PRESERVATION AND SUSTAINABILITY OF THE PEYOTE SACRAMENT IN REVERENCE OF THE NATIVE AMERICAN CHURCH

by

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STATEMENT BY AUTHOR

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Lastly, I thank the Creator for blessing me with great individuals to guide me during my journey and allowing me the opportunity to address the peyote concern.

All my relations.

DEDICATION

This research is dedicated to my daughter Lilianna Big Tree Nolan, who sacrificed and endured every inch of this writing with me.

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AUTHOR'S NOTES

I was raised on the Fort Hall Indian Reservation by my maternal grandparents Lillian & LaVon Jackson Sr. I have participated in "meetings" or peyote meetings which I now know as the Native American Church, for as long as I can remember. According to my grandma, since I was an infant. I grew up in the teepee sitting next to and observing my grandmother Lillian.

My first memory of the Church was lying behind my Grandma in a teepee, listening to prayer songs, the water drum, the gourd rattle and my grandma's voice. I remember hearing her talk in Shoshoni, and though I don't recall her words, I knew that what she was saying was sad and desperate. I sat up and looked at her; she was staring at the fire, talking and praying in a way that I had never seen. She was on her knees holding a hand rolled cigarette, very collected with a blanket wrapped tightly around her legs. She touched my leg with reassurance while still deep in prayer. I remember thinking I had better pay attention.

Over the years, I became more perceptive to the ceremony and realized that I was a part of something very ancient and spiritual. I asked a lot of questions, which never seemed to tire my grandma, then one evening as we were in ceremony I realized that the medicine was sparse. Then at ceremony a few months later, the medicine was again lacking when I recognized that the peyote buttons were the size of pennies, if not smaller. This is when I asked myself, what is going on with the medicine? Why are the buttons significantly smaller in diameter than I remember, and why did it take me so long to recognize the peyote may be endangered?

I asked my Grandma these questions and her answer was, "… if the Creator wants us to have this medicine, it will always be here for us". I didn't challenge her response as Native American epistemology teaches us never to question the words of an elder. I now recognize my grandma's response as a shared sentiment among most Native American Church members.

Several years ago I shared with her that I was working on research regarding peyote and she encouraged me, saying that somebody needs to do it. After our interview this summer I shared with her the graph from Figure 9 of this research and her response was, "…that graph makes me very sad…so, what are we supposed to do?" I shared with her my thoughts and plans for preservation. I also shared with her my worries and concerns about what other peyotists[1] might think by approaching preservation efforts with new laws and regulations, a very western mentality. This is one reason my research has been so difficult to write.

I have a deep personal interest in the preservation of this medicinal cactus; I have witnessed and experienced the miracles this medicine has performed. I can no longer be passive toward its depletion and feel that as a member of the Native American Church, it is my obligation to preserve this revered natural resource.

[1] Peyotists are consumers of peyote.

"Before our ways of life came to an end, our natural resources were sacred. Our ancestors prayed for the survival of their descendents, that they would keep their ways and protect their natural resources. We are those descendants." Ted Herrera

INTRODUCTION

The peyote cactus (*Lophophora williamsii* Lem. ex Salm-Dyck J.M. Coult.) which is ingested for its medicinal qualities has been a conservation concern for members of the Native American Church[2] (NAC), since 1976 (Morgan 20). In 2010, the Natural Resources Conservation Service (NRCS) identified peyote as a plant of cultural concern due to destruction of the native habitat in south Texas. The country of Mexico has also created a federal regulation which considers peyote a subject of special protection (Semarnat 2010), and justly so as 80 percent of the peyote habitat exists in Mexico (Terry et al. *Limitations to Natural* 663). The primary threat to long-term conservation of the peyote plant is overharvesting due to increased demands by members of the NAC (Terry, *Limitations to Natural* 661) and improper harvesting techniques of the peyote distributors. Other threats include: root plowing (i.e., the practice of clearing thorn scrub and peyote habitat to increase forage production), oil development, disturbance from feral hogs and exurban development. Therefore, it is imperative that conservation and sustainability measures by members of the church, *peyotero* distributors and Texas landowners be developed and implemented.

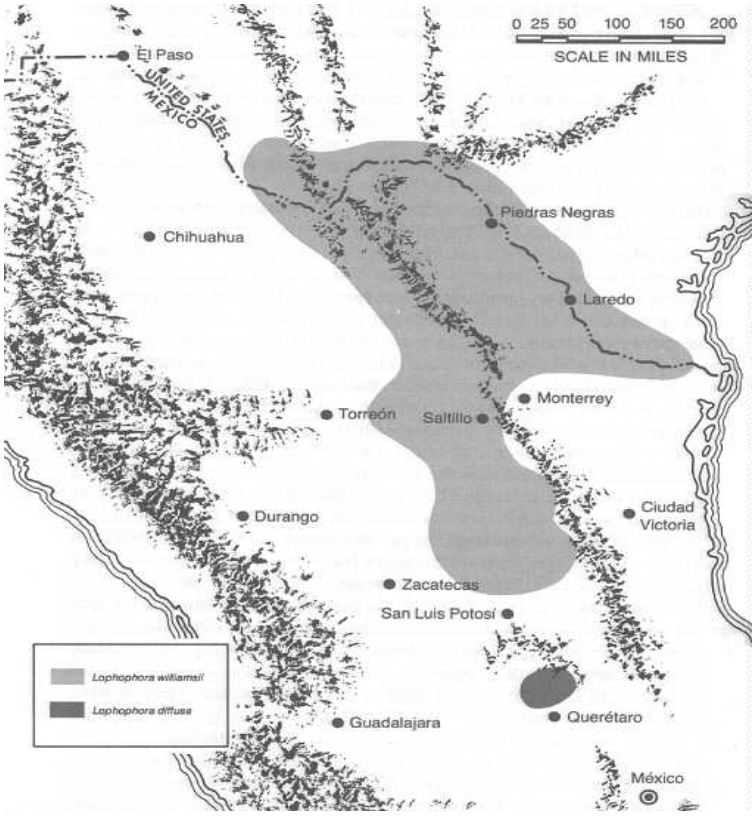
[2] The Native American Church was not recognized until 1918 as a *bona fide* religion; however, the ceremony conducted by and associated with the Native American Church had already been established. This is how I will identify the religion, pre and post recognition.

Unfortunately, existing regulatory measures for preservation have had limited success and peyote remains at a high endangerment level (Terry, *Limitations to Natural* 662). Considered by the NAC as a holy sacrament for its medicinal qualities, peyote is a vital element in the Native American Church. The church has a growing membership and is federally recognized as a bona fide religion. The anthropologist, Omer Stewart, reported in 1987 that the Native American Church may have as many as 225,000 adherents (Stewart, *Peyote Religion* 306), but exact numbers and the rate of membership increase is not documented. This study identifies major threats to the peyote habit and suggests conservation strategies. A conservation strategy is imperative for the survival of the peyote cactus across its range that spans from southwestern Texas into central Mexico and along the Rio Grande (Maroukis 197).

Fig. 1 Cluster of Peyote Buttons

Source: *Cluster of Peyote Buttons*. 26 Feb. 2011. Photograph by author.

Fig. 2 Geographic Distribution of Peyote Cactus: Lophophora williamsii and Lophophora diffusa



Source: Anderson, Edward F. *Peyote, The Divine Cactus*. Tucson, Arizona. University of Arizona Press, 1980. Graphic.

The habitat of the peyote cactus in the United States is limited to arid regions of southwestern Texas where approximately 90 percent is under private ownership (Anderson 1995). This area is referred to as the *Peyote Gardens* by Native American Church members and is considered to be a sacred and revered landscape. Historically peyote was harvested individually by church members, which is a time consuming and laborious task. Local Texans were empathetic toward church members when harvesting the peyote and began assisting them with the collection and processing of the plant for transportation. This required drying, which could take between 2 or 3 days, and was

needed to ensure the harvest did not spoil during transportation. Ultimately this undertaking created the peyotero[3] distributors who also refer to themselves as brokers. They are authorized by the state of Texas to harvest and sell the peyote sacrament to Native American Church members according to established regulations. To date, the Texas Department of Public Safety (TDPS) has three licensed peyote distributors/brokers.

The role and responsibilities of a licensed peyotero are minimal and pertain strictly to recordkeeping and maintenance of employee certification according to the Texas Department of Public Safety and Controlled Substances, Title 37 Public Safety & Corrections Part 1 Chapter 13 Subchapter C. Peyote. A licensed peyote distributor is not required under Texas law to preserve the native habitat, or ensure that proper harvesting techniques are used to collect the plant that contribute to long-term population stability. The peyote cacti is a slow-growing plant which is not considered fully mature until they are at least five years old or approximately 6.35 cm in diameter (CCI 2012). According to research conducted by Dr. Martin Terry of the Cactus Conservation Institute (CCI), "best practices" should be implemented when harvesting wild peyote cacti to ensure preservation and sustainability (Terry et al. *Limitations to Natural* 663).

Conservation management of the peyote is limited to the discretion of landowners. The level of commitment from landowners towards conservation of the Garden varies. Landowners who once welcomed peyoteros to harvest peyote on their property are now reluctant and hesitant to allow access due to liability by poachers in

[3] Not to be confused with the Native Mexican peyotero (including but not limited to the Huichol and Tarahumara).

search of the sacrament for illegal use. Illegal use is considered profane by most members of the Native American Church. Other landowners support peyoteros and take pride in the fact that a sacred and cultural plant exists on their property (Herrera, personal interview) and willingly collaborate with peyoteros and individual church members to ensure demand is met.

