

Running Head: CONSERVATION EASEMENTS ON MEXICAN EJIDOS

**Conservation Easements on Mexican Ejidos:
An Alternative Model for Indigenous Peoples**

by

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ABSTRACT

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Despite revolutions, sitting governments have often established policies based on efforts to either obliterate native people or to fully assimilate them into modern world economies largely based on the export of non-food or cash crops. Rarely have efforts been made to see them and their cultures and traditions as a viable part of Mexican society.

To become more economically viable, rural cultures in Mexico have been increasing monoculture activities to meet market demands, resulting in ever-increasing clear cutting and other ecologically unwise practices. Without butterflies and forests, local ecosystems collapse and communities are lost; their members eventually disperse in search of a way to make a living. Not only are forests being lost to commercial clear cutting, but, with approximately 100,000 trees being lost each year to personal use (e.g., firewood and houses), it is becoming increasingly clear that peasant populations must make some cultural changes in order to sustain themselves on their traditional lands.

Mexico City, once thought of as a great place to visit for its crystal clear air and magnificent views of the surrounding mountains, is now a city with some of the worst air pollution in the world. Ozone (O₃), sulfur dioxide (SO₂), precursors like nitrogen oxides (NO_x), hydrocarbons (HC), and carbon monoxide (CO) are just the worst of the pollutants that concentrate in the Valley of Mexico where Mexico City is located.

Mexico has a wide range of ecosystems, some very delicate, including tropical rainforests, Sonoran desert, and rich coastal marine areas. These ecosystems serve as habitat for a plethora of species, many considered endangered. The loss of habitat leads to the loss of biodiversity; and, it isn't just Mexico that is suffering. Canada and the United States also pay a price for habitat loss in Mexico. As pollution and ecological and cultural deprivation become greater problems for this country, it is imperative that some suggestions for creative solutions be implemented soon.

There is a growing number of ejidos that have leased their lands as conservation easements, among these are Ejido San Jose del Alamito (Mexican Prairie Dog, Mountain Plover), Ejido of Xcupil-cacab (Mexican Jaguar), and Ejido La India (Mexican Prairie Dog and Worthen's Sparrow), to name just a few. Conservation easements on ejido land are proving to be a way out that preserves local culture, local ecosystems, and local control while spurring local economies.

Two positive examples of these evolving links between traditional cultures, thriving ecologies, and viable economies are Ejido El Palmito and Ejido Luis Echeverria Alvarez. Ejido El Palmito in Sinaloa, Mexico, is a small 64-member ejido that has found a way, without cutting down all of its trees, to make a living from its community forest. One of Mexico's largest conservation groups, Pronatura Noroeste, stepped in to aid the ejido in the development of one viable alternative. Through the establishment of a conservation easement on ejido lands, the exploitative and extractive development of the area was halted.

The establishment of another successful conservation easement in March of 2005 with Ejido Luis Echeverria Alvarez was the result of a clear-cut threat to the ecological integrity of Laguna San Ignacio. Although Ejido Luis Echeverria Alvarez has fewer members—only 43—than El Palmito, it is one of six ejidos that comprise the Laguna San Ignacio Wetlands Complex in Baja California Sur. Laguna San Ignacio is the only lagoon left in the complex that hasn't been compromised by industrialization of some sort and the only undeveloped lagoon in the world that serves as a prime gray whale birthing nursery. Because of the conservation easement, the coalition of the ejidos and the assistance of many conservation groups worldwide, the threat to the lagoon has been eliminated for the time being. With approximately 28,000 ejidos comprising half of the land in Mexico, the development of conservation easements on ejido land has the potential to provide viable and exciting alternatives to exploitative and extractive development.

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DEDICATION

To Maggie, who convinced me that I was, indeed, good enough.

INTRODUCTION

Indigenous people are looking for ways to preserve their cultures and protect their lands from exploitation while developing economically and maintaining a sustainable and more traditional lifestyle. In order to become more economically viable, these rural cultures have been increasing activities such as cattle ranching, cultivating marijuana and other monocultures to meet market demands. All of this requires cleared land and the use of fertilizers, resulting in ever-increasing clear cutting and other ecologically unwise land use practices. The question arises as to why indigenous groups have been unable to move ahead economically without engaging in such unhealthy practices. Looking back may help to answer this question (Shadow & Barrientos, 2003).

Historically, the indigenous rural populations of Mexico have been viewed with disdain by urban dwellers as well as Mexico's leaders, all of whom have lent a derisive connotation to the terms peóns, peasants, and campesinos. The countryside and those who inhabit it are seen as ignorant and socially inferior and a problem that must be dealt with. It has been this way since the invasion of the Spanish and the perception has led to multiple rebellions and even full-scale revolution. Despite revolutions, the perception persists and sitting governments have often established policies based on it, trying either to obliterate the native peoples or to fully assimilate them. Rarely have efforts been made to see them as a viable part of Mexican society. It is clear by their unwillingness

to settle for this role that the peóns want better for themselves without giving up their cultures and traditions (Shadow & Barrientos, 2003).

Creating conservation easements on ejido lands may be one viable alternative to exploitative and extractive development in Mexico. With approximately 28,000 ejidos comprising half of the land in Mexico (The Mexican ejido, 2007), establishing such easements could have a major impact on the preservation and sustainability of a wide variety of natural resources.

This paper explores the history of the current ejido system and how it has evolved to allow the leasing of land for conservation easements. It asks if this is a viable option for preserving the natural resources of an area as well as for the sustainability of the traditional cultures of those living on ejido lands. The paper also includes case studies of two ejidos with conservation easements and what is and is not working in each of them.

CHAPTER 1

Mexican Landscape: Land of Many Lands and the Formation of Cultures

The land of Mexico is a rich collection of geographical and topological typologies that, by their very nature, are isolated from one another and have provided many opportunities for the formation of

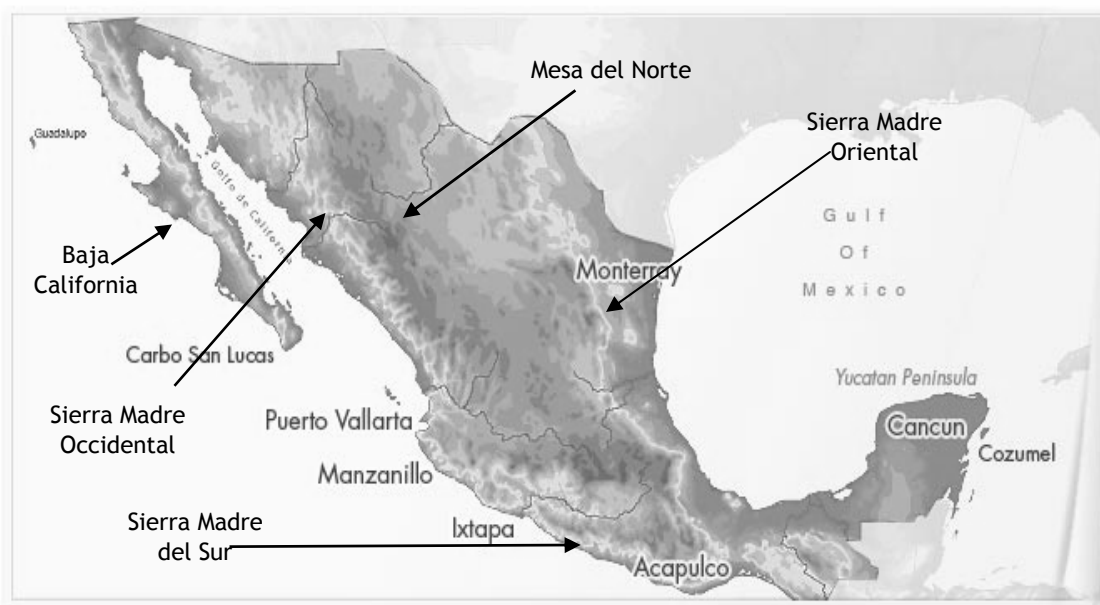


Figure 1: Map of Mexico showing major mountain ranges and the great plateau (Google images, 2008).

