 route daily. Long-haul trucks occasionally overturn in the area. There has been no emergency response cooperative agreement signed between tribal officials and federal agencies to address this potential issue. Consequently, this issue of emergency capabilities needs to be addressed in the future (D'Angelo 1990; McGovern 1995).

Torres-Martinez tribal members expressed concern about the monitoring of the new North American Free Trade Agreement (NAFTA) Highway, Highway 86, which cuts through the present reservation. This new "NAFTA" Highway (which will connect to Highway 10) is expected to be operational by the year 2000 and will handle a projected 80,000 vehicles per day (currently it services about 30,000). By the year 2000, it is projected to accommodate 100,000 vehicles.

The fear is that there will be an increase in hazardous material spills, drug smuggling, and illegal dumping. Narcotic labs have already been found on the reservation as well as illegal dump sites at abandoned wells where 50-gallon drums have been left within a few feet of the Salton Sea (some containing chemical waste products).

Interstate 8 has also led to illegal dumping on reservation property. A wide variety of discarded items such as tires, including trash, car batteries, storage containers, refrigerators, and construction materials such as roofing, paint cans, and fiberglass have been found on Indian land along the state highway. In addition, a number of the eastern San Diego County Indian reservations (e.g., Campo, Cuyapaipe, La Posta, and Santa Ysabel) are experiencing serious environmental problems from the presence of undocumented immigrants who are camping out in the remote parts of the reservation during the winter. In order to stay warm, some of them have been setting off unregulated fires. They have also been leaving behind discarded water containers, plastic bottles, and other refuse at their camps. In some cases, restoration areas are being affected by illegal trespassers. Some Campo residents are afraid to hunt on their own reservation for fear of being misidentified as armed trespassers by Border Patrol agents (especially new recruits). This decrease in hunting on the reservation has led to a resurgence in predatory wildlife such as mountain lions, coyotes, bobcats, and eagles.

Some tribes have fenced off the perimeter of this trespassed area but this action has not stemmed the encroachment. Tribal officials said that the problem of trespassing and illegal dumping on the reservations have been steadily increasing since the advent of "Operation GateKeeper."

Finally, the interviewers noted that the air quality of the Campo Indian Reservation, located 45 miles southeast of San Diego in the Laguna Mountains, has been effected increasingly by pollution from *maquiladora* plants on the border as well as from vehicle exhausts. The tribe asked the Mexican government for support to clean up the pollution but was told by Mexican officials that their government does not have the financial resources or the infrastructure to deal with the problem. As a result, the residents of Campo found themselves completely

responsible for maintaining the air quality codes even though they themselves have not been the source of the pollution.

Besides the primary issues of water quality, waste management, illegal dumping, and air monitoring, these U.S. border Indian tribes have a number of cultural priorities that need to be recognized. For instance, members of the Rincon/Pechanga/Pala, and Santa Ysabel bands have all expressed concern over the preservation of coastal sage habitats. There has also been some discussion of the future access to sacred plants, basket materials, and pinion nuts. At the Viejas Reservation, Kumeyaay elders have expressed some concerns not only about the repatriation of ancestral remains and artifacts, but also about the maintenance of reburial sites in the future.

The subject of the protection of sacred sites such as Tecate Peak (known in Kumeyaay as Kuchamaa “exalted high place”) is another ongoing point of concern. Besides the endangered eco-system, the Salton Sea is rich with Indian archaeological sites such as sandstone formations, remains of villages, drying racks, trade areas, and ancient circular stone fishing traps. Many of these sites, which have been surveyed by the State of California Office of Historical Preservation, need to be protected from future developments in the area.

Among the Indian communities of Baja California, water quality and quantity represent serious challenges since most of the existing settlement subsists on hand dug wells or sources such as natural springs. Throughout the area, residents have been advised that they should boil or otherwise treat their water, but they usually drink the water untreated “because we’re used to it.” A recent series of water quality tests carried out among five indigenous communities (Juntas de Neji, San José de la Zorra, San Antonio Necua, La Huerta, and Santa Catarina) yielded contaminated water samples with high coliform counts (Campo EPA 1996). These results may be due to nearby septic fields or cattle dung residue leaching into the water table, or they may be due to the lack of well sealed covers on wells. The surveys found that the existing water infrastructure in these communities (pipes, generators, and collection wells) are badly in need of repair.