In addition, Native American Church members themselves need to consciously monitor their consumption and institute conservation methods for self-regulation that sustain the peyote population while maintaining the sacrament for ceremonial purposes. Therefore, education within the Native American Church needs to occur to inform the membership of the endangerment level and develop a sustainable use quota that may include limitations upon the quantity and cacti size. Most recently, Dr. Martin Terry reported that long-term conservation management should focus upon reducing the frequency of harvesting of wild peyote and that harvested populations require more than two years allowing seed development and regeneration (Terry et al *Limitations to Natural* 661). However, reducing the current harvestable rate of peyote will result in change in the consumption use by various Native American Church chapters spread throughout Indian Country. It is unknown how a reduction such as this may affect the Native American Church. Conscious purchasing from peyote distributors can make certain that fully mature plants that have propagated are being harvested. Preservation and sustainability of the Gardens can be guaranteed with conscious purchases by peyotists.

If preservation and sustainability efforts are not implemented, the peyote cactus has potential to be listed on the Endangered Species Act of 1973. The mission of the

Endangered Species Act (ESA) is, "…to protect and recover imperiled species and the ecosystems upon which they depend," should the peyote cactus be listed, obtaining the sacrament for the Native American Church would likely become more regulated and possibly reduce access to the sacrament. The latter would result in limited consumption per church member, and reduced harvest per annum. A mutual and reciprocal conservation strategy between the Native American Church members, peyoteros and Texas landowners would be an important step towards ensuring preservation and sustainability efforts.

This study advocates for conservation easements of peyote cactus habitat and development of harvest strategy between Native American Church members, peyoteros and landowners that will perpetuate a viable population of wild peyote cacti. In addition, amendments to the regulations of licensed peyoteros in the state of Texas are needed to ensure that sustainable harvesting practices are used during the collection of the peyote cacti. Lastly, educating Native American Church members of the Peyote Gardens' depletion and possible development of quantity quotas per sales transaction are needed to ensure long term conservation.

PEYOTE GARDEN HABITAT

The peyote cactus inhabits the south Texas Plains region along the border of Texas and northern Mexico. The landscape was coined the Peyote Gardens for its abundance of and reverence to the peyote sacrament (Morgan 81) by members of the Native American Church. This area rests upon privately owned ranchland along the U.S. and Mexico border in the counties of Webb, Zapata, Jim Hogg, and Starr. In the United States, the Peyote Gardens are estimated to occupy 1,250 square miles. The Gardens stretch from Big Bend National Park then descend along the Sierra Madre Mountains to the Chihuahuan Desert of Mexico (Maroukis 226) where it is estimated between 80 percent (Terry et al. *Limitations to Natural* 663) and 90 percent of the habitat exists (TNC).

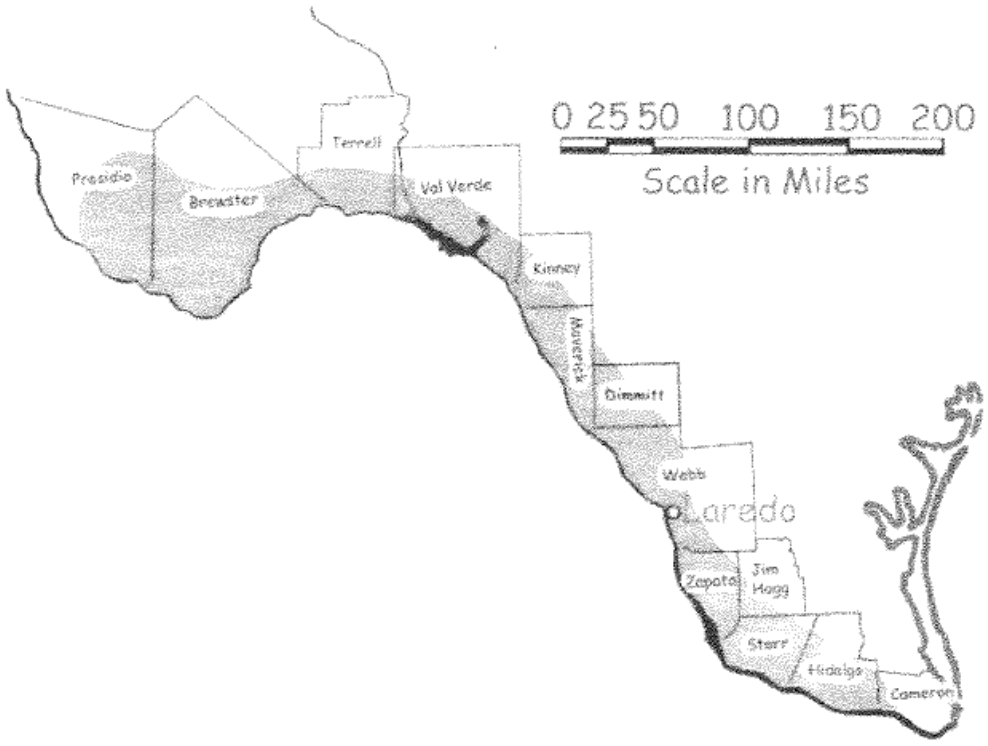
The peyote habitat existing on private land poses various obstacles for the Native American Church in their access to peyote. Though landowners have agreed via land leases to allow peyote distributors to access peyote, opinions in regard to peyote by landowners are mixed. According to Teodosio "Ted" Herrera, many landowners prefer to lease land to deer hunters or to graze cattle than to lease to peyote distributors. As Schmidly notes, "Leasing of private land for hunting of white-tailed deer has become a widespread and profitable practice for many landowners throughout the state" (443) making peyote low priority. Other landowners have taken personal measures to preserve the peyote habitat (Herrera personal interview) however research on the position of habitat landowners is limited.

This habitat or plant community type is referred to as the Tamaulipan Thornscrub (Hinojosa 31). It is characterized as dense brush that includes over forty-five different species of shrubs. Dominate shrubs of this habitat type include: honey mesquite [Prosopis glandulosa Torr. var. glandulosa), whitebrush [Aloysia gratissima (Gillies & Hook.)], creosote bush [Larrea tridentata (DC.) Coville], great leadtree [Leucaena pulverulenta (Schltdl.) Benth], Texas persimmon [Diospyros texana Scheele], Brazilian bluewood [Condalia hookeri M.C. Johnst. var. hookeri], lotebush , [Ziziphus obtusifolia Hook. ex Torr. & A. Gray], crown of thorns [Koeberlinia spinosa Zucc.], Texas sage [Salvia texana (Scheele) Torr.] and prickly pear [Opuntia engelmannii Salm-Dyck ex Engelm] (Schmidly 327). Other plant species include: thistles [Cirsium Mill.], crabgrass [Digitaria Haller] sunflowers [Helianthus L.], and Spanish daggers [Yucca faxoniana (Trel.) Sarg.] (Schmidly 321). The Tamaulipan Thornscrub consists of sandy, rocky, hilly and gravelly soils (Schmidley 321), which according to Martin Terry is the preferred composite soil for peyote that consists of a range of soils that also include caliche or limestone, calicium-rich gravelly loam (quartz, chert, igneous, sandstone, silicates), or sandy loam and a surface layer of organic material (CCI 2012).

According to the Biological Survey of Texas published in 1905, under chief field naturalist Vernon Bailey of the U.S. Biological Survey, noted that the flora and fauna of Texas has over 1,245 species of fish and wildlife, with approximately 126 living nowhere else in the world (Schmidly XI); this also includes 20% of the U.S. deer population. Though further biological studies have been minimal over the last 100-years, David J. Schmidly in 1986 noted that the Tamaulipan Brushlands, were most negatively affected

over the past several decades due to ecological processes. An increasing human population in Texas along with land development, displacement of wildlife species and vegetation alterations have degraded or resulted in direct loss of native habitat. Other leading factors of today's Garden depletion include root-plowing, feral hog invasion, oil development, exurban development, overharvesting by peyoteros for members of the Native American Church and improper harvesting techniques by the peyote distributors.

Fig. 3 Peyote Range in the State of Texas



Source: Terry, Martin. *Tale of Two Cacti*. Texas A&M. Dissertation, 2005. Illustration.

THREATS TO THE PEYOTE GARDEN

The area along the Texas and Mexico border is home to the creosote bush or greasewood [*Larrea* Cav] which is a common desert shrub that is a known associate of peyote. Although the creosote bush is known to interfere with the growth and reproduction of other plants, the peyote cacti can germinate and thrive beneath the canopy of the creosote. As such, shrub species is considered to be a nurse plant by Evenari (152). Creosote bush and peyote prefer to grow on gravelly, sandy, to stony soils. It is also capable of growing on shallow soils with a caliche layer (Phelan 40), which are common throughout the Tamaulipan Thornscrub. The creosote bush is considered a weed by some landowners as it is believed to interfere with the grazing of cattle.

Therefore to improve grazing landowners will eliminate creosote bush by "root-plowing" which allows better forage access to rangeland cattle. Root plowing uses a deep shank ripper or chisel that is dragged through the soil at various depths up to 30 inches. Root-plowing results in direct loss of habitat by reducing the commensalistic interaction between creosote and peyote. Root-plowing is costly and creosote will regenerate without periodic treatments, which are optimally done every seven to eight years (Phelan 218).