unique ecosystems. Most of the country is mountainous with mountain ranges running along much of the length of each of its maritime coasts. Between these mountain ranges is an elevated plateau, the great Mesa del Norte, which generates ample rainfall. However, the steepness of its edges creates torrential but short rivers that work well for hydroelectric power but do not provide good transportation routes, further isolating the various regions of the country. Historically, little of Mexico's rainfall

has been captured for irrigation and getting water to where it is needed is an historical problem for Mexico. The plateau also has numerous smaller mountain ranges on it that create separate valleys and basins. Two of the three main ranges of Mexico converge southeast of Mexico City. The eastern range, the Sierra Madre Oriental, drops down into the only really level land in the country along the Yucatán Peninsula. On the west are two ranges, the Sierra Madre Occidental in the north and the Sierra Madre del Sur to the south. The mountain ranges are volcanic with peaks as high as 10,000 feet. These varied topologies bring with them some very harsh climates that often contradict themselves. Many of the high mountain areas are found in tropical and semi-tropical latitudes but, because of altitude, they are very cold. As a consequence of all of this ruggedness, the Indians of Mexico, the Mayans and Aztecs notwithstanding, are not a single culture. They are, instead, hundreds of small cultures that had little contact with one another prior to the Spanish invasion. The Indians were spread over a total land area of 1,967,183 square kilometers (762,000 square miles or 196.7 million hectares) (Simpson, 1937; Venezian & Gamble, 1969).

The topography of Mexico not only determined, but continues to determine the lifestyles of many of its local people. It also limits the amount of tillable land that is available and much of that is subject to extreme and unseasonable weather fluctuations including frosts, hailstorms, and droughts. In 1966 only about 15 million hectares were

under cultivation and of that, only 4 million were irrigated leaving 11 million hectares of cultivated land subject to the vagaries of the weather. Another 79 million hectares of Mexican land were pasturelands, with two-thirds of that in semi-arid, low production areas. About 33.5 million hectares were various types of forestland (14.5 million in tropical and subtropical forests; 10.5 million in coniferous forests). The remaining consisted of other species. This does not include the 10.5 million hectares of semi-desert plants (Venezian & Gamble, 1969. pp. 3, 40-41, 60).



Figure 2: The rugged mountains of Copper Canyon, Chihuahua (Wikipedia, 2007).

Clearly, arable, tillable lands are rather scarce making food production for the nation, and agriculture in general, one of Mexico's most critical and complicated issues. The landscape of Mexico is, of course, one of the most complicating factors in Mexico's efforts to create sustainable as well as commercial agriculture but there are many others. The next sections discuss the evolution of the "agrarian problem" in Mexico and how the ejido system of land tenure came to be what it is today.

History of Ejidos: The Birth of Revolution and Modern Agrarian Reform

The Mexican Revolution of 1910 was thought of as an agrarian revolution because its leaders made the issue its loudest battle cry. Indeed, by 1910 only 10% of the indigenous people of Mexico owned land, leaving 90% landless and restless, and often hungry (Venezian & Gamble, 1969. p. 46). While there were other economic and cultural issues involved, the Revolution's leaders felt that agrarian reform was the key issue that would most resonate with the peóns, usually Indians, who were living and working on hacienda lands. The peóns generally lived a very meager existence and were paid very little for their hard work. The end of the Revolution brought about the end of the Porfirio Díaz administration. Díaz had taken the hacienda system to extreme lengths, increasing the chasm between the "landed gentry" of hacienda landholders (mostly Spanish) and an extremely impoverished agrarian labor force (mostly Indian). Díaz encouraged and supported the industrialization of Mexico's most populated areas thereby, perversely, planting the seeds of his own downfall. Those who could leave the haciendas to work in industry discovered that life could be better. Those who stayed behind were not blind to the advantages being gained by their former neighbors, and, not seeing their own circumstances improve, were ready to follow the leaders of revolution. Out of this Revolution came the current ejido system for redistribution of land (Simpson, 1937).

The ejido, as a system of land tenure, has existed as far back as pre-Aztec times. Indeed, it became the basis of society among the Aztecs. During the 16th century, the term ejido referred primarily to the areas within a town or pueblo that were used in common by members of the community, which also held title to the lands around the ejido (McBride, 1923). Later, ejido more appropriately referred to the outskirts of a village, the lands on the “way out” of town—the farmlands. Ejido, pronounced ā-heé-dō, is from the Latin *exire*, *exitum* and means to go out or the way out (Simpson, 1937). Over time, the ejido concept did not disappear and was occasionally used by the Spaniards. Consequently, the indigenous people of Mexico were already familiar with the idea of communal land holding. It was a system the Revolutionaries thought could be “most easily understood by the agricultural Indians” (McBride, 1923).

As the Revolution’s leaders began to think about how to run their new government, laws were written into the new constitution allowing individuals or villages to petition for land that was to be expropriated from the haciendas (McBride, 1923; Venezian & Gamble, 1969). The original January 6, 1915, agrarian decree and Article 27 of the 1917 Constitution provided for land redistribution but they did not address the relationship of the ejidos with the state and federal governments, nor did they define the duties of the governing structures beyond the top state levels (Simpson, 1937); thus, the various regions and ejidos

developed their own interpretations of how the land was to be distributed and run. Indeed, each ejido has its own constitution, which has led to inconsistencies in the governance of ejidos throughout Mexico (Wilkie, 1971).

Article 27 also addressed the regulation of natural resource development. The federal government holds all water rights and gives concessions for its use. This means that while the ejidatarios were granted the land, they may not have been granted rights to water on the land. Without water, of course, farming is impossible. Bringing water across a neighboring parcel might be possible, but only with the parcelholder's agreement. As discussed earlier, the ruggedness of the land isolated groups of people, creating many different cultures. The hacienda system drew these various cultures together as virtual slaves to the hacendados. When the system was dissolved at the end of the Revolution, the peóns generally remained in the area and petitioned for the land of their former hacienda. Despite remaining in close proximity, their hacienda experience did not seem to engender a sense of community and oneness among them. There were frequent disputes over water access; and, to make matters worse, under the Constitution, the hacendados were allowed to retain 150 hectares of land *of their own choosing*. Not surprisingly, that land usually had the best water access in the area (Simpson, 1937; Wilkie, 1971).

Another interesting point about Article 27 is that its language indicates that ejidos were designed to be *temporary*, ultimately leading to a system of private ownership. Consequently, little thought was given to long-term governance issues or incorporating ejidos into the broader political and economic structure of Mexico (Simpson, 1937; Wilkie, 1971).

President Plutarco Elías Calles (1924-1928) agreed with this section of Article 27. He saw ejidos as a training ground for private property ownership. Ejidatarios, Calles believed, were destined to become “peasant proprietors” (Simpson, 1937). Thus, on December 19, 1925, Calles enacted the Regulatory Law Concerning the Division of Ejido Lands and the Constitution of Ejido Patrimony (Appendix B, III, 3). Unfortunately, things have not worked out quite the way Calles envisioned; edjidatarios have not become peasant proprietors. Issues like those described may prove to be fundamental flaws in the ejido system. The seemingly never-ending changes in ejido governance also have been a hindrance to ejido progress; nevertheless, ejidos continue to exist and are finding new ways to survive.