In some communities like San Antonio Necua, the drinking water system and the irrigation system currently depend on the same water source. Thus, efforts to raise crops, such as alfalfa, tend to overtax the existing infrastructure. Local wineries also use large quantities of water for irrigation with the result that water sources such as creeks are often dry most of the year.

An especially arresting case in this investigation is that of the Cucapa Indians who originally occupied much of the lower delta of the Colorado River and surrounding desert area. Today, the Cucapa live primarily in the settlement of El Mayor Cucapa, while their relatives, the Cocopah, live primarily in Somerton, Arizona. El Mayor is located on Mexican Highway 5 about 56 kilometers south of Mexicali. The Cucapa land base is the most extensive of all the indigenous communities of Baja California at 143,000 hectares; however, much of it is parched desert without potential for agricultural or livestock activities (Alvarez de Williams 1989; Kroeber 1920; Ochoa-Zazueta 1973). A large part of this land is the usually dry bed of the Laguna Salada, which has been greatly affected by fluctuations in the quantity and quality of water flowing from the Colorado River. In years when sufficient water was released upstream, the lake filled and the Cucapa were able to practice traditional fishing activities. However,

contaminants either from the river itself or from toxic waste dumped into the watershed have caused large numbers of fish to die.

Soil erosion is another severe environmental problem throughout the Baja peninsula. Large-scale cattle grazing has caused serious foliage depletion throughout the area of investigation. The situation at San José de la Zorra is typical of this pattern. This community of 14,440 hectares is located in the small remote valley of San José, which is situated in the heart of one of Mexico's most important wine producing regions. A limited amount of agriculture has been carried out (for the most part dry farming along with some irrigated crops) since the early part of the century; however, livestock grazing has also driven the local economy, as evidenced by visible erosion of the main arroyo. Large areas of topsoil adjacent to the arroyo were "washed away" during the storms of the early 1980s, along with an earthen dam that had been built there. Very few seedling willows, sycamores, or oaks can be observed, probably due to hungry cattle. Almost all the trees that still stand are older trees. Erosion has also been increased by the clearing of native shrub cover from large tracts of land for planting.

Land tenancy is another serious sociopolitical issue for the Native people living in Baja California. A number of community members from Santa Catarina, Tribu Kiliwas, and La Huerta expressed their concern about the encroachment of neighboring ranchers or squatters on their land. This situation is especially serious for communities like Juntas de Neji, which have a limited population base. Even more uncertain is the future of unincorporated Kumiai settlements like Peña Blanca, whose existence is not officially recognized by the Mexican government due to the lack of suitable land tenancy documents. One informant of Peña Blanca commented that members of a neighboring *ejido* interested in claiming the land for their own use have tried to destroy archaeological sites and other cultural resources that might strengthen the Kumiai families' right to their land.

Another area of controversy centers on the legal distinctions that the Mexican government makes between ownership of land versus forests and mountains (Gonzales et al. 1995) As a result of these legal technicalities, many of these Indian groups are often prevented from harvesting traditional foods and materials, such as pinon nuts and juniper, which are easily accessible in the forest areas of local mountains. To collect such flora, the Indians must first secure an official permit from the local office of SEMARNAP, the Mexican environmental agency. In order to qualify for this permit, the Indians must finance a prohibitively costly environmental impact study.

INTERNAL DECISION MAKING

So many people would like to see reservations relegated to what I call a living museum. They see us as New Age creatures of the forest, and paternalistic wards of the state. We're supposed to have greater knowledge and understanding than mere mortals, yet we're not capable of making decisions for ourselves. (Mike Connolly, *San Diego Union-Tribune*, August 11, 1996)

In another section of the document, the internal decision-making process of each of these tribal groups was analyzed from a historical as well as from a contemporary perspective. Modern

investigators need to be aware of the fundamental political structure of the clan (Sh'mulq) as it still informs much of the present-day decision making among these Indian communities (Connolly 1997).