Fig. 4 Peyote Buttons under Creosote Bush

Source: *Peyote Habitat*. 26 Feb. 2011. Photograph by author.

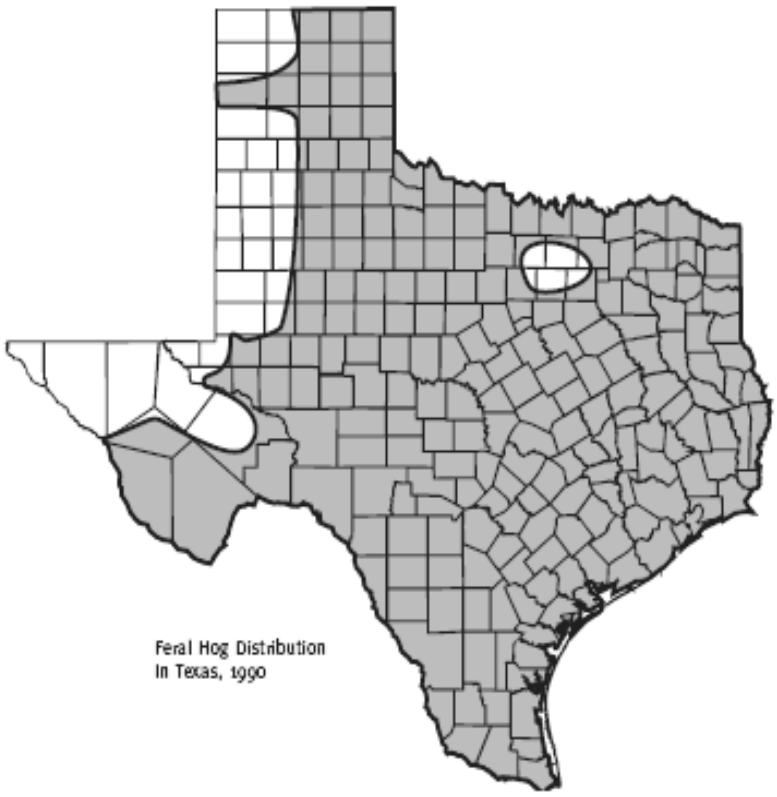
Feral hogs are also considered a threat (Terry et al. *Limitations to Natural* 666). These free-roaming invasive species may be causing destruction over major tracts of peyote habitat. The hogs, though not consuming peyote plants, have been reported to trample peyote sometimes at depths of up to three feet (Terry et al. *Limitations to Natural* 666). Feral hogs are considered one of the most destructive invasive species in the United States (Morthland 2011). Within the peyote habitat, they are destroying peyote as they forage on nurse plants (Trout and Norton 2011). The true rate of destruction is unknown at this point however they have the potential to negatively affect the peyote habitat across its range.

Fig. 5 Feral Hogs in Texas

Source: Texas Parks & Wildlife. *Feral Hogs in Texas*. 6 Nov. 2012. Image.

According to Morthland, between two and six million feral hogs in the United States and Canada exist with half roaming the state of Texas. Landowners are making their best attempts to eradicate the influx of hogs off of their property however killing of hogs does not reduce the population on a large enough scale and relocating the hogs from one area to another does not reduce the threat to the peyote habitat. Hogs have been destroying CCI study sites as early as the 1990s (Terry et al. *Limitations to Natural* 666) and destruction will likely continue to be a threat if hogs are not controlled.

Fig. 6 Feral Hog Distribution in Texas

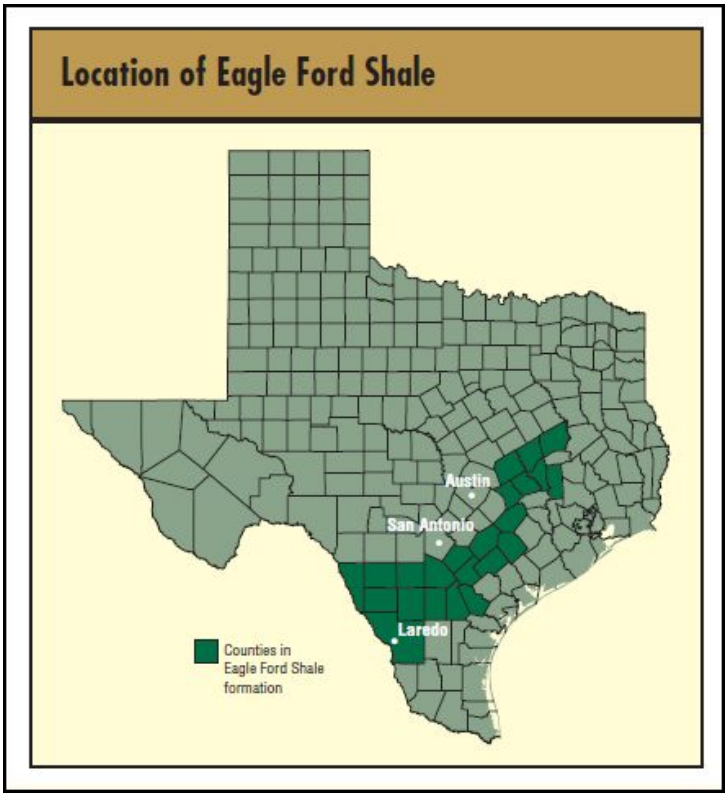


Source: Texas Parks & Wildlife. *Feral Hog Distribution*. 6 Nov. 2012. Map.

In addition to destruction by feral hogs, habitat depletion factors are contributed to oil development. Oil development in Texas began as early as 1886 in Oil Springs by 1894 the oil boom began (King 505). Landowners began renting their land for oil exploration and by 1941, approximately 500,241,199 barrels of oil had been drilled (Barbour 1942). Access roads were being developed for well-drilling through the peyote habitat. According to Stewart, "The influx of people brought new harvesters of peyote…oil workers became part-time peyoteros…and the peyote garden suffered (*Peyote Religion* 335).

In addition to improper harvesting techniques being conducted by the oil workers in the early 1940s, causing depletion of major tracts of peyote, the bigger concern today is how hydraulic fracturing and oil development affects the direct loss of peyote habitat. Little to no research has been done to determine the risks of these on the peyote cacti. According to *Investopedi* in 2011, Texas is ranked as the top oil-producing state in the country and has been since 1901 producing an average of 962,338 barrels of oil a day. This puts the peyote habitat in a vulnerable position as oil-development will continue to grow placing low-priority on the peyote cacti pending conservation efforts by the Native American Church and stakeholders.

Fig. 7 Oil Development Company Location



Source: Carpe Diem Blog. *Location of Eagle Ford Shale*. 6 Nov. 2012. Map.

Another threat to habitat destruction is exurban development. Exurban development is the expansion of land in rural areas for residential housing. This brings with it the destruction of native plant species not to mention the invasive land-use conversion for roads and power lines, just a few of the major infrastructures required for development. This exurbanization trend will likely continue to increase causing destruction to the native habitat of peyote land. According to a 2009 article written by the Texas Land Conservancy, "Texas is blessed with abundant undeveloped properties but also home to a rapidly growing population…protecting the beautiful landscapes of this state and ensuring people will be able to experience wild lands in the coming decades" (TLC 2012). This approach will contribute to the building of sustainability efforts among Texas landowners, peyoteros and members of the Native American Church in regard to peyote preservation.

David Schmidly wrote that the south Texas Plains is one of the most altered landscapes of the state (Schmidly 388). According to the United States Department of Agriculture (USDA), "… exurban development now occupies about 25 percent of private land in the lower 48 states and is currently the fastest growing form of land use" (Maestes 2007). As wildlife biologist Jeremy Maestas of the NRCS states, "Many rare or declining species depend upon private lands to persist". The *Journal of Soil and Water Conservation* notes that, "…many ecologically important sites are on, span, or are connected to these small private landholdings" (Rickenbach et al 2011). Where Texas is 90 percent privately owned (TLC 2011) exurban development could greatly impact the

future of the wildlife and plant communities including the peyote cacti habitat on private property.

Fig. 8 Peyote Habitat in Starr County

Source: *Peyote Habitat Range*. 26 Feb. 2011. Photograph by author.

However, it is most likely that the greatest depletion factor of the Peyote Garden is attributed, though no study is available, to the overharvesting and improper harvesting techniques of peyote buttons by peyote distributors (Terry and Mauseth 2006). According to the Texas Department of Public Safety (TDPS) official sales record, the number of buttons sold in 2011 decreased by 4 percent, i.e. 2010 total of 1,483,697 buttons sold and 2011 total buttons sold was 1,413,846 (Fig.9). However in 1997 the largest amount of buttons sold were 2,317,380. Since that time, the number of buttons sold has fluctuated. The overall trend depicts decline of the available peyote supply from

the peyote habitat yet the demand for peyote has not ceased and continues to increase annually (Johnson. pers. interview 2010).

