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by

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A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Master of Arts
Department of Geography

Western Michigan University
Kalamazoo, Michigan
April 2002
ACKNOWLEDGMENTS

First and foremost, I would like to thank H. Dan Heyn for opening up his professional work experience to me. His fortitude in the face of great odds is inspiring. Both he and his wife, Dottie Heyn, were gracious hosts on numerous occasions.

I received academic, financial, and personal support throughout this research. My main advisor, Dr. David Lemberg, encouraged my topic choice through the long thesis process. Dr. Lynne Heasley provided inspiration, direction, and detailed review. The Department of Geography, through the Harrison Fund, gave money to conduct field research in Texas. Over the course of my degree work, fellow graduate students and other faculty members meaningfully supported my research.

Many wonderful Texans, peer landscape architects, and Texas Native Plant Society members provided helpful information. Denise Delaney of the Wildflower Center permitted the survey. I appreciate all the insight, information and assistance.

My husband, Kenneth M. Cogswell, backed my pursuit of a graduate degree. My children, Adam, Jack, and Vincent, provided balance throughout, especially by being tickled at Mom ‘going to school’ just as they do, and by ‘daring’ me to finish.

Elizabeth A. Heiny-Cogswell
Indigenous planting design, the practice of incorporating regional native plant species into new landscape projects, is little studied. This trend is counter to the more known and accepted American practice of using exotic ornamental plant species. This thesis studies the work and context of one Texas landscape architect, H. Dan Heyn. Beginning in the 1950's and continuing through the 1980's, Heyn became committed to, and specialized in, the use of indigenous plants in his landscape architectural design practice.

This investigation shows the beginning and importance in Texas of the idea to use indigenous plants, the tremendous task involved to study and understand the local plants, and the momentous struggle to obtain and plant particular native species. Notably, there was a handful of allied professionals during this period that supported and greatly contributed to the effort. From the wide-ranging ground work of these rugged individualists - botany professors, university extension researchers, a plant grower, a landscape architect, a small number of accepting architects and clients, and a national political figure - the movement greatly expanded after 1980, and developed into the "native plant" landscape design trend in Texas.
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CHAPTER I

INTRODUCTION

Dan Heyn designed landscape changes in 1959 for the Dorn Residence in Midland, Texas. These changes were needed because of a home addition designed by award winning Texas architect Frank D. Welch, a frequent collaborator of Heyn’s. In the house and lot layout, the carport faced a side street. Dan proposed a berm to partially conceal the drive and carport from the street. The berm was to have large boulders, ground covers, trees, and Dwarf Yaupon. With tree contractor Walter Gilbreath, Dan “found beautiful boulders west of Denton for the project, and also Mesquite trees (*Prosopis glandulosa*). On the way out to Midland, (Gilbreath) stopped in Abilene or such to get gas, and a rancher demanded to know what these rocks and Mesquites on the truck (were for).” In learning of the intent to plant the Mesquite trees at a Midland residence, the rancher became incensed and threatened a fight. He had spent years clearing the ‘troublesome’ mesquite from ranchland. Gilbreath managed a narrow escape, driving away in his truck before being harmed (Heyn, 2000).

H. Dan Heyn fought many types of battles in Texas in his endeavor to plant indigenous plant species. Dan recognized that ranchers had reasons for disliking Mesquite, but regardless, it was a worthy, beautiful tree. In practicing landscape architecture through the second half of the twentieth century, after receiving a degree called ‘Landscape Art’ from Texas A&M in 1949, Heyn seized abundant opportunities to continue his professional effort on behalf of native plants (see Appendix A). By planting native plant species, Heyn accomplished several things.
First, the practice assisted in implementing his vision for a practical Texas landscape that would modify preconceived notions of beauty. Use of the indigenous plants was practical because the plants were durable in Texas, which led to more stable environments. The plants were durable because they adapted over centuries to the specific soils and climate of Texas.

Second, he contributed significantly, though perhaps unintentionally, to a greater awareness of regional plant species, which in turn provided great impetus for the Texas native plants movement that burgeoned about 1980. This greater awareness of Texas plant species after 1980 is seen in the founding of the Austin National Wildflower Center by Lady Bird Johnson, in the publication of books for landscape professionals by the Texas Department of Agriculture, of books for the general gardening public by Sally Wasowski and others, and in the increase of propagators growing native plants. This increase in the use of indigenous plant species is integral to the idea of making places and of responding to place.

He achieved these place-making objectives through several means. For one thing, he created artistic and practical site layouts appropriate to the climate and the user. In addition, he selected Texas building materials to construct hardscape elements. Finally, he willfully planted heretofore-unnoticed Texas plants into a multitude of constructed projects. From the 1950’s through the 1970’s Heyn used regional and local plant material, at a time when no other Texas landscape architects were exploring such use. Dan spent his design career studying indigenous Texas plants. From this research, in turn, he specified these ‘new’ species in multiple project plant lists. Throughout his career, Heyn’s work made the most of Texas indigenous plants, turning them into familiar elements of the cultural landscape.

It is noteworthy that in the course of his planting design work, Heyn also
employed non-invasive exotic plant types along with the Texas natives, preferring to understand, appreciate and make use of the abundance of the world's plants for particular design intent. Heyn's project work provided a valuable example as to how to blend the 'wild' with the exotic into new developments. The achievement of this proved difficult, and some of reasons for the difficulty persist. In the traditional development model, all existing plant and animal species on many sites are obliterated for new development. Dan's model accommodates at least a portion of the indigenous species.

A Chance Meeting

My landscape architectural path crossed with Heyn's toward the latter part of his career. We met through introduction by Patsy Stephenson, Heyn's former daughter-in-law and successful Dallas land planner, who fortuitously was my landlady. Starting in 1982, I collaborated with Heyn on landscape architecture projects in Texas, and on later projects in Indiana and Michigan. Heyn offered me his business card, which stated "Indigenous Planting Design" as a service provided. My interest in the meaning of this statement piqued immediately. As a landscape architect I had already spent several years practicing landscape design in San Francisco and Dallas. I had completed an unusual landscape architecture undergraduate thesis that explored attitudes toward the environment in American history. Naturally, I was curious as to the specific meaning of the term indigenous planting design, a term succinctly capturing a strong affinity for the American landscape prior to Columbus in 1492. What methods and plants did Heyn use to achieve his ends? Where did he obtain the plants? What success did he experience? What impact did he really achieve?
Subsequently, Heyn became a collaborative mentor as well as a personal friend with often-similar political and personal viewpoints. Stephenson summed up our relationship. "Libby and Dan have a thing," she said. He shared an overriding sentimentality toward nature, a responsibility in design for nature, humility in creating beautiful and functional spaces and places, and an ability for positive environmental change through landscape architectural projects. I hoped that by working with Dan I might learn from his tremendous reservoir of talent and knowledge.

Although Heyn still maintains an office in his simple, contemporary home in Richardson, Texas, north of Dallas, replete with design and construction drawings from the many years of his design practice, no one has yet studied or documented this body of work. Peers, such as nationally recognized landscape architects Lawrence Halprin and Dan Kiley, or predecessors, such as Thomas Church, have well documented stories. Yet Dan had done many noteworthy projects. For example, he completed landscape drawings for the Irwin bank building in Columbus, Indiana, a prestigious Midwest architectural haven, working with Dallas architect Pat Spillman. He designed this project soon after opening his own office in 1965. Knowledge of Heyn's design acumen must have been familiar to at least some of these renowned landscape architects. Years later Dan Kiley interviewed Heyn seeking collaborative work with him on a Dallas office-building project, but due to schedule conflicts, Heyn was not available. I feel it is imperative to document the volume and meaning of Heyn's work.

In the same way, books and articles recognize Heyn's Texas contemporaries in the early native plant movement. Heyn was not the sole proponent of native plants. Others published their various research endeavors, as in Benny Simpson's Field Guide to Texas Trees (1990), in Texas historical garden society articles, in Native
Plant Society of Texas documents, in extension service articles, and through the Austin Ladybird Johnson National Wildflower Center publications. I argue that Heyn played a pivotal role in the genesis of the Texas native plant movement, a movement fostered by such notable achievers as the Benny Simpson, Lady Bird Johnson, Lynn Lowery, and the Native Plant Society of Texas founders. It is the articulation of Heyn’s contributing role and the breadth of his geographic influence that I will explore in this research.

Sense of Place, Diffusion

Heyn’s work is important to the history of landscape architecture and the history of the Texas native plants movement, because he has made important contributions to them. Yet because of a combination of factors, not least of which is Heyn’s humility and preference for solitude, his tremendous contribution to these arenas remains relatively unknown. During this specific time in Texas history, when other landscape architects paid scant attention to indigenous plants or local environments, Heyn fought to plant these species.

In a very real sense, Heyn merged the artistic aspects of landscape architecture design with a scientific understanding of plants, particularly Texas plants. The results were landscapes imbued with a particular Texas sense of place. As a consequence of applying this knowledge to planting design projects throughout the State, Heyn helped further the movement to plant indigenous species. He held a statewide audience, completing projects in most cities and plant regions of Texas, and in both public and private settings (Figure 1). The decades of the 1950’s and 60’s were Heyn’s most pioneering years of indigenous planting design. He received critical support from two tree contractors, Walter Gilbreath and Joe Acosta, who assisted him in the use of
A Partial List of Cities and Counties with Projects Designed by H. Dan Heyn

Figure 1. Map of Heyn Texas project locations. Star symbol indicates project sites, with city name noted. Heyn worked throughout the state.

these species. Steve Dodd Sr., and Gene Tobin aided his goals during the 1970's. By including native plants in his designs, Heyn presented a creative new model for other landscape architects. Too infrequently is sense of place established in new developments, yet it remains vital to human emotional health (Lynch, 1960).

Heyn’s work is explored in light of two important geographic concepts: diffusion and sense of place. This thesis examines how Heyn’s work impacted the diffusion of Texas native plants and native planting and how this work at the same time built a unique Texas sense of place. It is from the perspective of these concepts
that the importance of Heyn's contribution becomes apparent. Heyn offered a particular vision of the Texas landscape. In his use of native plants, he helped to create a unique Texas environment, thus contributing to an appropriate Texas sense of place. Sense of place in this study refers to the distinctive physical characteristics of the landscapes, that is, the Texas landscapes, of Heyn's creation. Sense of place is significant because over time people develop deep attachments to place that provide them a distinct identity (Eyles, 1985).

Heyn deliberately fostered a Texas sense of place. He selected Texas plant material. He chose local construction materials such as Austin limestone. He considered climate in design. Once constructed, the projects, their materials and plants were in full public view, in residential, commercial, office, and rural settings. Through time, they became familiar to the public. Through the seasons, this familiarity included the textures, colors, flowers, structure, height, and seasonal changes of the plants. This familiarity evolved from a subconscious involvement with their surroundings into a greater consciousness of distinct plant species. In turn this has generated more demand upon the nurseries and growers to provide these Texas plant species. Subsequent designers, developers, and the general public came to see the beauty and practicality of natives in designed landscapes.

An increase in the usage of these native plants is evidence of their diffusion. During the 1950-1980 period of Heyn's innovative use of indigenous plant species, several barriers impeded their diffusion. One of the most daunting problems was that there was no commercially available supply of the indigenous species. Heyn began collecting plant species from natural areas. Additionally, individuals and, occasionally, nurserymen or landscape contractors held rigid ideas about what should or should not be planted, becoming obstacles to Heyn's vision. The opening story
illustrates a very real threat of violence to the planting of a native tree species in west Texas, and is but one example of resistance. Heyn spent these decades fighting to plant indigenous species.

This thesis will also show that landscape styles are not fixed, but change. Studying the change in landscape style and materials in Heyn's work will allow this understanding. Heyn's work presents accurate insight into his contributing role in changing landscape styles, or fashions. The context of his work is important. This context includes allied professionals, other landscape architects, the natural context, and individual project site conditions. I use his project drawings to show specific diffusion processes at work in Heyn's landscapes. These diffusion processes are important because they provide an opportunity to discuss the impact of the design model, and thus insight into the impacts that various styles of development are now having upon plant species survival and proliferation.

Why should we examine these landscape styles? The landscape styles and patterns chosen by a culture have tremendous impact on the natural environment, especially when they are replicated one thousand-fold across a landscape. Indeed, in one of my own presentations, the audience's reaction to the thesis topic was personal. The audience expressed comments of concern for what each individual was doing locally in their own landscaped yards, with their own lawns within a different regional landscape. Geography faculty were inquisitive, seeking discussion as to what tradition of landscape design they were following, discussing the sources of the plants they used, and pondering what effect these decisions held for the environment. The presentation led to discussion about the role of individuals in facilitating a particular landscape style.

Likewise, in conversations with landscape architects, this group was acutely
aware of a professional struggle between creative employment and the awareness that, in doing this work, they are implicated in the consumption of undeveloped, often indigenous landscapes. As agents of landscape change, they often apply templates of exotic landscape styles to sites, thus reducing the size of wild areas and ecosystems.

The design drawings of Heyn demonstrate his unique vision of human participation in the landscape. These plans show what each place was to become, and how people would interact in the new environment. Heyn varies the intention somewhat, creating urban, sophisticated environments that are very people-centered, as well as larger, more natural, settings which imbue a sense of grandeur. But distinctly important to his broad human-nature design sensitivity is his integration of indigenous plants into all types of landscapes.

The movement to use indigenous species is a direct counter to exotic landscapes. It is a method brought to tremendous success in projects by Heyn. He studied the Texas “wilderness,” the naturally occurring vegetational areas of the state. Then in new project settings, he transplanted, maintained, conserved, and displayed the native plants. Since Heyn developed his model for using native Texas plants, a new movement has emerged: ‘landscape restoration’ (Morrison, 1996). Landscape architecture practitioners of this method, including Darrell Morrison and James Patchett, seek repair of large-scale ecological systems formerly degraded. This latest effort, as well as the native plant movement and Heyn’s model of native plant inclusion in ‘synthetic’ landscapes, is important in terms of plant species survival. Plant survival implies animal survival, given the interdependence required with plants to attain the basics of food and shelter, of habitat. With conviction, Heyn forged ahead with this new landscape model, despite difficulty.

This thesis will examine Heyn’s work, expanding on Dan’s background with
details of his life and motivation. I will examine, in geographic terms, his landscape architecture design projects. I will make a case on the type diffusion Heyn employed in his use of plants. And lastly, I will give details of his incorporation of Texas plants, along with other design and materials strategies. This will provide understanding of Heyn's accomplishment of his particular vision of a Texas landscape, of one man's vision to create a Texas sense of place. To understand Heyn and his work, some of the influences of his life and childhood must be portrayed.

Heyn's Background

H. Dan Heyn (Figure 2) practiced professionally in Texas for fifty years. He dedicated his life to the work of landscape architecture, creating new places in the landscape. Background information on Heyn will help illuminate his life, personality, and work, to discover his motivation and source of curiosity about plants. Heyn indicates that childhood camping experiences in East Texas, and a weeklong hunting and fishing vacation with family friends, were important formatively for him.

Heyn's parents brought Dan to Dallas when he was two. He lived when young in the Dallas “M Streets” area, yet he did not like Dallas. His grandfathers came to Jefferson and Marshall in East Texas in 1866. He visited a Grandmother and Uncle who lived there. His own father was quite a gardener. Dan had art in grade school and loved it. Did Heyn study plants in the wild?

“Well, I was just interested. I didn’t actually study it.... I was interested in everything about nature and I liked being in the woods. I picked up everything. I picked up rocks all the time. Had collections of everything. Just like you do.”

Dan took an opportunity in 1937, at age 13, to travel to Harrison, Arkansas to visit a former Dallas friend and his family, who had moved there.

“Pretty primitive up there. Friend’s grandfather...woodsman,
like a mountain man. He was part Cherokee, I think. Big hound, little terrier. One morning went...had a Model A, opened trunk, dogs jump in, ball in trunk. Huge tree had fallen over, uprooted, soil up. Dogs digging into burrow, yapping, growling, dog shot backwards, had a possum by lower jaw. Dog Ok. (I was there) three weeks. Didn’t want to come back.

(His) Aunt owned land, father took to it well. Fantastic. Own smokehouse... harvest coming in... peaches... Jonathon apples. One
day Grandpa and I made cider. When folks came for me I had all these things he'd given me, this big jug of cider, bows and arrows, and his arrowhead collection—he gave me. Too bad his grandson didn't care about that sort of thing. I just really was, just interested.

He skinned the possum and showed me how to cure the hide. I brought that too. My mother was...(laugh). I had that possum hide for years. My poor Mother.”

Later Dan discovered the field of landscape architecture by accident. “Tell you what. No counseling.” He graduated from high school in June 1942, after the beginning of World War II. Thinking he wanted to study something to do with agriculture, he went to Texas A & M, in Bryan-College Station. He started in the famous “Corp,” in the Cavalry, which he describes as the worst thing (sadists). This is an understandable position, given the fact that once when thrown from his fallen horse, his supervising officer was concerned only for the horse’s welfare.

After seven months at A & M, Dan was lost interest in school and the Corp, and joined the Navy. The navy chief couldn’t figure him out: he was too happy to be out of the Cavalry Corp. “I went over obstacle courses. Made highest score rifle range. That’s how I got to go to aviation ordnance school. (I was on the) rifle team in high school; always...fired expert.”

When he came back from the war, the GI bill offered educational opportunity and Dan returned to A & M, not in the Corp, as now the student body was mostly veterans. He knew from his previous A & M stint that he was “more interested in plants than anything.” In finding a course titled “landscape art” in the catalogue, he thought that sounded like what he wanted, but still not knowing exactly what he would do with the degree, whether he would be “in the nursery business or what.”

“So I got down there and I found out there was such a thing as landscape architecture. So at that time Robert White, from Pennsylvania, also veteran in army.... I was in first class he ever taught. He was very good” (Heyn).
From this point, Dan had the combined interest and opportunity, along with supportive landscape architecture professors, to pursue work involving plants. Heyn recalls that Fritz Hensel, a man past sixty at the time, started the department at A & M.

"He was good with plants and knew natives. We had lists and we had places that... nurseries next to campus. We could go and see things. Also, as you know, the College Station area is a beautiful, natural part of the state. He had created this wonderful park just right off the campus. It was named for him, Hensel Park. It had everything that grew in that area. It was wonderful to be able to go out there and see that.

(Hensel) was an old German from San Antonio. San Antonio had lots of Germans (laugh). He was a wonderful guy. He hired a man named Adolph Dewirth. He was a floriculturist. What a character. I mean he was somebody. And then in turn Adolph hired Robert White, who was a landscape architect. He headed up that department" (Heyn, 2000).

While studying at A & M, Heyn dated and married Dottie Wahlquist, in 1947. Dottie’s family came from Nebraska and her mother knew Dan from her daughter’s high school, and she later plotted their relationship. After two years studying in Austin, during the war, Dottie had returned to Dallas to work. Subsequently, Dan and Dottie had two children, Henry D. Heyn, Jr. (Hank) and Hollis.

Heyn describes Texas A & M as being a very different place once the war ended. Fritz Hensel converted army barracks into housing. The accommodations had iceboxes, and rented for $27 per month, including utilities. They continued to live in rental housing, recalling a time living in the upstairs of a Baptist minister’s widow house. They smuggled in beer, and at times overheard her Baptist meetings. The GI bill paid for everything, providing for books, supplies, plus $105 per month. According to Dottie Heyn, “That was high on the hog.”

Dan had good drawing courses in architecture school. One required freehand drawing assignments of sites on campus. Heyn’s first drawing was displayed in the
class as the worst example, angering Dan. He made a resolution to improve, knowing he “could do better than that. After that, all the other assignments... he’d put my work up as the best example. When we started drawing trees, that was my thing” (Heyn, 2000).

Landscape architecture is in practice a broad discipline. Heyn cannot think of anything broader, with so many facets. He had engineering courses, ‘grading’, in the agricultural engineering department, which were very practical, and ‘fish and game’ and ‘geography.’ “You’re supposed to be part artist, part botanist, part engineer” (Heyn, 2000). Under scrutiny, Heyn’s work demonstrates his excellence in response to the challenges of all aspects of the discipline.

Heyn graduated in 1949. With the enactment of state mandated professional licensing for landscape architects in the 1970’s, he secured his Texas Landscape Architect license, number 114. After graduation, he continued his study of Texas plants, later taking trips to the Texas Hill Country.

A former professor, Robert White, helped Dan to secure his first job with the City Planning Department in Houston. He worked there one and a half years before switching to a position in a land-planning firm, Otto Phillips Site Planning, which later became Phillips, Procter, and Bowers. The projects during Heyn’s five and a half years there included subdivisions, shopping centers, military housing on various Texas bases. Though tired of subdivision design, Heyn values the “good training in use of space.”

“Finally I got this job with Arch Swank, O’Neil Ford, Sam Zisman, and Richard Colley. And that was just like you were one of their family. I was the only landscape architect. It was all architects. Which was good. I made a lot of contacts. That’s where the good work is - with the architects” (Heyn, 2000).

This feeling of being a part of the family, and of the fondness the architects
held for Heyn is depicted in Figure 3. Zender, who watched Dan frequently through the window from his drafting table, drew it, and captured Heyn’s passion for plant collection and identification. By this time, Heyn had already made important career choices that would allow him later to immerse himself in work that afforded him opportunity for expression of his passions for art, creativity, and love of nature and plants. The next section will describe how the entirety of Heyn’s project work demonstrates geographic diffusion and geographic meaning in creating a sense of place.

Figure 3. Sketch of H. Dan Heyn drawn by Norbert Zender, Architect, circ.1960. (Courtesy of Heyn).
The Projects

There are several threads that become apparent when looking at the body of Dan’s work. One is plant understanding and dissemination, seen in Dallas, Karnack, and Midland corporate, residential, and federal projects. Another is a Texas ‘home’, or sense of place, in San Antonio and Dallas residential and office work. A third Dallas school project looks at the context of fun, while a far West Texas weekend shelter on the Edwards Plateau suggests humility. Through the photos, plans and stories of the selected projects, this thesis will discuss several points relating to Heyn’s work.

Heyn carefully considered the user of the landscape. In the example of the Lamplighter School, encouragement of play for children, and the needs of play, is evident. For the weekend shelter landscape, Heyn judiciously handled the client wanting to ‘get-away from it all’ in an extraordinary exercise in restraint. Through these and many designs, Heyn demonstrated the ability to imbue a sense of place, of a particular Texas place, for specific users. The integration of regional plant material was paramount to this achievement.

Many other landscape architects have fostered play in playground designs and respite in vacation homes. Many individuals not trained in design have labored to forge their own personal visions of such goals. Yet, these purposes are clear, and very beautiful in Heyn’s designs. Heyn’s designs bring human goals for the landscape to their “simplest terms.” There are no ‘dangling participles’ or ‘run-on sentences.’ What he has to say is straightforward and direct, and yet, though orderly, they are not simple, but are complex. This combination of clarity and purport design intent makes analysis somewhat easier. In Chapter IV this thesis will address what Heyn did with, in, and about the landscape through the examination of project detail. Prior to this
specific discussion, the Chapter II will relate historical information to put Heyn's Texas landscape work in perspective.
CHAPTER II

LITERATURE REVIEW

Texas

"Conservation Pledge: 'I give my pledge as an American to save and faithfully to defend from waste, the natural resources of my country-its waters, forests and wildlife and it's air.' By prohibiting their removal from the public domain of parks and highways, Texas Conservation Laws protect the following: wild native evergreen or deciduous trees and shrubs, and all vines, flowers, ferns and moss" (Planting, 1970).

Why did Texas emerge as a leader in the movement to study and use native plants in the landscape? Just as it is no accident that small groups of dedicated, dynamic and focused agronomists have led the way in conserving diversity in agriculture, Texas is also a leader in the promotion of indigenous plant species. Texas plant nativism cannot be studied without glimpsing the cultural phenomenon of a rich Texas heritage. Many Texans invoke a history marked by a fierce struggle for territory and independence. Having served as a colony under not just one other country, but three (Spain, France, and Mexico), these Texans of European descent revolted and established their own Republic of Texas in 1836. They soon joined the United States, only to secede again during the Civil War. The flags of six nations have flown over Texas: Spanish, French, Mexican, Republic of Texas, Confederate, and United States. The struggle to settle Texas included many overlapping and conflicting forces from European, Mexican, Native American, and U.S. populations. The will to secede remains a vibrant part of the Texas persona, evidenced in recurrent serious and humorous conversations advocating secession, and in the use of the
Republic of Texas flag for the state flag. Texas pride is visible in bumper stickers advocating “Native Texan,” and can be found in newspaper writing, distinguishing between native and non-native Texans in obituary writing.

Going back further to European history, and specifically to German history, the Germans (who compose the dominant migrant group to the Texas Hill Country) have perennially fought for an independent tribal identity, the basis of which they found to be the original woodland tribal culture of Germany. The Nazis in their longing for a return to a pure race infused images of the woodland, subliminally tapping into deeply held cultural feelings and longings for the forest with their propaganda. Despite the horrors inflicted on their fellow men, and very ironically, they established sound ecological forestry management strategies. Their ties to the woodland were symbolic, but, in their pursuit of an ‘ideal,’ of a simpler, more basic culture, based on the woodland societies of yore, they struggled to make the forest itself again real (Schama, 1995). Heyn, of German and Dutch ancestry, is a proud Texan and studied the natural and cultural history of his state.

Tremendous struggles for identity and independence, albeit in many forms, make up a large part of Texas history. This thesis does not attempt to ascertain whether statehood or the immigration of Germans to Texas directly influenced Heyn’s work, or whether it arose from his own partial German ancestry, somehow cultivating in him a reverence for the woodland. But on the whole, it is suggestive that the language of independence and nativism finds its way into landscape design generally, and into Heyn’s work in particular. Heyn’s concern with indigenous species flows logically from the cultural importance placed upon the native in Texas. Although Heyn used exotic and indigenous plant species, his incorporation of the natives was unique during the 1950’s and 60’s.
Why are theories of landscape important? Through accepted cultural practices and technical advances, landscapes are created, destroyed or reconstructed. This chapter analyzes landscape not as a literal unchanging physical product, but as an outcrop of those fluid cultural forces which shape decisions concerning the landscape. By this approach, the thesis examines the Texas ‘nativism’ phenomenon and from this vantage, studies theories of landscape in culture.