Ejido Governance: Absence of Clear Purpose Leads to Confusion

Another change in ejido governance came during the administration of Álvaro Obregón Salido (1920-1924) when he appointed the National Agrarian Commission (NAC) as the highest level of the federal government administering the ejido. However, this relationship

was not direct. The NAC simply wrote and distributed circulars that were essentially policy edicts governing ejidos. The circulars were sent to the State Agrarian Commissions, which sent them on to local municipalities. On October 11, 1922, the NAC issued Circular 51, which was the first attempt at structuring the political, social, and economic life of the ejidos. Circular 51 stated that the NAC must assume responsibility for “regulating the development of the ejidos and directing their progress” (Simpson, 1937).

Circular 51 also declared that the NAC would begin to move ejidos toward a more collective perspective so that they could take advantage of more industrialized agricultural methods. It even went so far as to suggest the “imposition” of collectivity on the ejidos. Circular 51 directed the establishment of Ejido Administrative Committees to take control of governance of ejido lands after they were turned over by the Ejido Executive Committee, which had been established to represent communities petitioning for ejido grants (Simpson, 1937; Wilkie, 1971).

Circular 51 outlined the basic principles through which the ejidos were to be governed. These principles included:

- distribution of profits in proportion to work contributed;
- equal rights for members with the formula, ‘one member one vote’;
- the right of one-fifth of the members of the society to exercise at any time the privileges of initiative, referendum and recall.

Circular 51 failed to clarify who actually owned ejido land—was it collectively owned by ejido members or was it to be parcelized in severalty? This question created instability among those receiving ejido grants—the ejidatarios. The land was distributed to villages and then local committees redistributed it to ejidatarios in severalty but Circular 51 almost imposed collectivity. Practice did not synch up with legislation and policy. While Circular 51 attempted to fix the problem of continuing re-allotment by local committees, it actually made it worse; local politicians continued to arbitrarily re-allot land just as ejidatarios and their families were getting settled. The constant upheaval was clearly another weakness in the ejido system (Simpson, 1937). Circular 51 essentially created a paternalistic, dependent system and was deemed a failure and discarded by the Calles administration in 1925.

The enactment of the 1925 Law of Ejido Patrimony (Agrarian Code) provided for the parcelization of land and attempted to address the problem of corruption in ejido governance. The Agrarian Code eliminated the Executive Administrative Committees and established two new organs of governance, the Executive Commissariat and the Board of Vigilance. The main function of the Board of Vigilance was the oversight of the Commissariat (to keep the members of the Commissariat honest). It also established the Agrarian Department as holding the ultimate responsibility for the formation of the ejidos and how the land was distributed. In any irresolvable disputes, the Agrarian Department was

the final arbiter. The Agrarian Department also determined what was to be planted on the land based on local environments (Simpson, 1937; Wilkie, 1971).

The other governing entity at the federal level was the National Bank of Agricultural Credit. While the Bank did not operate in all geographic regions of Mexico, in those areas where it did, the social and economic organization within the ejidos were under its purview (Simpson, 1937; Wilkie, 1971).

The Federal Agrarian Code defined the areas of the ejido that formed the common and were to be held communally and inalienably by the village as a legal entity itself. This central entity held a lot of power not just over the commons but also over the ejidatarios and their individual holdings. The Code required all ejidos to form general assemblies, which were charged with the following responsibilities:

- To elect and remove members of an executive committee
- To authorize, modify, or rectify the decisions of the executive committee whenever this is in order
- To discuss and approve the reports rendered by the executive committee
- To order that an approved statement of account be posted in a visible and central place
- To request the intervention of the federal authorities on matters relating to the suspension or privation of rights of ejido members
- To issue rulings on how the communal lands of the ejidos should be used, subject to the approval of the Ministry of Agriculture or the Nation Ejido Bank

(Nuevo codigo agrario 1943: Art. 42. In Wilkie, 1971)

The assembly was to have considerable power. In practice, the Minister of Agriculture, the Ejido Bank, and the Agrarian Department have maintained veto authority over nearly every decision of the ejidos. This has been exercised in greater and lesser degrees, depending on the philosophy of the administration in power (Wilkie, 1971).

Property rights of the individual ejidatarios also were inalienable and title could be passed on only through inheritance. The only instance under which this inheritance could be interrupted was if the beneficiary committed certain well-defined transgressions. Women were allowed to hold title to land only if they were widowed and became the head of household. Wives could inherit but had to have a male surrogate to operate the farm and participate in the governing assembly on their behalf because women could not be members of the ejido nor could they attend governing meetings. As time went on and men died, the ratio of men and women in the community became weighted on the side of women. If women were not allowed to govern, decisions could become increasingly non-representative. If a woman remarried, title to her land went to her new husband who now assumed his position as a member of the ejido, displacing his new wife. However, the law did provide that the widow and her children should always be allowed to stay on the land and “enjoy its benefits” (McBride, 1923; Simpson, 1937; Wilkie, 1971).

Despite the new rules under the Agrarian Code, the ejidos continued to be seen as an interim solution designed to lead to totally

individual land ownership. Consequently, responsibility for overseeing their governance tended to be passed from one federal department to another and then on to the National Bank, which, it was hoped by the federal government, would eventually take on complete responsibility. The hope has not been fulfilled and has faded with successive administrations. Departments and agencies were formed and abandoned and formed again in an effort to find a viable, long-term answer for governing ejidos from the federal level (Simpson, 1937). During all of this federal-level juggling of responsibility, no one was “tending the farms.” The ejidos at the local level frequently became victims of the corruption of their own local governing committees and/or the ascension of a powerful and corrupt local leader who dominated all decisions.

Because the land was vested in the community and not in the individuals, plots were assigned to individuals who worked and subsisted on a particular piece of land. Actual legal title always resided with the federal government (McBride, 1923; Venezian & Gamble, 1969). As stated earlier, originally, the land was to be held in severalty except for limited parcels that provided space for village needs—schools, stores, municipal buildings, churches, and other public facilities. It wasn’t until 1936 and the Cárdenas administration that collectivization of the ejidos began to be seen as advantageous. Cárdenas believed that collectivization would strengthen the political and economic power of the ejidos while helping to bring more social cohesiveness to the ejidos.

The plight of the peóns, primarily Indians, was not improving under the current system of land distribution. There were numerous reasons for this but one that stands out was that individual landholders did not have the means to purchase farm equipment beyond the most rudimentary sort. They were just managing to produce at subsistence level leaving Mexico still unable to move into commercializing its agriculture. The “agrarian problem” persisted and Cárdenas believed that collectivization would resolve it (Simpson, 1937).

CHAPTER 2

Modern Ejido Land Law: More Changes in the System

Generally, the episodes of land redistribution in Mexico have sought to put the land back into the hands of the peóns from whom it had been taken, and take it out of the hands of large landowners. While the peóns had the skills and the desire to successfully work the land, they didn't have the resources to take it beyond a bare subsistence level. Mexico still could not move toward commercializing its agriculture whether it was to fully feed its own people or for export. This, of course, left the peóns and their lands open to exploitation. The peóns discovered that, at least in the short term, they could increase their income by illegally leasing their lands to extractive industries such as logging, mining, and oil drilling.