The governments of the local U.S. border tribes function under a wide array of legal mechanisms. A number of these tribes are formally organized according to the statutes outlined in the Indian Reorganization Act of 1934 (La Posta, Manzanita, Santa Ysabel, San Pasqual, and Viejas). Other tribes have created their own constitution and bylaws (Campo, La Jolla, Pauma, and Rincon). Finally, there is at least one tribe (Torres-Martinez) that operates without a formal constitution (Tiller 1996).

The central administrative structure is the tribal council (variously called the executive committee or business committee), which usually features an elected chairperson, a vice chair, a secretary, a treasurer, and a member at large. In tribes with small populations, the positions are condensed. The usual number of elected officials is four or five (La Jolla, Los Coyotes, Manzanita, Pauma, Rincon, San Pasqual, and Pala). However, at Barona, Campo, Sycuan, and Torres-Martinez, there are seven-member tribal councils while at Jamul and Santa Ysabel there are six-member governing bodies. The smallest tribal councils of those encountered at Cuyapaipe and La Posta are three members each.

The term of service of the tribal council varies widely as well. The most common elected term is two years (Jamul, La Jolla, La Posta, Mesa Grande, Rincon, San Pasqual, and Torres-Martinez). However, at Barona, Campo, and Santa Ysabel, officials serve four-year terms while members at Los Coyotes and Pala serve only a one-year term.

While the tribal council has the power to consider outside business propositions and governmental proposals, any major financial venture must be voted on by the general council (which is composed of all of the adult membership of the tribe). The usual pattern is that a draft is presented to the tribal council. The draft is reviewed, recommendations are made, and then a plan of action is drawn up. Finally, a general survey of the tribal members is conducted.

This power of consensus is extremely important. As one source recently observed about the workings of the general council, "they're very democratic—they even get input from the children. The elders have the final say. One person can stop or start a project." As a result, many decisions are determined by political factions which usually split along clan or family lines.

The forms of organization and leadership of the indigenous groups in Baja California are somewhat similar to those of the U.S. border tribes:

In general, almost all the forms of leadership have maintained a strong basis in family ties, an ever present reminder of the *shimulq* or clans of the past, so even though mixed marriages and acculturation have diluted their importance they continue to be key in inter-group relations. It should be recognized that traditional forms of leadership can also still be found, rooted in the

“captainships” of the past. Some individuals have organized those closest to them, usually family and relatives, in an effort to protect group interests from other Indians or outsiders. Sometimes they occupy the position of elected chief, while in other cases they may work parallel or in opposition to the elected authorities. Furthermore, a new type of leadership is being created by the indigenous primary school professors, generally women, who have acquired an important understanding of relations beyond their immediate groups, with Mexican authorities, and in some cases with the United States. Generally then, in the native communities of Baja California, leadership manifests in the form of elected chief and traditional authority (elder or traditional chief), positions which reflect some influences of Mexican mainland traditions, although the communities have sought to adapt them to meet their objectives and to work within their traditions (Magana-Mancillas and Censena, n.d.).

In the final section of the document, the research team reported on current cooperative efforts among the various tribes (e.g., the formation of the Native American Protection Coalition and the Cahuilla Indian Confederation) and outlined mechanisms that might better facilitate dialogue among tribal officials and agencies on the local, state, and federal level as well as nonprofit border-related organizations. Suggestions were also made as to how border tribes might be more effectively incorporated into the activities of SCERP.

An important component of this project was community outreach. This project’s findings were made public at an environmental tribal conference held in Ensenada, Mexico, in March 1998. Tribal members from California, Arizona, and northern Mexico were invited to attend and to publicly discuss their ideas about promoting sustainable development in the border region. Copies of the researchers’ summary document were then disseminated to tribal officials and to all interested parties.

CONCLUSIONS

The goal of this study was to demonstrate that different environmental perspectives and priorities exist among the various tribes that currently inhabit the California-Baja California border region. These differing sociopolitical and cultural viewpoints should be considered in any long-term, ecological planning for this unique region of the world.