Heyn’s planting design style was in opposition to the dominant style of landscape design in the 1950’s and 60’s. This literature review will describe Texas landscape attitudes, the emergence of native plant enthusiasts during the years of Heyn’s practice, and the description of the landscape architecture model that Heyn modified. Analyzing the long-term diffusion of ideas about native plants in Texas demands a more thorough understanding of both Texas culture and landscape architecture. From this understanding, the thesis results will derive useful information about Heyn’s work, about its uniqueness and significance. “Works on the geographical distribution of vegetation and soils are still few and far between” (Minshull, 1970). Therefore, the study of Heyn’s work will contribute information to an area of insufficient research.

The human-nature question is a broad one addressed by numerous theorists. The question of landscape is also broad, but perhaps a synthesized understanding can be garnered from a respected historical theorist, J.B. Jackson.

“Landscape is not scenery, it is not a political unit; it is really no more than a collection, a system of man-made spaces on the surface of the earth. Whatever its shape or size it is never simply a natural space, a feature of the natural environment, it is always artificial, always synthetic, always subject to sudden or unpredictable change. We create them and need them because every landscape is the place where
we establish our own human organization of space and time…” (Jackson, 1996).

J. B. Jackson in detail formulates his theory on three landscape types: Landscape Type I, Type II, and Type III. In brief, Landscape Type I is based upon the vernacular, the impermanent, with the focus of the occupants being on human relationships and temporary usage/stewardship of the land. Landscape Type II follows from the social ordered landscapes dating back to English, French, and Roman landscapes. Landscape Type III is a merger of the other two. Optimistically, Jackson sees this as the emerging landscape. He feels Type III will include not only the structures of social organization, but also of natural processes. To attain Type III, humility is required. This humility will allow for the recognition of humanity within a larger natural system.

More recent research addresses Jackson’s topic of human attitudes of nature control. Anne Winston Spirn, landscape architect, echoes Jackson’s sentiment of nature’s cultural constructedness, and of the “crucial (need) to reassert the reality of nonhuman features and phenomena” (Cronon, 1995). Renowned environmental historian William Cronon expresses similar sentiment.

“On the one hand, we need to somehow to persuade scientists and environmentalists who assume ‘nature’ to be natural, wholly external to human culture, that there is something profoundly important and useful in recognizing its cultural constructedness. On the other hand, we need no less to persuade humanists and postmodernists that although ideas of nature may be the projected ideas of men and women, the world onto which we project those ideas is by no means entirely of our own making: there is more to the world than just words” (Cronon, 1995).

Jackson, in the hope of an emerging Landscape Type III, foresees change not only in the form of the built landscape, but also in the larger culture.

“When we see how we have succeeded in imposing our own rhythm on nature and how we have altered the life cycle of plants and animals
and even transposed the seasons, we become aware of how dangerous a role we have assumed, and there are many who say that the salvation of Landscape Three depends on our relinquishing this power to alter the flow of time and on our returning to a more natural order. But the new ordering of time should affect not only nature, it should affect ourselves. It promises us a new kind of history, a new, more responsive social order, and ultimately a new landscape" (Jackson, 1996).

A recent increase in ecological understanding is forcing change in the decision-making processes of landscape designers (Collinge, 1996). This change is difficult, however, given the many cultural barriers to incorporation of this ecological insight. Heyn’s work examples are chronologically prior to landscape architectural projects that apply broad, new ecological principles. Firms and individual landscape architects now specialize in landscape restoration.

However the dance of cultural attitudes and landscape creation is manifest, the larger environment is impacted, either positively or negatively. Heyn was the first landscape architect to thoroughly study, design, and plant ignored native Texan species. He discarded popular cultural notions of landscape, advocating a new way of thinking about landscape. Heyn’s efforts contributed to profound changes in peoples’ awareness of plant diversity. He helped create a desire to change existing practices, and to try new approaches to landscaping. The following segment lays out considerations of attitude affecting Heyn’s endeavor to be inclusive of natives.

Attitude

Why did Heyn grow to value these native plants? One historical question posed in this section is the intrinsic value, or lack of value, of indigenous plants. Are the local plants in an area understood on many levels? Are they looked upon as beautiful? If there is value attached to these plant species, what kind of value? Is the value based upon the subjective measures of beauty, such as the flower color or size,
or the texture of the plant, or the form, or its overall color? On a broader scale of inquiry, is the value derived from the perspective of the individual plant, i.e. a ‘specimen plant,’ or of a more holistic perspective of the larger biome, i.e. of forest, prairie, or wetland, of gene pool diversity, of preservation of species, or of habitat? The answers to these questions lead directly to plant usage. How plants are used, be it in conservation areas, in landscape restorations, in specimen displays, or how plants are eliminated in clearing and grubbing, in selective thinning, or in clear cutting operations, is directly related to the underlying attitudes about indigenous plants. It is through the understanding of these underlying attitudes toward native species that insights into landscape development can be understood.

The origin and the meaning of the word “indigenous” are also important. The word derives from the Latin *indigen(a)*, meaning native, original inhabitant plus the – *gena*, from the base of *gignere*, to bring into being. The latter being the root of words such as ‘genesis.’ The current definition of the adjective is “originating in and characteristic of a particular region or country; native...” (Random House, 1993). Thus, nature has or is ‘bringing into being’ original life. In the context of this research, the indigenous elements are the flora and fauna of a region or area. Botanist Robert Vines regarded native plants as “those which are indigenous to an area and which grow there without cultivation” (Vines, 1960). Later description discerns within regional biomes, “Moreover, a plant that is native to your general area is really native to a specific habitat within your area” (Wasowski, 2000). Having touched upon the issues of Texas culture, landscape theory and reality, and the idea of exploring the attitudes underlying the aforementioned, the next section will examine global research issues as they relate to the purpose and importance of native planting.
Why is native planting important in a worldview? With the survival of plant species, the accompanying gene pool survives; with the survival of native plant habitat, animals survive. Without survival of these interdependent species, there is a degradation of the earth's biological diversity. Scientists in the 1970's sounded an alarm over plant genetic uniformity and the potential for crop failure problems (Tuxill, 1999). Summaries of the science from sources such at the World Watch Institute stress the tremendous importance, value, and necessity of conserving indigenous plant species. One such publication, "Nature's Cornucopia: Our Stake in Plant Diversity," discusses the profound value of the genetic pool found in plants.

"Although we have achieved unprecedented skill in moving genes around, only nature can manufacture them. For all its appeal, agricultural biotechnology relies on the same resource that traditional indigenous farmers do: biological diversity, or "biodiversity" for short-a word that refers to the richness and complexity of life on Earth. Biodiversity is most commonly measured as numbers of species, but its full scope is much greater. It also encompasses the different genes that individual organisms carry; the distinct populations, varieties, and breeds evident within species; and the patchwork of natural communities that species assemble into when they share a common habitat-all part of the kaleidoscopic variation of nature produced by 3 billion years of evolution" (Wilson, 1992).

Tuxill goes on to point out that human activities consume about 40% of annual biological productivity, thus the need for stewardship stems from our dependence on this biodiversity. Yet current extinction rates, estimated to be "100 to 1000 times higher than normal, or "background" levels," preclude this understanding. Further stated is the point concerning green plants in mentioning that our food supply is underpinned by them, one in four medicines is derived from them, and timber, oils, fibers, essences, cleaning products, clothes, and shelter are their derivatives. "Healthy assemblages of native plants renew and enrich soils, regulate our freshwater supplies,
prevent soil erosion, and provide the habitat needed by animals and other creatures” (Tuxill, 1999). The use of plants in development can also be described as a non-point pollution issue, having large-scale impact given the tremendous amount of land developed for residential use, and the subsequent transformation of indigenous landscapes (Gasmire, 2000).

Maintaining plant diversity requires maintenance of remaining plant species. This has been accomplished in part through gene banks, botanical gardens, national parks, and protected areas systems. “An even more daunting challenge, however, is revitalizing cultural practices that foster plant diversity, and reforming those that work against it. Our predominant systems for producing food, for instance, favor centralization and economies of scale, which discourage variation and local adaptation of the gene pools of crops and the ecological mosaics covering farm landscapes” (Tuxill, 1999). The importance of culture, and cultural landscape practices, is mentioned as paramount to the issue of plant life sustenance on the planet, with estimates of endangered plant species as high as twelve percent. In many countries much remains unknown not only about the plant species but also about their endangerment (Tuxill, 1999).

Botanist Lloyd Shinners published in 1958 a Spring Flora for the Dallas area. In it he discusses the importance of seemingly useless vegetation. “Actually it is not useless. Every plant that grows is improving the soil and air, and retarding erosion by water and wind; even the most unwelcome weeds have this to their credit” (Shinners, 1958). He contrasts these discounted plants with those recognized for economic value, be that for forage, timber, or crop uses. He blames much, but not all of the botanical problem on botanists not making technical information generally available.

What is known about plant species decline, however, is the cause. Loss of
plant and animal habitat is due to disturbance. The disturbance focus in this thesis refers to that whose root cause is land development, involving clearing and displacement of indigenous plants. The subsequent introduction into many of these disturbed areas of exotic plant species, requiring unusually high levels of nutrient and water maintenance, and sometimes the unwitting introduction of invasive plant species, which naturalize and further threaten the native communities, exacerbates the problem for native species survival. The landscape practice of using exotic species has meant much greater uniformity in landscape practice. From coast to coast, the look of lawn and garden is quite similar. “The richly textured mix of native plant communities that evolved over thousands of years now appears increasingly frayed…” (Hannah et al, 1995).

“To learn that more than four thousand native plant species are in danger of extinction in this country gives us a wake-up call and brings close to home the Wildflower Center’s mission. Will these plants be lost to all but memory, with succeeding generations losing even that fragile connection? Are there sources of food, fiber, or medicine that might perish with them? How do we save these species in the face of an ever-expanding human population and its impact on the land?” (Lady Bird Johnson, 2001).

In South Africa, the “government’s water department has become a sponsor of invasive plant control, since many non-native trees are heavy drinkers, with deep root systems that tap into scarce groundwater supplies” (McNeil, 1998). Many communities in Texas are dependent upon a constructed system of reservoirs to meet their water needs. Thus far, engineering savvy has enabled the reservoir supply to keep up with the demand, but common sense suggests that in the long haul, the practice of maintaining vast introduced exotic plant species populations will not remain cost-effective. Having this foresight, San Antonio, Texas’ water utility department has initiated incentives for their customers which offer price breaks for
those installing a landscape which is more homespun and requires less water, similar
to a landscaping practice referred to as ‘Xeriscaping.’ Heyn’s planting design
methods offer another means for indigenous species survival, both in the conservation
of existing plant species and in the introduction of additional native species.

In terms of the greater landscape, “less clearly understood to the layman are
the drastic changes man has made to the soils and vegetation all over this planet”
(Minshull, 1970). Given the large-scale consumption of land in Texas for
development, the habitat that remains becomes island communities, and species are
lost (Tuxill, 1999). The end result of isolated remnants of native plant communities
will most likely require tremendous investment of outside management to maintain
the species, protecting plants from altered hydrological and soil conditions, usually
changed from mesic toward more xeric conditions, from the dominance of invasive
species, and from interrupted reproductive processes no longer present such as the
natural disturbance of fire or periodic flooding.

Samuel Roberts Noble Foundation’s Coffey Ranch, in Ardmore, Oklahoma,
west of Marietta and just across the Red River Texas boundary, is a large non-profit
organization dedicated to researching the management of native plant communities.
At present three tools have been used to manipulate plants in what they term “go-back
land”: grazing, wildfire, and rest, according to Russell Stevens, a wildlife biologist for
the Foundation. The intention in managing for diversity is to benefit ecology as a
whole, including wildlife for recreational hunters, songbirds, and birds native to the
prairie. In the dual enterprises of wildlife and livestock, the foundation strives to
discover efficient means to restore native landscapes, means which can be replicated
by ranchers in cost effective and timely ways.

After trying for ten years to re-create a 30 acre Post Oak (Quercus stellata)
Savannah, by opening up the thick growth, allowing more grasses and forbs to grow, fighting invasive species, the Noble Foundation’s Coffey Ranch has not been able to succeed. The speculation is that the area has more growth now than it did before European settlement. Fire burned the area with some frequency. The difficulty that the Coffey Ranch is experiencing in recreating the Post Oak Savannah environment lends support to efforts to preserve remaining natural community areas.

"Broad recognition of the need to conserve plant resources is largely a twentieth century phenomenon. The first warnings about the global erosion of plant diversity were voiced in the 1930’s by crop scientists such as Harry Harlan of the United States and Nikolai Vavilov (of Russia), who realized the threat posed by farmers’ abandonment of landraces in favor of new varieties that were spreading widely in an increasingly interconnected world. In the decades since their prophetic warnings (which went largely unheeded at the time), we have come to realize the importance of protecting plant biodiversity both off site in specialized institutions, such as botanical gardens and gene banks, and in native habitats and agricultural settings" (Harlan, 1992).

Botanical gardens are typically rooted in the European colonial tradition of studying plants from around the globe for economic and ornamental value. A recent mission, since the late 1980’s, is to preserve species, similar to the work of zoos with endangered animal species (Tuxill, 1999). Heyn was always mindful of the source of the exotic plants he used in Texas design work. In one of our interviews, he mentioned the Afghanistan origin of Mondell Pine (*Pinus eldarica*) and the Asian Indian origin of Crape Myrtle (*Lagerstroemia indica*).

The patterns of plant use need to be sustainable, with an understanding of the underlying landscape ecology, if biodiversity is to be stewarded. And since political and economic support for protection varies, entities such as the Austin Ladybird Johnson Wildflower Center become important to educate and provide continuity to citizens willing to champion native plants and therefore biodiversity.

“As encouraging as these trends are, the scale of what remains to be
accomplished to reverse the erosion of plant biodiversity, both in agriculture and in wildlands, presents a sobering challenge. While many people are pursuing alternatives to unsustainable patterns in agriculture and natural resource use, others remain heavily invested in continuing them.... Without action to address the underlying social and economic trends eroding biodiversity, progress on one front like sustainable agriculture can easily be offset by negative developments in a related arena. How well we conserve plant biodiversity and other natural resources depends ultimately on what kind of society we shape around them” (Tuxill, 1999).

The above quote echoes J. B. Jackson’s understanding that, in order to incorporate and sustain natural plant and animal systems, the culture will be molded into a society with different attitudes and ways of operating. Heyn’s projects show one way to pursue built environments that incorporate modern cultural living standards integrated with indigenous plants. His work suggests a pattern that can be replicated.

A large and varied body of research information on indigenous plant species shows the importance of indigenous plant species for many reasons: for future agricultural use as the basis for a gene pool, for ‘spiritual’ reasons, and for aesthetic purposes. Invasion of plant communities by exotics is a very real, present danger (Stohlgren, 1997). Another calls for “adopting a spatially explicit approach to quantifying threats to biodiversity, and ...(of needing) to prioritize threats from alien species and the sites that need urgent management and intervention” (Higgins, 1999).

Ecologists have found that the endangered Oak Savannas of Southern Wisconsin show “extensive floristic differentiation: 507 native plant species, ~27% of Wisconsin’s indigenous vascular flora.” They have more clearly defined the savanna plant species composition, structure, and horizontal patterning of their species-rich ground layers, and compared this information with those of prairies and forest. The information is important for “efforts to restore/conserve Midwestern Oak Savannas”
In an Australian study about conserving small, fragmented remnants of the native grassland flora, it was determined that ... "Native species richness and cover are most negatively affected by increases in non-native cover. Declines are largely evident once the non-native cover exceeds 40%. Widespread, generalist non-native species are numerous in intact sites and will have to be considered a permanent part of the flora of remnant grasslands. Management must aim to minimize increases in cover of any non-native species or the disturbances that favour the establishment of competitive non-native grasses if the native grassland flora is to be conserved in small, fragmented remnants" (Morgan, 1998).

In Illinois testing has been conducted to ascertain whether native plant species and plant community richness can contribute substantially to insect biodiversity conservation. The conclusion is affirmative for the Tall Grass Prairie regions (Panzer and Schwartz, 1998). In an inverse study in California, the central grassland ecosystem protection is analyzed in relation to the amount of 'umbrella' protection it receives by being habitat for the endangered Bay Checkerspot butterfly. "However, if only the sites supporting the largest butterfly populations are preserved, or if portions of habitat patches classified as being of "marginal" value to the butterfly are lost, then the proportion of plant species receiving protection drops substantially (Launer and Murphy, 1994).

In National Rocky Mountain Park, Colorado, a geospatial database for local resource monitoring and ecosystem management quantifies "the effects of elk grazing on plant diversity, identifies areas of high or unique plant diversity needing increased protection, and evaluates the patterns of non-native species on the landscape" (Stohlgren, 1997). Indigenous plant species value and contributions are seen by many
researchers as critical to species and ecosystem conservation. Conservation biologists have studied a 400-ha metropolitan Boston park, Middlesex Fells, to determine species composition ratios of native to non-native species. Native species are declining at a rate of 0.36% per year, while exotics are increasing at a rate of 0.18% per year (Drayton and Primack, 1996). Across the ocean in Britain, a 1994 'back from the brink' project to re-establish in the wild an extinct native plant, the annual Narrow-leaved Cudweed (Filago gallica) was successful by 1998 (Rich et al, 1999).

What is the meaning of this in relation to Dan Heyn? From these larger studies, there are parallels to Heyn's landscape design contribution. In the field of landscape architecture, Heyn has shifted the predominant aesthetic. No longer is the palette of landscape architects strictly ornamental, composed exclusively of exotic species. Rather, in his realm, he succeeded in elevating the role of individual native plants, a first critical step in shifting cultural attitudes positively in favor of indigenous plants. Presumably, this shift will ultimately contribute to a cultural shift in attitude toward entire plant communities, a shift certainly not yet realized, yet visible in landscape restoration projects currently underway by ecologists and landscape architects, such as Morrison in Texas gulf coastal large-scale bird habitat restoration. Heyn has elevated the importance of the role landscape architects have in design from that of artistry somewhat frozen in time, bearing a certain stylistic look, to that of creator of human habitat inclusive of unique, local flora. Through his consistent effort and practice, he has served as a cultivator for the culture to recognize the importance of native plants.

Derivation of American Attitude

In the United States, a particular style of landscape design is widely accepted,
one based predominantly on the foreground look of a manicured lawn, accompanied with a few shade trees and foundation shrub plantings. Many communities have adopted landscape ordinance laws that perpetuate this standard of appearance and use of land. Deed restrictions are frequently written to landscape to this look. The passion American citizens have for this landscape ideal is captured in columnist Dave Barry’s humor, that residential neighbors would prefer to live next to criminals and sociopaths than anyone not keeping up their lawn.

In 1950 Texas, the ideal of landscape was predominantly this same English romantic lawn aesthetic. In Heyn’s work, he challenged this ideal, which in turn challenged people to look at landscape differently. In common-sense fashion, he proposed landscapes that used plant species adapted to the climate, rainfall, and soils of Texas. Although Heyn did not exclude exotic species, the practice of favoring indigenous species was a strong challenge to the cultural norm. The culture’s landscaping standards posed a fundamental problem for Heyn. Heyn had no commercially available source of native plant material. He had to recruit and train tree contractors find the plant material necessary for construction. Heyn butted heads with some nurserymen unwilling to change from the standard.

The dominant landscape look in 1950 was not very different from the dominant landscape look of 2000. There is simply much more land consumed in pursuit of the look. The style is now deeply entrenched as a standard American way of living, and has been the subject of extensive research on landscape taste in the United States. Geographer Peter Hugill points to the English romantic landscape derivation of this taste. This historical tracing illustrates the diffusion and transformation of complex ideas and material technologies over space and time (Hugill, 1986). Heyn tried to dethrone that imported style from its place as the only
option available for landscape design. It was a daunting task, but he made great inroads, due to his consistent effort. Other early native plant proponents influenced this cultural shift as well, but Heyn’s work, as it relates to this contribution, is the main subject of this research.

Maintaining the status quo of the romantic landscape look remains expensive. A great deal of water is needed to maintain the exotic plants species. East Texas lies at the western edge of the vast eastern deciduous forest, and the state falls in warmer southern latitudes. Natural rainfall amounts are on the low end (average of 40 inches per year in Dallas, and 30 inches in Fort Worth). It is estimated that 30-40% of water use in Texas goes to landscaping. That is a tremendous amount of water required to maintain a certain landscape look. The five largest water users in August 2000 for Dallas were large estate homes, using 1.25 to over 2 million gallons during a single month. There are no restrictions or laws regulating this use of water. One home had five water meters. The estates are enormous, with pools, ponds, and of course, the perfectly manicured lawns. Undoubtedly the estates are examples of conspicuous consumption. An even greater impact of the adopted landscape style visible when simply driving through the Dallas-Fort Worth metroplex area. The spread in every direction of the look is visible in residential, commercial and office buildings. The sprawl is so vast that in terms of the impact on natural plant communities that it defies comprehension. Heyn talks about the Possumhaw (Ilex decidua), and that it is found in natural areas around Dallas-Ft. Worth. But he notes he finds it now only where there are remnants of natural communities. During the span of his career, unrestricted development has eliminated much of the indigenous landscape.

The look of the estates is the look that everybody else thinks they need to achieve. They want the gorgeous look, very manicured, just on a smaller scale.
“That’s the look everybody thinks they need to have and then you end up writing these deed restrictions that...force that look even farther” (Gasmire, 2000).

The domestic front lawn is a typically American landscape feature (Jenkins, 1994). It is not from England, but from France, that the modern lawn originates. Landscape Architect Andre’ LeNotre designed a small lawn, called a *tapis vert*, meaning ‘green carpet,’ at the palace of Versailles. The idea caught on in England, with a climate well suited to grass culturing. Soon the idea expanded with the creation of natural, or romantic, gardens “on the estates of wealthy Englishmen by the landscape gardener Lancelot “Capability” Brown, in a new, elite style characterized by a mixture of meadows, water, and trees, with grazing animals and graceful curves” (Shepard, 1967). Certainly the Native Americans shaped the landscape, but it is with the arrival of the European settlers that a greater landscape management transformation occurred (Jenkins, 1994). Indeed, the predominant definition for native plants delineates them as those plants found on the North American continent prior to the arrival of Columbus. The transformation of the American landscape included large scale changes, such as altering river courses and draining wetlands, eradicating indigenous plants, and introducing exotic plant species, some of which became invasive or brought killing pathogens (Jenkins, 1994). The introduction of lawn grasses, in the romantic style, certainly falls under the category of exotic species introduction.

“American front lawns are a symbol of man’s control of, or superiority over, his environment. Americans have moved from regional landscapes based on local vegetation and climate to a national landscape based on an aesthetic that considers grassy front yards necessary to domestic happiness” (Jenkins, 1994).

Yet, before the Civil War only the wealthy imported the romantic style of lawn, including the estates of Washington, Jefferson, Hamilton, and Penn. The
diffusion of the lawn idea spread through English gardeners, travel, and books. South Carolina is home to the first documented English romantic landscape in the United States. Mrs. Pinckney, the landowner, had traveled through Europe in 1758 and subsequently renovated her southern garden to the English style (Jenkins, 1994). Noteworthy, however, is that the continued replication of this English style in this country. It was accompanied by an active search for American features (Hugill, 1986). This search for an American element in landscape style reflected an attempt to distinguish, through the form of the landscape, from England. Social structure was understood even at this early time as being reflected in the landscape. A landscape that duplicated an English estate was disparaged as a representation of aristocracy. Only through other ‘marketing’ techniques did the lawn and larger romantic landscape catch on.

“Landed estates were successful in the northeastern United States only when the owners avoided the appearance of being elite in the English manner.... They manipulated and managed the landscape rather than directly dictated its appearance.... The Ledyards justified landscape beautification on the basis of the moral and economic benefits for everyone, not solely the family, and over the years they persuaded most of the villagers to agree with them.... Clearly derived from English values, American literature, art, and architecture...” (Hugill, 1986).

Many of the features of the English landscape were thus assimilated into American culture, becoming a status symbol of the middle class as well. With research resulting in seed advances from both the U.S. Department of Agriculture and the U.S. Golf Association, lawn became available to all areas of the country. Along with the widespread diffusion of a front-lawn aesthetic across America came corresponding ecological modifications. The exotic grasses imported to North America naturalized with such speed that they expanded west faster than the settlers who had first brought them across the ocean. The spread of “Kentucky Bluegrass”
illustrates this point. On their arrival in Kentucky, Virginia settlers thought the grass was native. In fact, it originated from the Balkans, but had spread across Kentucky (Teyssot, 1999).

Other forces caused a shift away from the English style. Photographer John James Audubon and author Susan Fennimore Cooper, nature and nativist advocates, educated the American public to the beauties of the American landscape. Susan Fennimore Cooper published a journal in 1850 that "displayed her sensitivity to the American landscape in ways like the insistence on Indian place-names that revealed the nativist search for indigenous origins and values" (Hugill, 1986). An 1855 review of her journal proposed that "the northern heritage of England and the northeastern states had produced the ability to appreciate the natural landscape. 'Southern painters and poets deal with persons and passions; -to northern poets and painters are reserved the elements of nature and that which inhabits them'" (Hugill, 1986). Noteworthy here is the theoretical discussion of the natural landscape, and the ability to perceive this native environment. Because her assumption that the northern landscape lent itself to such appreciation and discovery, it is interesting that a core group of Texas naturalists and artists in the second half of the 20th century emerge with such strong predilection to the native landscape.

Certainly early landscape architects in this country contributed to the adoption of the English landscape model. The first professional American landscape architect, Andrew Jackson Downing, lamented in 1841 "the close proximity of fences to the house gives the whole place a confined and mean character.... A wide spread lawn, on the contrary, where no boundaries are conspicuous, conveys an impression of ample extent and space for enjoyment" (Downing, 1841). In the 1840's Downing designed residential estate landscapes for New York's Hudson River Valley, and
these English based models became the working model for American landscapes (Jenkins, 1994). Downing is considered the first nurseryman and horticulture writer to have a substantial influence on the American way of life (Tatum, 1973). His books, *A Treatise on the Theory and Practice of Landscape Gardening, Adapted to North America* (1841), and *The Architecture of Country Houses* (1850) were very popular in mid-nineteenth century (Chase, 1973).