After the post Revolution flurry of lawmaking around property rights, laws surrounding the distribution and governance of ejidos continued to go through iterations—some a step forward, some backward. One of the most significant changes occurred in 1936 and changed the basic structure of ejido holdings.

In October of 1936, President Lázaro Cárdenas (1934-1940) issued a decree outlining the conditions under which a *collective* ejido could be officially formed (Wilkie, 1971). The land would no longer need to be assigned and held in severalty. It was hoped that collectivization would

help to sustain the livelihood of the peóns and move ejidos closer to the commercialization of agriculture (Simpson, 1937).

In pre-revolution Mexico, two strata of society had evolved—the landed Spanish and their descendents, and the Indians (Venezian & Gamble, 1969). Simpson (1937) includes a third stratum, the Mestizo, a blend of Spanish and Indian. The Indians were at the bottom of these layers with the Mestizo struggling to find a place somewhere in between. Since neither the Indians nor the Mestizo were faring well economically, it was hoped that a different, more communal method of land tenure that echoed traditional patterns of employing natural resources in a more efficient manner, striving for greater self-sufficiency without infusion of massive inputs, or some combination of modern and traditional methods might provide a more workable path to sustainable agriculture (Venezian & Gamble, 1969).

Since its post-Revolution inception, the ejido has received various levels of support and attention from the Mexican government, depending on who was president at the time. Despite the effort to establish greater equity and more subsistence opportunities, individual farmers still did not have enough land to produce enough food for their families. As a result, and despite its illegality, many ejido members continued to lease out their lands to large agribusiness or other development entities. In 1992 radical changes were made to the ejido system in an effort to legitimize what had become common practice; the members of the ejido

would be allowed to sell or lease their parcels or to join into partnerships with private enterprises. Additionally, the landholder no longer needed to personally work the land to retain rights to it and the Mexican government would no longer be allowed to seize land for redistribution. Privatization of some lands also would be allowed. And, aside from registering an ejido, the Mexican government would not interfere in its management; that would be left in the hands of the ejido members (The Mexican Revolution of 1910, 2006; Mexico, 1998).

The changes in the ejido system, especially the withdrawal of federal involvement in management activities, effectively set the stage for increased exploitation of the land and of the ejido members themselves. Working their individual parcels provided a bare subsistence living. The temptation to sell or lease the land to large businesses engaged in exploitative and extractive practices grew stronger as the process grew easier.

Pros and Cons:

What Has Worked or Not Worked Before and After Collectivization

It should be clear by now that the ejido system is extremely complex. It has been simultaneously successful and unsuccessful for many reasons. The system did put an appreciable number of hectares of land back into the hands of the people. With the Cardenas administration encouraging the move toward collectivization, ejidatarios could finally pool their resources to buy large pieces of equipment to mechanize some

of their work. This allowed individual farmers to produce enough to take at least some of their produce to market. Facilitating this was the ability to transport the produce in a shared truck. Collectivizing also helped some farmers with water access issues. As a collective, water access was more readily shared across individual parcel boundaries; but, there were problems. Water access was made more difficult for others because the lands of a newly formed collective now blocked the access of another collective (McBride, 1923; Simpson, 1937; Wilkie, 1971).

The absence of clear governance guidelines from the federal government left ejidos open to disputes, chaos, and corruption. Some regions set up their own systems for allotting land and determining what would be planted. Some even rotated families from parcel to parcel as land productivity diminished. This served only to break the ties families had made with their pieces of land and their neighbors. Systems even changed depending on who was in charge locally at a given time, eliminating any sense of consistency and reliability in the lives of ejidatarios and their families (McBride, 1923; Simpson, 1937; Wilkie, 1971).

To further compound the issue of who held ejido rights, the federal government had failed to develop a system for updating grantee records for ejidos (another consequence of the philosophy that ejidos were to be a temporary form of land tenure) (McBride, 1923; Simpson, 1937; Wilkie, 1971).

During all of this governance related turmoil, the ejidos, and Mexico itself, continued their struggle to support growing populations and to move toward the 20th century economic world stage. Industrializing the nation and commercializing agriculture were two primary goals of modern Mexico. The process for achieving these goals came with consequences that included environmental degradation. The following section discusses some of the environmental problems that have arisen and how they have led to the idea of conservation easements on ejido land as a countermeasure.

Industrialization and the Commercialization of Agriculture: Economy and Environment Collide

As Mexico struggles to bring its citizens out of poverty, extractive industries have brought jobs and income to many indigenous peoples. But there is a price to pay—the loss of critical habitat for the diverse flora and fauna of Mexico. As industrialization took hold of Mexico (having begun in the mid 19th century), like most social change, it brought the good and the bad. Environmental and economic problems were not the least of the bad. Pollution from both urban and rural sources began to plague the country. Urban areas quickly became overcrowded while the countryside bled out able-bodied men, and the economic imbalance between the rich and the poor grew ever wider (Simpson, 1937; Wilkie, 1971). With industrialization came the commercialization of agriculture. Fertilizers and cattle-waste lagoons polluted the water and large tracts

of land began to be converted from natural habitat to agricultural use. Some ejidos leased out their lands in order to sustain themselves, others were victims of illegal activities (primarily logging) being perpetrated on their lands. Either way, critical habitat was being lost (Wilkie, 1971; Kiehl, 2007).

Mexico has a wide range of ecosystems, some of them very delicate; these systems include tropical rainforests and the Sonoran desert, as well as rich coastal marine areas. These ecosystems serve as habitat for a plethora of species, many of which are considered endangered in the United States, Canada, and/or Mexico. The loss of habitat leads to the loss of biodiversity; and, it isn't just Mexico suffering the consequences. Canada and the United States also pay a price in species and diversity loss when Mexico loses habitat. Mexico provides over-wintering sites for many migratory species from the monarch butterfly to neo-tropical birds to the California gray whale; all of them spend the spring and summer months in northern latitudes.

One species, the monarch butterfly, is freezing to death in its winter home because of illegal clear-cutting. In 2002, conservationist Bill Toone found himself standing ankle-deep in the frozen-dead corpses of monarch butterflies in the El Rosario Monarch Butterfly Bioreserve in the forests of Michoacan, Mexico, on Ejido Donacio. Two causes contributed to this die-off of 250 million monarchs: one was a particularly cold winter, and the other was clear cutting. The forest provides a blanket of

warmth and protection around the butterflies, keeping the coldest winds at bay. When the surrounding trees were totally removed, the cold winds moved in to freeze the butterflies to death. Not only does the forest provide protection to the butterflies, it provides water to



Figure 3: Vincente Guzman Reyes stands in a portion of the butterfly preserve that was illegally cut by loggers. In response to the logging, his community organized volunteer patrols that keep watch over the forest.

local communities. Over generations, members of local communities, including Donacio Ejido, have created and maintained small canals in the forests to catch water as it drips off the trees. When the trees are gone, the water will no longer flow into the communities. Sometimes, to survive, local ejidos sell off their trees, but not Ejido Donacio. Led by Vincente Guzman Reyes, head of Ejido Donacio, local communities decided not to wait for the federal government to help stop illegal logging on their lands. They began to form groups of volunteers who patrol their own ejido lands to fend off the invasion of illegal loggers. Says Guzman, "If we stopped patrolling for a day or two, nothing would happen, but if we stopped for a week, 100 trees would be gone" (Kiehl, 2007).