Peyotero Salvador Johnson of Mirando City, Texas stated during an interview at his home, that the supply of peyote will never meet the demand by the members of the Native American Church. He also stated that he will sell his entire supply to buyers and still have members visiting his property to purchase peyote. In order to meet the high demand by members of the Native American Church, peyoteros harvest and sell immature buttons or "pups" (Terry et al. *Limitations to Natural*, 667), as peyoteros refer to them. Cultivating immature peyote plants reduces propagation of seeding, resulting in fewer peyote plants per annum and adding to the overall decline of the species in its native habitat.

Peyote is a slow-growing cactus that can live for up to 200 years (CCI 2012), yet is not considered harvestable for at least ten years following germination (Terry *Peyote Population* 2003), this is not ideal for peyotists. In a study completed by Terry, maturity is defined by age, not by size (Terry et al. *Peyote Stewardship* 2012). Terry found that an unharvested control group of peyote had a 98 percent survival rate, in a two-year study, compared to a harvested group which had a 90 percent survival rate (Terry et al. *Limitations to Natural*, 661). Therefore, harvest increases mortality rate of peyote and strides towards conservation should include establishment of a rotation harvest or reduction in the frequency of harvest. It would be ideal to implement a harvest rotation of at least five years which would still allow peyoteros to harvest supply and meet the demands of the Native American Church. Terry has inferred that a two year time interval

is not a sustainable effort but has been the common practice of peyoteros (Terry et al. *Limitations to Natural* 672).

Fig. 9 Mature Peyote Buttons

Source: *Mature Peyote Buttons*. 26 Feb. 2011. Photograph by author.

This will allow some plants to set seed and also allow the plant time to develop root reserves to survive and regenerate after harvest. Terry also reported that modifying harvesting techniques to only remove the crown and not disturb the root may also improve survival and increase regeneration success (Terry et al. *Limitations to Natural*, 663). The harvest of immature buttons is known to increase mortality because the small plants do not have enough root reserves to regenerate after harvest. Furthermore, these immature plants are incapable of adding seed to the seed bank, thereby reducing natural recruitment (Terry and Mauseth 2006). To improve recruitment and survival from harvest, buttons should be carefully harvested at the crown and near the subterranean

portion of the stem, the section just above the root (Terry and Mauseth 567). Cutting into the taproot of the cactus is similar to uprooting and will result in death of the entire plant.

Fig. 10 Peyote in Starr County

Source: *Peyote Buttons*. 26 Feb. 2011. Photograph by author.

Combined these threats pose a significant risk to the sustainability and resiliency of the peyote cactus. If these threats are not reduced or eliminated they could potentially result in the extinction of the peyote cactus in the state of Texas. Furthermore, if populations are eliminated or significantly reduced in the United States, it will be difficult for Native American Church members to obtain the sacrament within the United States. Should the peyote cactus no longer be available in the United States it is likely church members will seek new ways of obtaining the sacrament in Mexico which was a topic of informal discussion among members at the semi-annual NACNA (Native American Church of North America) meeting held in February 2012 in Mirando City, Texas.

Currently the country of Mexico and the Huichol people are facing their own struggles due to silver mining in the destruction of their peyote habitat. The state of San Luis de Potosi is home to the Cerra Quemado Mountain, considered the birthplace of the sun, a sacred site for the Huichol people (Zhorov 2012). It is also a silver mining town that has had closed mines since 1991 however a Canadian silver mining company, First Majestic Silver, plans to re-open mines which has potential to destroy the Wirikuta Reserve (peyote habitat). Efforts to protect the peyote for use by the Huichol have been undertaken by local activists and the Huichol people resulting in the 2008 signing of the Hauxa Manaka Pact which guarantees protection of Huichol culture and sacred places (Zhorov 2012). The most recent interest by First Majestic Silver assures the Huichol that mining will be conducted two-square miles around the Wirikuta yet there is still concern from the Huichol people on the protection of this site (Booth 2012). Future conservation efforts should take into account the habitat and threats as a whole in Texas and in the country of Mexico.

Fig. 11 Peyote Historical Timeline

1810	Los Ojuelos settled
1870	First peyotero established
1914	The Harrison Act created, but did not include requirements for peyote at this time
1918	The Native American Church established as a bona fide religion
1920s	Peyote trade established via Texas landowners
1923	States of Arizona, Montana, South and North Dakota banned peyote
1935	Commercial sale of peyote began
1937	Texas enacted the first peyote prohibition
1957	The Texas Department of Agriculture permitted peyote for religious use
1960s	Anti-peyote law passed
1967	Texas Dangerous Drug Act of 1967 prohibited the possession of peyote
1967	The Texas Department of Public Safety established rules and regulations for taxation and sale of peyote
1967	Amada Cardenas became the first licensed peyotero
1968	Peyote placed on the Federal Food, Drug and Cosmetic Act
1969	Texas Dangerous Drug Act of 1967 amended to allow Indians permission to obtain and use peyote. An inclusion was also made to require that peyoteros maintain a license, document sales by official record keeping and sell only to Native Americans with one-quarter Indian blood
1969	Texas Narcotics Law passed with exemptions for the use of peyote
1970s	TDPS placed in charge of regulating peyote
1970s	Texas Soil and Conservation Service lists peyote as endangered flora
1970	State of Texas banned the possession of peyote
1973	*The Teachings of Don Juan* written by Carlos Castenada
1973	Drug Enforcement Administration established
1978	Controlled Substance Act initiated
1978	American Indian Religious Freedom Act passed
1993	Star Cactus [Astrophytum asterias] placed on the Endangered Species List
1994	American Indian Religious Freedom Act Amendment of 1994 allowed for "traditional Indian religious use of the peyote sacrament"

PEYOTERO HISTORY

To obtain peyote, Native American Church members or peyotists rely almost exclusively upon distributors, historically known as peyoteros. The earliest documented peyotero was a man from Los Ojuelos, Texas named Francisco Canales who befriended Comanche Indians from Oklahoma who had arrived in the Rio Grande area in 1870 in search of peyote (Morgan and Anderson 273). Canales and other Mexican-American men in the area recognized that there was money to be made in the peyote trade and began providing peyote to Native Americans who traveled long distances to obtain the sacrament from the only place in the United States where the cacti grows. The original peyoteros have been documented as being, "…vital to the continuance of the peyote religion" (Morgan 41) this statement remains true today.

Los Ojuelos settled in 1810, is Spanish for "little springs", which describes the fresh water springs once abundant in the area (Morgan and Anderson 273). It was located in Webb County approximately thirty-six miles southwest of Laredo and less than three miles south of present day Mirando City. It is this location for which the adage *Peyote Gardens* was coined. The term Peyote Gardens may also have been derived from the habitat surrounding Los Ojuelos prior to 1870 when the area was flourishing with peyote. According to George R. Morgan, "Indians coming to Texas for the first time are surprised to find peyote in a maze of thorns instead of an orderly garden. They come seeking the sacred plant in a kind of paradise, and they find it [peyote] instead in a wilderness" (24).

The peyoteros of Los Ojuelos created a lucrative peyote trade with the assistance of the rail lines that ran from Texas to Oklahoma where the sacrament was in high

demand. Initially, Native Americans who arrived in Los Ojuelos in search of peyote were guided by the locals and peyoteros to locations abundant with the cacti. The peyotists consider the Peyote Gardens to be sacred and when harvested by themselves is "…more precious, more powerful than that purchased from peyoteros…" (Morgan 58). Peyotists also became dependent on peyoteros for their knowledge of cacti locations and harvesting techniques. Peyoteros were not initially paid for their services that included guiding and harvesting. It was actually the Texas landowners who began charging for freshly cut peyote cacti that was harvested from their property (Morgan 83).

During the 1920s peyoteros began charging between five and ten dollars for one-thousand peyote buttons which they harvested and dried for peyotists (Morgan 84). Most peyoteros during this time were aware of peyote's use as a medicinal sacrament in the Native American Church. The "drying" of peyote became an essential part of the purchase as it was required to prevent spoiling during transportation which could take days for some peyotists who traveled many miles to arrive at the Peyote Gardens.

The process of drying peyote is quite simple and can be accomplished in various ways. The simplest and most common method is to slice a harvested crown into thin pieces to reduce dying time. However, it is also common for peyoteros to dry the entire crown. In both cases, the sliced pieces or crowns are then laid out on wire racks and dried under the sun for about seven days. This process increases the storage life without affecting medicinal potency (Morgan and Anderson 271). Peyotists often do not have the time or resources to dry the peyote for proper transport. Therefore, the peyoteros were providing an essential service to the peyotists.

In 1935, Amada Cardenas and her husband Claudio from the Los Ojulos region began providing peyote to Native Americans who visited the Gardens. The Cardenas' began to define the role of the peyotero (Morgan 78). Amada was the daughter of Esquio Sanchez, from whom she inherited the peyotero trade (Hinojosa 2000). This generational succession has remained evident with today's three current peyote distributors who have also maintained the mutual relationships with peyotists and landowners. Morgan notes that peyoteros were set apart from all other local traders by their, "…cultivation of lifelong friendships among Indians who traded with them" (Morgan 85).

In 1957, the Cardenas' relocated to Mirando City, Texas once Los Ojuelos was abandoned. They began to establish initial relationships with landowners in order to access peyote from the property and continue the peyotero trade. The relationship between Native American Church members and the Cardenas' was built from necessity ultimately developing into a productive partnership. The Cardenas' home in Mirando City serves as the official headquarters of the Native American Church of North America and continues to exist today along Highway 649.