"Downing's ideal house was the 'beautiful, rural, unostentatious, moderate home of the country gentleman' set in a miniature version of an eighteenth-century English estate" (Chase, 1973). His taste could be realized in small lots, "wherever grass will grow, and trees thrive luxuriantly" (Tatum, 1973). He worked for wealthy clients, and he encouraged others to beautify their property, noting that, "We can already, especially in the finer places on the Hudson, and about Boston, boast of many finely kept lawns, and we hope every day, as the better class of country residences increases, to see this indispensable feature in tasteful grounds becoming better understood and more universal" (Jenkins, 1994).

Despite Downing's success in the north, the south discounted northern taste and developed a different landscape, where 'swept yards' surrounded by simple planting beds dominated.

"Many well-to-do southerners rejected northern taste in landscape design before the Civil War and were too impoverished to create or maintain English-style estates after the war. The landscape of the South remained predominantly rural but changed from that of great plantations to smaller farms with poor tenants or sharecroppers. It took many years for southern cities destroyed during the Civil War to begin to recover. As the southern economy gradually improved in the late nineteenth century, some gardeners who could afford it were influenced by popular horticultural enthusiasms, but traditional practices persisted in rural area" (Jenkins, 1994).

The lawn aesthetic that had taken hold in the north required the labor involved
in cutting, fertilizing, and edging to maintain a manicured look. Neighbors, shamed into compliance, learned lawn management (Jenkins, 1994). Some company towns docked employee pay of those who did not keep their lawns cut.

"Lawns represent time, money, and labor. Both the idea of the lawn and lawn equipment were sold to the American public by appealing to a sense of status. In the early twentieth century, advertisements promised the homeowner the same grass seed or equipment used by men with large estates" (Jenkins, 1994).

Other landscape architects who followed Downing continued along his bent. Herbert J. Kellaway (1867-1947) was a Boston landscape architect who published an article in 1907 titled "How to Lay Out Suburban Home Grounds," stating that the source of joy and delight for every home builder "is a good lawn. Without it all efforts at adornment seem futile. The green carpet is the canvas upon which the house, trees, shrubs, and flowers depend for setting" (Kellaway, 1907).

"The revolution in American domestic landscape that began in the nineteenth century was not due simply to the aesthetic criteria of the upper class that trickled down to the rest of society. The interaction between landscape architects, suburban real estate developers, urban reformers, moral improvement societies, the transportation revolution, public parks and golf courses, and advances in printing that provided architectural books and periodicals, builders' trade journals, pattern books of house designs, domestic guides, home magazines, and newspapers to a literate public led gradually to a new residential landscape that included a lawn of certain aesthetic dimensions. Middle-class homeowners, influenced by Jacksonian democracy, romanticism and transcendentalism, magazine articles and architectural design books, made the single-family detached house with a front yard the most characteristic single feature of European settlement in North America" (Shepard, 1967).

By the 1950's some were beginning to question the validity and purpose of the "lawn" environment. In 1953 J. B. Jackson published an article entitled "Green Desert" in the journal he had founded, Landscape. In this article he expressed fear of the universality of the lawn on the American horizon: "we wonder if (lawns) are
worth the trouble. What kind of satisfaction does the public derive from these large and frequent expanses of grass? (I think the situation is) almost out of hand” (Jackson, 1953). Jackson was not so much concerned about the ubiquity of grass, as he was with the inaccessibility of large expanses of it for public use (Teyssot, 1999).

The specific ramifications of suburban development and the lawn aesthetic to the Cross Timbers plant association area west of Dallas is telling. The Post Oak Savannah landscape has been rapidly developed for residential purposes. The Post Oaks are particularly sensitive to environmental change in their root environment. Change stemming from soil compaction from construction trucks and trailers alters the amount of aeration in the soil so that this sensitive tree species dies. Landscape architect Gasmire notes the circumstances of the Post Oak devastation.

“They kill them like crazy out here. We’re in the Cross Timbers area, Post Oak Savannah. All these trees over here in this part of the neighborhood (are Post Oak). And they have died, right and left. Huge shade trees...beautiful Post Oaks. It’s like incredible. People say you can sneeze on a Post Oak and it’ll die, which is about right. You can’t disturb in the drip line of a Post Oak. And these builders could care less. They charge ten to fifteen thousand more a lot, with Post Oaks on them, and then they die. And then the people have to spend about $5000 per tree to take them down. They’re not happy. They’re not happy at all. I’m surprised there hasn’t been some kind of legal action over it. (The builder has) done nothing to save them or to protect them.

So even though we have tree ordinances to save existing trees, I think there’s a lot that needs to be done to make sure they survive. Especially the Post Oaks. I don’t know anyone who transplanted them. You certainly don’t see them in nursery stock” (Gasmire, 2000).

A “new aesthetic” began to emerge in the seventies and eighties, advocating natural lawns, prairies, and xeriscaping (water conservation landscaping) (Jenkins, 1994). Despite this shift, the dominant aesthetic remains closely tied to the English romantic style of landscape. H. Dan Heyn’s divergence from the English style of
landscape planting design toward the use of indigenous species falls prior to this broader cultural shift in landscaping. Yet the question, after half a century of model development, lingers,

“Will the advocates of an alternative domestic landscape at the turn of the next century be as effective as those at the turn of this last century? The trend toward smaller homes and smaller cars came to a halt during the eighties as homes and cars started getting bigger again. Despite signs of movement away from manicured front lawns, there were 45 million lawns covering some 30 million acres of the United States in 1991” (Lowen, 1991).

Landscape styles do change, but some will still persist depending on cultural norms. J. B. Jackson in the mid-1950’s sounded an alarm concerning what had become the widespread adoption of the use of lawn grass, calling what he saw, ‘the great green desert.’ Another landscape architect, Andrea Kevrick at Insite Design in Ann Arbor, Michigan, also sounds the alarm referring to lawn as a ‘drug-dependent rug.’ At present, the pressure remains for one to have a great looking green lawn. A recent example illustrates this ongoing tension.

During the heat and drought of the Texas summer of 2000, Landscape Architect Denise Wilhite Gasmire found herself the recipient of a ‘friendly reminder’ letter from her affluent neighborhood association west of Dallas. She received the letter due to the browned look of one type of shrub in her front yard. Having a yard planted with many native species had already elucidated comments from neighbors. Some loved the look of her yard; others did not. “They were very kind about the way they’d phrase it, but they don’t like the look. It’s not manicured green. They’re the folks that have St. Augustine grass” (Gasmire, 2000).

When Gasmire responded to public appeals to voluntarily conserve water by not over watering her landscape, some of the plants dried out. At the time of our conversation, the area had received one-half inch of rain over a period of three
months. “I knew those shrubs weren’t dead; they’d gone dormant. They were under stress and got burned out. But I didn’t increase my watering. Other than buffalo grass, everything’s doing well” (Gasmire, 2000). The neighborhood association, which polices landscape management, wrote a ‘friendly reminder’ letter to Gasmire criticizing the appearance of the dead shrub in her front yard. The shrub was Anthony Waterer Spirea (*Spiraea bumalda* ‘Anthony Waterer’), and it grew among native plants in her yard.

“(I received a) letter from the management company, to the effect, ‘You have dead plants in your front yard. This is a reminder to replace them.’ They completely browned out because of the drought. They were completely brown. They’ve come back already.... My yard (with natives) is different enough compared with their yards, and (natives) have a different look. So you can pass by somebody else’s yard here, that’s simple, just...a row of Hollies (*Ilex sp.*) across the front, or Indian Hawthorne (*Raphiolepis umbellata*), with a couple of trees, no frills, but, everything’s green. So that’s the look they want, that very green, lean, tailored look, which I don’t have. So I got the letter.”

Irritated by the letter, Denise “had it out on the phone” with the sender at the Home Owner’s Association, but her explanations fell flat. Gasmire perceived no concern for the larger issues.

Jenkins reiterates Spiri and Schama in her writing on the American obsession with lawn. In her opinion landscape aesthetics are cultural creations. “It remains to be seen whether the environmental movement in this country can enlist as potent a group of supporters and teachers for the twenty-first century as the lawn industry, the Garden Club of America, the U.S. Golf Association, and the U.S. Department of Agriculture did during the twentieth century” (Jenkins, 1994). To this very end, books by Sally and Andy Wasowski, *The Landscaping Revolution, Garden with Mother Nature, Not Against Her*, are written. Permaculture, a movement to ensure survival of cultures through a sustainable agricultural base and land use ethic, uses
principles of design to make systems of sustainable environments (Mollison, 1991). Local chapters of a national organization called ‘Wild Ones’ have formed across the country, promoting residential indigenous plant usage and plant ‘rescue’ operations to save and reuse existing plants on sites planned for development. The goal of Wild Ones is similar in principle to the residential model established by Heyn: inclusion of indigenous plant species in the design of residential landscapes.

Recent research in Guelph, Ontario, suggests that ‘lawn alternatives’ are not very common, constituting less than two percent of the 19,901 single family homes in that city; there is a cultural inertia to change landscape style. Furthermore, motivation for the alternatives was not based on ecological understanding, but were found to be composed of ornamental non-native plant species, reflecting “people’s horticultural preferences or perhaps an inadequate knowledge or supply of native plant material.” The “alternatives observed demonstrated design cues which appear to be necessary for their acceptance by the general population. Many people continue to see neat, orderly residential landscapes as a sign of neighbourliness, hard work and pride. Good design can promote lawn alternatives by improving landscape fit or congruity and by providing indicators of landscape care and neatness” (Henderson, et al, 1998).

The author witnessed another example of an irresponsible, yet not uncommon, development practice in a suburban community northeast of Dallas. The builder of the home had filled earth on the backside of the house a full ten feet above the natural grade, and used a retaining wall to return to existing grade. This level area of fill continued only twelve feet out from the house, enough for a small patio, and was held in place with a timber retaining wall of the same height. An existing large, 24” diameter Burr Oak (Quercus macrocarpa) tree remained at the lower grade, and the retaining wall was stepped back several feet toward the house to accommodate the
massive trunk. The home's new owners were asked to sign a release of tree liability from the builder. At least half the root zone of the tree was buried in ten feet of fill, depriving the roots of essential moisture and oxygen. "That's dangerous" (Heyn, 2000).

American attitudes toward landscape aesthetic, although shaped mainly from English roots, were somewhat infused with an underlying quest for American landscape identity different from the aristocratic English style, and authors, naturalists, and poets have persevered in their quest at noticing the American landscape uniqueness. Texas landscape identity has followed some of the same national trends, with local variation due to economic condition and varying settlement pattern. The English style took hold later in Texas, and Heyn was one of the first to challenge the notion of it. It retains a very strong grip, however, although alternatives are probably more prevalent in Texas than many other states. At this point the thesis will examine how a handful of influential, allied professionals were pursuing research involving Texas indigenous plants during this same middle twentieth century time period as Heyn's professional practice.

Allies

The individual probably most recognized among the small group of early Texas indigenous plant proponents is the late Dr. Benny Simpson (d.1997) of the Texas Agricultural Experiment Station at Dallas. Books and articles chronicle Dr. Simpson's legendary pursuit of identifying, collecting, documenting, educating, and cultivating native species (Wasowski and Ryan, 1985).

In brief, Simpson was a Texas agronomist from 1954 until 1972 when land near Dallas at Renner, Texas was gifted to Texas A & M University. At this time
Simpson was given the opportunity to work at Renner and to write his own job description; he chose to research Texas native plants. In this work he concentrated on selecting resource efficient native species for release by A & M to the nursery industry. Indeed, one native plant nurseryman, Peter Loos, considers Simpson’s release of Texas Sage (*Leucophyllum spp.*), or Cenizo, selections from Texas A & M about 1978 as the pivotal point in nursery trade availability of Texas native plants, presaging a turnaround in the plant industry which did not emanate from the public. Simpson brought plants from Texas’ Big Bend area, a higher altitude than Dallas, so they were hardy to Dallas (Pinkus, 2000).

Eventually Simpson published Benny Simpson’s *Field Guide to Texas Trees*. Unfortunately upon his death in 1997, a working manuscript of Texas shrubs was lost. Through educational grant funding and a subsequent research appointment at A & M Renner, the legacy of Benny Simpson has been preserved through identifying, cataloging, and digitizing the 12,000 slides Simpson left, many unmarked, in drawers. These photos are available on a researchable database on a web site: Dallas.tamu.edu/natives.

In 1982 this thesis author, working as a designer for a proposed intensive office and commercial development, sought professional information from Benny Simpson about existing Live Oak species in north San Antonio. Simpson provided valuable information about the close groupings of Live Oak trees in an association called a mott, with offspring dependent upon the dominant central tree for sustenance, because of a connected root structure. The central tree, the ‘mother of the mott,’ should not be destroyed, was the clear message from Simpson, lest the entire group perish.

Simpson began his research on Texas native plant species in 1972. Though his
work in the 1970's was concurrent with Heyn's work, Heyn had already been using native species extensively during the prior two decades. Simpson's 'release' of Texas species to the nursery trade contributed directly to the increased propagation of native plants, and therefore to their availability in general, helping to surmount a difficult barrier Heyn encountered, the lack of an available supply of native plants.

Lynn Lowrey was another highly influential contemporary of Heyn, a nurseryman, who operated out of Southeast Texas beginning in the 1950's for 35 years (Figure 4). Lowrey eventually had nurseries in Houston, Conroe, New Braunfels, and Brenham. At one point in his career, he headed the native plant nursery Lone Star Growers' research and development program, and within six months of starting this role cultivated 400 types of native species. Lowrey became a propagator of natives because the plants were not available. He graduated from Louisiana State University in 1949 with a horticulture degree.

Figure 4. Lynn Lowrey, nurseryman, Houston area. (Photo by Julie Ryan, courtesy Wasowski).

Lowrey’s Houston nursery industry work is geographically significant. It
exemplifies diffusion of a different type than the demand-based diffusion of Heyn. Lowrey fostered supply side availability of native species in the Houston area. Lowrey propagated not only the native species but also taught ‘disciples’ in the nursery industry to value and carry on his tradition of growing and selling native plants. Mr. Lowrey directly employed, educated, and trained many of the present-day Texas native plant growers, including Peter Loos, of Conroe. When Loos worked for Lowrey in 1978 he remembers being told that he “works for that weed guy,” and conveys the dilemma facing Lowrey: an oversupply of native plants with little demand. He “had to give away natives” (Loos, 2000). Just as Dr. Simpson’s work effectively removed barriers to native plant availability, so did the work of Lowrey. Lowrey is also important because he taught the next generation of Texas native plant growers, ensuring the continuity of a sustained supply. Heyn mentioned with regret he never had an opportunity to communicate directly with Lowrey. Their strengths, had they been familiar, would have complemented their individual efforts with natives.

Heyn knew of these individuals and consulted once or twice with Dr. Simpson, and also with another botanist who worked at A & M’s Renner Station before Simpson, Dr. Donovan Carrell. Heyn remembers Dr. Carrell:

“He’d been all over the world. (He was a) botanist (who wrote a) book on potatoes (and took) expeditions to Himalayans. A lot of our plants came from that area and from China. The British brought a lot of them. They were great botanists. Captain (James) Cook (18th century explorer and navigator) had a botanist (Joseph Banks) with him and was on his voyages. A lot of plants (derive) from Far East over to America…. Crape myrtle comes from India. They brought it to the Carolinas” (Heyn, 2000).

Heyn’s own affinity for plants and his quest for information on them were apparent in his recall of Dr. Carrell. Other botanical texts, by Lloyd Shinners and
Robert Vines, figured importantly in contributing to Heyn’s understanding of and work with native species (Figures 5, 6, and 7).

The late Carroll Abbott who worked at Green Horizons Landscape, a native plant nursery in Kerrville, in the Texas Hill Country, became known as “Mr. Wildflowers.” Earlier in his career he worked as a press staff member for Lyndon Johnson, a position which afforded him the opportunity to drive Texas roads. Over

Figure 5. Title page of Shinner’s book on local, native plant material. Book was gifted to Heyn and signed by architect and work associates at the firm of O’Neil Ford, A.B. Swank, 1959.
Figure 6. Robert Vines, botanist. Author of Trees, Shrubs, and Woody Vines of the Southwest (Vines, 1960).

Figure 7. Cover of Heyn copy of Vines' book on native plants of the Southwest. "(I) had...a long time" (Heyn, 2000).
time he perceived a change in the roadside landscape, namely missing color. He set out to remedy the cause of color void: plant species loss. His strategy was to organize, value, reclaim, and restore the plants. Abbott at that time was on the faculty of Texas Women’s University, and with others formed the Native Plant Society of Texas in 1980. Others included Dr. Simpson, Dr. Mary Evelyn Huey, then president of Texas Women’s University in Denton, and Edith Bettinger, of Flower Mound New Town (Figure 8). The mission of NPSOT was to preserve and restore Texas’ natural heritage.

“All worked together to start the Native Plant Society, Texas Wildflower Day in late 1970, TWU gardens. Planted seedlings, from

Figure 8. Map of Native Plant Enthusiasts locations.
those grown in botany class. Gave one to each student to take home in addition to one planted. The idea to spread the wealth in our wildflowers was already being initiated. Carroll headed Texas Women’s University Staff (organizing) symposiums, recognition awards, exhibits, specimens to share, field trips, good times” (Huey, 2000).

These same individuals set a goal to influence the creation of a legislatively mandated Wildflower Day, San Jacinto Day, April 21st. Their lobbying included the delivery of 300 Lace Cactus (Echinocereus pectinatus) plants in 300 small ceramic pots to Austin legislators. H.R. Bill 116 passed.

Nurserymen factored heavily into Heyn’s success or difficulty in adopting use of indigenous plants. He depended upon their willingness and ability to obtain the plant material.

“We had several very good nurserymen, but we also had some really bad characters. Some really bad people. Some of them were just really.... They hated landscape architects. I had at least one of them said he was going to whip my ass, he said. I waited for him to do it and he didn’t do it.

“But they had some good ones. Ralph Pinkus (Northhaven Nursery, ‘Father of Dallas Arboretum’) was a great guy. Over in Fort Worth there was a fellow named Judd Germany who was a really fantastic plantsman in this part of the country. He had a nursery, Germany Nursery. You could go over there and he would spend a whole afternoon showing you around, talking to you endlessly about, oh, he knew more plants than anybody. Just a wonderful person. Ralph was the same way. Those two were outstanding people.

“And I located these three individual tree contractors. Cody Carter, Walter Gilbreath, and Joe Acosta. They were really good guys. I was in the woods with them lots of times. They had these crews of Mexicans. Camp out where digging. They never missed a stroke. Amazing how fast they could ball and burlap a huge 7” tree. It was amazing. These guys knew how to get that huge tree out of there and take it and plant it. Dig the pit, correct depth, set it right. It’s a real art. It was a real pleasure to work with people like that. Those Mexicans were fantastic workers” (Heyn, 2000).

Heyn mentions nurseryman Ralph Pinkus. He supplied plants in Dallas.
beginning in 1951, and experimented with some natives. While Heyn acknowledges the resistance he encountered from some nurserymen, in our interviews he focused on those individuals who helped him gain knowledge of plants and access to them. Another landscape contractor was Walter Gilbreath, whom Heyn describes as an unusual character. Uneducated, he would take Dan to show him the trees he selected for projects, pronouncing, "Ain't that a natural beauty?" They maintained a long time association, which consequently provided Heyn with a supply of plants.

Heyn and Northhaven nurseryman Pinkus had a mutual admiration. This is apparent from an interview with Frank Thrower, an architect living in Dallas' exclusive Highland Park area. Heyn and Thrower were "more or less partners ten years" (Heyn, 2000). Thrower contributed valuable skill in detailed construction of fountains.

"And as we know, Dan, you either like him or you don't, and vice-versa. So (in a recent social encounter) it was neat to see this man who is really considered by the Dallas elite especially as somebody terribly significant, the Father of the Dallas Arboretum...(praise Dan's work)" (Thrower, 2000).

In this same conversation Thrower had with Pinkus in the late 1990's, they discussed Dan and his contribution. When asked if Pinkus stated that Dan was responsible for bringing natives to this area, Pinkus responded, "Yes."

"This is significant to me, because Ralph Pinkus was part of the establishment, and Dan certainly was not and he prided himself in not being. And Pinkus really was a great admirer and respected Dan's talent and knowledge. And Dan respected Ralph" (Thrower, 2000).

Heyn needed a connection to the nurserymen to get his planting designs implemented. A Heyn-nurserymen connection facilitated the diffusion of indigenous plants.

There were no other practicing landscape architects in Dallas, or in the state of
Texas, specifically exploring the use of native species in the decades of the 1950’s and 60’s. Dan did not collaborate or correspond with other landscape architects on the issue of incorporating native species. He was a real innovator in his field, however the architecture firm which employed Heyn from 1956-59, O’Neil Ford and Arch Swank, was supportive of his endeavors. Upon Heyn’s departure from the firm to work for Texas Instruments as a resident landscape architect in 1959, the office gifted Dan a copy of Shinners new book on flora of the Dallas-Fort Worth area.

Collectively the efforts of these allies show the start of the native plants movement. Their efforts were from various professions and from different locations in the state. Heyn practiced at the same time as these allies, or prior to them. His overlap with them varied: he consulted with them, was a consultant to them, or did not cross paths with them. The next section will discuss landscape architecture, from the vantage of the profession as a whole and from notice of individuals whose work has had an impact on the use of indigenous plants.

Landscape Architecture

“(Renowned landscape architect Frederick Law) Olmsted made a trip through Texas, 1850. One of the best accounts of early life in Texas. Traveled in from the East and down into Hill Country, where German settlers were. He didn’t think much of settlers in East Texas, but he admired the Germans” (Heyn, 2000).

Olmsted distinguishes two areas of cultural impact in the European settlement of Texas, East Texas and the Hill Country. Interestingly, Olmsted, who would later be crowned the “Father of American landscape architecture,” held a high regard for the Texas German culture. What other landscape architects and trends within the profession provide some basis for an understanding of the concept of nativism and therefore offer insight into the context in which Heyn’s work developed? Landscape
architect Darrel G. Morrison, offers historical perspective on the advance of a native planting idea within the landscape architecture profession. The publications and design work of Edith A. Roberts, a plant ecologist, and Elsa Rehmann, a landscape architect, in the late 1920's contributed to a public understanding of plant association ecology and its application to landscape design. They recommended planting in association groups, based on known plant communities.

A collaborative book by Roberts and Rehmann, *American Plants for American Gardens*, proposed a planting design model which they felt would protect biodiversity in landscapes transformed by human activities. They published the articles in a national magazine, yet the model was not adopted, due to larger cultural circumstances. Their work, although not known to Heyn, serves as a milestone within the landscape architecture profession. They helped develop the concepts involving native plants in design. Working in Texas and influenced by other landscape architecture academics, Heyn independently implements a similar strategy. What is more, he succeeded in making the model a reality, more so than any other landscape architect prior to 1980.

Roberts and Rehmann compiled their book from a series of twelve articles that first appeared in *House Beautiful* magazine two years prior, under the article category of 'plant ecology.' In it they espoused “the fundamental principles upon which the indigenous vegetation is established, and the contribution that an understanding of these facts can make in the retention or recreation of the natural landscape. It draws attention, moreover, to the significance of retaining the original contours, and the adaptation of a house and garden to the lay of the land and to the spirit of the natural landscape” (Roberts and Rehmann, 1929). Roberts acknowledged the precursor to their book as being a booklet co-authored by her and Margaret F. Shaw for the
Conservation Committee of the Garden Club of America published in 1924. That booklet contained lists of specific plants organized by ecological associations. It was not until 1985 in Texas that the authors Sally Wasowski and Julie Ryan published yet another book, intended as a reference tool to aid residential planting design, which organized the Texas plant material by regional ecological association.

Morrison outlined Roberts and Rehmann's contribution, first by explaining some of the background in development of ecological concepts. He continued to point out the backgrounds of Dr. Roberts, a professor of botany who studied directly with research professors developing the science of ecology in Chicago, and Rehmann, landscape architect, writer, and lecturer on landscape gardening. Both women were on the faculty at Vassar College. Morrison explains why their concepts received support. The "cross section of native landscape-oriented activities during the first three decades of the twentieth century (showed there was)... broad professional interest in the use of native plants in ecologically based groupings, as well as in the study of natural landscapes as a basis for design, and there was even an early awareness of the potential invasiveness of introduced exotics" (Morrison, 1996).

In the Midwest, where Roberts completed her education, the prairie style of architecture and landscape architecture was developing. "...Practitioners of the prairie style placed a high priority on conserving the native flora and using it in designed settings" (Grese, 1992). Jens Jenson, a Danish-born landscape architect, is a well-known prairie stylist. In working for the Chicago park system, he established the American Garden in one corner of Chicago's Union Park.

"Increasingly throughout his long and productive career, Jensen espoused the use of native plants in designed landscapes and the study of naturally evolving landscapes as sources of inspiration for design

"...(Jensen formed an) influential conservation organization, Friends of Our Native Landscape... in 1913" (Morrison, 1996).
Other landscape architects ardently used natural models as sources of inspiration for designed models. O.C. Simonds worked as superintendent of Chicago’s Graceland Cemetery and used “local landforms and native vegetation to express regional character” (Grese, 1992). Landscape architect Wilhelm Miller, published “The Prairie Spirit in Landscape Gardening,” thereby “establishing the prairie style of landscape design as an influential movement within landscape architecture” (Morrison, 1996).

Frank Waugh worked in the East as a strong proponent of native-inspired landscape design. “Waugh strongly advocated field observation of natural landscapes as a basis for landscape design in his teaching and in his prolific writings, including many articles in the periodicals Landscape Architecture and American Landscape Architect. His book advocating this approach, *The Natural Style of Landscape Gardening*, was published in 1917” (Morrison, 1996). He was strongly influenced by Jensen and Miller, but emphasized “understanding, interpreting, and clarifying ‘the spirit of the place’ (and of) intelligently letting alone a natural landscape” (Morrison, 1996).

On the West Coast, a 1909 article by Gustav Stickly titled “The Natural Garden: Some Things That Can Be Done When Nature is Followed Instead of Thwarted,” helped to advance the concept of native, natural gardens in California” (McLelland, 1993).

“In 1927...the venerable Olmsted Brothers' landscape architectural firm from Brookline, Massachusetts, designed a ‘wild garden and native plant preserve’ for the Ahwahnee Hotel in Yosemite National Park’s Yosemite Valley.... The success of this project and its popularity with the public provided a stimulus for the National Park Service to expand the concept to other parts of Yosemite and to other western parks (McLelland, 1993). Subsequently, in the 1930's nurseries for the propagation and growth of native plants were established in national parks ranging from Acadia National Park in
Maine to Sequoia National Park in California, as well as in many state parks.