Without butterflies and forests, local ecosystems collapse and communities are lost; their members eventually disperse in search of a way to make a living. Not only are forests being lost to commercial clear cutting, approximately 100,000 trees are lost each year to personal use

(e.g., firewood and houses). Says Bill Toone of EcoLife Foundation, “Every time a forest is cut to completion or a monarch butterfly colony disappears, it's a job that ends and it means that fathers will leave their families and children to make money somewhere else” (Kiehl, 2007).

Toone’s EcoLife Foundation has stepped in to help these local communities. One of the things needed is organizational assistance. EcoLife has set up a Spanish/English web site to facilitate communication between residents, local governments, and law enforcement agencies. They also supply fuel-efficient mud and concrete stoves to local residents, reducing their requirement for fuel-wood (Kiehl, 2007).

Air pollution is another consequence of industrialization and that is nowhere more apparent than in Mexico City. What was once thought of as a great place to visit for its crystal clear air and magnificent views of the surrounding mountains is now a city with some of the worst air pollution in the world. In the 1940s, average visibility was about 100 km. In 2000 it was down to about 1.5 km with almost every pollutant testing two to three times higher than international standards. By anyone’s standard, that is serious degradation and



Figure 4: Mexico City on a day when wind has replaced polluted air with fresh clean air.

Figure 5: But, too often the air moves very little in the “hollow” in which the city is situated. (Photos courtesy of H. A. Bravo)



it created an extremely unhealthy environment for the 21 million people living in Mexico City (Yip & Madl, 2002). Industrialization also brings population increases. With situations becoming more desperate in farming/rural regions, people, including those living on ejido land, have poured into the city looking for industrial jobs. The influx has brought not only more people but also more cars, more housing, more air conditioning, and more of everything that supports urban dwellers.

Unfortunately, from land use, atmospheric, and geographic perspectives, Mexico could not have picked a worse place to concentrate its industry. A large portion of Mexico's industry lies in the Valley of Mexico where Mexico City is located. Pollutants get caught under inversion layers and are trapped over the city. The situation is demonstrated in Figures 6 & 7. A lot of pollutants are concentrated in the Valley of Mexico. Some of the worst are ozone (O_3), sulfur dioxide (SO_2), precursors like nitrogen oxides (NO_x), hydrocarbons (HC), and carbon monoxide (CO) (Yip & Madl, 2002).

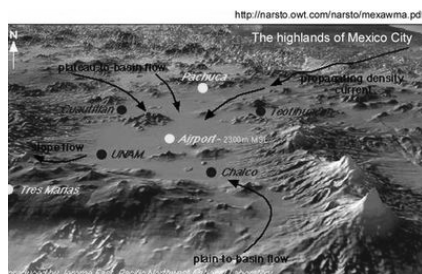


Figure 6: The Valley of Mexico is surrounded by mountains and lies at an average altitude of 7,349 ft (2,240 m).

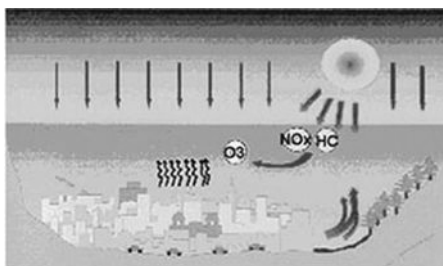


Figure 7: Atmospheric conditions form a layer over the city that blocks the escape of greenhouse gases and other pollutants.

These chemicals have very deleterious affects on all living things—people, plants, and animals. This means the ejidatarios have left a bare

subsistence life on their farms, headed for the city where they may or may not secure enough income to improve the life of their families and, they will surely be exposed to innumerable pollutants.

As loss of habitat has increased in the countryside, so have efforts to save it and staunch the flow of able-bodied men looking for work to more urban areas. One such effort has been the rethinking of the use of ejidos as agricultural entities and refocusing them on preserving and conserving habitat while still providing income streams to indigenous communities (Huang, n. d.; Eco-Index, 2006; Murillo, 2006).

CHAPTER 3

Conservation Easements: An Alternative Model for Sustainability

Recently, several Mexican and American nonprofit conservation organizations have been assisting ejidos to develop other means for sustainable living without having to sell out or lease out their lands to extractive industries. Essentially, an agreement is made between the ejido and a Mexican nongovernmental organization (NGO) (often Pronatura Noroeste) in which the NGO agrees to lease land from the ejido, setting up a conservation easement on all or part of the ejido land. Only members of the ejido (the ejidatarios) are then allowed to make money in the area by providing appropriate services on their land.

In addition to lease payments and other financial benefits, the ejidos receive extensive technical and educational training and support. Training includes building, carpentry, business and legal skills, among others, that lead to ways for ejidos to sustainably support themselves within their ecological environment. This support varies, of course, from ejido to ejido and easement to easement depending on need. Each lease agreement is specifically designed for the area, habitat, and people who will benefit from its conservation.

The easement on the land of Ejido El Palmito in the state of Sinaloa has been set up to preserve a pine oak forest that was about to be logged out, destroying the overwintering habitat of numerous

migratory birds and the hunting grounds of American black bears and cougars. Threatened by the building of a salt factory and drying lagoons, Ejido Luis Echeverria Alvarez in the state of Baja California Sur developed an easement to provide sanctuary for the California gray whale (a major tourist draw and source of income), and to help sustain traditional fishing activities of the area. The following section and next chapter provide brief case studies of these two ejidos.

Case Study #1: EJIDO EL PALMITO

In El Palmito, Sinaloa, Mexico, a small 64-member ejido has found a way, without cutting down all of its trees, to make a living from its community forest. Logging, cattle ranching, and marijuana cultivation

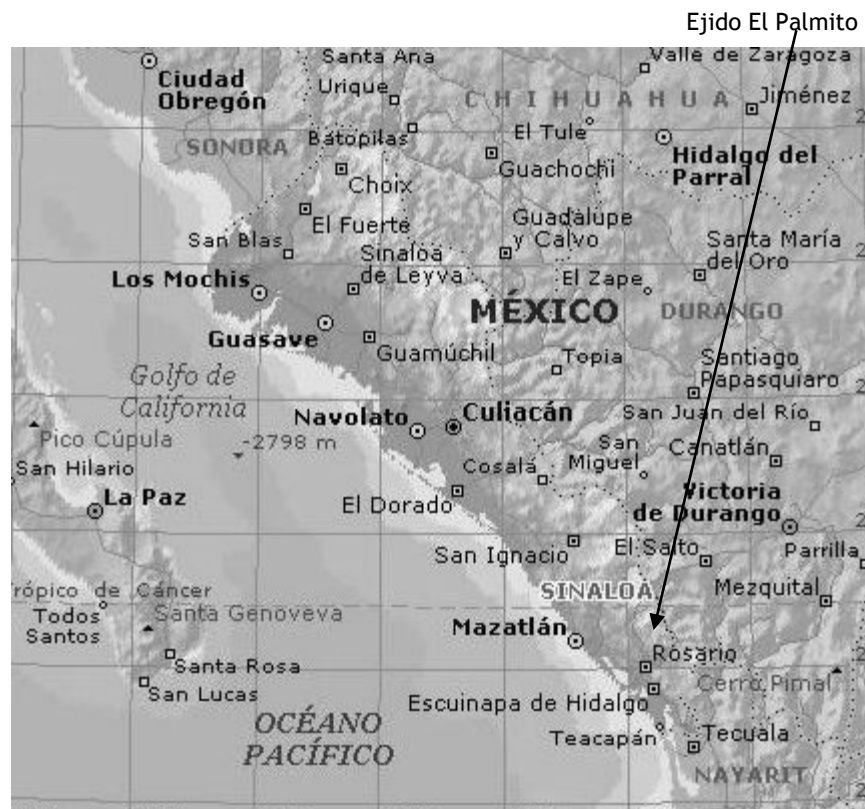


Figure 8: Location of Ejido El Palmito in state of Sinaloa (Maps of Mexico, n.d.).