Fig. 12 Entryway to Amada Cardenas' Property in Mirando City, Texas

Source: *Cardenas Property*. 26 Feb. 2011. Photograph by author.

Peyote quickly became a commodity in the 1960s and was harvested and sold by various individuals in the Rio Grande. Obtaining the sacrament, however, was becoming difficult for peyotists due in part to the glamorization of peyote as it was written by author Carlos Castaneda. Castaneda wrote a book series in 1968 titled, *The Teachings of Don Juan*, which attracted "new-agers" of the late 1960s through the 1970s. These followers were in search of the "meaning of life" and gaining "greater consciousness" through the ingestion of peyote, as described by Don Juan. This book created a movement which brought new-agers to the deserts of the Southwest in search of peyote for secular purposes. Many of these searchers mistook the star cactus [*Astrophytum asterias*], a plant with similar peyote features, nearly depleting the population. Overharvesting of the star cactus eventually resulted in its listing on the Endangered

Species Act in 1993. Due to the peyote cacti's association with non-religious use by non-Indians, several Federal and Texas State laws were implemented to ban its use and possession. These laws resulted in the development of complex regulations for religious use and prohibited all recreational use.

According to Omer C. Stewart in the book *Peyote Religion*, the peyote trade at the Peyote Gardens began with Mexican families who

> saw opportunity for a steady income in the expanding peyote market. They became familiar with the characteristics of peyote and learned that in order to keep plants producing, it was necessary to harvest them properly, cutting the top neither too deeply nor too shallowly. They found that properly cutting the plant actually increased the plant's growth, one root supplying many "buttons" where only one had been.

According to the code of the wildcrafter, which is the work of a peyotero, when harvesting your medicinal plants, you should harvest only 10 percent of the population. Terry is suggesting that harvesting 30 percent of a population once every five years can have a sufficient impact on the growth rate of peyote (Terry et al. *Limitations to Natural* 673).

In a study completed by Trout and Norton in 2011, their research suggests that, "…proper harvesting practices might offer a sustainable way to harvest usable peyote buttons as long as time sufficient for growth is allowed between harvests." Peyote has the ability to regenerate the crown, which is the uppermost part of the peyote cactus, referred to as the button. If harvested correctly it has the potential for regrowth of

multiple buttons (Terry et al. *Limitations to Natural* 670) further emphasizing the importance of proper harvesting techniques.

Fig. 13 Multiple Peyote Buttons with Exposed Root

Source: *Multiple Peyote Buttons with Exposed Root*. 26 Feb. 2011. Photograph by author.

PEYOTE DISTRIBUTORS

To harvest and sell peyote in the state of Texas, one must obtain a permit for an annual fee of 25 dollars from the Texas Department of Public Safety, which monitors the sales records of peyote. Currently there are three licensed individuals, Miguel Rodriquez, Mauro Morales, and Salvador Johnson who are all non-Indian men who have been peyote distributors for decades, selling to serve a population of over 225,000 Native American Church members. The distributors, whom also identify themselves as brokers, are required by state law to document each transaction and verify that every sale is legitimized with proper tribal identification, Native American Church chapter documents, and travel permits according to Subchapter C. Peyote of the Controlled Substances Act under the Texas Department of Public Safety (TDPS).

Of the three licensed distributors, two reside in Rio Grande City, Texas. Mauro Morales a sixty-eight-year old man was taught the peyote trade and harvesting techniques by the matriarch of the peyote trade, the late Amada Cardenas, and refers to peyote as, "medicine" like that of Native American Church members. In an article from the *Houston Press* dated 2008, Morales is quoted as saying that, "I used to collect as much in a week as I now do in a month" (Cobb 2008); testifying to an obvious decrease in the peyote supply. In addition to peyote depletion by members of the Native American Church in their supply demand, poachers still exist in the Tamaulipan brush land.

Morales, who states that, "…I want to help the Natives in any way I can" (Cobb 2008), is unintentionally contributing to peyote depletion by poachers, offering to buy peyote, which he then sells to Native American Church members. By advertising his

willingness to buy peyote, Morales is not only decreasing the peyote habitat by encouraging improper harvesting by poachers, he is also impacting the relationship with landowners who are becoming hesitant about peyote harvesting on their property due to illegal trespassing (Morgan 105).

The TDPS identifies an individual who registers for a peyote license as a "peyote distributor" in Subchapter C. section 13.42; however, in a personal interview conducted in March 2011 with Salvador Johnson, he identifies himself as a peyote "broker" but this does not imply that Miguel Rodriquez or Mauro Morales, the two other distributors identify by the same term. Considering peyote sales have exceeded $400,000 annually since 2002, the title of broker is appropriate.

According to Morales, landowners, "…would rather root-plow their fields to plant grass for cattle feed than protect their native plants" and that, "…it's getting harder and harder to find chiefs [large peyote cacti]. The only way to ensure the supply…is greenhouse cultivation" (Cobb 2008). Though Mauro Morales inadvertently encourages poaching and habitat depletion, he also recognizes the importance for preservation of the peyote sacrament through greenhouse cultivation, a strategy not shared by Salvador Johnson.

Fig. 14 Peyotero Mauro Morales

Source: Russell Cobb. Houston Press News, 14 Feb. 2008. Website. 30. Sept. 2009.

Salvador Johnson, a sixty-four year old native of Mirando City, like Morales, was also taught the trade by his former employer, matriarch Amada Cardenas. Johnson, the highest selling peyote broker (generating gross revenue of over $227,000 in 2009 according to the TDPS records) is against cultivation and believes that, “The medicine will become something else” (Johnson personal interview 2011). Johnson acknowledges that further studies regarding the cultivation process of the peyote cacti need to be conducted, and then perhaps his claim, “…may be different” (Johnson personal interview).

Fig. 15 Peyotero Salvador Johnson

Source: *Peyotero Salvador Johnson*. 26 Feb. 2011. Photograph by author.

According to the TDPS 2,317,380 total peyote buttons were sold in 1997; this was the largest amount of legally harvested and sold buttons. Since 1997, the number of peyote buttons has been dwindling to a record low of 1,413,846 in 2011. Though Johnson testifies that his peyote supply is abundant, based on the TDPS sales record (Fig.9), there is a noticeable decline in the number of buttons sold.

Johnson, who undoubtedly respects the peyote sacrament and has been a devoted and respected peyotero for several decades, cannot deny that the peyote sacrament is a plant of concern and has acknowledged that the peyote supply is of concern when he stated in a 1999 article, "…We will never have enough to meet the demand. There is no

way in the world we can meet it. It's sad, because this is something these people use for their church. And without peyote, there is no church" (Economist 1999).

Though he does not acknowledge the peyote sacrament as an endangered species or endangered due to overharvesting, he does recognize the obligation of sustainability through proper harvesting techniques, which he claims to encourage among his employees. He also believes in allowing peyote to mature by alternating harvestable acres in five year increments on leased ranch land. Johnson is favorable towards a seed-study of the cacti which could dramatically increase the native habitat and eliminate the need for greenhouse cultivation, which he is against, but a topic suggested by members of the Native American Church, most recently at the NACNA in February 2012.

The third peyotero, Miguel Rodriquez, a neighbor of Mauro Morales in Rio Grande City, was contacted via telephone for an interview. He declined only to say that, "…he has nothing but respect for the peyote" (Rodriquez personal communication 2011). It is important to recognize this relationship of respect between peyoteros and the sacrament for which they harvest. In an instruction video produced in 2011 by the *Texas Country Reporter*, Teodosio "Ted" Herrera demonstrates a technique that should be applied when harvesting peyote. His demonstration offers a prayer to the land and the peyote sacrament which involves the use of sacred objects, an eagle feather, sage and tobacco. This includes an offering to the peyote sacrament prior to harvesting the crown. This practice is based on traditional knowledge from Herrera's elders which created his revered relationship with the sacrament and the peyote habitat.

It is not my intention to undermine the peyotero business or the peyoteros themselves, as I am aware that the job of a peyotero is a difficult and strenuous one. I was fortunate to explore the Gardens with Salvador Johnson in 2011 who acknowledged that I was the only Native American Church member who had expressed any interest in visiting the habitat of the sacrament. The Tamaulipan brushland is thick, dense, hot, and the arid climate adds to the harsh conditions this arduous job requires. It seems evident that there is a reciprocal and respectable relationship between the Native American Church and the peyoteros based on their ability to provide and maintain an invaluable service. This relationship is vital to the Native American Church and their access to the sacrament. However, access to the sacrament is based on the relationship between peyoteros and landowners.

Currently, several landowners within the Peyote Garden range which exist over four counties lease their land to the distributors to access peyote for a fee of $2,000-$3,000 for a thirty-day permit (Salvador Johnson personal interview 2011). This allows peyoteros to harvest peyote while compensating the landowner. According to Johnson, he leases various properties and advises his employees on his rotation plan based on five-year intervals, which he has devised himself. This allows time for the peyote to regenerate yet allow workers to harvest a hefty supply. Johnson also stated that leasing property is the most difficult part of peyotero work (Johnson personal interview). Landowners hold a vital position in regard to access; they also have the ability to endorse preservation and sustainability of the peyote cacti, however, further in-depth study is required to gauge their true position.