"In (the) 1930's, the National Park Service adopted a policy of "landscape naturalization" under the leadership of Harold C. Bryant, assistant director for education. Under this policy, exotic plants were banned in any new landscape development and removal of any already-present exotics was encouraged" (Morrison, 1996).

Dan Heyn and his friend, the architect Frank Thrower, were familiar with the landscape architects working for the CCC and the WPA during the depression. In office conversations with student intern Phoebe Cutler, Frank touted the marvelous work of those earlier landscape architects in park and civic projects across the country. Ms. Cutler continued graduate studies at Radcliff and Berkeley and from these office conversations developed a graduate thesis on the role of landscape architects during the depression (Cutler, 1973 and 1985). After three decades of 'native landscape oriented activities,' interest by landscape professionals declined.

"(These concepts failed to be adopted into the mainstream of) landscape design and management practices during several of the intervening decades between the book’s first publication and the present. It has been only since the 1970’s, following the first Earth Day in this country, that many of the ideas advanced...have resurfaced in the literature of landscape architecture. Today, native landscape proponents in this country are viewed with a certain skepticism and even suspicion in some quarters” (Morrison, 1996).

In Parkwyn Village, Kalamazoo, Michigan, architect Frank Lloyd Wright promoted the prairie style in proposing native plantings be added around the perimeter of residential home sites, though he was not specific in detail of what those plants were to be. The plan does articulate a spatial arrangement pattern for landscaping individual lots in order to arrive at a natural character. This was somewhat successful, and did more than offer aesthetic character; it provided animal habitat where it did not previously exist, since the land had been cleared for farming.
The native planting could have been achieved through more detailed specification.

Several reasons portend "the decline of ecologically based design." Among those reasons: 1) the end of the Estate Era, 2) the Modern Movement in landscape architecture, 3) post-World War II suburbanization, 4) the landscape industry, and 5) landscape architectural education (Morrison, 1996). It is in the middle of this period of native plant/habitat design decline, that Dan Heyn practiced landscape architecture in the Texas Southwest. Heyn’s work is a strong statement supporting the use of individual native species.

“I’ve always used a combination of exotics and native plants. I never tried to do exclusively native plants. As to what I think would work well and achieve what I wanted. There are people who do that you know, well, that’s not what I am. There are lots of really well adapted exotic plants. If it’s not invasive…” (Heyn, 2000).

Yet Heyn did turn his architecture associates and clients away from the style of landscaping that exclusively used exotic species with a singular view of individual plants as sculptures. Because he made this change, he helped foster an appreciation of local plants. Later, about 1970, an even broader regional plant ecology movement began. Heyn, by turning the landscape focus to indigenous plants, helped set the stage for this movement.

A new environmental era began in the late 1960’s when environmental awareness increased. From Morrison’s analysis, the reemergence of ecological design commenced not only with Earth Day in 1970, but with Ian McHarg’s landmark book, “Design with Nature,” published in 1966. With this treatise came an encouragement of considering ecological and environmental factors in large-scale land planning. The McHarg vision pursued environmentally sensitive land-development practices so that native plant communities could be preserved.

The awareness of pesticide dangers furthered environmental awareness; water
shortages in more arid regions of the U.S. led to the practice of water conservation landscaping, such as 'xeriscaping.' The practice espoused the use of drought-adapted native plants in garden design. Equally important has been a broader base of literature defining the problems associated with the over development of turf grass areas (Morrison, 1996). A few landscape ordinances across the U.S. have provided for the protection or planting of native plant species. Since 1975, Morrison himself has worked on native plant restoration and ecological restoration projects since 1975, including the Lady Bird Johnson Wildflower Center master plan and the World Birding Center in the Texas Rio Grande Valley, a ten-site habitat restoration project targeting migrating birds.

Nationally, then President Clinton issued a presidential memorandum in 1994 calling for 'Environmentally and Economically Beneficial Landscape Practices' in federal projects. The intention was to use regionally appropriate native plants, to protect natural habitats from destruction during building and site work construction, to lessen dependence upon chemicals in managing the landscape, and to practice water conservation landscaping.

"The guidelines that have been developed for the implementation of these provisions, in many respects, would be met by following the design approach proposed in Roberts and Rehmann's 'American Plants for American Gardens'" (Morrison, 1996).

Recent articles and books explore the possibility of creating habitat for wildlife such as birds and butterflies in home landscaping. In Texas, the division of Texas Parks and Wildlife has established a program to designate home landscapes as successful examples of "Texas Wildscape." Morrison sees the importance of the text of Robert and Rehmann in the model it provides enabling "us to see more clearly the beauty of these and other once-common native associations wherever we might live. They provide a way of looking at our natural environment and suggest that an attitude
of humility be adopted as we manipulate that environment.” A few years after the book’s publication, Elsa Rehmann articulated a broad vision calling for ecological design principles in a 1933 article in Landscape Architecture magazine. This vision saw “the application of ecological understanding in a wide variety of situations far broader than individual gardens and private estates” (Morrison, 1996). The book is a good tool for field use to garner a deeper understanding of “native plants as well as to a keener appreciation of the relationship inherent between native vegetation and the landscape. It is this inherent relationship that many a landscape architect seems to forget in his eagerness to organize land and landscape for human use and to show his creative ability as an artist” (Roberts and Rehmann, 1929).

Heyn seems to manifest in his practice the vision articulated in writing by Rehmann. Dan Heyn, through interest, education, and decades of design practice, became intimately familiar with the inherent relationship of Texas native vegetation and the landscape. His personal quality of humility is also reflected in this approach to planting design. Subsequent chapters will discuss the methodology and results of his specific design projects to help illustrate this point.

Landscape architects, who specify plant material, appreciate the availability of native plants for use in landscape projects.

“Adding the natives into the plant palette of plant materials...has certainly broadened our palette and made things far more interesting in landscaping. Because it’s added a lot of plants we didn’t have. And they’re working well. Skulls Cap (Scutellaria wrightii). Coreopsis (Coreopsis lanceolata). Coneflowers (Echinacea spp.). Sages. Lots of perennials. Shrubs, zilch. Southern wax myrtle (Myrica cerifera)(is) fast growing, brittle. May not use. Desert Willow (Chilopsis linearis). It’s O.K. Thought (it) might take place of crape myrtle, but blooms aren’t nearly as significant. They’re fast growing, and brittle, too. Different look; good to have option. Shade trees...(I) wouldn’t do anything but natives” (Gasmire, 2000).

During the early period of Heyn’s exploration of native planting design he
knew of no other landscape architects using native plants. He was aware of the work of other local landscape architects. At one point Heyn carried business cards espousing his ability to provide 'Indigenous Planting Design,' but later “decided I didn’t need that.” Further, after joining the American Society of Landscape Architects (ASLA) in 1967, Heyn continued his successful design practice, but quit the landscape architecture professional organization eight years later, for ethical reasons.

“I quit ASLA back in ‘75, after they began to let nurserymen and anybody else in it. I didn’t think it was a very professional organization in my opinion. I had nothing against most nurserymen. Professionals don’t sell plants or do contracting. You’re not the owner’s agent any longer” (Heyn, 2000).

Post 1980 “native plant design” seemed to occur on a much larger scale, and plant material was much more readily available. Two recognized landscape architects were Michael Parkey and Linda Smith. Example projects include the Tierra Verde Golf course, which, through design succeeds because the golf cart path itself serves as a barrier to protect the native species from exotic grass invasion. The landscape designer for that project communicated that in order to design native habitat a different thought process was required. Vegetation was planted around water areas to filter some of the chemicals. Some of the existing plant species, specifically Little Bluestem (Schizachyrium scoparium), were moved from land development areas to the golf course. Water was used the first two years to establish the native species, and then it was discontinued.

Other landscape architects in Texas, in the Dallas area, after 1980 gained a reputation for focusing their planting design on native species. Prior to 1980, concurrent with Heyn’s period of work, professional landscape architects Arthur and Marie Berger
“didn’t particularly emphasize native plants, but Arthur was famous for his perennial plants that he used. Part of the arboretum is the estate that he did, DeGolyer. (He designed) a huge magnolia alley. Huge magnolias. He and Marie had worked with Thomas Church. (Church)...influenced me. Wonderful drawings. I have his book. Lawrence Halprin worked with Church at one time, didn’t he?” (Heyn, 2000).

Yet others did not change from established planting traditions. Roland Jackson, a longtime landscape architect in Dallas, whose practice includes work throughout the state, says that he still does not plant natives much. Yet Myrick, Newman, Dahlberg, the precursor firm of Jackson’s present office, did a “lot more planting (than Heyn)” (Pinkus, 2000). In contrast to his professed manner of plant design, Jackson has worked tirelessly with the founders of the Dallas Arboretum, beginning in the mid-1980’s. He reflects that from his recent study of arboretums that the Dallas Arboretum is a display garden. The arboretum founders have decided to include a section with native plants in the next expansion. Heyn’s view of the arboretum has long reflected a sentiment similar to the more recent Jackson analysis.

“Glad they did it. (They) saved (the beautiful DeGolyer) house. Little too artificially maintained—not exactly my conception of an arboretum” (Heyn, 2000).

It is both interesting and significant that the Arboretum continues to evolve in the 21st century. More and more, its founders and landscape architect designers recognize the importance of native species. Arboretums are powerful because of their ability to protect endangered plant species, and also through their missions of public outreach--educating future designers, the landscape industry and the general public.

“It’s almost hard to be a landscape architect to me if you are environmentally conscious, because it’s like a contradiction. What the client wants, and the look they want, and what you think is ethical. And they don’t match. Texas is a tough place to have this beautiful garden look that people want. It takes a lot of work. And it’s not native. There’s nothing normal about this look that we’re all trying to
create. I find it kind of difficult to do. You know it’s kind of a contradiction in what you feel is ethically right and what society expects your lawn to look like. They don’t mesh” (Gasmire, 2000).

In conclusion, Morrison’s foreword in the new publication of American Plants for American Gardens is hopeful that the philosophy espoused by Rehmann spreads.

“(I hope) respect and admiration for indigenous plants and naturalistic settings will be heightened, along with efforts to restore them to designed and managed landscapes as well as to preserve them in areas where they already exist” (Morrison, 1996).

This chapter traced the historical evolution in indigenous planting design, and some pertinent cultural issues influencing and influenced by the movement. The culture of Texas was fertile for growth of a movement seeking to create a stronger sense of place and identity. Though styles of landscaping imported to the United States from Europe were widespread, a small number of Texans worked to promote a landscape that used domestic plants. Most landscape architects followed the European landscape model, but Heyn decided to change it. Chapter III discusses the methodology employed to analyze Heyn’s work.
CHAPTER III

METHODOLOGY

The author took a field research trip to Texas in the October 2000. The purpose of the trip was to investigate how native plants are used in the landscape in Texas. The focus was to gather information from an indigenous planting designer’s work, from his associates, and from the larger native plant enthusiast community. The decades 1950-1980 were the focus years. Data was recorded through traditional note taking and through video and audiotaping. Copies of landscape drawings, design resource materials, and photographs were obtained.

H. Dan Heyn was interviewed at length; three days of the trip (not consecutive) were spent in the home, office, and on project sites of H. Dan Heyn in Richardson, Texas, and traveling with Heyn to the Sewell Residence near Crowley, Texas. Discussion centered on his landscape architecture projects, his childhood, and some of the more memorable experiences shaping his career. As his Richardson home and office are combined, plans, plant lists, specifications, photos, and drawings were readily available, as a particular project became the subject of discussion. Time did not permit a comprehensive review of all project drawings, but could become the subject of additional research.

In addition, many allied professionals were interviewed through personal contact, phone interviews, and the public by means of a written survey. Those questioned include: landscape architects working in the Dallas area; landscape architects working in other locations specializing in native plants; architect associates of Heyn; native plant nurserymen; Native Plant Society members; Texas A & M
extension service native plant specialists, and retail native plant buyers at the Lady Bird Johnson Wildflower Center in Austin.

Through phone and personal contact with landscape architects in Texas, names of landscape architects currently specializing in native planting design and of nurseries supplying native plants were obtained. From American Society of Landscape Architects (ASLA) publications, names of landscape architects and names of firms specializing in native plant restoration were learned, and those individuals contacted. Darrel Morrison, a Fellow within ASLA, in particular was helpful, having written the historical foreword for the new publication of American Plants for American Gardens. A chapter president of the NPSOT (Native Plant Society of Texas) provided names of active native plant growers (Peter Loos), who worked directly under Lynn Lowery, and of a current Texas A & M University extension researcher, Dr. William Welch, working on native plant education, research, and history; they in turn were contacted. Heyn made reference to architect Frank Thrower as a source very familiar with his work, and he was interviewed. Phone interviews were conducted with many of the individuals. Personal interviews were conducted as feasible, and occurred mainly during the course of a weeklong field research trip to Texas in the fall of 2000. The researcher attended two days of the annual conference of the NPSOT during this same week, and acquired valuable historic information about the society, its founding members, and current information about notable projects, research, designers and growers through the sessions and field trips. Dr. Mary Evelyn Huey, former president of Texas Women's University and charter member of NPSOT gave a keynote address on “Revisiting Our Origins,” a verbal history of founding members and motivations. The conference sponsored a field trip to the Noble Foundation’s Coffey Ranch to observe current research on indigenous
species.

Interview questions were open-ended, and focused on work with native plants (see Appendix B); questions were intended to ascertain locations and define time frames of particular native plant species propagation and usage in order to determine how Heyn's work fit into a larger, more known framework. Several interviews were recorded with permission on video and audiocassette tape, and the conversations were later transcribed into text.

‘Native plant buyers’ were contacted through means of an HSIRB-approved, written, voluntary survey distributed at the Lady Bird Johnson National Wildflower Center Spring Gardening Festival event in April 2001 (see Appendix C). Nursery grower Pat McNeal first contacted the Wildflower Center to determine interest in conducting the survey. Denise Delaney, Director of Horticulture at the Wildflower Center approved the survey, and Senior Horticulturist Julie Krosley directed five interns to solicit respondents in the native plant sale area. This survey, too, intended to establish a profile spatially, temporally, and contextually, of people engaged in purchasing and using native plants. The results are not random respondents from a broad population spectrum but rather are taken from a specific, targeted population. The Wildflower Center also asked to include several questions to help them make future decisions on lecture topics at Fall and Spring Gardening Festivals. Interest in how to design with native plants surfaced as one notable area of interest. 126 individuals responded to the survey. Krosley mailed the completed surveys to the author who in turn aggregated the data and interpreted the results (see Appendix C). The raw data was immediately made available to the Wildflower Center, per request. Where applicable, portions of the results are included as excerpts within the thesis.

The bulk of the field research week in Texas was spent interviewing the
subject of this research: H. Dan Heyn. The thesis author is a landscape architect, and in the past worked together on a number of projects with Heyn, projects originating from Heyn and Heiny-Cogswell clients. The view of Heyn, perhaps, is not completely objective due to professional rapport and history between the subject and the researcher. The benefit of this rapport, however, is unlimited access to Heyn’s work, family, and stories. Heyn’s son Hank D. Heyn, Jr. provided assistance in the form of information, mailings, and communication pertaining to his father’s work. Particularly instructive was the experience of traveling with Heyn south of Fort Worth to visit a residence whose landscape Heyn designed.

Obtaining quantitative data on the change in native plant use proved difficult due to a lack of readily available and accessible information. Nursery catalogues and species production statistics were sought from various sources, including Heyn’s office, Texas nurseries, and from the United States Department of Agriculture Census of Horticulture. Records were either not kept, were not publicly accessible, were lost in fires, or did not contain specific enough information on indigenous plant species. This approach was therefore abandoned for qualitative research methods.

The research looked at Heyn projects for evidence of diffusion. The diffusion mechanism was discussed. A larger view of Heyn’s design work, artistically and practically, also illuminated his striving to achieve in a holistic design sense a Texas sense of place, through choices made of construction materials, the form of the projects, climate considerations, and of course, planting design. The context of each project, in the sense of professional, natural, and resistance ‘barrier’ factors was analyzed. The diffusion emanating from Heyn’s professional work occurred in parallel to the work of other native plant proponents. Analysis of this group showed their contribution to the larger picture of Texas native plant appreciation, and of the
nurseries that supply these plants.

The text of audio and video recordings, survey results, notes from conversations and presentations, have been examined for evidence of plant diffusion, for meaning in creating a sense of place, for barriers of supply or resistance, and for context, in professional, natural, human, and particular site circumstance. Heyn projects were then reviewed for specific diffusion illustration, supply barrier, resistance barrier, professional context, natural and human context, and site conditions context, and in the whole, sense of place. The Analysis section will delineate the review process developed to study Heyn's work.

Issues of Bias and Experience

Besides the more recent information gathered on the subject of indigenous plants, the author, having worked in Texas four years in the early 1980's both for the firm of Myrick, Newman, Dahlberg, Inc. (MND) and for herself in the firm, Elizabeth A. Heiny & Associates, had personal experience with landscape architects and planting design. She is thus familiar with the change in planting design focus toward the natives. In the early 80's she attended a talk by Lady Bird Johnson on Texas Wildflowers presented at Southern Methodist University in Dallas, when Lady Bird was promoting the newly formed National Wildflower Research Center. She attended a seminar presented by John Thomas, founder of WildSeed, Inc. near Houston. At the time WildSeed was a fledgling Texas wildflower seed company. Thomas had a goal to increase the availability of wildflower and prairie seed through research conducted both in the company and jointly with the National Wildflower Research Center. On her own projects, the author sought assistance from botanists, including the renowned and amiable Benny Simpson, and worked with another landscape architecture student
intern, Lori Dennis, who assembled information on wildflower cycles, blooming periods, etc for use by the designers within the landscape firm of MND. Kay Tiller, author and well-known wildflower proponent in Texas, conducted marketing for MND, and she possessed a great affinity for the work landscape architects were trying to achieve with wildflowers in such projects as the DFW airport. Others at MND, including partner Walter Dahlberg, supported the Green Hills Environmental Center, south of Dallas.

In 1984 the author obtained from the Texas State Department of Agriculture a newly published set of two books on detailed native tree nursery stock sources in the state. It is during this time of landscape architecture practice, developing her own approach to planting design, that the author fortuitously met Heyn. Given the tremendous effort she experienced in practice in the early 80’s in the merging of data, research, and plant sources to design and plant constructed landscapes with native plant material, it became apparent in work with Heyn that he had already achieved so much to this end in the prior decades. An appreciation of the even greater difficulty and effort it must have taken Heyn to practice ‘Indigenous Planting Design’ was thus immediate for this researcher. Research bias in this case, though possible, is in actuality participatory observation possessing important advantage given the inherent researcher knowledge of the task facing Heyn to accomplish what he did during the decades 1950-80. Because of her own professional practice in environmentally responsible landscape design, she is well positioned to interpret the challenges Heyn faced. Because of experience with native planting design in the early 80’s, she can explore the subtext to that period.
Analysis

Sense of Place

Analysis of sense of place in Heyn’s work was discussed previously. Kevin Lynch articulated the importance of sense of place in writings, such as in *The Image of the City*. Lynch discussed the need ‘mobile animals’ have for external environmental sensory cues. The mobile animal organizes the cues and uses them for survival. This process of recognizing and patterning our surroundings is vital for emotionally well being. “A good environmental image gives its possessor an important sense of emotional security. He can establish an harmonious relationship between himself and the outside world” (Lynch, 1960). The external environmental sensory cues created in Heyn’s projects included cues to ‘mobile animals’ through inclusion of the regional Texas flora, the use of local hardscape construction materials, and by the practical use of water in designed water features, appropriate for the Texas climate.

Lynch defined good environments as having distinct and identifiable character, providing individuals with a sense of place and home. “With it (sense of place), he can begin to make relations; he has the visible basis for a sense of belonging; he can savor the uniqueness of places and people” (Lynch, 1990). Lynch proposed a number of policies in the example of Central Boston to help maintain a sense of place and time. To study Heyn’s work, I will use several of these policies. The three policies extracted from Lynch’s writings follow: 1) Maintain and strengthen character, 2) Preserve a sense of continuity with the past within a context that allows for change, and 3) Enhance natural and manmade geographic features (Lynch, 1990). Heyn employed these techniques in his work with the result that a strong sense of
place was established. These findings are further discussed in Chapter IV.

**Diffusion**

Carl Sauer (1889-1975) of the University of California Berkeley conducted seminal diffusion research in his work "Agricultural Origins and Dispersals" studying crop diffusion in primitive cultivation and primitive economies (1952). He sought to unify the areas of physical and human geography, and became a strong advocate for the humane use of the environment (Leighly, 2002). Sauer became concerned with problems of the land while teaching at the University of Michigan early in his career. Michigan forests were clear-cut for timber to rebuild Chicago after the devastating fire, etc. Sauer realized that once cleared, however, the land became unusable for agriculture. Sauer wrote on land issues pertaining to human development, and on the state of America prior to human settlement (Leighly, 2002).

Most importantly, Sauer sought to understand cultures and cultural history to understand human "tenure on earth" (Kenzer, 1987). In order to do this, he identified the role humans played in the diffusion of plants. He identified a series of stages of plant crop diffusion by early cultures: plant domestication, vegetative plant selection, and seed selection. Sauer uncovered how plants dispersed in early societies. He recognized the importance of obtaining knowledge about these plant diffusion processes when he said, "We remain a part of the organic world, and as we intervene more and more decisively to change the balance and nature of life, we have also more need to know, by retrospective study, the responsibilities and hazards of our present and our prospects as lords of creation" (Sauer, 1952). Emulating the plant diffusion focus of Sauer's curiosity, this thesis studies the role Landscape Architect Heyn played in plant diffusion during the 20th century in Texas. Furthermore, it seeks to
discover the type of impact Heyn had on plant dispersal.

Preliminary study of Heyn's work show that plant diffusion occurred. Heyn employed plants to achieve design effect and to serve practical ends such as the stability (longevity) of plants, since these species were adapted to the soils and the climate. Heyn was the first to plant four Texas plant species in new locations: Southern Wax Myrtle (Myrica cerifera), Figure 9, Mexican Plum (Prunus mexicana), Figure 10, Crossvine (Bignonia capreolata), Figure 11, and Possumhaw (Ilex decidua), Figure 12. These he made familiar to the public (see Appendix D). He qualifies this point in typical humble fashion.

"I had to find people to go and collect those (Southern Wax Myrtle). It
comes from East Texas, but it’s used pretty commonly all over now around here. I remember I eventually used some out in Midland, if you can believe it (laugh). They did well. Which is pretty amazing, really. You usually can’t move plants from east to west, as you know. Of course there are other factors. Soil and acidity are big factors.

"Yes, we collected Mexican Plum from the wild.

"Crossvine...I think that I found a few in some nursery, but I had never seen them used anywhere before.

"(Possumhaw was) collected, absolutely. Their range is wide. They’re around what’s left of nature in Dallas-Ft Worth area" (Heyn, 2000).
Further scrutiny of Heyn’s design process shows that diffusion occurred in several ways. Additionally, these various ways at times occurred simultaneously. Three main types of diffusion are seen. In a fourth type, the plant’s location is not changed, and thus is not technically diffusion. The plant is ‘moved,’ however, from one landscape type into another and from one use to another. This fourth is referred to as a ‘pseudo-diffusion’ method. Heyn used all four types, which can be defined as follows:

**TYPE A: Global to Region.** This involves the use of transcontinental exotics as planted exotics in Texas. Heyn employed this method skillfully, but the method
itself was not new with Heyn. In at least one place where Heyn worked, Midland, the technique was new. This method was the dominant method in developing landscapes prior to 1980, and remains customary, but other options are now also available.

**TYPE B: Region to Region.** Texas species native to a particular region were used as exotics in other parts of Texas. This method was new with Heyn.

**TYPE C: Region to Local.** Texas natives were used as natives within their natural range but in new locations. Early in Heyn’s practice, species were relocated from wild areas; later, native species were added from cultivated nursery stock. The former leave species numbers unchanged, but in the latter, the species numbers increased.

**TYPE D: Conservation.** This ‘pseudo-diffusion’ incorporated existing
native species into a new landscape context, that of a different land use. The plants were not moved, but rather through the process of drawing existing conditions, existing tree species and other significant natural areas were located on site drawings, and the design was worked out around the presence of the located and valued plant species. Type D was achieved through site design and layout. The existing plant species were conserved, though the ecosystem that would support continued regeneration of the plants years ahead might not have been. This method was not new with Heyn, but as an example of a landscape architectural relatively standard practice, Heyn’s example was commendable. This method was critical to achieving a sense of place; the form of the plants was designed to endure. This type provides a model for others who shape landscapes, including architects, planners, and engineers. It is another example of how to incorporate the ‘wild’ into new developments. Planner Randall Arendt offers another model in the form of ‘open space planning’, detailing techniques for “landowners, developers, local officials, and conservation organizations who are interested in conserving land through the development process so that their communities may enjoy the benefits of an interconnected network of open space in years to come” (Arendt, 1996). The challenge to achieve conservation of plants or open space remains great, because many sites lose all prior species when developed. The model presented by Heyn shows how to accommodate at least some surviving indigenous species (Figure 13).

**Barriers**

Resistance is another issue important to an understanding of diffusion. Heyn faced many barriers in his indigenous planting endeavors. One was the poor supply of
indigenous plants. Heyn overcame this barrier by first collecting plants from wooded, wild areas. The problem of plant availability was a constant theme throughout Heyn’s practice. Heyn was able to nurture relationships with specific landscape contractors and nurserymen. They were sympathetic to his efforts, and he mentions them appreciatively. Heyn felt that the greatest resistance to native plants came from the nursery industry. The difficulties he experienced in working with many in the nursery sector caused him in the mid-1970’s to disengage himself from the national landscape architectural organization, the American Society of Landscape Architects, when that
organization opted to permit grand fathered memberships to nurserymen. The plant availability problem, however, has been greatly mitigated by the concerted effort of many later nurserymen. Many of these nurserymen served as apprentices to Lynn Lowrey (whom I discussed earlier). Over the decades of the 80’s and 90’s the situation changed to the point that, incredibly, in Texas many native species stores such as Wal-Mart (Loos, 2000).