Socioeconomic pressures along the 2,000-mile, U.S.-Mexican border will only increase in the wake of NAFTA agreements. These pressures will impact the present infrastructure of the region (particularly in terms of water supplies, electricity, and the preservation of the local environments). The current low level of Indian participation in the process of official policy-making on border environmental issues raises important questions about how Indian groups in the border region can fit into the increasingly complex web of actors on border environmental policy and practice. This web of actors includes local, state, and federal governments on both

sides of the border. In Mexico, this arena will become more complex as the government in Mexico City decentralizes environmental administration and enforcement activities and places more responsibilities on state and local entities.

How can the special interests and perspectives of border Indians in Mexico and the United States be adequately brought to bear in the process of defining and resolving border environmental issues? As has been stated, many tribal officials continue to feel that “they are out of the loop” with Border XXI policymakers and want greater tribal representation on high level committees such as the U.S.-Mexico Good Neighbor Board. More conferences and public outreach forums are clearly needed to allow tribal officials to voice their specific concerns about the changing economic interdependencies in the border.

RECOMMENDATIONS FOR FURTHER RESEARCH

From the meetings with tribal representatives, government officials, and NGO administrators, the research team was able to identify five areas that need further review:

1. One of the announced goals of the Border XXI program is to promote sustainable development and to implement “community-based or ecosystem-based approaches to environmental management.” What has become readily apparent from this fieldwork is that there is a critical need for each of the U.S.-Mexican border tribes to develop a formalized plan to maximize their own natural resources.

Such a development plan would include an inventory into existing ecosystems as well as a study of the traditional management of natural resources. It might also establish a means of environmental monitoring and create a market development study. The situation is especially critical in Mexico where the lack of a comprehensive land-use plan has resulted in subsistence strategies such as the overgrazing of livestock and the overexploitation of juniper, yucca, manzanita, and other natural resources, an action that affects the environment well beyond just the communities.

2. Even though the U.S. Geological Survey has conducted an extensive aerial mapping of the U.S.-Mexican border region (in conjunction with the Mexican government) there is, to date, “no good picture of the water resources on the Indian reservations” (Terry Rees, USGS, per comm.). As a result, there is an overarching need to inventory the natural and cultural resources on the various reservations in the region. The creation of such a database would help the tribes to develop their own infrastructure and secure their territorial boundaries.

3. In Baja California, there is no viable medical care system in place. As a result, there is a critical lack of information available regarding health conditions in the eight Indian communities in Baja California. There needs to be an accurate and ongoing assessment of health care conducted in this region, which can be activated by a partnership between governmental and private sources.

4. Since the implementation of Operation Gatekeeper in 1994 by the U.S. Immigration and Naturalization Service (INS), the flow of immigration has shifted to areas surrounding the

Indian reservations in southeastern San Diego County. The extent to which this heavy migrant flow impacts the forest environments of the Cleveland National Forest and the Laguna Mountains needs to be further studied.

5. Finally, there exists the need on both sides of the border to survey the water systems on all the reservations and to develop low-cost technological remedies to ensure better quality and quantity to the residents of these reservations.

BENEFITS OF THE RESEARCH PROJECT

Most of the current academic research on border environments has stressed the effect of population growth and the pressures of increased urbanization in the international zones. There has been very little analysis done on the environmental issues that face rural Indian populations that live in dispersed communities, many of which lack the basic necessities of running water and electricity.

This project has developed much needed information and analysis about a little known area in the border region. Access to such information should not only promote greater cooperation between the U.S. and Mexican tribes, but should also empower tribal leaders to take greater control over and maximize their own environmental planning and use of their local resources. Besides aiding the border tribes, this research should be of great utility to local, state, and federal authorities as well as private sector organizations, university researchers, and the general public.