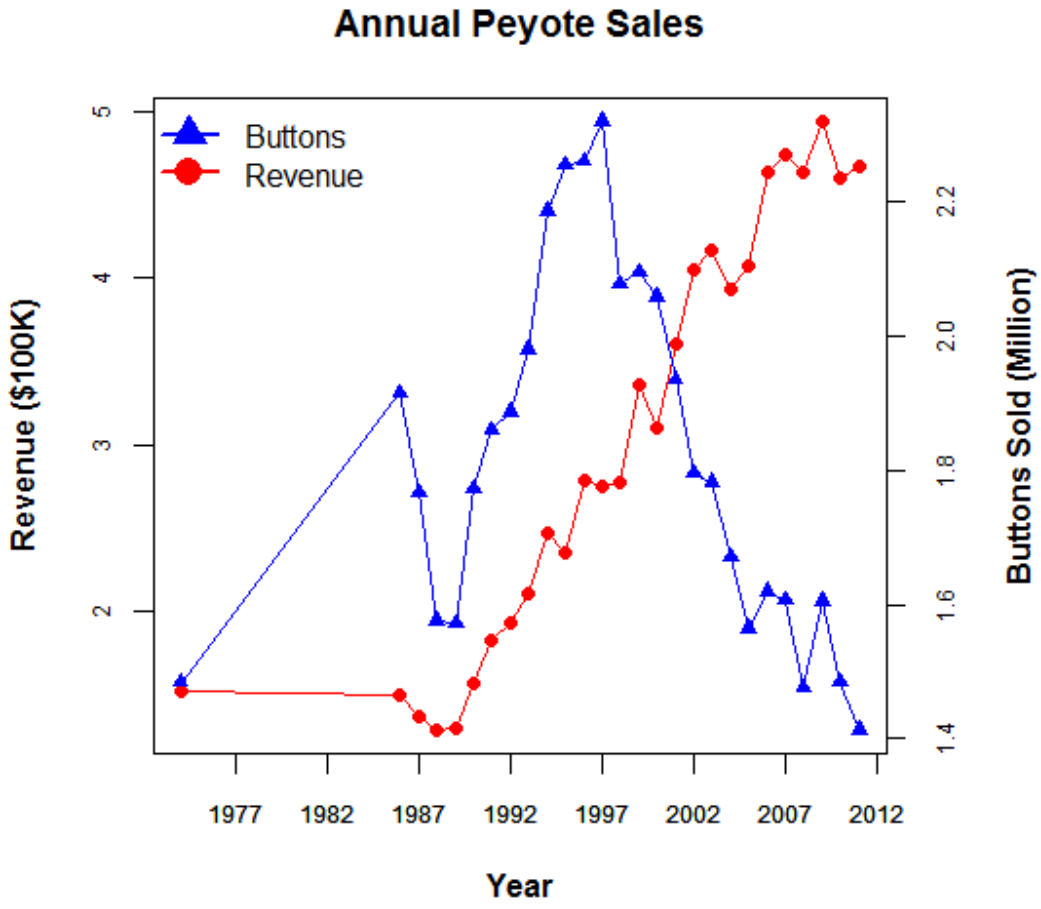
Though Johnson has developed a great strategy for peyote sustainability and preservation, Professor Servando Z. Hinojosa with the University of Texas-Pan American states that, "…many whole [peyote] plants had been getting up-rooted and bagged [for sale]. This harvesting practice, of course, endangered the renewability potential of peyote" (2000). Terry too, has attributed population depletion based on improper harvesting techniques (*Peyote Population* 21).

The CCI, established in 2003 recognized that preservation efforts based on the fact that the "…geographic range of peyote had clearly become reduced over the past few decades, and, at the population level, peyote had become locally extinct or endangered in many areas of its historical range."

According to the Annual Peyote Sales Graph in Fig.9, the decrease in buttons sold can be interpreted as limited peyote supply, this will likely lead to continued increase in the cost of peyote which has steadily increased since 1989. It is also likely the peyote cactus will continue to decrease in size, which will be a further indication of population depletion. However, this could only be determined by statistical study that examines average button size purchased over time. Should button size decrease it is likely that recruitment through natural seeding will decrease as well. If this occurs, it could also be an indication of peyote age-class at various collection sites. Therefore three things should occur: future research needs to be done to determine size-class: TDPS should establish guidelines to require peyoteros to sell buttons no less than a scientifically determined size in addition to land rest periods of up to five years on leased property: and further research should be conducted on land conservation easements with non-profit

entities, including vested chapters of the Native American Church and the Native American Church of North America.

Fig. 16 Peyote Sales Graph



Source: *Peyote Sales Graph*. 30 Sept. 2012. Graph by author.

NATIVE AMERICAN CHURCH

The Native American Church was recognized officially through a corporate charter as a bona fide religion on October 10, 1918 (Maroukis 4) the ceremonial practice however was already being conducted. The Native American Church was formed to allow ingestion and possession of the peyote sacrament within the confines of an established "church". Peyote was and is still considered controversial due to its hallucinogenic properties, specifically, mescaline (Maroukis 5). The peyote religion, now identified as the Native American Church was a religious practice conducted by the Indigenous peoples of Mexico with recorded use by Lipan Apache in 1757 (Stewart 46).

Stewart credits the Lipan Apache, Carrizo, Mescalero Apache, Tonkawa, Karankawa, and Caddo Indians with establishing the peyote ceremony within the United States (47). During the proselytizing of the peyote religion Native American tribes were resistant and some refused the rite. Quanah Parker a Comanche Chief has been credited as the most influential leader in the spread of peyotism (Stewart 69). The peyote movement predated the Ghost Dance which began around 1889. The Ghost Dance movement was spread by a Northern Paiute man from Nevada named Jack Wilson, also known as Wovoka; in an attempt to restore the traditional American Indian culture (Maroukis 35). Both religious movements advocated for the incorporation of traditional Native American ways, beliefs and harmony with the land.

James Mooney, an anthropologist with the U.S. Bureau of American Ethnology, (Stewart 1987, 213) and various peyotists from several tribes gathered to help create the

first, “Native American Church”. The NAC was formed to establish that peyote use was in fact part of a bona fide religion practiced by Native American Indians.

Since Morgan wrote, "Man, Plant and Religion: Peyote Trade on the Mustang Plains of Texas," in 1976, the relationship between Native American Church members and peyoteros had already been established. In addition, the depletion of the peyote habitat was already a cause for concern among members and geographers such as Morgan. With at least 225,000 members and growing, habitat awareness and education to members of the Native American Church is imperative. Continued growth of the membership will likely increase the depletion rate.

The Native American Church has evolved into a pan-Indian religion in which Native American Tribes across North America and Canada have embraced the religion. There are an estimated eighty chapters within seventy different Native American Tribes throughout North America and Canada (Moreno 2009). This large of a population which is spread over a vast area will pose a challenge towards any conservation education effort.

According to Darryl Tendoy, a 53 year-old Shoshone-Bannock tribal member, roadman and president of the NACNA United Tribes of Fort Hall, Idaho Inc., he “…is very grateful to see peyote growing in 2012”. Tendoy during an interview in his home spoke reverently about the peyote medicine he has ingested his entire life and feels blessed to have made many journeys to the Peyote Garden, where numerous members have not had the blessing to experience. Tendoy acknowledged that the peyote buttons over the course of his life have become increasingly smaller, while the cost per button

continues to increase, not to mention that the price of gas and expenses to make the pilgrimage to the Gardens is also becoming more expensive. He feels that in order to preserve the medicine for the future generations, a plan needs to be created for Native American Church members to understand the Texas law but also that the State of Texas can also understand our ceremony, including the peyoteros.

Tendoy feels that the peyoteros lack a connection to the medicine as Native American Church members do. He says, "…all we have is prayer to rely on. It is mainly faith in what we are doing with this medicine in asking the ol'mighty Creator. [We] leave it in his hands."

The common theme among the ten interviews that were conducted with various Native American Church members is that the power of prayer will sustain the peyote in its native habitat. My grandmother Lillian Ramsey Jackson, a Shoshone-Bannock tribal member and a member of the peyote ceremony for over fifty years said we need to, "Pray for it [peyote] and just take care of it." Though her knowledge of the peyote depletion in the Gardens was limited until our post-interview discussion, she mentioned that many peyote meetings (ceremony) she has held at her home over the years were on the verge of cancellation because she was not sure there was even medicine available to her. She said that if she were meant to have the ceremony, the medicine would come. The medicine always came. She feels that if we are meant to have this holy medicine growing in the Peyote Gardens, it will always be there, we [Native American Church members] just need to pray for it.

In an interview held with a Navajo man from Rough Rock, Arizona, who chooses to remain anonymous, was not aware of any depletion of the peyote habitat in the Gardens. He has attended peyote meetings in various locations in the west where he has heard discussion from roadmen on the difficulty in obtaining peyote and recently recognizing himself that the peyote buttons have become smaller and there is a decreased amount of medicine available in ceremony. He also believes that there is power in prayer and views the Gardens as a holy and sacred place. He shared with me a story about a first peyote experience that he shared with his cousin. His cousin, also a Navajo, had never been in or ingested peyote in a ceremony. In an attempt to help set his cousin on the "red road" a term used to describe a holy way of life, he introduced him to the peyote ceremony that he had been raised. During the course of the meeting, they exited the ceremony for a restroom break at which point his cousin felt the need to purge the peyote he had just ingested. The Rough Rock man intervened to remind him that the medicine he ate was intended to heal him, and that it [peyote] had traveled a long distance to get to him, that it was meant for him, and that once he ingests the medicine the peyote will remember him and he should respect that relationship.