However, ascertaining the availability of native species in quantitative data was not possible. Native plant nurseryman Ted Doremus, with a nursery forty miles north of Beaumont, Texas, stated that his nursery does not track the sales of species. Species type, moreover, varies from year to year. He “plays it by ear,” and does not grow large numbers of any one of 700 species, despite a reputation among some NPSOT members for being a big supplier of native species. TreeSearch Farms has sold natives since 1983. They, too, do not track sales records. They push the sale of natives to contractors. Bruce Miller Nursery, with five locations, “sure wouldn’t” have sales records. The supply of natives available in large quantities from stores such as Lowe’s, Wal-Mart, Sears, and Home Depot sometimes is misleading. With plants grown in another state (California) under ideal greenhouse conditions from suppliers such as Hines Nurseries, their hardiness is compromised and the plants often do not survive. This confounds the reputation of native plants with an erroneous perception that they are difficult to grow. It raises the issue of cultivars vs. native genotypes as well. Although natives are becoming more popular, the “craziness is still going on” (Odegar, 2000). Hines Nursery records were unavailable, and a fire destroyed its propagation in the mid-90’s. Some in the nursery trade feel that Hines follows trends in lieu of conducting its own research. The NPSOT web site (npsot.org) maintains a list of native plant nurseries and contractors, and in 1992 the
society distributed regional plant lists to those in the nursery trade. The organization itself grew from seven regional chapters to the present 38 chapters. In 1991 Peter Loos, a grower who had worked in 1978 for Lynn Lowrey, helped develop a resource list of native growers. There are “never good statistics” and “no good data, don’t know why people left (business of growing natives)” (Loos, 2000).

With Benny Simpson’s A & M release of five or six selections of Texas sage, touting them as “these are the best,” and the Dept. of Agriculture marketing campaign to promote natives through the publications of Texas Native Plant Directory 1984 and Texas Native Tree Directory 1984, growers such as Hines began to mass produce species. 1984 was pivotal as the beginning of a much larger trend (Loos, 2000). Loos continues to discern the difficulty of planting true native species, given mass marketing of species with catchy names that are similar to indigenous species names. Heidi at TreeSearch Farms recognized the length of time spent educating the public on natives: sixteen years. And with the effort, they still find the issue of underlying importance to plant purchasers is a good floral bloom. Loos feels much has been gained since 1995. He estimates one to two percent of his customers specifically want native plants. Others may ask for Possumhaw, though, which is native, though they are not conscious of that fact. Loos too maintains a demonstration garden to teach people about plants.

In 1983 TreeSearch’s supply of natives included only trees. Without records, it is impossible to figure numbers that they sold, but they recently supplied 100,000’s of fourteen varieties of native oaks in tree liners. Aldridge Nursery, southwest of San Antonio, has been growing some natives for sale since 1969. They experienced a problem with production, that of maintaining a consistent product. They find they made a three to seven year investment before selling species, and in some years the
time rose to twelve years. There are other issues, too. Herb Black, of Aldridge, feels that Possumhaw has a limited market because of personal taste. “Somebody has to like it. Nice reforestation, parks, highway; not homeowner, (who) likes evergreen.” Couple public attitudes with growers’ difficulties- “seedlings a mess, no conformity in growth, wasted ten years on that,” (Black, 2000) -and the challenges are apparent.

This finding translates into economic decisions on whether or not to grow particular native species. Aldridge grew Crossvine in 1994, but due to limited sales, ended up giving away the plants. Aldridge has grown Southern Wax Myrtle since 1997. In 1998 they began tracking their production and sales, but these records are for their own internal use in making business cost accounting decisions. They will not release such proprietary data. Black feels Aldridge has “plugged into the 21st century finally. Used to be mom and pop; now more corporate. Whether will sell” (Black, 2000). A second barrier included the resistance H. Dan Heyn experienced in working with some nurserymen. Heyn overcame this by seeking different nurserymen who would help him to accomplish the planting of native species.

**Context**

I define four types of context within which Heyn worked. The first refers to other professionals, what they were doing, and how Heyn contributed to them or they to Heyn. I defined much of this in “Allied Professionals” in the literature review section, and I note other examples in Chapter IV. In a second sense, context refers to a large natural setting, the realm of dwindling and endangered plant species, the impact on landscapes of extensive urban sprawl, and the domination of some invasive species, again discussed in the literature review. In yet another sense, context refers to particular site conditions found on Heyn’s projects, profiled through existing
conditions notes on drawings. A fourth important aspect of context refers to the person or persons intended to use the project once it is completed. In light of these issues, the results are next presented.
CHAPTER IV

RESULTS

The results of the study are presented herein. Projects or groups of projects representing diffusion, sense of place, context, and restraint are included. In addition I wove other factors pertinent to the study of native plant diffusion into the chapter. They are integral to the history of Heyn’s project work. Finally, I present results of the survey conducted at the LBJ Wildflower Center.

Texas Instruments, Midland, Karnack:

Diffusion

During the three years Heyn spent working as the resident landscape architect for Texas Instruments (1959-62), he learned something about himself: he is not a corporation person. Despite this discrepancy, Heyn appreciates that the position afforded him the opportunity to conduct testing with Texas plant material on their corporate campus in Northeast Dallas.

“I had the opportunity to experiment. On site there, found some Eve’s Necklace. It’s Sophora affinis. There was some growing on site. I had to look it up. Nobody ever knew what it was. So I transplanted some of those. Had a man there that could dig and plant them. Now they’re used some. They are out at the (Dallas) Arboretum. They have a grove or several groves. It’s an interesting plant. It’s not spectacular, but it’s kind of nice. It has these bean pods which are the necklaces, and purple flower, not terribly spectacular, not bad. Of course they’re very adapted to the climate.

“I remember (Texas Instruments) had a wooded area, a climax stand of
Cedar Elm (*Ulmus crassifolia*), mainly. One of these Eve’s Necklaces had germinated next to this very large Cedar Elm and in its search for light it had almost become vine-like and it had gone up the trunk of this Cedar Elm. If that wasn’t weird. And, I think it was very tall. I didn’t think they could get that tall. I imagine in its search for light it managed to get up there.

“I transplanted some Soapberries (*Sapindus saponeria drummondii*) on the site, too.

“(I) had a grove of Post Oaks planted. Walter Gilbreath (was a) wonderful tree contractor. (I don’t) think anyone else (since has successfully transplanted Post Oaks). Four to five-inch (caliper) range. All lived. Did quite well.


“Also, planted Mesquite trees; no one done before” (Heyn, 2000).

Noteworthy about Heyn’s discussion of the experimentation on the Texas Instruments corporate property is the detail he calls forth forty years later. His recall of the plants and their form, adaptations, and culture requirements, is vivid. The intimate knowledge of the plants shapes the perspective of his memory.

Heyn’s understanding of plants was not easily obtained, but was a development requiring decades of research and observation. He mentioned being stymied about the identity of the Eve’s Necklace plant, after he had already worked for a decade full time in landscape architecture. He determined the plant’s identity and subsequently found ways to use it in a new corporate office landscape.

From Heyn’s recollection, at least one type of plant diffusion was evident in the T.I. work. Transplanting the Eve’s Necklace was Type C diffusion, region-to-local, meaning that a plant was moved from within its own region to another location in the same region. The moving of the Post Oak trees is another example of this type
of diffusion, but with a twist to the diffusion story, namely the barrier of extreme fragility of the plants when root soil disturbance occurs. The Post Oak has a growing range covering the Southeastern U.S., and extending west through more than half of Texas. In the Dallas area, the Post Oak is the dominant tree of the Cross Timbers Post Oak Savannah ecology. Heyn used a tree contractor to dig the Post Oaks from the Cross Timbers area south and west of Fort Worth, and to transplant them to the north Dallas T.I. property. The decision to move the sensitive Post Oak trees from one part of its native region to another was then new. It remains a novel accomplishment. This was Type C diffusion, with an extreme natural barrier, in the form of plant sensitivity to a changed soil environment. Heyn overcame the problem by working in concert with a "damn good tree contractor" (Heyn, 2000).

The earlier literature from the Noble Foundation Coffey Ranch tour discussed the Post Oak Savannah area under the experimentation of prescribed burns. The opinion of researchers involved in this study is that the Post Oaks are actually greater in number today than they were prior to Western European settlement. The savannah is presently more heavily wooded. From experiments trying to thin the ratio of savannah Post Oaks with fire management techniques, the mature Post Oaks proved to be fire resistant; trees were not thinned even after repeated burnings over a number of years. Speculation from these results is that the burning in earlier centuries was more frequent than the burning prescribed in the study. More young Post Oaks were lost from fire, eventually leading to fewer Post Oaks.

The Post Oak was therefore found to be fire resistant, yet it has other vulnerabilities: it is not at all tolerant of soil compaction or of root cutting. The stresses placed upon it in new residential development frequently kill it. As Gasmire stated previously, the Post Oaks have a reputation: when sneezed on they die. It is
also nearly impossible to transplant, though Heyn showed that with extraordinary tree contractor care, that too can be accomplished.

In further discernment of this diffusion occurring at Texas Instruments, the plants were sometimes moved from one location on the corporate property to another, such as was done with the Eve’s Necklace. The plants were moved from more remote areas of the site to garden areas around the building, in view of employees. The process of plant diffusion did not stop with the physical movement of the mentioned plants through Heyn’s work, but continued in other ways which are difficult to trace or measure. Undoubtedly the people experiencing the courtyards and using the walks of the company began to assimilate visual familiarity with the Texas plants, affecting later decisions concerning home landscape choices.

Apparent also in the T.I. work is the process Heyn went through to obtain the indigenous plants. Heyn mentioned the feat tree contractor Walter Gilbreath accomplished in transplanting Post Oak trees. He mentions bringing the Possumhaw tree to Gilbreath’s attention, inferring that Gilbreath then planted the tree on other projects unrelated to Heyn’s. These indigenous species had to be collected from the wild since they were not available through wholesale nurseries. Gilbreath and other tree contractors held contracts with ranchers to dig trees from their land. They paid the ranchers for the trees. Heyn accompanied Gilbreath south and west of Dallas to help with the tree selection of collected Live Oaks and Shumard Red Oaks for Heyn projects. On these trips, Heyn taught Gilbreath about other tree species. Heyn’s persistence in working with contractors such as Gilbreath created diffusion in yet another way: Gilbreath later dug more plants of the type Heyn introduced to him, and planted them on other outside projects. Heyn continued to specify indigenous species in the Dallas area. A mid-1960’s example is found in the example of the Cullum and
Boren downtown Dallas sporting goods store entrance garden (see Appendix E and Figure 29). The garden was demolished for other development, but the photo and plant list provide evidence.

A different, non-corporate landscape project opportunity materialized for Dan in 1959: a residence for the Dorn family in Midland. This time the environment Heyn designed was in West Texas, where Heyn was again forced to experiment with plants. "There was no other way" (Heyn, 2000). He did not know what would grow in Midland. The Dorns were wealthy, which afforded Heyn the opportunity to create interesting, challenging and pioneering landscapes. Once again Heyn mentioned gratitude for a nurseryman, this time for a Midland nurseryman, Jimmy Walker, whom he described as an "outdoor guy, a naturalist."

"And he was very cooperative and worked with me in every way possible. He didn't know what all would grow there either, but he was willing to do whatever, so we did. He took care of it after we planted. I know he retired" (Heyn, 2000).

Heyn provided landscape design services to the John C. Dorn family for a residence and oil company office building in Midland, and for a weekend shelter on a ranch in Sterling County exhibited later in this chapter. Heyn worked in association with architect Frank Welch. Heyn described Midland gardens as typically having walls and fences surrounding them, as the screen helped both with the wind and with a cultural preference for privacy.

"The wind is terrible out there. In the old days it drove women insane. Dusty and wind constantly. They have these sandstorms. One of the first times I ever went out there I was at the Dorn's house, sitting in the library, having a few drinks...all of a sudden, everything turned brown and I saw a tumbleweed sail by in the air. One of my first experiences with really bad sandstorms. Airport...Continental...wings were flapping...I was scared.

"Most of the time when you go out there it's beautiful. The weather's fantastic. In the shade it can be hot, but you don't feel the heat, it's so
dry. The humidity's like 10%. Spring sandstorms.

"(I did a) lot of work (for John Dorn. Travelled out there) 3 or 4 times a year" (Heyn, 2000).

Heyn reflected on the benefit of 25 years of plant design experience he had in West Texas when he designed a residence in 1984 for Mr. W. C. Smith, a widow in Odessa. "I had a pretty good notion. I wasn't experimenting on her." Odessa's town character was that of oil worker residences; 'the rich live in Midland' is the lore. Heyn looked at the photos of the constructed landscape, pausing to dwell on the high quality plain concrete work achieved by the contractor, a man in his 70's.

Some of the species Heyn planted on this Odessa project included Mexican Plum, Western Soapberry (*Sapindus saponeria Drumondii*), Mondel Pine (*Pinus eldorica*), Royal Oak Violets (*Viola odorata*), Liriope (*Liriopoe spicata*), Southern Wax Myrtle, Magnolia (*Magnolia grandiflora*), Cherry Laurels (*Prunus caroliniana*), Lavender (*Lavandula latifolia*), Aspidistra (*Aspidistra elatior*), Trumpet Vine (*Campsis tagliabuana 'Madame Galen' *), Grapes (*Vitus spp.*), and Lady Banks Rose (*Rosa banksiae*) (see Appendix F). Heyn recollects the species:

"I had pretty long list on this job. Trumpet vine, 'Madame Galen.' Grapes, on arbor, do well out there. *Rosa banksiae* is an old standby. Thornless. Rampant. Have to be careful where you put it. Of course roses are small.

"I was the one who introduced Southern Wax Myrtle out there. Magnolia does pretty well out there too. Cherry Laurels do much better there than they do here. They seem to really like it there. Lavender because it's sandy there, and I think it works pretty well. Lavender doesn't do well here. Aspidistra? That's an old, old...that's called the old 'cast iron plant.' It goes back to Victorian times. It was used indoors and out. It was used all over England and America. I don't know where it originally came from. English woman's song, 'I've got a lovely Aspidistra....'

"Western Soapberry is a good tree out there. And it turns gold in the fall. Beautiful, beautiful.


"Mexican Plum. That’s another tree I took out to Midland (from wild sources). I know that was the first time they had been out there. Have you tasted the fruit? It’s (tart and) much better than…. They’re small, but they’re really very good” (Heyn, 2000).

Western Soapberry is native to Midland and to other parts of West Texas. He used Western Soapberry as a tribute in another West Texas location, for a memorial designed for architect Frank Welch’s young son. When asked about bringing the other plants to Midland, Dan affirmed that he did, and attests to their adaptation to Midland and Odessa.

"I had a lot of fun working out in West Texas. It’s a real challenge. The people are so nice. You go out there to consult with them or supervise, and they have a party. They have to make their own entertainment” (Heyn, 2000).

The challenge for Heyn was to create pleasant, habitable spaces for people, given the tremendous heat and need for shade, and given severe spring sandstorms and the need for protection. The challenge also was to discover which plants could survive in these harsh conditions.

Plant diffusion in Midland of course occurred on several levels. Heyn introduced exotic species from Europe and Asia, such as Aspidistra and Mondel Pine (Type A). He brought native plants from one region of Texas to another region, as in the case of moving Southern Wax Myrtle from the Pineywoods area of East Texas to the High Plains in West Texas (Type B). Lastly, he planted a tree native to the region, Mesquite, in Midland and Odessa landscape projects, a Type C diffusion. Given Dan’s comment that the native landscape has “nothing there. All new trees. That’s the way it is in West Texas,” Type D pseudo-diffusion, a.k.a. conservation, did not
Until Heyn worked on these projects, scarce knowledge about which plants would grow and thrive in the Midland environment existed. It was while working on a landscape plan for the Dorn Residence that Heyn used his knowledge of East Texas plant material to make selections he thought most adaptable to West Texas. Heyn again relied on a nurseryman to obtain wild plant material; for their part, the nurseryman found tradesmen in East Texas to collect the plants from natural areas (Heyn, 2000). This was the first time Southern Wax Myrtle was planted in Midland, and it grew well. The result was its adoption by others and now common use throughout the Midland-Odessa cities; there has been a long-term, area-wide impact of its use directly stemming from the diffusion of Heyn’s plant experimentation.

Earlier the literature review identified a handful of individuals in Texas who were critical ‘allies’ at the time Heyn was studying, experimenting and promoting indigenous Texas plants. Their individual efforts provided a broad base of information and, later, a supply of plants necessary for the native plant movement to burgeon in Texas after 1980. Heyn completed another landscape project in the small East Texas town of Karnack. When Heyn worked on the Karnack United States Post Office, he crossed paths with another famous and highly influential ally in the Texas native plant movement.

Heyn knew Dallas architect James Roberts from their concurrent employment at the O’Neil Ford, A.B. Swank office. Roberts designed a United States Post Office building in Karnack in 1967. Roberts, in turn, invited Heyn to design the landscape plan for the post office.

"Karnack. Architect Jim Roberts, eight years younger, very good friend. Shot himself. Worked together at Arch Swank’s office. Remarkable, best educated man I ever met. Had his own office, with Stewart Todd, another friend of mine. I think he donated services (for
the Post Office building design). Came to me to do landscape plan-
pro bono. Admirer of LadyBird, and I did it” (Heyn, 2000).

The planting plan that Heyn developed was lost, but not the story. Heyn chose
for the landscape plan species that were commonly found in the wild woodland areas
around Karnack. This manner of plant selection was now a common method for
Heyn, and may be referred to as Type C diffusion. But what distinguished this project
from others Heyn completed was his client. The United States Postal Service branch
of the Federal Government owned the land and the new building. Representing the
owner was the First Lady of the United States, Mrs. Lyndon B. Johnson. She worked
with the architect and landscape architect while designs were discussed, developed,
and drawn, and also provided final design approval to indicate permission to
commence construction. Mrs. Johnson was born and grew up in Karnack and was
known around town by her childhood nickname of “Bird.” Having lost her mother at
the age of five, she spent much of her childhood exploring the natural areas around
her home (see Appendices G and H). Her national reputation held that she was fond
of natural beauty, having initiated national highway beautification programs to hide
junkyards, etc. She took a personal interest in the development of the post office
landscape.

Along with the Architect, she invited Mr. Heyn to attend the dedication
ceremony for the Post Office building. During this day she explored strategies to
implement the landscape plan.

Those present during the meeting were LadyBird, Roberts, Heyn, and
members of the Secret Service. Heyn had encountered the problem of implementing a
landscape plan that specified indigenous Texas plant species throughout his career.
He had overcome the obstacle before by finding means to collect the plants from
natural areas. But this meeting afforded Heyn a politically influential audience. Lady
Bird was powerful on the national political level, and remained influential for decades. She now lives on the LBJ ranch near Austin. LadyBird witnessed Heyn’s process of landscape design through graphic drawings, written specifications, and she participated in the process during their discussions. Heyn’s method of using native species would have seemed unusual to her. The resolution of the plant availability problem required a special meeting in order to develop strategies to overcome this barrier.

“(The Secret Service) called Jim Roberts and said we were to appear (at the dedication). While she was there she was going to see about financing the landscaping. So, we met, and went to her childhood friend’s plantation house and talked about how to accomplish the landscape. The building had just been completed. And there was an ordnance plant, an ammunition plant, there in Karnack. And so this Colonel was commanding there and he was also to appear, to his Commander-in-Chief’s wife (laugh). So he was present. And she was trying to decide how this was to be accomplished. So the Colonel had a young man who was in charge of the grounds there at the ammunition plant. We were to try to see if we could use the native plant materials for that area and I had specified in Southern Wax Myrtle, and Water Oaks, and there were lots of Water Oaks there, and I’ve forgotten what all else I had for the plants. So anyway, I said, ‘Well Mrs. Johnson, I will come down and meet with this young man who’s in charge of the grounds and see what we can do.’ So shortly after that I drove down and came to the ammunitions plant and met with him and the Colonel…. Anyway, I made arrangements and they dug these plants, and these trees and did it” (Heyn, 2000).

The day spent with Mrs. Johnson was a fond memory of Heyn’s (Figure 14). Another architect who worked with Heyn, Frank Thrower, described the day as a “great love fest,” given Heyn’s charm and appreciation for native plant beauty, and mutually, Mrs. Johnson’s (Thrower, 2000).
“Yes, she was a very charming person.

“Later on, Jim Roberts and I got an invitation to the White House. He went. I couldn’t. I know you’re supposed to go; I couldn’t afford it. We had kids in college.... I hated to miss that. I mean she was a very wonderful...met at the dedication. She took us to lunch, and we had catfish and hush puppies. I sat next to her. Yes, she was into native plants then. I think she knew somewhat what they were. She relied on me” (Heyn, 2000).

Again, the manner in which the native plants were collected for this project
allowed for the public exhibition in a new way. The exhibition showed their
distinctive textures, rhythms, and adaptations. The diffusion apparent in the Karnack
project is clearly that of Type C. Heyn mentions guidance he provided to the staff at
the ordnance plant to transplant Water Oak trees and Southern Wax Myrtle from the
wild to the post office site. Heyn recollects:

"I don’t have drawings. Don’t know what happened to it. I remember
very little about it except that I used the desirable natives of that area
and Water Oak was one. Around College Station it's almost
evergreen. Even more evergreen in Houston. When you get up where
this is in the Marshall-Jefferson area, it's more deciduous, but it's a
handsome tree and has kind of silvery bark, sort of bands around it. A
really nice tree. There are many, many oaks in Texas.... Quercus
nigra. It grows in sandy, clay soils, and the Blacklands are death to it.
It needs acid or won’t make it. It grows at Flower Mound because they
have it” (Heyn, 2000).

These words from Heyn reveal much about his design process, about his
objective to use natives of an area. His knowledge of the plant species and their soil
and climate requirements provided the basis for making decisions. This combination
of Heyn’s aesthetic design acumen and plant knowledge is still rare. To possess this
knowledge, and to thus use plants appropriately, avoids wasted money from the loss
of plants placed into conditions hostile to them. To have gained and utilized this
knowledge in the time from 1950-1980 represents tremendous individual
achievement. Heyn mentioned Flower Mound, a new town north west of Dallas.
Edith Bettinger, one of the previously mentioned native plant enthusiasts, helped form
the Native Plant Society of Texas in 1980, and she lived in Flower Mound. Heyn was
familiar with Flower Mound because he was a consultant to them about 1975. He
designed park areas for the town and understood the area has sandy clay soils that
support the growth of water oaks.

Heyn’s impact went beyond using indigenous species in a visible, public way.
Lady Bird Johnson's subsequent efforts on behalf of native plant species. Mrs. Johnson in 1982 founded the National Wildflower Center in Austin, Texas. The WC functions as a communication system or medium for furthering education, history, research, distribution, and appreciation of native plants in North America. The WC has expanded considerably from its original scope of national wildflower research, and includes a library containing information on North American plants. The Center holds fall and spring festivals that sell many varieties of indigenous plant species. The building and site serve as a model for environmentally sustainable living and architecture. The Wildflower Center continues to fuel the native plants movement.

In the WC website is heard the platform of its founder:

"My dear friend Helen Hayes and I founded the Lady Bird Johnson Wildflower Center in 1982 to educate people about the environmental necessity, economic value, and natural beauty of native plants."

"My hope for what lies ahead in the field of landscape design—our own and that of the professionals—is not a revolution against the use of non-natives, but a resolution to educate ourselves about what has worked for Mother Nature through the ebb and flow of time, and to put that knowledge to work in the planned landscapes that are everywhere a part of our lives" (Lady Bird Johnson, 2001).

In the second paragraph, Lady Bird asks for a landscape design whose goals and philosophy are indistinguishable from those Heyn had practiced since 1950. The two shared devotion to native species. Their collaboration in Karnack on the post office site plan opened the First Lady to Heyn's landscape philosophy. Heyn's plan presented a tangible means of utilizing native species in a newly constructed setting. During the course of the day, the problem of obtaining these selected native species was the topic of strategizing; the problem was addressed by Heyn as best he could at that time. Mrs. Johnson's own love of nature and plants was not new; her efforts to rehabilitate derelict landscapes, and her work with Heyn, may have deepened her
understanding of the vital role created landscapes potentially offer to native species conservation.

Humbly, Heyn dismisses any suggestion that he influenced Ladybird Johnson. It seems plausible that their interaction created in Mrs. Johnson a greater awareness of designing with natives. Heyn was the only landscape architect thus specializing during this time frame. Although the connection is unconfirmed, we can say reasonably presume that H. Dan Heyn opened Lady Bird Johnson to the possibility of using native plants. This would surely have built upon her concern for beauty in the landscape and her love of nature. Years later she focused more clearly on native plants, as manifested in the founding of the Lady Bird Johnson Wildflower Center. Her written plea from the Wildflower Center remains a call to design "planned landscapes" with natives, as Heyn did years earlier in the landscape for the Karnack Post Office.

In summary, Heyn's reputation was not unknown. Prominent Dallas Landscape Architect H. Roland Jackson, formerly a partner with the prestigious firm, Myrick, Newman, Dahlberg, Inc., and presently with Newman, Bieberstein, Jackson Associates, echoed the esteem in which allied professionals held Heyn's plant knowledge: "Dan Heyn is the best plant (Landscape architect) man in Texas." Through his intensive use of Texas plants, Heyn fostered the spread of native species across the cultural landscape. In effect, he worked to replace exotic ornamentals with native plants. This was a demand based phenomenon, originating with the designer, Heyn, and spreading to clients such as Texas Instruments, Dorn, Redman, and so forth, architects, and the nursery trade.

All three project examples- Texas Instruments, Midland, and Karnack- are examples of plant diffusion. From the 1950's on, Heyn fostered the spread of
indigenous plant species, introducing nursery contractors to unused Texas species, so that others came to mimic Heyn’s choices.

Morton, Sewell, and Redman:

Sense of Place

Just as the diffusion highlighted in the previous section spotlights several types of diffusion in Dan Heyn’s work, qualities in Heyn’s other projects are notable. Just as the T.I., Midland, and Karnack work demonstrated various strategies of plant diffusion in Heyn’s work, other Heyn residential and urban projects were strong expressions of his design ability to forge a sense of place. The Morton Residence near San Antonio shows the achievement of a Texas sense of place in its use of plants and site construction form and materials. Part of the achievement was due to the architecture of the home, which was designed by architect Frank Welsh. But the ability to establish a Texas residential sense of place did not end with the home structure. Heyn completed designs for the ‘hardscape’ (walls, walks, fountains, paving) and the ‘softscape’ (plant material) (Figures 15-19). The house form was historically reminiscent of rural Texas homes from the area, given the long, linear room configuration opening up to side porches that facilitated ventilation during the brutally hot Texas summers. The exterior of the home was constructed of a local limestone. Reflecting on working near San Antonio, Heyn stated, “San Antonio...that’s the real Texas. The Menger Hotel, Roosevelt Bar....” He continued to describe the home setting.