were rapidly eliminating the forest until one of Mexico's largest conservation groups, Pronatura Noroeste, stepped in to offer a solution—the development of a conservation easement. Open to alternatives to destroying their land, the El Palmito ejidatarios agreed to work with Pronatura. The ejido has entered into a 30-year lease with Pronatura to preserve approximately 5,000 hectares of the Rancho La Liebre pine-oak forest in the Sierra Madre Mountains, home to a number of endemic and migratory species including the rare Tufted Jay, the endangered Sierra Madre sparrow, mountain trogon, and the American black bear. This will become the core area of what is hoped will be a much larger preserve. Pronatura is working with this small ejido, where all decisions are made by the community, to develop diversified sources of income that are more closely aligned with conservation goals (tourism, growing flowers, and woodworking). The real goal is to educate locals to the idea that preserving natural resources can lead to better income than the unsustainable and destructive means of the past (Vega. In Murillo, March 2006).

Birdwatchers are especially interested in this area and, as a result, several bird reserves have been established including the Chara Pinta Reserve, inaugurated in April of 2005, the El Palmito Tufted Jay Preserve, and the



Figure 9: Tufted Jay (Sendero Mexico Newsletter, February 25, 2006).

San Ignacio Reserve. In its first year, the Chara Pinta Reserve received about 300 birdwatchers. Many “life birds” live on these reserves for at least part of the year. “Life birds” are those birds that birdwatchers seek out for their life-lists. Such birds may be spotted only once in a lifetime. The Tufted Jay, military macaw, Sinaloa martin, and the mountain trogon are just a few of the exciting birds to be seen in the pine forests of Ejido El Palmito.

Cabins (2 2-bedroom) and safari tents (initially 5 holding a total of 40 people), out-door bathrooms and showers, cooks, guards, and guides all generate income for the ejido. In addition to adding new income sources, the new arrangement has opened up the area to scientific research and more intense bird monitoring. Pronatura has also carried out a pilot project for the North American Bird Conservation Initiative (Eco-Index, 2006; Beckman, 2005).

But, this isn't all that is planned for the area. To increase the protected area, Pronatura hopes to bring surrounding ejidos into the project by establishing easements on their lands. This also will allow for



Figure 10: A guest tent and cabin at the Tufted Jay Preserve (Sendero Mexico Newsletter, February 25, 2006.)

more diversity of activities on the land. Plans for the expansion of services in El Palmito itself include a cafeteria, restrooms, and a meeting hall, and the training of more local guides (Eco-Index, 2006).

Much of the success of Ejido El Palmito is based on increasing tourism. Pronatura and the ejidatarios have established a cooperative agreement with a tour operator, Sendero México (formerly Mazatlanco Tours), to promote the project through a web presence and trip packages. According to Paul and Carolyn Beckman, owners of Sendero México, the couple was instrumental in initiating interest in creating the Tufted Jay Preserve in the El Palmito area. They had been guiding birders through the area since 1994. Realizing the impact that heavy logging was taking on the endangered Tufted Jay and other birds in the area, they contacted several organizations to come in to document and evaluate the situation. Photographers and illustrators came in as well as scientists. In 2001, bird illustrator Hans Peeters created an illustration of the Tufted Jay for a Mexican postage stamp. The biological reports and the publicity led to the creation of the Tufted Jay Preserve in 2004 (Eco-Index, 2006; Beckman, 2006).

For the El Palmito Ejido, it is the activities and services provided by the



Figure 11: Ecotourism project creates job and builds community as the men of El Palmito Ejido work on road to Mesa de los Alisos, site of cabins and tents to accommodate tourists (Sendero Mexico Newsletter, February 25, 2006.)

ejidatarios in support of tourism that make the easement work. These services and activities help create a feasible alternative to selling off the land and provide income to supplement the subsistence existence of the ejidatarios. While tourism has its own impacts on the environment, the ejido can control the number of people coming in and out over a given time period. The ejidatarios serve as guides into the sensitive areas and, thus, also control where the tourists actually go. These measures help to mitigate the impact of tourism. Once the ejido leased a piece of land to the logging companies, it had no control over what happened on that parcel. Additionally, loggers leave once a forest is logged out, the locals lose their extra income, and the land has been destroyed. As long as the El Palmito ejidatarios continue to maintain the forest intact and provide appropriate services for the visiting tourists and scientists, the ejidatarios will continue to have a supplemental income and the ecological systems of the forest and surrounding areas will continue to function.

Pronatura also plans to propose to the federal government that a bird sanctuary be created in the areas where conservation easements are established. This will be an important step since the El Palmito area provides major wintering habitat for many migratory birds and animals (Eco-Index, 2006). Pronatura has established biological criteria for monitoring and evaluating bird populations of the El Palmito project that include an extensive bird count, one from designated sites along

roadways, and a more intensive count, done using mist-netting or nest searches. Both cover the entire project area (Eco-Index, 2006).

Economic Feasibility

Tourism, however, is not the only source of income to the ejido. Income also comes through lease payments from Pronatura Noroeste's National Program for the Conservation of Private Lands as long as the ejido continues to protect the natural resources of the forest. In this case, the primary benefit of this to the ejidatarios is the income generated by the visitors. However, the local residents also are allowed to use the resources of the forest—vegetation, seeds, animals—for subsistence purposes. Pronatura has established an annual budget of \$1,000,000 for this project. The state of Sinaloa makes environmental services payments of \$45,000 annually to the ejido. In addition to Pronatura and the state, many other agencies and groups are involved in providing technical, financial, and legal support to the ejido and its reserves. These include the Mexican Commission for Use of Knowledge of Biodiversity (CONABIO), the National Forestry Commission (CONAFOR), the U.S. Fish & Wildlife Service (through the Neo-tropical Migratory Bird Conservation Act), the Sonoran Joint Venture (Audubon), the Universidad Autonoma de Sinaloa, and Grupo Coppel, Mexico (Eco-Index, 2006; Murillo, 2006).

What does success look like?

Pronatura and other stakeholders involved in developing these conservation easements need to know if their time, efforts, and dollars are well spent and that their projects are working successfully. They have established criteria and protocols for determining whether or not an easement is proving successful for the ejidatarios and for the species living in and around, and moving through, the easement. These criteria and protocols, like the technical support, vary from easement to easement and ejido to ejido. Miguel Vargas, Director of Private Lands and Programs with Pronatura Noroeste responded to three questions about determining success at Ejido El Palmito (personal communication, September 26, 2007).

QUESTION: What criteria are being used to determine if the use of a conservation easement is working?

ANSWER: There are protocols to determine if the ejido and its members are in compliance with the limitations on land use and activities on the easement. This is accomplished through a rapid assessment of the landscape and ecosystem status, which looks at the opening of new trails and roads, disturbance of vegetation and woods, and new buildings or infrastructures, among

other criteria. Compliance on all of these issues over the long term means that the easement is working.

QUESTION: Has the income of the ejidatarios increased? Is the overall community better off economically and/or socially than they were before the easement was established?