This sentiment regarding peyote reverence is an attitude shared among most Native American Church members however, there seems to be a disassociation when it comes to the connection between them and the Peyote Gardens. Though Vine Deloria, Jr. has said in *God is Red*, "Indians who have never visited certain sacred sites nevertheless know of these places from the community knowledge, and they intuit this knowing to be an essential part of their being" (271). Yet, for individuals to physically

experience the Peyote Gardens will allow them to cultivate their own spiritual connection to the land and instill the membership obligation to the habitat that is required for preservation.

According to Fikret Berkes, et al in *Rediscovery of Traditional Ecological Knowledge as Adaptive Management*, traditional ecological knowledge can contribute to the conservation of biodiversity, rare species, protected areas, ecological processes and sustainable resource use (1251). By returning to and considering the "…peoples' understandings of ecological processes and their relationships with the environment" (1252) this can contribute to the traditional ways of knowing that have been disregarded by members of the Native American Church and peyote distributors.

Understanding this lack of association between Church members and the Peyote Gardens resulted from interviews among Native American Church members from various North American tribes. In conducting my research the methodology used relied upon interviews with subjects affiliated with the Native American Church. In addition, a review of existing peyote literature was used. The interview process consisted of approximately twenty questions regarding awareness of the Peyote Garden habitat and knowledge of the depletion of the peyote sacrament.

The interviews were conducted with various tribally affiliated Native American Church members and a peyotero (Table 1). The common theme resulted with an apparent lack of knowledge of the peyote depletion. Only three interviewees acknowledged they were informed about the Garden depletion; Earl Arkinson, the 2011 President of the NACNA, Teodosio "Ted" Herrera of San Antonio, Texas and Salvador

Johnson, peyotero. All three individuals have direct and firsthand knowledge of the Gardens and share the same goal: preservation of the peyote habitat.

It is apparent that educating the Native American Church and its members on the current state of the Peyote Gardens is critical. Members should insist that the Church and their chapters advocate to the TDPS for amendments to the rules and regulations which would require peyoteros to use proper harvesting techniques and rotation plans. In addition, Native American Church members who purchase peyote from distributors should also apply sustainable purchasing practices by refusing to purchase pups and purchase only peyote buttons of at least 6.35cm wide, a recommended harvest size (Herrera personal interview). This sustainable purchasing practice will allow pups to establish root and help propagate a garden fecund of peyote.

Table 1. Interview List

Name	Ethnicity	Depletion Awareness	Affiliation
Anonymous	Navajo	No	NAC Member
Darryl Tendoy	Shoshone-Bannock	No	NAC Member
Earl Arkinson	Rocky Boy Cree	Yes	NAC Member
Leroy Honnie	Navajo	No	NAC Member
Lillian R. Jackson	Shoshone-Bannock	No	NAC Member
Nocona Burgess	Comanche	No	NAC Member
Rainbow Lopez	Tohono O'odham	No	NAC Member
Salvador Johnson	Mexican American	Yes	Peyotero
Shawna De Cola	Shoshone-Bannock	No	NAC Member
Teodosio "Ted" Herrera	Coahuiltecan	Yes	NAC Member

LICENSING BACKGROUND

In 1929, peyote was categorized as a "habit-forming drug" and listed in the Controlled Substance Act of 1970 as a Schedule I, hallucinogenic substance (Stewart 4). The Texas Department of Agriculture in 1953 had allowed peyote for religious use to be transported, sold, harvested and ingested in the state of Texas. Then in 1965 the Federal Government declared its first prohibition on amphetamines and barbiturates, acknowledging LSD as a Schedule 1 substance in 1968 as part of the Drug Abuse Control Act. The Harrison Act of 1914, however, had long preceded and established narcotic regulations which would require those who import, distribute and sell such narcotics to register with the Treasury Department to, "…raise revenue and to tax and regulate the distribution and sale of narcotics…" (Harrison). This act also required registrants to document and pay taxes on all transactions. The Harrison Act ultimately led to the Controlled Substance Act of 1970 and the creation of the Drug Enforcement Administration in 1973.

In 1967 the state of Texas banned the possession of peyote by any individual (Maroukis 193), including Native American Church members, voiding the previous Texas Department of Agriculture approval in 1953. This policy brought Native American Church chapters from across North America to petition Congress for religious and sacramental rights to possess peyote; ultimately the state of Texas amended the act the same year to exempt Native American Church members. This regulation amendment included stipulations for peyote distributors and peyoteros, which would require registration with the state of Texas as official peyote distributors who could only sell to

"…an individual with not less than 25% Indian blood who is an enrolled member of a federally recognized tribe under federal law and a certified member of the Native American Church" (TDPS 2012).

The first official licensed peyote distributor was Amada Cardenas in 1967 (TDPS), followed by twelve others that same year. The largest number of peyote distributors peaked in 1975 with twenty-eight licensed distributors, eventually dwindling over the next several decades to a low of six in 1999 (Timber and McDonald 198). According to the TDPS, which has served as the licensing bureau for peyote distributors since 1970, only three licensed peyote distributors exist in the entire state of Texas to serve the population of Native American Church members across the United States.

Over the years, peyote and the Native American Church have experienced numerous legislative challenges and legal battles since acknowledgement in 1918. One of the initiatives included the creation of membership cards, which still exist today.

Upon initial implementation of the membership requirement, there was resistance by Native American Church members who felt that, "… restrictions on Peyote were unconstitutional…" in reference to members requiring proof of membership to the Native American Church (Maroukis 201). The Church had been established as a bona fide religion since its initial charter in 1918 (Maroukis 4), though the ceremony had already been occurring long before recognition.

Leroy Honnie, a Navajo with the Native American Church of Southern Arizona, believes that the regulation which requires a travel permit, Native American Church membership card in addition to a tribal identification card to purchase peyote, "…give

security…so you won't have any legal consequences" (Honnie 2011). Honnie along with Rainbow Lopez, also of the Native American Church of Southern Arizona, believe that the document requirements are not a violation of their religious rights rather they are implemented to protect the rights of Church members to possess, travel and rightfully purchase peyote for religious purposes. Honnie and Lopez feel honored that they have been given approval from their Church chapter membership to carry such a privileged permit (Honnie and Lopez personal interview).

Teodosio "Ted" Herrera of the Rio Grande Native American Church chapter in San Antonio, Texas initially had issues with possessing a membership card; however, he realizes now that, "…this is a way of life…if carrying the cards make the process [peyote purchases] smooth, then I am in favor" (Herrera personal interview 2011).

Herrera, who has been a life-long participant of the peyote ceremony, believes that preservation must be the responsibility of the peyotero in practicing sustainable harvesting techniques in addition to policing of employees. Herrera is aware that the TDPS has no requirements in regard to peyote size or age-class, however he believes strongly in peyoteros conducting self-regulation in addition to provisions to include volume control (Herrera personal interview).

The rules and regulations of Subchapter C. Peyote of the TDPS were created to legally allow Native American Church members access to peyote; however there are no requirements which require peyoteros to sustain or preserve the peyote habitat. Native American Church members as stakeholders need to advocate for amendments which include measures that require class size guidelines, applying proper harvesting techniques

and at least five-year rotation harvests within the peyote habitat. Quantity quotas on sale transactions should also be considered, however this is not ideal for peyoteros who depend on peyote sales for their income, nor is this ideal for Native American Church chapters, but it is of sustainable benefit to the Peyote Gardens' natural regeneration.

In 1990, a landmark case involving peyote use was heard by the Supreme Court of the United States in Employment Division, Department of Human Resources of Oregon v. Smith, 494 U.S. 872 (1990). This case involved two Native American Church members, Alfred Smith and Galen Black who were terminated from employment for ingesting peyote in a Native American Church ceremony. At the time of their termination, peyote possession was illegal under Oregon law, therefore their claim for unemployment benefits was denied. The Oregon Court of Appeals reversed the ruling stating that this was a violation of their right to exercise their religion, however, the Oregon Supreme Court ruled in favor of Oregon law which prohibited the consumption of illegal drugs for sacramental religious use. Eventually, the case landed in U.S. Supreme Court challenging the interpretation of the First Amendment which ultimately lead to the passing of the Religious Freedom Restoration Act of 1993 (RFRA), Pub. L. 103-141, 107 Stat 1488.

The Religious Freedom of Restoration Act of 1993 (RFRA) is, "…aimed at preventing laws that substantially burden a person's free exercise of their religion." This also led to the passing of the American Indian Religious Freedom Act Amendments of 1994, Public Law 103-344 which restored constitutional rights to the Native American

Church allowing peyote use, but no provisions protecting the peyote sacrament or the peyote habitat were considered.

Fig. 17 Peyote Buttons with Damage

Source: *Peyote Buttons with Damage*. 26 Feb. 2011. Photo by author.

CONSERVATION PLAN

Recommendations to the conservation plan are undeveloped and require in-depth analysis by individuals specialized in the fields of botany, biology, economics, geology, natural resource management, and conservationist, to name a few.