“The site is about 40 acres, and is heavily wooded with Live Oak. Real beautiful, at top of hill, lots of deer around, Dwarf Yaupon, Loquat, Pittosporum, Spanish Red Oak, Texas Mountain Laurel, of course, Texas Live Oak, Primrose Jasmine, Indian Hawthorn. It was
Figure 15. Morton Residence, with Live Oak trees that pre-existed the residence integrated into the design for the courtyard garden. Newly planted shrubs and vines are also visible. The water channels that both parallel and cross walks are visible. (Photo courtesy Heyn).
Figure 16. Morton Residence, juxtaposition of native, mature, pre-existing trees and the constructed stone pathways. (Photo courtesy Heyn).
Figure 17. Morton Residence with Texas limestone building material. Limestone is repeated in the house exterior, low garden retaining walls, and fountain.
Figure 18. Morton Residence, view of the Texas landscape from the home interior. A floor-to-ceiling wall of glass facilitates the flow of space from the interior of the home into the courtyard. The feel of the Texas landscape is brought into the home, given the view of the mature Live Oaks and limestone fountain and walkways. (Photo courtesy Heyn).
<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>CONDITION</th>
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<td>Spanish Red Oak</td>
<td>4&quot; caliper</td>
<td>B&amp;B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12'-14' high</td>
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</tr>
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<td>Spanish Red Oak</td>
<td>3 trunks</td>
<td>B&amp;B</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2 trunks - 3&quot; cal.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1 trunk - 2&quot; cal.</td>
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<td></td>
<td></td>
<td>2-3 trunks</td>
<td></td>
</tr>
<tr>
<td>3</td>
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<td>Loquat tree</td>
<td>6'-8' high</td>
<td>B&amp;B</td>
</tr>
<tr>
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<td>Yaupon tree</td>
<td>6'-8' high</td>
<td>B&amp;B</td>
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<td></td>
<td></td>
<td>female plant</td>
<td>2-3 trunks</td>
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<td>heavy plant</td>
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<td></td>
<td></td>
<td>&quot;Jack Evans&quot;</td>
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<td>Rosemary</td>
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<td>QUANTITY</td>
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<td>COMMON NAME</td>
<td>SIZE</td>
<td>CONDITION</td>
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<tr>
<td>2</td>
<td>Bignonia capreolata</td>
<td>Cross Vine</td>
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<td>21</td>
<td>Ficus repens</td>
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<td>Wisteria sinensis</td>
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<tr>
<td>17</td>
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<td></td>
<td></td>
<td></td>
<td>heavy</td>
<td></td>
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<tr>
<td>5</td>
<td>Passiflora caerulea</td>
<td>Passion Flower vine</td>
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<td>2</td>
<td>Hedera helix &quot;Needlepoint&quot;</td>
<td>Needlepoint Ivy</td>
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<tr>
<td>67</td>
<td>Viola odorata &quot;Royal Robe&quot;</td>
<td>Violet - &quot;Royal Robe&quot;</td>
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<td>6&quot; pot</td>
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<td>27</td>
<td>Dryopteris erythrosora</td>
<td>Autumn Fern - Evergreen</td>
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<td>11</td>
<td>Agapanthus africanus &quot;Peter Pan&quot;</td>
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<tr>
<td>67</td>
<td>Hemerocallis - Evergreen Dwarf Yellow</td>
<td>Daylily - Dwarf Evergreen - Yellow</td>
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<td>Chrysanthemum maximum</td>
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<tr>
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<td>Coreopsis auriculata Nana</td>
<td>Dwarf Perennial Coreopsis</td>
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<tr>
<td>130</td>
<td>Liriope muscari Variegata</td>
<td>Variegated Liriope</td>
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<tr>
<td>1,993</td>
<td>Ophiopogon japonicum</td>
<td>Mondo Grass</td>
<td>clump - equals 1/3 of 1 gal. can</td>
<td>B.R. clump</td>
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<td>7,116</td>
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<tr>
<td>300</td>
<td>Duchesnea indica</td>
<td>Mock Strawberry</td>
<td>heavy liner</td>
<td>2½&quot; pot</td>
</tr>
</tbody>
</table>
Heyn conveyed how a good client relationship was important to his design and planting achievements. The owner for the project was Cliff Morton. He made the job as good as any client could.

"Wonderful client, enjoyed working with him. His wife was great too. San Antonio...wonderful place to work. Far enough south, you can use Pittosporum and Loquat, and get away with it" (Heyn, 2000).

Constructed in 1980, Heyn's plan for the Morton Residence included a series of walks, fountains, and pool, framed by the limestone home. The landscape embodied several Texas themes, which Heyn continued into the landscape from the house. The plan drawings, too, signified importance and professional responsibility for Heyn.

"I put a lot of effort in my preliminaries (drawings). I believe I ought to help people visualize what's going to happen. It doesn't take as long as you'd think to do all those squiggles.

"A contractor once said to me, 'When you show a plan to a client, Dan, they feel like they've got something for their money.' That's what I like to try. And I don't like small plans. 1/8" smallest scale; prefer ¼" scale. An architect (once said), 'Take your plan, put on ground, and start driving stakes' (laugh)" (Heyn, 2000).

In review of the site plan for the Morton Residence, Heyn boldly indicated the line of existing trees (Live Oak). Welch sited the house and in the process of
construction tree loss was inevitable. But Heyn gave thoughtful consideration to the
layout of the drive and fountain, pool, and garden worked around existing native
trees, keeping tree loss to a minimum (Figure 32).

Perhaps a parallel exists to an observation by Thoreau, who beautifully
expressed a sense of place. He described sitting next to a river, and the feeling of
connection he felt to all the unseen places up and downstream (Thoreau, 1971).
Likewise, mature native vegetation, even that integrated into new uses, evokes a
feeling of connection- to previous times and landscapes. They are living survivors.
Trees, when conserved, provide historical continuity through changing landscapes.

A humorous contrast to this Morton design was a story Heyn told from his
work on a resort clubhouse area known as “Horse Shoe Bay.” Heyn was familiar with
the client, or rather the client’s cousin, and this connection was enough to persuade
Heyn to plant palm trees deep in the heart of Texas. As his client wished, Heyn
specified palm trees on the plans, despite his strong feeling that this was not an
appropriate place for palm trees. “I wonder if still there.... I hope not.” Even the
most serious planting designer harbors a skeleton. “I’m very embarrassed by those
damn palm trees” (Heyn, 2000).

Like the Morton Residence, the Sewell Residence was another example of a
Heyn project that affected a Texas style and, therefore, a Texas sense of place. It was
located on a ranch site southwest of Fort Worth, near Crowley, Texas, and was called
‘Windy Hill Farm.’ This project represented a Type C diffusion (within region).
Heyn again collaborated with architect Frank Welch. Dan reminisced about the site:

“Pretty dramatic site for house....Nose (of earth grade) pretty much
way it was.”

In a tour of the site in October 2000, Heyn walked around the home to the rear
pool area, an area offering a view of the beautiful and vast dramatic landscape (Figure
20). Dan noted that the Desert Willow tree, with its beautiful, orchid-like flower, had been planted in the wrong place. Its location disrupted a spectacular view and obstructed the pool path.

Owner John Sewell acquiesced to designers on how to create a home environment. He further explained his personal difficulty with plant identification.

“Once we bought property, and chose the site, any house we’d ever thought about, we said, is not going to work. Carol (Sewell) had seen house by (Welch)...never thought of...so interesting. (We had the) topo survey done, six to eight weeks (of) ideas.... Sat down (with Welch, looked at his drawing, and said,) ‘That’s it”’ (Sewell, 2000).

Figure 20. Sewell Ranch, view from. Near Crowley, Texas. (Photo by author).

With respect to the landscape, there were pre-existing Cedar Elm (Ulmus crassifolia) and Chittum trees (look somewhat like Live Oak when in leaf) on the site. The Cedar Elms were very stunted due to the minimal amount of water available.
With the new construction and the introduction of irrigation lines in some areas, they fared better. Heyn planted Live Oaks. He was perplexed about why they were not naturally occurring on the ranch site.

"Not far from where native Live Oaks would be, southwest of here. Not sure why not around here. I was surprised when I first came out here and there weren’t some. They’re admirably suited to this area, as you can see” (Heyn, 2000).

Heyn effected this diffusion, Type C, in the planting of Live Oak trees. None of the planted Live Oaks died, and all “have done extremely well. 3 ½-4” (caliper) when planted in fall '96. Excellent color, growing like crazy” (Sewell, J., 2000). Heyn affirmed this conclusion about the Live Oak trees. “They’ve achieved what I wanted as far as the trees go” (Heyn, 2000).

Maintenance, even when indigenous Texas plants were used, was still important. “We need to get rid of some of those damn weeds, and get some pruning done” (Sewell, J., 2000). Maintenance also included pruning of plants overhanging walkways and irrigating large trees during recent droughts. There was still a “lot of (plant) color, even with drought” (Sewell, J., 2000). The irrigation lines were left in even after the first few establishment period years, and they were used during the droughts to water the large trees. In addition to the droughts, recent grasshopper infestations ate some of the planted exotics, Chinese Holly and Liriope. They left native Yaupon. From this experience with grasshoppers, Carol Sewell determined, “Natives are definitely the way to go.” She is substituting Yellow Bells and Seep Muhly Grass and a Palo Verde Tree, dug from near Alpine, for the Dwarf Burford Hollies which did not survive (Sewell, C., 2000). The Sewells asked Dan to not have foundation plantings next to the house. Heyn instead placed a crushed stone path next to the foundation.

Sense of place was achieved in the Sewell Ranch through the architecture,
through the stone used in site construction, through the preserved form, the “nose,” of the land, through conservation of Cedar Elm and Chittum Tree groves, and through the framing of views from the hillside across the broad landscape. Perhaps the sense of the Texas ranch atmosphere was most achieved by the design of the “Horse Trough Fountain” along the front circle drive (Figure 21).

Figure 21. Sewell Ranch, “Horse Trough Fountain.” (Photo by author).

The fountain evoked a ranch image, given its similarity in form and size to a horse-watering trough. The placement of the fountain punctuated the point of arrival, opposite the home’s entrance. Yet the fountain was across the drive, so in combination with a wooded planting island backdrop, it framed a larger entrance space. The three dimensional framing was important to creating the exterior space, and used in combination with interesting textures and forms of indigenous materials,
thus establishing a sense of place. The place created calls to mind images of a more relaxed, horse-drawn time, and of the vital watering-hole oasis that provided shade and water to drink in relief from the brutal Texas summer heat.

Just as Heyn made the Sewell and Morton projects into distinctive Texas residential places, so he deliberately brought a sense of nature, and the natural, into the office-building environment of the Redman Office Complex in Dallas. In contrast to Morton and Sewell, Redman Plaza is urban. Heyn completed the project in 1972, and after forty years it remains a stable environment and continues to be used. Described by Heyn as a “garden office complex,” Redman Plaza was made up of two story office buildings configured in a system that locates parking areas around the exterior of the “square” configuration of four office buildings. The buildings in turn frame the interior pedestrian plaza spaces (see Figure 33).

“Ralph Kelman, architect. Appreciated plants. (Our goal was) low maintenance. 1972 or 73. Fountain design...make simple enough so that it can be repaired; is easy to maintain” (Thrower, 2000).

Heyn’s design skillfully invited users from the roadway and parking environment into the central spaces framed by the buildings. He accomplished this not just through the careful location of parking and walks, but by the additional element of an interesting water feature. Architect Frank Thrower designed the fountains of Redman Plaza in concert with Heyn, a longtime associate. Thrower worked with Heyn from 1969 until 1982, and felt “in awe of Dan.” The success of the mechanical aspects of the fountain design is evident by its longevity. Not only was the office complex still fully functional after almost thirty years, but the fountains, an element often of short duration due to operating expenses and mechanical problems, were still operational. Thrower discusses some of the intent and inspiration of the water feature.
“(We made the) fountain design simple enough so that it can be repaired. It is easy to maintain. (There is a) trough. Everything drains to that. (The office of famous landscape architect Lawrence) Halprin, (designed) Portland (Lovejoy Plaza and Ira’s Fountain in the) late 60’s…. (Halprin did) more dramatic (fountains)…. Dan always intrigued by (Halprin) and just being next to the water” (Thrower, 2000).

Redman’s water feature was not loud and showy, but was, rather, subtle and calm. In character it was reminiscent of Spanish landscapes such as the Alhambra. In fact, Heyn did look to such landscapes for design study and inspiration, using a book on the Alhambra for reference. Heyn and Thrower used water judiciously, in ways suggesting connection, direction, and focal point (Figures 22 and 23). It embellished and made interesting circulation by paralleling walkways and leading into interior plaza spaces. This use of water was an example of an appropriate and excellent

Figure 22. Redman Plaza. (Photo courtesy Heyn).
adaptation of an idea to a Texas urban landscape. Lying at the westernmost fringe of the mesic eastern deciduous forest, Dallas on average receives only forty inches of annual rainfall. Water was not plentiful, and evaporation and runoff was great given the summer temperatures and heavy clay soils. The City supplied itself with drinking water from an elaborate system of river reservoirs surrounding the metropolis, by trapping and holding the watershed rainfall.

After consideration of Redman Plaza’s climatically appropriate use of water in an urban environment, the parallel with Alhambra minimalist water forms diverged. From the water elements, Heyn did not leave the plaza to stand on its own with only the “hardscape,” (constructed) elements. He filled and framed the plaza spaces with
plants, many of Texas origin. The Live Oak trees Heyn included in the design continue to grow, and with passing years have gained a formidable presence. The trees embellish the plaza space with their powerful trunk size and stature. Heyn used the pedestrian circulation in a manner which served to function, invite, and surprise.

"Dan had a way of pulling all these spaces together. This double walk with the trees, it's just...he created all these wonderful outside spaces. It's very gratifying to see that it's still (intact).

"Dan doesn't look at these things. They haven't destroyed his concept" (Thrower, 2000).

The manner of the pedestrian circulation layout is not explained by a Spanish influence, but by a Japanese one. Heyn also studied Japanese gardens and landscapes. Although he never traveled to Japan, he sought out books, including pictorials. One of these books was The Art of the Japanese Garden by Tatsuo Ishimoto. Published in 1958, this book was the first book in English explaining Japanese family-gardens. Within its pages was the suggestion to avoid a rigid layout, even when working with 'cut' materials; it advocated evergreen, not colorful, plants in a 'natural' way. Early in the book pathways are shown for the interest and mystery their design conveys. Heyn adapted these recommendations to Texas and to Redman sidewalk design.

The circulation pathways in Redman Plaza first collected the people who arrived by auto at the office complex, by means of an exterior walk between the parking area and the building. These walks led either directly into small entrance court areas of each building, or to one of three paths between the buildings. Pavement indicated the way, and the plant material (trees) along these paths echoed this direction. Later the element of the water channel came into view as the paths led between the buildings and again reinforced this direction. The long, linear water channels paralleled the walks into the central plaza area, where the space opened up, and where a central pool was located. This "interior" exterior space was ringed with
low walls and planting areas beyond, where the Texas Live Oak trees were planted. The walls provided places to sit under the shade of the now mature oaks. The plaza’s fountain remains intact and its vegetation matured, making an even more inviting place.

Other famous landscape projects followed Redman Plaza, repeating some of its design. Lawrence Halprin’s work invites such a comparison. Halprin designed both Heritage Park in nearby downtown Fort Worth, Texas, and Levi Plaza in San Francisco. In Heritage Park (1976), the narrow, slow-moving water channels both parallel and contrast the pathways, overlooking the Trinity River. In Levi Plaza (1982), the use of water in minimalist, channeled ways invites, parallels, and surprises the viewer. Certainly Halprin adds complex layers to these later designs, but the basic use of simple water channels that parallel pathways within the park is reminiscent of Heyn’s Redman work.

In a Redman Plaza side issue that demonstrates Heyn’s attention to construction details, Heyn honored another individual important to the development’s construction:

“That contractor was fantastic. Did that warm tone concrete. Still look warm? The color? He did all that concrete work. My gosh! He said later, (I) did some work at his house later, that was the high water mark of his career.”

In summary, the three projects noted in this section, Morton, Sewell, and Redman, illustrate Heyn’s approach in sculpting a Texas sense of place. He conserved and integrated existing trees and land forms into new land uses; he used the elements of water sensible for the Texas climate; and he built with Texas stone.
The Lamplighter School in Dallas departed in the aspect of context from previous Heyn work. The “end-user” of the project was children. Heyn masterfully handled the overall site design for parking, planting and walkways, but it is his creative design response to the context of children that is noteworthy. As this was an elementary school, a place for children to play was to be included. Nestled into an angled space at the back of the school, in the junction of the two building wings, was a ‘sequenced degree of enclosure’ play area (see Figure 34). The first, northernmost area was open, with swings and climbers. The second, middle play area Heyn handled by enclosing it slightly more with shade trees planted amongst play structures. The third, southern most play area he mounded a hill for climbing, and planted bamboo on the slopes to give a sense of enclosure and hilltop refuge. Studies of children’s need for play found the most interesting and beneficial play environment for children was spontaneous play generated in small, enclosed spaces. Heyn achieved this spatial enclosure through sculpting the earth and planting a dense, durable bamboo screen. In this children’s play area he offered the children varying degrees of spatial enclosure, providing them with variety and choices. Because of the intense trampling expected by the children, Heyn used a durable plant material from China. To satisfy this planting design problem (durability under trampling and soil compaction), Heyn uses Type A diffusion.

The play area was not large in size and the materials and equipment were simple and economical, as compared to more commonly used elaborate and expensive colorful wood and metal manufactured play structures. The three areas, though
defined separately for purposes of explanation, are woven together with functional, interconnecting walks, giving the sense of one overall space framed by the school building. The exploration by children of this overall play area provided for interesting, organized yet complex, and varied play opportunities. Heyn's wonderful design response to the context of children in this project suggested the breadth of his creative ability. The design itself was playful.

Other issues of context were discussed in the literature review, and in Heyn's method of conserving vegetation and land forms in development. There is an overlap between sense of place and context. When trees and land forms are conserved, an issue of context, sense if place is also augmented. Heyn understood, appreciated, and used these contextual elements to the advantage of sense of place. The next section will discuss the issue of restraint in design.

A Shelter for Willow Creek Ranch:

Respect and Humility

In 1967 the Texas Society of Architects gave one of two twenty-five year awards to a project in West Texas called 'A Shelter for Willow Creek Ranch,' designed by architect Frank Welch. The newspaper article described this "Birthday House" as "about as basic as shelter gets: a 20-by-20 box with a stone fireplace and walls that can be rolled open and shut depending on the weather. The stones were collected on-site and the structural timbers salvaged from discarded oilrigs. The term "birthday" refers to the small rock constructions that Mexican cowboys built in memory of loved ones back home" (Dillon, 1997). H. Dan Heyn was the landscape architect on the project, and his former client, John Dorn, once again hired him. Dorn
owned the ranch south and east of Midland, and raised sheep, cattle, and goats, selling goat meat to Israeli’s.

This west Texas ranch was remote, rural, and vast. The project was as opposite an example to Redman Plaza as could be found. The shelter project denoted human restraint in terms of landscape. Where Redman commenced from urban office lifestyle needs, the Birthday House offered retreat and simple shelter. Redman was obviously heavy-handed and intentional in creating inviting effects and an outdoor, strongly urban refuge for the office workers—effects which represented the natural world by framing and integrating particular water processes and plant communities. The Shelter, in contrast, in approach was light-handed. Although the structure was sturdily constructed of stone and wood and concrete, the placement of it at the promontory overlooking the immense Edwards Plateau seemed somehow ‘light.’ Heyn described a day spent with the architect and owner walking the site in his role of assisting in the selection of the location for the shelter structure.

“Went out there in January. It was bitterly cold. Fortified ourselves with tequila and climbed up on this, the face of this mesa. Got up there on top and decided that was the place” (Heyn, 2000).

What was important about the landscape in the Shelter for Willow Creek Ranch? The existing landscape of rock, mesquite, and yucca was minimally disturbed. A ‘habitat’ for a family was created, but it was done in a more organic fashion that worked in concert with the surroundings (Figures 24-27). There was no manicured lawn or courtyard garden introduced. There was no attempt made to alter the existing rocky area around the shelter with contrived landscape elements. The landscape architecture practiced in this instance stopped short of any attempt to create a new type of landscape and instead looked to the existing landscape for inspiration.
Figure 24. Shelter for Willow Creek Ranch, view over Edwards Plateau. (Photo by Ezra Stoller, Courtesy Texas Architect).
Figure 25. Shelter for Willow Creek Ranch, mesa site. (Photo by Ezra Stoller, Courtesy *Texas Architect*).
A relatively high hillside site was selected to overlook the ranch and the lands beyond. Extreme and sudden variations in weather required the building to be flexible in its manner of protection. The owner discouraged the idea of a *dwelling* per se and asked that amenities be kept minimal. It was particularly necessary to avoid "cleverness" in a building with a program and site so unencumbered.

A design of simple but strong shapes evolved as appropriate to the modest requirements and the vastness of the setting. Twenty foot wide walls at two sides roll open their full width to make a breezy pavilion or close to make a cave.

Figure 26. Shelter for Willow Creek Ranch, site plan and floor plan. (Courtesy *Texas Architect*).
Heyn made design decisions. Those decisions recognized the importance of the existing landscape, altering it very little. The beauty of the Edwards Plateau was recognized and respected. That recognition, and the resultant design restraint, was no small feat. There were a few items added to the site: the windmill behind the shelter from the overlook, a few nearby cactus and shrubs moved into selected positions near the shelter. However, Heyn derives the overriding excellence in this project from the wise limit he set on landscape manipulation.

"I didn't do much. Moved a few (plants). Jimmy Walker and these Mexicans.... After he put the windmill, he constructed this little rill that ran around in the rocks. This guy had a pick and shovel and he was working while we were supervising. We'd turn the windmill on and let the water through and we'd let the water go so far and he'd keep working to take it where we wanted it. (A) frog quickly found
the water. Deep well. (Dorn was in the) oil business. Knew how to drill" (Heyn, 2000).

Heyn’s decision to make few changes was a departure from his previous work. Both the urban plaza and the weekend retreat possessed masterful design intent. In opposition to the urban Redman Plaza, the ‘Birthday House’ retreat provided the ‘get away’ from an urban lifestyle. He directed the user's focus, not taking it inward toward a created landscape, but by taking it outward, toward the awe-inspiring Edwards Plateau, the larger nature. It was a humbling, respectful design intent, which conveyed a similar emotional response from the shelter.

J.B Jackson, among others, expressed the need to incorporate a sense of respect and humility toward nature and natural processes, and toward time. For Jackson, some processes are beyond human control. At Willow Creek, Heyn achieved just this sense of respect and humility in recognition of the larger landscape, the Edwards Plateau. The Shelter for Willow Creek provided clarity in design concept and intent: to minimally disturb the existing landscape with the introduction of human shelter. Enriching the story, Heyn recalled a later trip to the shelter.

"Stay at ranch. September. No rain, on deck, scotch. Rain dance. Had seen Indians out west. I did a rain dance (with) Juniper sprigs. That night (there) was a tremendous storm. It was a flood. It was a torrent. It was scary. I did the chant" (Heyn, 2000).
The Survey

Results from the Lady Bird Johnson Wildflower Center survey confirmed the rapid increase in use of native plant species after 1980. Users of native plants jumped from four individuals in the 1970's to 29 in the 1980's, and to 62 in the 1990's. From this, the premise of the thesis, that Heyn and others involved in researching and using native plant species in the decades from 1950 to 1980, had a direct impact on the increase in native plant use after 1980, was upheld. Overwhelmingly, individuals used native plants in residential situations, and were split equally between urban, suburban, and rural settings. Two-thirds managed plants on less than an acre of land. Their reasons for using natives varied. Sources of information on native plants were many, but books and magazine sources were the most common. Aesthetics and wildlife habitat were the top two reasons given for planting native species, followed by water conservation and reduction of maintenance. One person cited sense of duty.

Two-thirds of survey respondents did not answer the last open-ended question asking for input on native plant presentation topics for future Fall and Spring Gardening Festivals at the Wildflower Center. But, of the thirty-seven who did respond, design and water conservation were the top two topics of interest. The study of Heyn’s work provided such a design example. The plea from those surveyed to receive more information on designing with natives underscores the need to study his work.
CHAPTER V

CONCLUSION

This research describes and illustrates the work of H. Dan Heyn within the framework of native planting design- its development and meaning. Dan was an agent of change. In this he demonstrated leadership and vision. Lesser-known plants became commonly known and available. H. Dan Heyn readily recognized the transformation that occurred in the 80's and 90's in the area of indigenous planting, after the previous three decades of his own landscape architecture practice. Indigenous plant stock became available for purchase from nurseries and later, even from chain home-improvement stores. Planting natives became more common. Yet Dan was an early Texas' innovator, Texas' first native plant designer. He had to befriend, educate, and occasionally beg nurserymen to obtain the plants he wanted for his projects. He took tree contractors into the woods to educate them on native plants. "It was a long, hard fight to get some of these things" (Heyn, 2000).

It was difficult to directly measure the impact Heyn's design work has had upon the increase in use of native plant species. He has no protégé or group of landscape architects who are direct followers, and whom he has educated. His early use of specific native plants and conservation of existing trees in new development was cited through documentation from his office records. The diffusion trail subsequently led to the users, to those who viewed the public and private spaces Heyn created. The "inhabitants" of the spaces became the ‘disciples’ for Texas plants. Importantly, the nurserymen with whom he worked used plants he recommended for other projects they later built. It was a "quiet thing. Didn’t happen overnight"
Dr. William Welch, a county extension landscape specialist at Texas A & M who led education programs such as Texas native plant propagation techniques, understood too that there was an increase in awareness of native plants and planting, but that it was “hard to put a yardstick on” (Welch, 2000).