ANSWER: This is a hard question to respond to at this time for Ejido El Palmito. Social and economic improvements take time because they depend on cultural changes in how people use natural resources. However, we do have some achievements in regard to community development alternatives. Several cabins have been installed to start an ecotourism business and we have gained the support of an ecotourism agency in Mazatlan. Some people in Ejido El Palmito have been engaged directly on this project and part of the income goes to the Ejido's treasury. There is still the need for more sustainable alternatives to engage more people and we have more ideas for fulfilling this need (e.g., a carpenter's shop and a small factory for bottling water).

QUESTION: Is there anything not working as well as expected when the easements were established? If so, how are those issues being addressed?

ANSWER: It is hard to change customs and the way people have traditionally used their natural resources. More education work is needed. Also, we need to promote more economic alternatives that are attractive to ejido members.

Monitoring, stewardship, and legal defense costs are our main issues. We need to address these issues in Ejido El Palmito in order to guarantee land protection over the long term. Finding funds and foundations with the willingness to support these endeavors is not easy.

CHAPTER 4

Case Study #2:
EJIDO LUIS ECHEVERRIA ALVAREZ

Unlike the relatively low-fanfare process that evolved in the Sierra Madre Mountains around Ejido El Palmito, the conservation easement that was established in March of 2005 with Ejido Luis Echeverria Alvarez was the result of a clear-cut threat to the ecological integrity of Laguna San Ignacio. Although Ejido Luis Echeverria Alvarez has fewer members—only 43—than El Palmito, it is one of six ejidos that comprise the Laguna

San Ignacio Wetlands Complex in Baja California Sur, Mexico (Laguna San Ignacio, n. d.). Laguna San Ignacio is the only lagoon left in the complex that hasn't been compromised by industrialization of some sort and the only undeveloped lagoon in the world that serves as a prime gray whale birthing lagoon and nursery (LaBudde, 1998). The locals have been fishing the area for centuries and ecotourism has been going on since the 1960s (long before the word was coined) in the form of whale watching (Baja Whale Watching, n. d.). The lagoon is part of the El Vizcaíno Biosphere Reserve established in 1988 (El Vizcaíno, 2004). It also has

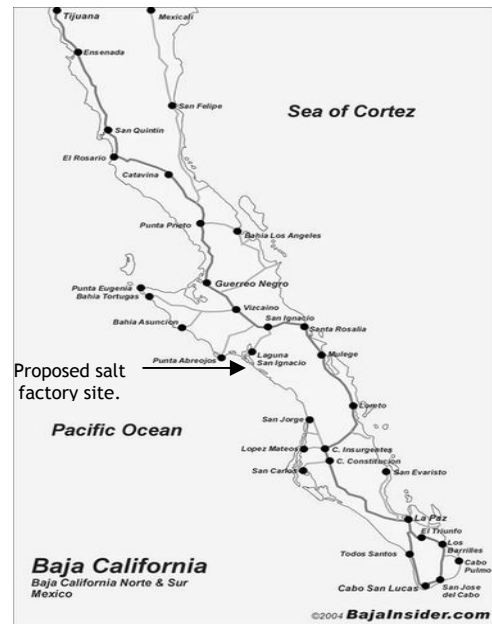


Figure 12: Baja California (Bajainsider.com, 2004).

been designated a UNESCO World Heritage Site since 1993 (Whale Sanctuary, 2006).

Despite these designations and its importance as gray whale habitat, Exportadora de Sal, S. A. de CM (ESSA), a corporation owned by the Mexican government, and Japan's Mitsubishi Corporation proposed building a large industrial salt facility that would utilize parts of Laguna



Figure 13: Gray whale greeting tourists (News from the Laguna, July 2007).

San Ignacio as salt drying ponds and processing facilities (A Triumph, Summer 2000).

The move forward with this proposal occurred in June of 1994, within weeks of the gray whale being downlisted from endangered to threatened

under the Endangered Species Act (LaBudde, 1998; Saving the Whales, 2000).

Gray whales may be the most charismatic species, but they are not the only species to inhabit the El Vizcaíno Biosphere Reserve. It also is home to many other sensitive species such as



Figure 14: Mating endangered Black Sea Turtles (Roberson, September 23, 2000).

the endangered Sonoran pronghorn, several species of endangered sea

turtles, numerous raptor species such as osprey and hawks, as well as migratory waterfowl and other birds. So far, 560 species of plants have been identified on the Reserve (A Triumph, Summer 2000). Finally, after a 5-year-long battle waged by local ejidos, independent local fishermen, a multitude of international conservation groups, all of whom were supported by public opposition to the salt factory project proposal, as well as countless letters from individuals around the world, Mexico's President Ernesto Zedillo cancelled the ESSA/Mitsubishi proposal.

Realizing the possibility that a similar proposal might be resurrected in the future and fearing the pollution and loss of their traditional fishing grounds, some ejido members began looking for ways to protect their precious natural resources. With 99% of the land in the Laguna San



Figure 15: Ejido members vote for conservation easement (Wildcoast Newsletter. Summer2005).

Ignacio Wetlands Complex

being owned by the members of the six ejidos, they were definitely a force to be reckoned with. In contrast to Ejido El Palmito, which was approached by Pronatura, the Laguna San Ignacio ejido members went looking for help. They approached Wildcoast, Pronatura Noroeste, the International Community Foundation, and the Natural Resources Defense Council for help in establishing a conservation easement of 140,847

acres. In response, Pronatura Noroeste, Wildcoast, the International Community Foundation (ICF), the International Fund for Animal Welfare (IFAW), TV Azteca, Comunidad Maijanu, A.C., the Natural Resources Defense Council (NRDC), the Mexican Foundation for Environmental Education (FUNDEA), and the National Commission of Natural Protected Areas and, of course, Ejido Luís Echeverría Alvarez formed the Alliance for the Conservation of Laguna San Ignacio. The Alliance worked to negotiate a viable contract to establish the first easement on Ejido Luis Echeverria Alvarez. Not quite knowing how all of this would work out, and despite their opposition to the salt factory, the other five ejidos in the area adopted a “wait and see” stance before committing their lands to an easement. In October of 2005, Ejido Luis Echeverria Alvarez approved and signed the contract for the easement. They agreed to restrict development and manage their communally owned land with the conservation and protection of their natural resources as the goal. Zones for economic uses would be set up, as would buffer areas and fully protected sites (News from the Laguna San Ignacio, July 2007).

Again taking the lead, Pronatura Noroeste, along with Wildcoast and the International Community Foundation, continue to work with the other five ejidos to encourage them to bring their lands into an easement. In fact, Ejido Emiliano Zapata is currently negotiating for 175,000 acres of its land to be placed into an easement (ICF, 2007). The hope is that over a million acres of “pristine coastal lands” will be

protected by an easement agreement with the remaining ejidos and private property owners by the year 2009. In addition to ejido lands, the Commission on Protected Natural Areas (CONANP) announced that it will make 44,000 hectares of national land located within the El Vizcaíno Biosphere available to the Office of the Secretary of Environment and Natural Resources (SEMARNAT) to include in the protected area (Laguna San Ignacio, n. d.). Other groups involved in the effort in various ways include Grupo de Los Cien, Pro Esteros, the Mexican Green Party, Grupo Tortuguero, Earth Island Institute, and a number of private citizens.

Economic Feasibility

In the case of Ejido Luis Echeverría Alvarez, the International Community Foundation is providing some of the financial incentives that will help the ejido continue to manage its community properties for conservation of resources. The ejido will receive \$25,000 annually in perpetuity from a trust fund set up by the Foundation. In late 2005, a one-time payment of \$545,000 was split among the ejido residents who hold individual parcels that comprise about 20,000 acres. As part of an incentive package, the Alliance created a fund to generate revenues which will be given to the ejido annually. Technical and legal advice and support also are part of the package. Other sources of income include ecotourism and related services (a flourishing whale watching industry is already established), fishing, lease payments, environmental service fees from the state, and payments to private landholders (Dibble, 2005).