1. Statement of Purpose

   The wild peyote cacti of south Texas is considered a plant of cultural concern. Peyote is used as a sacrament in the Native American Church however the peyote population, referred to by the Native American Church as the Peyote Gardens is depleting due to several factors. Preservation measures to sustain the habitat need to be implemented to ensure the cacti are not placed under the Endangered Species Act.

2. Goals

   To preserve the peyote sacrament through feasible efforts among stakeholders and create conservation partnerships among non-profit agencies. Propose amendments to the TDPS Rules and Regulations to mitigate further loss of peyote habitat.

3. Management Actions

   Rehabilitation management of the habitat should include significant assessment of the current state of the peyote within its range. This includes identification of peyote plots that exist in private, state and federal lands. Recognition of peyote threats to the habitat and identifying objectives to alleviate depletion through feasible efforts.

4. Conservation Easement

A conservation easement is a written agreement between landowners and a "holder", the individual or group with species concern. This is a voluntary agreement which places restrictions on the use of the property to protect specified natural resources, as determined by the landowner. The landowner remains in full title of their property which also allows them to set the stipulations regarding their property. An easement will allow the holder access to their property for assessment according to the stipulations of the contract. The easement or land trust, will allow landowners to continue full use of their property however specific plots will remain undistributed for recovery of the peyote species. Placing property in land trust will have significant results on the propagation of the peyote species while allowing for tax benefits to the landowner.

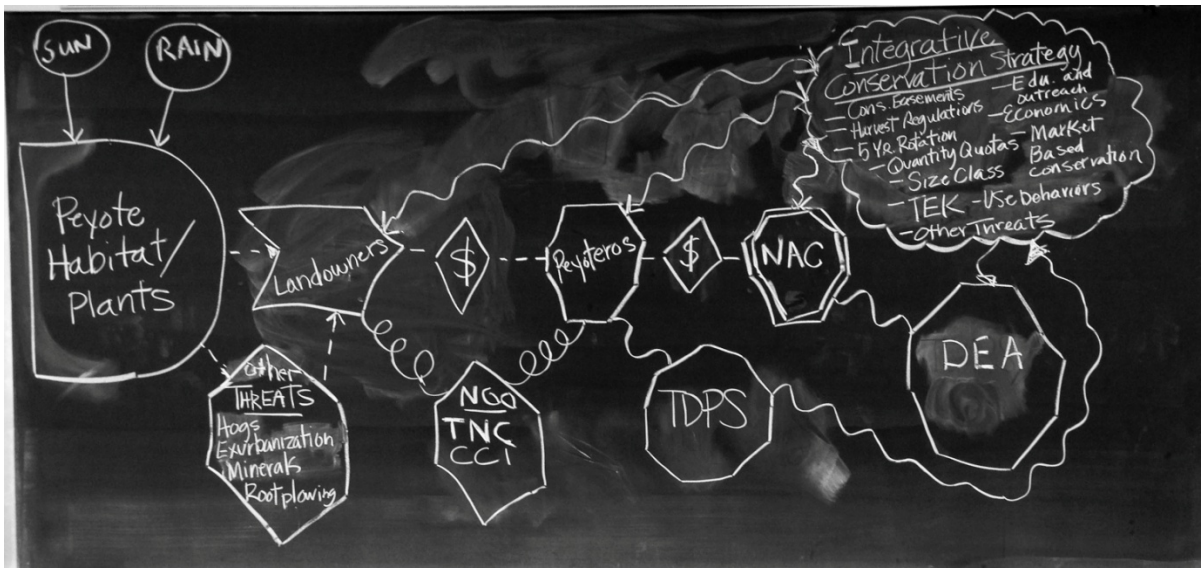
5. Recommended types and levels of protection for items of interest
    - Formal stewardship agreements between landowners via conservation easements
    - Amendments to the TDPS Rules and Regulations for inclusion of proper harvesting techniques and requiring sale of peyote buttons at least 6.35cm
    - Voluntary private, state and federal land
6. Action plan

    To collaborate with stakeholders the Native American Church members, landowners and peyoteros, a feasible strategy to preserve the peyote cacti habitat for sacramental use in the Native American Church. Goals include education and awareness of habitat depletion among church members, recommending quantity

quotas among individual Native American Church chapters, implementing conservation easements, amending rules and regulations of the TDPS to include proper harvesting techniques by peyoteros, and fines for peyoteros who harvest and sell peyote less than 6.35 cm.

In developing a conservation plan to preserve and sustain the peyote habitat, input among stakeholders, the Native American Church, their members, the peyoteros and the landowners, must be acquired. Prior to implementing further regulations on peyote distributors and possible limitation of peyote purchase to Native American Church chapters, peyotists should devise a self-policing strategy to negate further regulation on peyoteros and the peyote habitat. This is a more feasible remedy than increasing additional regulation by the TDPS which has the potential to reduce the number of peyote distributors. Peyote distributors are also required to obtain clearance from the Drug Enforcement Administration (DEA) and placing additional responsibilities has the potential for peyoteros to opt out of the profession. The conservation plan should consider posing the question to Native American Church members on what the Indian way to solve the depletion of the peyote sacrament is?

Fig. 18 Conceptual Model for Conservation



Source: Conceptual Model on Chalkboard. 10 Nov. 2012. Design by author.

Figure 16 represents a conceptual model based on the *Conceptual Utility of Models in Human Ecology* written by Mitchell A. Pavao-Zuckerman. This text aided in developing my framework for integration of a conservation strategy using traditional ecological knowledge among peyote stakeholders and the peyote sacrament/habitat. Pavao-Zuckerman based his work on H.T. Odums' modeling, incorporating his symbols which represent input/output, energy sources, outside systems, energy producers, consumers, organized groups, pathways, etc.

The conceptual model represents the peyote habitat/plants as the "energy producer" with the sun and the rain serving as "energy flow". I would like to include prayer as an additional energy source to the habitat as well. The habitat then has a "flow of materials" to the landowners which serve as the "interaction" between the peyoteros who represent the "consumer", and the threats to the habitat. The flow of materials

results in a “financial transaction” (rectangle symbol) from landowners to peyoteros to the NAC (Native American Church) in the double hexagon representing an “organized group of consumers”.

The circular lines connecting the landowners to the NGO’s (non-governmental organization) which connect to the peyoteros represent the “promotion of something” which in this case, is the sponsorship of peyote conservation. The wavy lines represent “information pathway/flow”, or the sharing of conservation strategies between the TDPS, the peyoteros, the DEA and the Native American Church. Ultimately, the conservation strategy, which is represented in the balloon symbol as the “information source/beliefs, etc.”, lists the specific ideas for an integrative conservation strategy which would then be disseminated back to the landowners, peyoteros, and the Native American Church.

The model was created to visually symbolize the complex system that surrounds the components of peyote distribution among the stakeholders. Pavao-Zuckerman wrote in his text that, “…bioecology’s historical omission of humans from ecosystem analysis…called for a form of ecosystem analysis that considers humans as a part of, not apart from, nature” (31). I found his analysis of human integration in ecosystem revitalization to be in line with my theory of peyote habitat/sacrament preservation through conservation awareness among Native American Church members, peyoteros and landowners.

CONCLUSION

In conclusion, the recommendations for preservation and sustainability of the peyote habitat will require development of:

- A conservation easement between the Native American Church and other non-profit entities such as the Nature Conservancy of Texas, the Texas Land Conservancy and Texas landowners.
- Amendments to the regulations of licensed peyoteros that include implementation of proper harvesting techniques, harvestable button class and inclusion of five-year rotation plans established between peyote distributors and landowners.
- Education and awareness of peyote depletion and sustainable purchasing practices by Native American Church members should be addressed.
- Native American Church chapters implementing quantity quotas on sale transactions should be considered to allow natural restoration of the peyote habitat.

Implementing a conservation easement, which can be designed according to specific needs of the landowner, will restrict specific use of the land/property to protect the specified natural resource. This option, though costly, is one of the most effective means available to preserve the peyote cacti on private property.

Recommending amendments to the regulations of the peyote distributor, which is under management of the TDPS, to advocate for proper harvesting techniques and development of harvest rotation plans will increase the peyote population. By

implementing proper harvesting techniques, this will allow the harvested peyote to regenerate and increase reproduction by harvesting only peyote buttons of mature size, which allows seeding propagation to occur. Establishing and implementing additional regulations on peyote distributors may have risks; however, peyote distributors do have a vested interest in sustaining the peyote habitat and may support increased regulation.

Education and outreach to Church members is necessary to inform the membership on the state of the Gardens in regard to peyote depletion. I believe that reestablishing a relationship with the land will create a connection instilling an obligation to preserve the habitat and the peyote sacrament. By advocating to Native American Church members to actively participate in sustainable peyote purchases from peyoteros, they have the ability to change harvesting practices and create a sustainable habitat without the need for further regulation under the TDPS.

Lastly, I suggest the possibility of implementing quantity limitations on Native American Church chapters. Currently, no mechanisms are in place to limit the number of peyote buttons chapters can purchase which results in wealthier Church chapters purchasing large quantities over less wealthy chapters. Implementing this regulation will bring back the traditional way of thinking by "taking only what we need". By limiting the quantity, this allows the peyote population to recover, creating management obligations to the habitat.

In closing, my research leads me to conclude and recommend that future studies should explore potential market based conservation strategies such as: direct private sector payments for peyote habitat conservation, market-based environmental standards

and certifications that add value to products and services, such as those that promote sustainable harvest.

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