Botanist Robert Vines recognized the value of individual knowledge of plants; he further recognized that botanical science was never the work of any individual. “Each worker co-operates with his contemporaries, building on the work of others and knowing his own work will be added to by his successors” (Vines, 1960). Heyn was an important individual, within a handful of individualists, because he tirelessly promoted indigenous plants through the medium of landscape design (Figure 28).

Figure 28. Sewell Ranch, H. Dan Heyn seated on “Horse Trough Fountain.” Near Crowley Texas, October 2000. (Photo by author).
This thesis shows that Heyn's vision mattered. His design work was the most public of the group of native plant "allies." He showed how to give shape to the landscape. He reached many people and had a broad audience, though he worked diligently behind the scenes. It was Heyn who gave form to a growing awareness of native plants which was happening all over Texas. Texans held strong cultural ties to place, so Heyn was perhaps driven by this history. He may have been reacting against things "eastern," or "northern," in working to define a Texas sense of place.

The search for identity and independence, in the architectural aspect, could be defined as the search for a sense of place. Yet this does not divulge how exactly sense of place is created. It is an endeavor open to interpretation. Heyn's technique was to use the plant and rock materials of the project areas in innovative and beautiful ways. Specific site plans in Heyn's design work take into consideration not only the building materials of the area, but the extremes of Texas climate in the intense summer heat and low amount of rainfall as well. Such consideration is evidenced through use of shade, walls, and minimalist water techniques.

He, more than any other landscape architectural designer of the period, gave thoughtful study of the plant regions and plant species of Texas. Heyn's work does not seek exclusively to restore plant associations from the natural environments he studied. Rather, it is from the intensive study of the plants and their habitats that he made astute decisions about translocation of species into different contexts. His work drew accolades from some within the nursery trade. "Always admired Dan Heyn because he was always willing to try not only plants, but design, making it more interesting.... One of the first of the better architects that did a lot of work with native plants" (Pinkus, 2000).

There remain various reasons natives are used. These include designer
recommendation, as seen in the work of Heyn, local ordinance (example: 40% of plants must be native), grower decision (three to seven years to market), retail sales and education, wetland mitigation, wildlife preserve, park land massing, state regulation of invasive species, contractor preference and specialization, university extension education (A&M promoting), and remediation. For remediation or restoration projects, Ted Doremus, a native plant propagator, confirmed that huge numbers of natives have been planted recently in many areas of Oklahoma. For single projects, 100,000 to 200,000 plants were planted. The difficulty of finding the plant supply has persisted, albeit this new conundrum is for far greater quantities of plants. For water conservation, the Xeriscape program, such as the mid-80’s Xeriscape water conservation demonstration garden at the Ft. Worth Water Department demonstration garden, and the San Antonio Water Department water conservation garden promotion, with financial incentives, continue. One ordinance in Austin mandates use of Buffalo Grass in subdivisions. The benefits included that the grass need be cut only one time per month. The grass browned out during hot, dry periods. But, difficulties remain. It was hard to keep Bermuda grass from invading, and sometimes hard to keep alive. Some opted to use buffalo sod, with all female plants. Some developers have stopped trying it (Gasmire, 2000).

Pat McNeal, of McNeal Growers, was a testament to the change that has occurred on the propagation end. He was familiar with the early native plant propagators, and has been a grower since 1985. He introduced hundreds of species and selections into cultivation at the three nurseries he worked, and was in charge of production planning at Native Texas Nursery, producing “gobs of plants mostly native, trees, shrubs, perennials, and grasses” (McNeal, 2000). His perception held that people who are into native plants are themselves from other places.
Heyn was not a purist, but looked at the flora of his own state as a source of plant material to use. He loved all plants. In the process of exploring use of these Texas natives, he expanded the palette for designers and others. In this experimentation with native plant material, he made measured judgments about which plants would do well in other regions or other local situations. In so doing, he propelled the diffusion of Texas' natural heritage plants forward.

This process of plant diffusion contrasts current work by landscape architects practicing ecological restoration, or landscape restoration. Today, native plant restoration emphasizes the importance of maintaining a sustainable cultural relationship with the earth's land and water resources (Patchett, 2001). Dan's use of native species was more commonly on the scale of individual plants, or groupings of plants. Sometimes he expanded a certain community to another locale. He attempted and achieved this when the site was well suited for such translocation, due to variables of soil, rainfall, topography, and sun orientation, as found in the example of the introduced Live Oaks at the Sewell Ranch.

Other Dallas area landscape architects lacked interest in indigenous planting design in the 1950's and 1960's. This did not deter Dan, a self-described loner, from his struggle to use native species. It was not until later in the 1970's that the usage of native plants became more widespread, and by the 1980's, there was exponential growth in that arena. Several examples signify this change. The literature available on the subject of native plants, in a scientific article Internet search, indicated 16 'hits' on the topic in the 1970's, 79 for the 1980's, and 172 for the 90's (see Appendix I). The number of people in the general 'gardening' public also increased in this exponential fashion. A survey conducted at the National Wildflower Center shows the number of individuals who responded to a question about when they began using
native plants increased from 4 in the 1970's to 29 in the 80's, and to 62 in the 90's. Obviously there was a significant shift in the cultural attitude toward native species beginning about 1980.

He also located existing tree and shrub species on site plans and incorporated them into the final proposed design layout whenever feasible. Sometimes he added more shade trees to enhance the sense of spatial enclosure or framing, sometimes he removed or relocated a tree or shrub of manageable size when a necessary hardscape improvement (drive, road, structure) portended its loss. This philosophy and practice of planting design which incorporated and integrated native plants along with exotic plant species was successful. His choice of balancing native and exotic use to achieve design intent parallels a finding by the National Wildflower Center concerning native plant nurseries. According to Sage Kawecki, a 'Native Plant Information Specialist' at the WC, those nurseries that grow and sell both native species and 'traditional' exotic species have on average maintained business success over those nurseries that chose to sell only native species. Many of the latter have struggled and folded operations (Kawecki, 2000). In the opinion of Heyn, a successful Texas design could be achieved by using only native trees and shrubs. However, he also felt that other plants, used as ground covers, perennials, forbs, and annuals, need an expanded palette with exotics in those categories.

Whereas the English sought new plants throughout the globe during the colonial period, Heyn looked to an untapped source, the Texas wild landscape, for plant material. He then used this “new” material in residential, commercial, and office landscapes. The rational for integrating Texas natives has proved strong since 1950. The survival of the plants in the harsh Texas climate was better than many of the exotics. The demand for water in landscaping was somewhat reduced by use of
the native species, though often this demand remained high, and warrants further study. The character of Texas was discernible through its plants, building a sense of place, and was the antithesis to the preponderance of homogeneity described in the recent book "The Geography of Nowhere" (Kunstler, 1993). Yet from the example of one native landscape immersed in a traditionally English romantic style suburban development, that of landscape architect Gasmire’s home, the reception for the different look of natives remains lukewarm.

In terms of the J.B. Jackson ethereal landscape categories, the projects designed by Heyn have been the medium used to convey a particular nature, time, and human use concept. While some Heyn examples drew upon the Texas vernacular for inspiration and form (and illustrated a form of the Landscape Type I that Jackson refers), others illustrated Landscape Type II, but with a distinctive local, Texas character. And still, Landscape Type III was found in the Shelter: the acquiescence of wildness and human humility before it. Jackson strove to marry the social ordered "Landscape II" with the vernacular "Landscape I" into a new form, named "Landscape III." His vision for Landscape III incorporates and recognizes "wildness" and its processes. Heyn in no small way was striving similarly to achieve such balance and integration through years of actual design practice and construction.

In order to diffuse native plants Heyn spent a tremendous amount of effort in study of the local plants, of their cultural needs for soil, water, sunlight, as well as their character and form for intended artistic purpose. In other words, he conducted an intense study of Texas regional biomes. Yet the finding that natives were not used exclusively in Heyn’s design, both because of the tremendous difficulty of availability, and also because the conflict with design intent was significant in that it offered a measured view, or a model, of one effective way to use native species.
Heyn, a proud Texan with a strong Texas heritage, including East Texas ancestry, indeed an “Aggie,” who gained exorbitant knowledge of Texas plants and who practiced award-winning Texas landscape architecture for years, himself hailed originally from the Northeast. Heyn never went back, but was actually born in Buffalo, New York, and was brought to Texas by his parents at the age of two.

Through project case studies, Heyn’s various design and development solutions exhibit a way to culturally maintain a relationship with the earth’s land through plants, and indirectly, water resources. Humans have played and will continue to play a critical role in powerful and sweeping changes to landscapes across North America, made comprehensible in sequent occupancy geographical studies. In the course of these phenomenal changes, only with the incorporation of indigenous species, will the conservation of plant species be pledged. Heyn showed a way to accomplish this. At the end of the interview Heyn provided directions to Thomas Reprographics Co., to make reproductions of his photo and drawing data. Those directions give insight into his frame of reference. “There’s a big Live Oak in front of the building.”

Further Research

From observation during the course of this research many additional questions were identified, which merit further research. Possible research topics include:

- Trace the supply and demand side of native plants. Which side is spreading faster?
- Search for other nodes of diffusion emanating from single projects Dan designed out of state. Perhaps begin with Oklahoma. Were there identifiable nodes?
• Investigate a resurgence of the Estate movement. Is it occurring? (Ex. Ross Perot estate)?

• Study the use of indigenous species in design among landscape architects in sub-regions of Texas since 1980. How did it diffuse?

• Explore the collaboration between H. Dan Heyn and Frank Welch. What Texas vernacular was the source of inspiration for the architecture and landscape architecture generated from this association?

• Research forces within the Texas native plants movement. Did elements mutate into the current landscape restoration movement? What impact is that movement having upon native ecologies? Is this the Type III Landscape of J.B. Jackson? Or is it a preservation movement?

• Investigate municipal water department conservation programs. What is the impact of native plant use upon the demand for water?

• Preserve the office files and drawings of H. Dan Heyn for future research, such as has been done with the offices of Frederick Law Olmsted by the National Park Service. What other projects contributed to diffusion of indigenous Texas species?
Appendix A

H. Dan Heyn Resume and Representative Project List
RESUME: H. Dan Heyn - Landscape Architect
Texas Registration N. 114

BORN: July 2, 1924

EDUCATION: Dallas Public Schools
Bachelor of Science Degree
Landscape Art
Texas A & M - January 1949

MILITARY: U. S. Navy Combat Aircrewman - January 1943 - March 1946

MARRIED: Two Children

EXPERIENCE:
Jan. 1949 City Planning
Jul. 1950 City of Houston, Texas

Jul. 1950 Phillips, Proctor & Bowers
Mar. 1956 Land Planners
Dallas, Texas
Land Planner

Mar. 1956 Associated Architects & Planners
Dec. 1959 O'Neil Ford, A. B. Swank,
Sam Zisman, Richard Colley
Dallas, Texas
Landscape Architect

Dec. 1959 Texas Instruments Incorporated
Sept. 1962 Dallas, Texas
Resident Landscape Architect

Sept. 1962 Beran & Shelmire - Architects
June 1965 Dallas, Texas
Landscape Architect Associate

June 1965 to Date Private Practice
REFERENCES:  Mr. Frank D. Welch, Architect F.A.I.A.
5207 McKinney Ave. - Suite 10
Dallas, Texas 75205

Professor Robert F. White, F.A.S.L.A.
School of Landscape Architecture
Texas A & M University
College Station, Texas

Mr. John C. Dorn
Forest Oil Corporation
Post Office Box 1916
Midland, Texas 79702
A PARTIAL LIST OF PROJECTS DESIGNED IN DALLAS AND OTHER TEXAS AREAS:

Texas Instruments Incorporated Industrial Campus
13500 N. Central Expressway, Dallas, Texas
O’Neil Ford and Richard Colley - Architects

Texas Instruments Incorporated
Sherman, Texas Plant
O’Neil Ford and Richard Colley - Architects

A garden for Cullum & Boren Sporting Goods Store
Bryan Street, Downtown Dallas, Texas
Pierce, Lacey Partnership - Architects
1966 Design Award - Texas Society of Architects
Dallas, Beautification Award - 1967 - Small Land Area Award
Dallas Design Award - 1968

One Lemmon Park East Office
Two Lemmon Park East Office
3627 Howell Street, Dallas, Texas
Woodward & Cape - Architects
(Architecture '66 Design Award and 1966 Design Award -
Texas Society of Architects)

A Shelter for Willow Creek Ranch, Sterling County, Texas
Frank D. Welch - Architect
(1966 Design Award - Texas Society of Architects)

Bank of Commerce Building
Abilene, Texas
Thomas E. Stanley - Architect

Church of the Holy Cross
Dallas, Texas
Thomas Hines - Architect

A Main Street Redevelopment
for Borger, Texas

Northgate Plaza Shopping Center
MacArthur Boulevard, Irving, Texas
Beran & Shelmire - Architects

Credit Bureau Services Building
2819 N. Fitzhugh Street
Dallas, Texas
Pierce & Lacey - Architects
A PARTIAL LIST OF PROJECTS DESIGNED BY H. DAN HEYN

Page 2

An Office in Downtown Midland, Texas for
John C. Dorn - Forest Oil Corporation
Frank D. Welch - Architect

Waterview Church of Christ
Richardson, Texas
Hallum & Wrightsman - Architects

Braniff Hostess Training College
Wycliff & Hartford Streets, Dallas, Texas
Pierce & Lacey - Architects
1970 Design Award - Texas Society of Architects

Texas Instruments Incorporated
South Building - North Central Expressway, Dallas, Texas
O'Neil Ford and Richard Colley - Architects

Phase 2 - Northgate Plaza Shopping Center
MacArthur Boulevard, Irving, Texas
Beran & Shelmire - Architects

Armstrong Cork Company Glass Container Plant
Waxahachie, Texas
Beran & Shelmire - Architects
Dallas, Design Award - 1968

Texas Instruments Incorporated
Houston, Texas Plant
O'Neil Ford and Richard Colley - Architects

A Field Office in Odessa, Texas for
Forest Oil Corporation
Frank D. Welch - Architect

Irving Medical and Dental Professional Building
MacArthur Boulevard at Highway 183, Irving, Texas
Beran & Shelmire - Architects

Landscape Plan for United States Post Office, Karnack, Texas
for Mrs. Lyndon B. Johnson
Todd & Roberts - Architects

Mountain View Junior College
Dallas, Texas
Harrell & Hamilton - Chan/Rader - Associated Architects
1970 Design Award - Texas Society of Architects
A PARTIAL LIST OF PROJECTS DESIGNED BY H. DAN HEYN

Page 3

Jonsson Plaza & Mall - Austin College
Sherman, Texas

Horseshoe Bay - A Resort Community
Marble Falls, Texas

Redman Plaza - A Garden Office Complex
Dallas, Texas
Ralph Kelman - Architect
1973 Design Award - Texas Society of Architects

Windsor Mall - Austin College
Sherman, Texas

Tennis Facilities, Practice Fields and Baseball Diamond for
Austin College
Sherman, Texas

Landscape Consultations for Flower Mound New Town
Denton County, Texas

The Wadley Central Blood Bank Building
Dallas, Texas
Dryden, West & Humphries - Architects

First National Bank of Kerrville, Texas
A. B. Swank - Architect

Texas Farm Bureau Office Building
Waco, Texas

Riverhill Club - A Country Club
Kerrville, Texas
Frank D. Welch - Architect

Cumberland Hill, An Office Tower with Gardens
Downtown Dallas
Burson, Hendricks & Walls - Architects

Baylor College of Denistry, A Courtyard Garden with a
Fountain
Dallas, Texas
Harwood K. Smith & Partners - Architects

The Lamplighter School
Dallas, Texas

S & S Tea Room Dining Garden
Highland Park Shopping Village, Dallas, Texas

Clifford Morton Residence
San Antonio, Texas
Frank D. Welch - Architect
North Lake Community College
Irving, Texas

Envirodynamics, Inc. - Daniel, Mann, Johnson, Mendenhall, Associated Architects

Trinity River Authority of Texas - Construction and Land Division Building, Arlington, Texas

Sakowitz Village on the Parkway - A shopping center, Addison, Texas

Preston Del Norte, - final phase - An apartment project, Dallas, Texas

Employers Insurance Building - Downtown Dallas
Burson, Hendricks and Walls - Architects

Merchant's and Planter's Bank - Sherman, Texas
Charles Galbraith - Architect

CURRENT PROJECTS:

Museum of the Southwest - Midland, Texas
Ford, Carson, and Powell - Architects

Farmers Branch Public Library - Farmers Branch, Texas
O'Neill & Perez - Architects, San Antonio, Texas

4600 Greenville Ave. Office Building - Dallas, Texas
Bethel & Williams, Architects
Appendix B

HSIRB Protocol Outline for Interview Questions
HSIRB Protocol Outline

Title: Roots and Shoots of the H. Dan Heyn Vision: Indigenous Planting Design

Project Description

The objectives of this study address a historical geography problem. Specifically, this research will investigate the origins and impacts of the native plant movement in Texas in order to understand the forces that influenced this growing trend in Texas and nationwide toward indigenous planting design. How and why did indigenous planting design originate and evolve? And, what are the impacts and implications of this approach on landscape design, and ultimately, biodiversity?

Indigenous planting design has become important work for landscape architects. This effort is now called “native plant restoration.” This research looks at the projects designed by H. Dan Heyn, a landscape architect in Texas, to ascertain the origin and the impact of his particular indigenous planting design work. Dan Heyn was committed to and specialized in the use of indigenous plants in his design work, beginning in the 1950’s and continuing through the 1980’s, when only a handful of others were interested in the idea of planting native species. Documentation through Heyn’s drawings includes planting plans with specification of native plant species for planting in urban and residential projects. Yet the question remains, from where did the idea to use native species in his work originate? Further, what impact, either positive or negative, has his use of indigenous species had upon the spread of the native plant movement in Texas?

This research will study the many individuals, including other professionals, academics, landscape growers, and the general public, who have also been important to the native plant movement.

The research will include the following:

1. Review the literature concerning native plants and native plant restoration.
2. Interview 1) nursery growers, primarily in Texas national, 2) national landscape architects currently involved with native planting design and Texas landscape architects, including H. Dan Heyn and his peers, 3) Texas governmental policy makers and agencies who affect laws concerning planting of indigenous species, and 4) academic extension services.
3. Peruse the office of H. Dan Heyn, Richardson, Texas, for representative native planting design project drawings and specifications in order to determine the timing and location of incorporation of native species.
4. Visit representative projects of H. Dan Heyn to investigate survival, context, and dispersion.
5. Give questionnaire to the native plant-purchasing public at annual native plant sale.
6. Collect data from electronic sources, maps, and fieldwork to create a Geographic Information System on the diffusion, spatially and temporally, of the idea to incorporate indigenous plant species.
7. Present research to the Dept. of Geography, WMU, and at the American Association of Geographers annual conference in New York City, March 2001. This will include results and suggestion for further research.
Benefits of Research

The diffusion model developed in this research will help those involved with native plant restoration to understand the history of the movement and thus implement more viable future policies and design in the effort to restore native species.

The GIS database will use information from the interviews and surveys, and which locate the native planting efforts spatially, temporally, and by participant, be it landscape architect, nurseryman, residential public, and local or state ordinance. This will be useful to assist those involved in native plant restoration in an understanding of the history and multiple fields impacting the native plant movement.

Perhaps primarily, this research will develop a body of information on native plant restoration history. This type of information can be important not only to native plant enthusiasts, but to local and regional policy-makers, planners and landscape architects concerned not only native plants, but other more encompassing aspects of sustainable native ecologies.

Subject Selection

The human subjects for interview will be selected from the landscape architecture membership directory, from the Native Plant Society of Texas Membership, and from experts in native plant restoration, and from other recommended by those we interview. We anticipate a minimum of 20 interviews and a maximum of 40 interviews. Interview appointments will be scheduled by phone and email and will take place, by phone, by personal interview in Texas in October 2000, by internet NetMeeting, or in other mutually agreed upon locations.

Interview subjects already identified include H. Dan Heyn, Roland Jackson, ASLA, Walter Dahlberg, ASLA, Darrel Morrison, ASLA, members of the Native Plant Society of Texas, Mr. William Welch, Texas A & M Extension Service, and participating members of the Native Plant Society of Texas Symposium (October 2000), as well as other growers and experts in the field of native plants.

The subjects for a written questionnaire survey will be purchasers of native plants at the annual native plant sale at the LadyBird Johnson National Wildflower Center, near Austin, TX. We anticipate a sample of 300 of the approximate 2000 purchasers who attend the annual sale. The subjects will be offered the survey form at the plant sale when purchases are made.

Risks to Subjects

There will be little risk to the subjects for these interviews. The interview questions should cause no discomfort to the subjects and all information will be confidential. The greatest hardship to the subject will be the time taken for the interview itself, and precautions will be taken to inform all subjects of the time required and of the nature of the questions.
Protection for Subjects

Care will be taken to make sure that the subjects realize the time required and general theme of the questions. We will not be asking our subjects about for any detailed financial information and will assure them that all responses will be confidential. The informed consent documentation will affirm this. All interviews and surveys will be confidential so that any responses will not be released to the public or neighbors in such a way that they could be linked back to the respondent, unless expressed permission is obtained to quote the subject in the Thesis.

Confidentiality of Data

The data collected in the interviews will be confidential. If there are specific quotations, audio clips, video clips, project drawings, photographic or digital graphics that we would want to use in an Electronic Theses and Dissertations (ETDs), we will request permission from the subject. Interviews will be archived on either video or audio tapes, until they are transcribed. Transcribed interviews will also be archived on write-only CD-ROM. The interview archives, as well as the consent forms will be filed for a minimum of 3 years. The files will be stored in Dr Lemberg’s office in the Department of Geography, at WMU.

Instrumentation

Interviews

These will be “open ended” interviews with a structure based on a loose interview script with, but open to other questions as the interviewer learns more about the problems involved. The general questions will be as follows:

Questions for Landscape Nurserymen

When did you begin using native plants?

What are your goals in using native species? What type of native plant restoration do you envision?

What percentage of your production is devoted to growing native plant species? If so, what quantities were grown (or sold) between 1980 and 2000? (In, say five-year increments).

How did you become aware of these native species? I.E. what information prompted you to begin using these species?

Have regulations and zoning ordinances affected your interest in native plantings?

How would you like to change the regulations and ordinances to improve the native planting effort?
If retail nursery centers, are the homeowners asking for native species? Are you promoting and educating about these native species?

How are these native species being used? Home? Commercial? Park? Ecological Restoration Projects?

Or, rather, are homeowners purchasing these species for other reasons than the fact that they are native species, i.e. such as flower color or low water needs, etc?

**Questions for Landscape Architects**

When did you begin to design intentionally using Texas native plant species?

What are your goals in using native species? What type of native plant restoration do you envision?

Are there indigenous plant species that you incorporate into planting design, which are still not readily available or used?

Which contractors and nurseries have you worked with that are particularly amenable to supplying native plant species? When and where are they located?

How did you become aware of these native species? I.E. what information prompted you to begin using these species?

Have regulations and zoning ordinances affected your interest in native plantings?

How would you like to change the regulations and ordinances to improve the native planting effort?

Were you in contact with Benny Simpson from the agricultural extension office, or any other botanists, who were studying and promoting native species?

Have your clients been supportive of your indigenous planting endeavors? Are they aware of the indigenous planting design?

What are your main sources of information on indigenous plants?

As a percentage of your design work, what quantities of native species do you use? Initially? Today?

How are these native species being used? Residential? Office/Commercial? Parks and Recreation? Ecological Restoration?

Has there been any resistance to your use of indigenous species? If so, by whom? Clients? Nurseries? Colleagues? Neighbors?
Questions for Governmental Policy Makers

When did you begin using native plants?

What are your goals in using native species?

What laws and ordinances affect the planting of indigenous plant species in your community (city, county, state)? How are they intended to impact native species? In residential development? In commercial or office development? In parks and recreation work? In restorative ecology?

How long have these been in effect?

How did you become aware of these native species? I.E. what information prompted you to begin regulating these species?

What laws and ordinances are under development, or on a 'wish-list,' that promote the planting of indigenous species? What type of native plant restoration do you envision?

Questions for Academic Extension Service


Who have been the key extension service employees who have contributed to this effort? When and where were they employed?

How did you become aware of these native species? I.E. what information prompted you to begin using these species?

Have regulations and zoning impacted your interest in native plantings?

How would you like to change the regulations and ordinances to improve the native planting effort?

As a percentage of your work, what amount of time and effort is devoted to native species?

How do you view your role in the future in continuing the effort of native plant restoration? What type of native plant restoration do you envision?

Questionnaire

Please see attached questionnaire. The written formal survey will be presented to the native plant-purchasing public at the annual LadyBird Johnson Wildflower Center native plant sale in October 2000.
The subjects of the interviews will be given an informed consent document to sign (see attachment). All subjects will be adults. The interviewer will explain the document, and make it clear that all responses will be confidential. If there are specific quotations or digital clips that we want to include in the reports or papers stemming from the interviews, we will get oral permission to use such quotations.
Appendix C

LBJ Wildflower Center Survey and Results
Anonymous Survey Consent

You are invited to participate in a research project entitled "Roots and Shoots of the H. Dan Heyn Vision: Indigenous Planting Design" designed to study the history and impacts of the native plant movement in Texas. This study is being conducted by Dr. David Lemberg and Elizabeth Heiny-Cogswell, ASLA, from Western Michigan University, Department of Geography as part of a master's thesis, and is partly funded by the Lucia F. Harrison Geography Research Endowment Fund. The survey will take approximately 10 minutes to complete. Your replies will be completely anonymous, so do not put your name anywhere on the form. You may choose to not answer any question and simply leave it blank. If you choose to not participate in this survey, you may either return the blank survey or you may discard it in the box provided. Returning the survey indicates your consent for use of the answers you supply.

If you have any questions, you may contact Dr David Lemberg at (616) 387-3408, the Human Subjects Institutional Review Board (616) 387-8293 or the vice president for research (616) 387-8298.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner. You should not participate in this project if the corner does not have a stamped date and signature.

Survey Questions for Native Plant Purchasers

When did you begin using native plants?


What number of different native species did you purchase today?

<10 10 to 25 26 to 50 >50

Approximately what number of native plants did you purchase at this sale?

<10 10 to 25 26 to 50 >50

Have you purchased plants in other years or at the Fall Gardening Festival?

Yes No

Which best describes your home lifestyle?

City Rural Suburb

What city do you consider your home, or that you live closest to?