ACKNOWLEDGEMENTS

The authors wish to thank the following individuals and organizations who generously shared their time to facilitate this research: Sharon Dubois, Mike Connolly, Campo EPA; Chris Devers, Pauma Reservation; Mike Garcia and Vivian Silva, Cuyapaipe; James Hill and John Parada, La Posta Reservation; Mike Kellner, Torres-Martinez Reservation; Art Logan, Viejas Reservation; Lorena López and David Fege, EPA Border Office; Diane Martinez, La Jolla Reservation; Devon Reed, Santa Ysabel Reservation; Terry Rees, United States Geological Survey; Lori Senini, California Department of Health Services; Roger Simpson, Sycuan tribal engineer; Mark Ayuvoo Sixkiller, Pala Reservation; and Ray Suárez, Indian Health Service.

In Baja California, Mario A. Magaña-Mancillas, Aurora Meza, Yolanda Meza, Josefina López, Rito Silva, Gregorio Montes, Gloria Casteñeda, Bernabé Meza, Agustín Domínguez, Angel Domínguez, Javier Ceceña, Teodora Cuero, Ofelia Muñoz, Armando González, Benito Peralta, Josefina Ochurte, Eufemio Sandoval (D.E.P.), Gertrudis Álvarez, Cruz Ochurte, Ricardo Albañez, José Armenta, Víctor Navarro, Antonia Torres González, Norma Harris, Claudia Leyva, and Moisés Santos.

REFERENCES

Alvarez de Williams, Anita, 1989, "Los Cucapá en su Medio Ambiente," Estudios Fronterizos, Revista del Instituto de Investigaciones Sociales. Año V, vol. V, No 14. Sept.-Dic. 1987.

- Anderson, Kat, 1993, "Native Californians as Ancient and Contemporary Cultivators," In: Before the Wilderness: Environmental Management by Native Californians, Thomas C. Blackburn and Kat Anderson (eds.) Ballena Press, Menlo Park, CA.
- Blackburn, Thomas C., and Kat Anderson (eds.), 1993, "Kumeyaay Plant Husbandry: Fire, Water and Erosion Control Systems," In Before the Wilderness: Environmental Management by Native Californians, Ballena Press, Menlo Park, CA.
- Bendimez Patterson, Julia, 1989, "Antecedentes Históricos de los Indígenas de Baja California," *Estudios Fronterizos, Revista del Instituto de Investigaciones Sociales*. Año V, vol. V, No 14. Sept.-Dic., 1987.
- Campo Environmental Protection Agency, 1996, "Technical Report on Water Quality Testing," Campo Band of the Kumeyaay.
- Connolly, Mike, 1997, "History of the Campo Band of Kumeyaay Indians," Vol. 1, Campo Indian Reservation.
- D'Angelo, Pamela A., 1990, "Waste Management: Industry Turns to Indian Reservations as States Close Landfills," *Environmental Reporter*.
- Gómez Gonzales, Gerardo, José Emilio Orlando, and Ordóñez Cifuentes (eds.), 1995, La Cuestión de la Tierra y Los Pueblos Indios, Autonomous Chapingo University, Mexico.
- Kroeber, Alfred L., 1920, "The Yuman Tribes of the Lower Colorado," *University of California Publications in American Archaeology and Ethnology*, 16: 475–485.
- Laylander, Don, 1987, Sources and Strategies for the Prehistory of Baja California, M.A. Thesis, Department of Anthropology, San Diego State University.
- Magaña-Mancillas, Mario A. and Javier Ceseña, n.d., "Decision Making in the Indigenous Communities of Baja California," In: "Indian Groups of the California-Baja California Border Region: Environmental Issues," Alan Kilpatrick et. al., Southwest Center for Environmental Research and Policy, 1997 Summary Document.
- McGovern, Dan, 1995, The Campo Indian Landfill War, University of Oklahoma Press, Norman.
- Ochoa-Zazueta, J.A., 1973, "Los Cacapa de El Mayor Indígena," *Instituto Nacional Antropología e Historia, Boletín Deas* 1: 17–43.
- Shipek, Florence, 1991, Delfina Cuero, Menlo Park, Ballena Press.
- Tiller, Veronica, 1996, "Tiller's Guide to Indian Country: Economic Profiles of Indian Reservations," Tiller Research, Inc.