What does success look like?

As with Ejido El Palmito, Miguel Vargas responded to the same three questions about determining success at Ejido Luis Echeverría Alvarez (personal communication, September 26, 2007).

QUESTION: What criteria are being used to determine if the use of a conservation easement is working?

ANSWER (same answer given for both ejidos): There are protocols to determine if the ejido and its members are in compliance with the limitations on land use and activities on the easement. This is accomplished through a rapid assessment of the landscape and ecosystem status, which looks at the opening of new trails and roads, disturbance of vegetation and woods, and new buildings or infrastructures, among other criteria. Compliance on all of these issues over the long term means that the easement is working.

QUESTION: Has the income of the ejidatarios increased? Is the overall community better off economically and/or socially than they were before the easement was established?

ANSWER: In this Ejido things are better and more easily determined. The conservation easement agreement includes the creation of a community endowment (the fund established by the Alliance) of \$650,000. The interest generated from this endowment allows us to deliver \$25,000 annually as an incentive to the ejido members. These

funds can be used by the ejido to develop sustainable activities, support social and health needs, and to match government grants.

QUESTION: Is there anything not working as well as expected when the easements were established? If so, how are those issues being addressed?

ANSWER: As with Ejido El Palmito, is hard to change customs and the way people use natural resources. More educational work and capacity building are needed here. Also, for the Ejido Luis Echeverria Alvarez easement, we have created a monitoring endowment. We are still working on the creation of a legal defense fund.



Figure 16: Hydroponics greenhouse built by Rigoberto Sanchez Mosqueda (News from the Laguna, July 2007).

There are other success stories resulting from the creation of the easement on Ejido Luis Echeverria Alvarez. There are some private land holdings within the ejido and those landholders have begun to negotiate easements on their lands. For example, on June 16, 2007, Rigoberto Sanchez Mosqueda signed a lease contract for 641 hectares of land within the ejido. Not only did he decide to comply with the land use restrictions

of the easement, Sanchez Mosqueda is expanding his environmental activities to include the development of a hydroponic greenhouse for the production of up to 10 tons of food per month for 60 head of goats. This alternative to using the land to feed his goats will spare the landscape and keep Sanchez Mosqueda competitive as a producer of goat meat and other goat products. The state of Baja California Sur is enthusiastic about this project and has agreed to give 10 goats and a registered stallion for each new greenhouse established. The Northwestern Center of Biological Research, an arm of the National Council for Science and Technology, and the source of the greenhouse, agreed to provide technical training and assistance to Sanchez Mosqueda in how to set up and operate the greenhouse. They also have agreed to provide ongoing assistance for a full year so that Sanchez Mosqueda can learn to train others who wish to set up such a project. Thus, the development of the conservation easement by Ejido Luis Echeverria Alvarez is leading to the growth of more sustainable economic and social development all over the biosphere (News from Laguna San Ignacio, July 2007).

As easement leases are negotiated with the other five ejidos and individual property owners within ejido land, additional bird, mammal, and marine mammal sanctuaries can be established, helping to eliminate the threat of industrialization not only in and around Laguna San Ignacio but throughout the El Vizcaíno Biosphere Reserve, which spans the width of the Baja Peninsula (News from Laguna San Ignacio, July 2007).

CHAPTER 5

Conclusions and Recommendations

There is a growing number of ejidos that have leased their lands as conservation easements, among these are Ejido San Jose del Alamito (Mexican Prairie Dog, Mountain Plover), Ejido of Xcupil-cacab (Mexican Jaguar), and Ejido La India (Mexican Prairie Dog and Worthen's Sparrow), to name just a few. Historically, conservation efforts have often come at the expense of indigenous peoples (Keller & Turek, 1998). The preceding examples are helping ejido members begin to see options beyond selling their land to commercial developers, the annihilation of their natural resources, and the loss of their cultures as the only means of surviving. Conservation easements on ejido land are proving to be a way out that preserves local culture, local ecosystems, and local control, and spurs local economies. Environmental groups also find the easements to be a good way to preserve and conserve at least some of the ecological systems and services of an area. More and more, it seems that such groups, as well as individual environmentalists, are beginning to appreciate the role indigenous peoples have played in creating and maintaining their local ecosystems.

Seeing the ecological and biological need for such enterprises and appreciating the long-term benefits for both the ecosystems and the local cultures are one thing, getting people to behave differently over time is another thing. As Señor Vargas pointed out in his responses to my

questions, the most difficult part is changing local customs and the way people have come to use their resources. To survive, local cultures have turned to extractive activities, which have become a way of life and a livelihood for many. Survival has forced them to use their lands in ways that are not in keeping with their traditions and beliefs. Even with the help of the income from conservation easements, changing this way of life will not happen overnight and Señor Vargas and his organization realize this. It will take time to develop new ways of sustaining these local communities and the remedies will need to be and, indeed, are being developed specifically for and within each community. Beyond establishing the easements themselves, one solution will not fit all ejidos. Each must be designed around the local ecosystems and address the unique traditions, as well as the population, of each community.

Facilitating more cross-pollination of successes and creative solutions would encourage those ejidos who are reticent to sign onto such agreements to move forward. Groups of ejidatarios from the successful areas might become “roving ambassadors” and technical advisors. Ways to fund these ambassadors/advisors might include subsidies from Pronatura and other stakeholders, including state governments; their home ejido might contribute proceeds from local tourism; and/or, recipient ejidos also might contribute to the advisors’ expenses.

It also is important to foster “out of the box” thinking to creatively develop alternative livelihoods. An example of this is Pronatura’s efforts to teach the ejidatarios at El Palmito to build custom furniture. Carpentry training, resources for building a carpentry shop and buying equipment, and training in sustainable forest management techniques are all a part of this effort. Everyone wins: birds continue to have an overwintering area, the ejidatarios develop a new income source, the forests remain intact, and, the birdwatchers get to add to their life lists. One of the most creative ideas is the hydroponic growing of goat food (mentioned earlier in this paper) to alleviate the damage done to the land by grazing goats. The farmer gets to keep raising his goats, ecosystem balance eventually will be restored, and the community continues to have access to the goat products.

More research should be done on what is working and what is not. This paper just barely touches on the overall success of these programs. A number of these conservation easements have been in existence long enough to really assess what works, what doesn’t, and how to adapt the process on a wider scale.

Mexico’s great biological diversity—“Mexico holds approximately 10% of all plants and animals of the world” (Rainforest Alliance, 2007)—and its key role in the migratory systems of many species make it vital to encourage the United States and the Mexican governments to cooperate in efforts to preserve Mexico’s natural environments.

Mexico's ejido system needs to be supported through laws and economic incentives. The system should be elevated from its perceived status of temporary to a formal and permanent place in the Mexican governmental structure. The ejido system encourages local involvement and gives its members local control over a large area of land while avoiding the recreation of the hacienda system by the individually wealthy or by corporations. Thus, the ejidatarios control enough land to have an impact on conservation and to sustain their traditional cultures. Official status in the government structure would help eliminate some of the local corruption and provide a more efficient means of moving federal tax dollars out to the local level. Additionally, it would allow for broader efforts aimed at equalizing the status of women within the ejido system. Bringing women into full legal and participatory status within the ejido system would help fill the increasing number of gaps left by men migrating to urban areas looking for work.

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