Austin San Antonio Houston Dallas Bryan-College Station

Other
How are you using these native species?

Personal projects (residence or business property)   Community projects

Where did you hear about the Spring Gardening Festival and Plant sale?

I am a member   I am a volunteer   Austin American Statesman
Radio   Television   Friend
Other

How did you become aware of these native species? That is, what information prompted you to begin using these species? Use back of form for additional space.

Books/Magazine articles   Local Ordinances   Friend   Retail Nursery
Extension Service   Gardening Club   Gardening Magazine
Other

What size is your property where you are planting these natives?

< 1 Acre   1 to 50 Acres   50-1000 Acres   >1000 Acres

What benefit do you derive from the use of native species? (circle all that apply)

Aesthetic   Water Conservation   Water utility savings
Texas natural heritage conservation   Texas natural heritage pride
Wildlife Habitat (birds, butterflies, etc)   Yard maintenance time savings
Other

For the native plants that you have previously purchased and planted, are you aware of any natural reseeding and spread of these species from your garden to neighbors/ranchland? If so, please describe briefly.

Did you find the experts, walks demonstrations and talks to be helpful in providing the information you need to use native plants in your landscape? Any in particular that were extra informative?

What landscaping topics would you like to learn more about?

THANK YOU FOR YOUR TIME IN COMPLETING THIS SURVEY.
Survey Questions for Native Plant Purchasers

When did you begin using native plants?

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What number of different native species did you purchase today?

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Approximately what number of native plants did you purchase at this sale?

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<th>26 to 50</th>
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<td>73</td>
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Have you purchased plants in other years or at the Fall Gardening Festival?

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<tr>
<th></th>
<th>Yes</th>
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<td>68</td>
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Which best describes your home lifestyle?

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<thead>
<tr>
<th></th>
<th>City</th>
<th>Rural</th>
<th>Suburb</th>
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<td>43</td>
<td>34</td>
<td>47</td>
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What city do you consider your home, or that you live closest to?

- Austin 84
- San Antonio 3
- Houston 3
- Dallas 5
- Bryan-College Station 2
- Other: Dripping Springs (4), Georgetown (4), Fort Worth (3), Cedar Creek (2), Victoria (2), Round Rock (Lake Charles, LA) (2), Clifton, Denton, Driftwood, Mason, San Marcos, Spicewood, Valley Mills, Waco-Hewitt, Huntsville, AL, St. Louis, MO, Harrisville, NH, Princeton, NJ.

How are you using these native species?

<table>
<thead>
<tr>
<th></th>
<th>Personal projects (residence or business property)</th>
<th>Community projects</th>
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<tr>
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Where did you hear about the Spring Gardening Festival and Plant sale?

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<thead>
<tr>
<th></th>
<th>I am a member</th>
<th>I am a volunteer</th>
<th>Newspaper (AstAmerStsman/Chrn/PtW-ST)</th>
<th>Radio</th>
<th>Television</th>
<th>Friend/Family</th>
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<td>10</td>
<td>13</td>
<td>15</td>
<td>5</td>
<td>18/4</td>
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Other: Garden Club of America (2); Mail (2); Heard about for several years; Got lucky-didn’t know about it and now a member (2); Magazine (2) (Southern Living Magazine); Sign on road to WFC; Intern @WFC; Email; Previous WFC visit; Now a family member-joined today; NPSOT; San Antonio Herb Society newsletter; Just showed up for pictures; Frequent Visitor; Internet; Banner Sign over Sweet-Downtown.
Survey Questions for Native Plant Purchasers

When did you begin using native plants?

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No Response: 1

What number of different native species did you purchase today?

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<tr>
<td>Values</td>
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No Response: 2

Approximately what number of native plants did you purchase at this sale?

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<td>Values</td>
<td>73</td>
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No Response: 2

Have you purchased plants in other years or at the Fall Gardening Festival?

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Which best describes your home lifestyle?

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No Response: 1

What city do you consider your home, or that you live closest to?

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<td>Other: Dripping Springs (4), Georgetown (4), Fort Worth (3), Cedar Creek (2), Victoria (2), Round Rock (Lake Charles, LA) (2), Clifton, Denton, Driftwood, Mason, San Marcos, Spicewood, Valley Mills, Waco-Hewitt, Huntsville, AL, St. Louis, MO, Harrisville, NH, Princeton, NJ.</td>
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<tr>
<td>Austin</td>
<td>3</td>
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<td>San Antonio</td>
<td>3</td>
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<tr>
<td>Houston</td>
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<td>2</td>
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<td>Bryan-College Station</td>
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How are you using these native species?

<table>
<thead>
<tr>
<th>Use</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal projects (residence or business property)</td>
<td>109</td>
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<tr>
<td>Community projects</td>
<td>3</td>
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</table>

No Response: 15

Where did you hear about the Spring Gardening Festival and Plant sale?

<table>
<thead>
<tr>
<th>Source</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>I am a member</td>
<td>56</td>
</tr>
<tr>
<td>I am a volunteer</td>
<td>10</td>
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<tr>
<td>Newspaper (AstAmerStsman/Chrns/FtW-ST)</td>
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<tr>
<td>Radio</td>
<td>15</td>
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<tr>
<td>Television</td>
<td>5</td>
</tr>
<tr>
<td>Friend/Family</td>
<td>18/4</td>
</tr>
</tbody>
</table>

Other: Garden Club of America (2); Mail (2); Heard about for several years; Got lucky-didn't know about it and now a member (2); Magazine (2); Southern Living Magazine; Sign on road to WFC; Intern @WFC; Email; Previous WFC visit; Now a family member-joined today; NPSOT; San Antonio Herb Society newsletter; Just showed up for pictures; Frequent Visitor; Internet; Banner Sign over Street-Downtown.
How did you become aware of these native species? That is, what information prompted you to begin using these species? Use back of form for additional space.

<table>
<thead>
<tr>
<th>Books/Magazine articles</th>
<th>Local Ordinances</th>
<th>Friend</th>
<th>Retail Nursery</th>
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<tbody>
<tr>
<td>61</td>
<td>1</td>
<td>25</td>
<td>16</td>
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<tr>
<td>Extension Service</td>
<td>Gardening Club</td>
<td>Gardening Magazine</td>
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<tr>
<td>12</td>
<td>17</td>
<td>18</td>
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</tbody>
</table>

WFC 12

Other: WFC (6) (upon arrival at WFC, working @ WFC, volunteer @ WFC, Stew here, WFC guide to the natives, members); Camping/Nature preserves/State Parks (5) (Big Bend Camping Trip, Missouri Wildflower Trail, live on State Park, Wild Basin Wilderness preserve, Missouri Wildflower Trail); Observation (5) (...of roadsides (2), ...that they grow successfully in area, grew up in country, experience, lived in Texas all my life); Family (4) (mother-In-Law, niece, family, father & interest in flowers); Media (4) (radio garden shows (2), newspaper, television gardening programs); Landscape Architects/designers (3) (landscape org/American Society of Landscape Architects, garden planner/designer, Howard Garrett); NPSOT (3)(Georgetown, NT); Education (3) (informal class at UT Austin, university study & classes, H.S. Bio Teach); Internet (3) (website, City of Austin website, online Wildflowers.org); Environmental (2) (concern over water, environmental ethic); Own interest (2) (lifelong); David Mahler.

What size is your property where you are planting these natives?

<table>
<thead>
<tr>
<th>&lt; 1 Acre</th>
<th>1 to 50 Acres</th>
<th>50-1000 Acres</th>
<th>&gt;1000 Acres</th>
<th>2000 Acres</th>
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<tr>
<td>83</td>
<td>28</td>
<td>5</td>
<td>1</td>
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No Response: 6

What benefit do you derive from the use of native species? (circle all that apply)

<table>
<thead>
<tr>
<th>Aesthetic</th>
<th>Water Conservation</th>
<th>Water utility savings</th>
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</thead>
<tbody>
<tr>
<td>101</td>
<td>79</td>
<td>39</td>
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</table>

Texas natural heritage conservation Texas natural heritage pride

Wildlife Habitat (birds, butterflies, etc)

Yard maintenance time savings

92        69        No Response: 6

Other: Fragrance; Feel great about natives/non-natives don’t survive in Austin; Emotional Therapy; Deer proof (2); Duty; Grow well in Texas.

For the native plants that you have previously purchased and planted, are you aware of any natural reseeding and spread of these species from your garden to neighbors/ranchland? If so, please describe briefly.

Yes 46 50

Reseed in containers; To other parts of yard & neighbors; Just at the edges on both sides: First time planting; Spreading in our own garden; Not that I know of; No notice/Neighbors have been given plants we propagated; Columbine spread through yar

Don’t know (2); Three neighbors are jointly seeding a large pasture w/wildflowers; N/A
No, but I share my plants; Caesalperse, narides sages, acanthus, yaupon, sumacs; Annuals and perennials have spread through property; Now are reseeding and spreading and old things are coming back; Wild ageratum; Bluebonnets have spread wildly this year; Bluebonnets have spread; Texmania hemnokis to many native prairies in front yard; St. Augustine, Bermuda, bluebonnets, and others reseed around yard and to neighbors; No because neighbors all mow a lot; Salvia spread.

Did you find the experts, walks demonstrations and talks to be helpful in providing the information you need to use native plants in your landscape? Any in particular that were extra informative?

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<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
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</thead>
<tbody>
<tr>
<td>71</td>
<td>1</td>
<td>41</td>
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</table>

All helpful and kind; All very informative and helpful; All the “experts” were friendly and knowledgeable; Docents- Mrs. Morgen and Denise; All good; People at plant sale were very helpful; Fantastic; They were great people; All very helpful; Very informative around plant purchasing area; Someone just walking; The NPSOT people were very helpful; Exceptionally courteous and helpful; NPSOT member was very friendly and informative; Volunteers and native displays were very helpful; Shade plants talk; Butterfly Gardening; Butterflies/Agairita information; Wildlife habitat; Deer gardening; Deer person; Deer resistant plants; Deer proof ideas; The demonstration gardens are great for ideas and also give an idea of what plants look like in maturity (size, etc…); Walk demonstration; The new walk through the new property south of the center; Walk demonstration; Specimen gardens and volunteers were helpful; Site use; Soil expert/ pond society; Water gardening; Pond experts very helpful; Daniel Dietz, I believe? He was great!; Person selling grass—very knowledgeable; Instrumental in seed and seedling purchase; Vendor from seed company; Seed guy—described process for planting wildflowers from seed; N/A; 0; Not really— we already knew what we wanted; Didn’t stay.

What landscaping topics would you like to learn more about?

<table>
<thead>
<tr>
<th>No Response</th>
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<tbody>
<tr>
<td>66</td>
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</table>

Water (7) (Water conservation, not require water, water use, xeriscape, xeriscaping, mulch/water retention, rain water expert); Design (7) (arrangements of, design and mixing species together; specific plants and their adaptations- how they can fit into the microhabitats of my garden; design with natives; small yard gardening); None (4); All (2); Soils (2) (soil improvement); Geology; Composting (3) (why don’t I have worms in my yard?, compost/ soil prep/ organic users; Plant propagation (3); Water gardening (3)(pond plants); Wildlife Federation booth; Birding gardens; Beneficial insects; Organic pest control; Future of jobs in hort; Identification (2) (of many native plants); Natives to central Texas; Cactus gardens; Shrubs and trees; Ground Covers; Interested not only in native seed, but in anything that will grow here; Bulbs; Native Vines; Texas native; Grasses (2) (native grasses); Endangered species; Exotic invaders; Maintenance (2) (yard maintenance, maintenance of natives); Planting techniques; Planting St. Augustine grass; Places to purchase native plants.
Appendix D

H. Dan Heyn Questionnaire
Dan,

Thank you for the nice letter; it is always good to hear from you also.

I have several questions pertaining to your professional use of indigenous plant species. Please answer as best you can. I will call you in about a week in case you would like any clarification on the questions.

1. In your experience, which Texas trees, shrubs, and vines that are currently well known were least known prior to 1950? When did they become readily available to landscape architects? Did they become readily available to the general public? If so, when?

2. Are there indigenous species, which you incorporated into planting design, which are still not readily available or used?

3. Which were the most pioneering indigenous planting design years of your career? Early 50’s, 60’s?

4. Do you remember specific contractors and nurseries that you worked with in your pioneering indigenous plant work? Would they fall into categories, such as worked with x in the 50’s, then x, y, and z in the sixties, etc? Tree contractors: Walter Gilbreath &

5. Do you still have any old or new nursery catalogues for those nurseries? If so, may I borrow them?

6. Was Dick Myrick or any other landscape architect or landscape designer in Texas also exploring the use of native species in the decades of the 50’s, 60’s, or 70’s? Were you collaborating or corresponding with others on the issue of incorporating native species? (This question assumes that many landscape architects and
the general public were more widely aware of native plants in the 80's).

7. Were you in contact with Benny Simpson from the state extension office, or any other botanists who were studying native species in any of the decades since the 1950's? [Dr. Donovan Carrell]

8. Enclosed are two lists of Texas native plants (from a 1984 State Dept. of Agriculture directory). From this list of native species, could you note on the copy if you used the species in design, according to the following scale, and by decade?

   A. USED FREQUENTLY
   B. USED PERIODICALLY
   C. USED INFREQUENTLY
   D. NEVER USED

9. Assuming your use of indigenous plants had an impact later on their availability, which species would you guess were most influenced by your use? (Top five or ten). [Southern Wax Myrtle, Posesumhaw, Mexican Plum, Cross Vine]

10. Were state or local political figures, such as Lady Bird Johnson or Gov. James Hogg, who promoted wildflowers and trees, any influence on you? Or, conversely, were you an influence on them? [No]

11. In terms of your clients and employers, who were the most important? Were they supportive of your indigenous planting endeavors? Were they aware of your indigenous planting design? [Yes]

12. What were your main sources of information on indigenous plants? [Books (Previously you mentioned your childhood east Texas camping experiences. How did you continue this study)?] [Books & Trips to Texas Hill Country]


I certainly appreciate your assistance in answering these questions. Again, I will call in about a week. Ideally, the answers would be written, unless you would prefer another means.
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<th>50's</th>
<th>60's</th>
<th>70's</th>
<th>Comments</th>
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<td>Acacia schaffneri v. 'Gravoensis'</td>
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**FASLIRION TEXANUM**

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**SMILAX LANCEOLATA**

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**TEXAS SOTOL**
Appendix E

Cullum and Boren Photo and Plant List
FOR THE SPORTSMAN . . . A DIFFERENT APPROACH

(Courtesy Texas Architect).
<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>CONDITION</th>
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<td>Magnolia grandiflora</td>
<td>Southern Magnolia</td>
<td>5&quot; cal.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>14'-16' high</td>
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<td>1</td>
<td>Pinus thunbergii</td>
<td>Japanese Black Pine</td>
<td>6'-7' high</td>
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<td></td>
<td></td>
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<td>4'-5' spread</td>
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<td>1</td>
<td>Liquidambar styraciflua</td>
<td>Sweet Gum</td>
<td>4½&quot;-5&quot; cal.</td>
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<td>Ilex vomitoria</td>
<td>Natural Tree Form</td>
<td>8'-9' high</td>
<td>B&amp;B</td>
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<tr>
<td></td>
<td></td>
<td>Yaupon(Female Plant)</td>
<td>min. 2 trunks</td>
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<tr>
<td>1</td>
<td>Ilex Foster's Hybrid</td>
<td>Natural Tree Form</td>
<td>8'-9' high</td>
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<td>Sophora secundiflora</td>
<td>Texas Mountain Laurel</td>
<td>7'-8' high</td>
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<td>min. 2 trunks</td>
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<td>Acer palmatum</td>
<td>Red Japanese Maple</td>
<td>4½'-5' high</td>
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<td>Yeddo Hawthorn</td>
<td>2'-2½' high</td>
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<td>Hypericum patulum Henryi</td>
<td>Hypericum</td>
<td>10&quot;-12&quot; high</td>
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<td>Dwarf Chinese Holly</td>
<td>10&quot;-12&quot; spread</td>
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<td>Dwarf Yaupon</td>
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<td></td>
<td></td>
<td></td>
<td>10'-12' high</td>
<td>or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 culms min.</td>
<td>can</td>
</tr>
<tr>
<td>3</td>
<td>Mahonia aquifolium Compacta</td>
<td>Dwarf Oregon Grape Holly</td>
<td>10&quot; spread</td>
<td>1Gal. C</td>
</tr>
<tr>
<td>58</td>
<td>Liriope muscari Variegata</td>
<td>Variegated Liriope</td>
<td>heavy clump</td>
<td>1Gal. C</td>
</tr>
<tr>
<td>QUANTITY</td>
<td>BOTANICAL NAME</td>
<td>COMMON NAME</td>
<td>SIZE</td>
<td>CONDITION</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------</td>
<td>----------------------</td>
<td>---------------</td>
<td>-----------------</td>
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<tr>
<td>11</td>
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<td>Violet - variety</td>
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<td></td>
<td></td>
<td>Royal Elk</td>
<td></td>
<td></td>
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<td>458</td>
<td>Ajuga reptans Atropurpurea</td>
<td>Bronze Leaf Ajuga</td>
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<td>2½&quot; Pot</td>
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<tr>
<td>8</td>
<td>Hosta plantaginea</td>
<td>Funkia</td>
<td>heavy plant</td>
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<td>54</td>
<td>Sedum brevifolium</td>
<td>Sedum</td>
<td>heavy clump</td>
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<tr>
<td>203</td>
<td>Ophiopogon japonicum</td>
<td>Monkey Grass</td>
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<tr>
<td>5</td>
<td>Hemerocallis flava Hyperion</td>
<td>Daylily - Yellow</td>
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<tr>
<td>1,250</td>
<td>Trachelospermum asiaticum</td>
<td>Asian Jasmine</td>
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<tr>
<td>1</td>
<td>Trachelospermum asiaticum</td>
<td>Asian Jasmine</td>
<td>heavy vine</td>
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</tr>
<tr>
<td>1,014</td>
<td>Hedera helix Hahnii</td>
<td>Hahn's Ivy</td>
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<td>2½&quot; Pot</td>
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<tr>
<td>14</td>
<td>Hedera helix Hahnii</td>
<td>Hahn's Ivy</td>
<td>5-6' vine</td>
<td>staked plant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>heavy</td>
<td>5Gal. Can</td>
</tr>
<tr>
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<td>Hedera helix var. Heart</td>
<td>Heart Ivy</td>
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<td>Bignonia capreolata</td>
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<tr>
<td>1</td>
<td>Wisteria sinensis Alba</td>
<td>Wisteria - White</td>
<td>5-6' vine</td>
<td>heavy B&amp;B</td>
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<tr>
<td>2</td>
<td>Fatshedera lizei</td>
<td>Fatshedera</td>
<td>6-7' high</td>
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<tr>
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<td>Fagaria chilensis</td>
<td>Strawberry</td>
<td>heavy plant</td>
<td>1Gal. Can</td>
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<tr>
<td>3</td>
<td>Gelsemium sempervirens</td>
<td>Carolina Jasmine</td>
<td>6-7' vine</td>
<td>5Gal. Can</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>heavy</td>
<td>staked plant</td>
</tr>
<tr>
<td>66</td>
<td>Colchicum autumnale Album</td>
<td>Autumn Crocus - White</td>
<td>#1</td>
<td>Corm</td>
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<tr>
<td>36</td>
<td>Lycoris radiata</td>
<td>Red Spider Lily</td>
<td>#1</td>
<td>Bulb</td>
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<tr>
<td>12</td>
<td>Lycoris radiata Alba</td>
<td>White Spider Lily</td>
<td>#1</td>
<td>Bulb</td>
</tr>
<tr>
<td>64</td>
<td>Narcissus jonquilla &quot;Golden Perfection&quot;</td>
<td>Daffodil - &quot;Golden Perfection&quot;</td>
<td>#1</td>
<td>Bulb</td>
</tr>
<tr>
<td>14</td>
<td>Hydrangea macrophylla Mariesi Variegated</td>
<td>Hydrangea heavy plant</td>
<td>1Gal. Can</td>
<td>Silver Variegated</td>
</tr>
<tr>
<td>3</td>
<td>Hippeastrum hybrdium</td>
<td>Amaryllis - White</td>
<td>heavy plant</td>
<td>1Gal. Can</td>
</tr>
</tbody>
</table>
Appendix F

Smith Residence Landscape Specifications and Plant List
LANDSCAPE SPECIFICATIONS

RESIDENCE OF MRS. W.C. SMITH
ODESSA, TEXAS

H. DAN HEYN
LANDSCAPE ARCHITECT
P.O. BOX 1291
RICHARDSON, TEXAS 75080
(214) 238-7016
LANDSCAPE SPECIFICATIONS - Residence of Mrs. W.C. Smith
Odessa, Texas

H. Dan Heyn - Landscape Architect

A. SCOPE

These specifications/instructions cover the soil preparation for all planting areas, and installation of all plants shown on the Landscape Plan and listed in the Plant List for the Smith residence, Odessa, Texas.

B. PLANT MATERIALS

All plants shall be the kinds and sizes specified in the Plant List. No substitutions shall be made except with the written approval of the Landscape Architect. Should discrepancies in plant quantities occur between Landscape Plan and Plant List, the Landscape Plan shall govern.

1. Trees, shrubs, vines, ground covers, and flowering perennials shall be well branched and normal in height and spread according to age and species. They shall possess a healthy, normal, and unbroken root system and shall be free from insects, diseases or mechanical injuries.

2. All plants shall be balled and burlapped, or container grown in accord with the standards set forth by the American Association of Nurserymen.

3. Plants shall be adequately protected from drying out or mechanical injury by the Landscape Contractor in transit and on the site prior to installation.

C. STEEL EDGING

Steel edging shown on the Landscape Plan shall be 1/8" x 5" Ryerson steel edging. Top of edging shall be set one and one half inches above adjacent lawn areas.
D. BED PREPARATION - SHRUB AND GROUND COVER AREAS

Bed preparation shall consist of the spreading of a one inch layer of well rotted weed-free barnyard fertilizer, a one and one half inch layer of peat moss and "Sulfa Soil" at the rate of three pounds per 100 square feet on all bed areas. All bed areas shall then be spaded to a depth of eight inches and the soil shall be worked until it is in a fine, loose condition suitable for good plant growth. Finish grade for bed areas shall be maintained 1 1/2 inches below adjacent paving or bed edging.

E. PLANT INSTALLATION

1. Tree and shrub pits shall be circular in outline with vertical sides, and pits shall be 12 inches greater in diameter than the diameter of the ball.

2. All trees and shrubs shall be set in center of pits, plumb and at such a level that an adequate cover of top soil may be placed over the top of the ball.

3. Extra peat moss shall be added to the backfill around all trees, shrubs, and vines in the amount of one-fourth of the total volume. Backfill around all camellias, be 100% WET PEAT MOSS.

4. Soil mixture around all plants shall be thoroughly settled by soaking with water. All trees and shrubs shall be encircled by a shallow basin to facilitate watering.

5. Pruning of trees and shrubs shall only be done to improve their natural form or to remove broken or badly bruised branches.

F. FESCUE LAWNS

1. All areas indicated Fescue lawn on the Landscape Plan shall be seeded with "Rebel" turf type tall Fescue grass.

2. Lawn areas shall be tilled to a depth of four inches and raked until a fine, smooth seed bed is established.
3. Granulated 10-10-5 fertilizer shall be applied at the rate of 40 pounds per 1,000 square feet of area.

4. Grass shall be evenly sown at the rate of 12 pounds per 1,000 square feet of area.

5. Seed and fertilizer shall be covered 1/4 inch by very light raking.

6. Lawn areas shall be rolled with a medium weight roller.

7. Lawn areas shall be kept moist.

8. After germination, all bare areas shall be fertilized, seeded, and watered as before.

G. BUFFALO GRASS MEADOWS

1. All Buffalo Grass meadows shown on the Landscape Plan shall be rendered free of Bermuda grass by the application of "Round-Up" herbicide.

2. Meadow areas shall be lightly tilled to a depth of about two inches and raked until smooth.

3. Buffalo Grass (Buchloe Dactyloides) treated seed shall be evenly applied at the rate of one pound of seed per one thousand square feet of area at a time when the soil temperature is at 70° or more.

4. After sowing of seed, all meadow area shall be fertilized with 10-10-5 commercial fertilizer at the rate of 40 pounds per one thousand square feet of area.

5. Meadow areas shall be soaked with a fine spray of water and kept moist to insure germination.

6. Two weeks after germination, bare areas shall be re-seeded and watered as before.

H. MAINTENANCE

The Landscape Contractor shall be responsible for the adequate watering of all plants, control of insect pests, and
weeds during the progress of this installation.

I. FINAL INSPECTION AND GUARANTY

1. The work under this contract shall be inspected and upon satisfactory completion accepted for the Owner by the Landscape Architect.

2. Guaranty and Replacement:
   a. All plants shall be guaranteed by the Contractor for a period of one year from date of completion of the work.
   b. All plants that are dead or not in a vigorous thriving condition during the guaranty period shall be replaced by the Contractor.
   c. Plants used for replacement shall be the same sizes and kinds specified in the plant list.
   d. Replaced plants shall be removed from the site by the Contractor.
   e. Plants dead or damaged by severe freeze are not guaranteed.
<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quercus shumardii</td>
<td>Spanish Red Oak</td>
<td>3 trunks 2 trunks 3&quot;-3 1/2&quot; cal. 1 trunk 2&quot;-2 1/2&quot; cal.</td>
<td>B&amp;B</td>
</tr>
<tr>
<td>3</td>
<td>Quercus virginia</td>
<td>Live Oak</td>
<td>3 trunks 2 trunks 3&quot;-3 1/2&quot; cal. 1 trunk 2&quot;-2 1/2&quot; cal.</td>
<td>B&amp;B</td>
</tr>
<tr>
<td>3</td>
<td>Quercus virginia</td>
<td>Live Oak</td>
<td>4&quot; cal.</td>
<td>B&amp;B</td>
</tr>
<tr>
<td>7</td>
<td>Liquidambar styraciflua</td>
<td>Sweet Gum</td>
<td>2 1/2&quot;-3&quot; cal. 9'-10' high</td>
<td>B&amp;B</td>
</tr>
<tr>
<td>3</td>
<td>Sapindus saponaria</td>
<td>Western Soapberry</td>
<td>2&quot;-2 1/2&quot; cal.</td>
<td>B&amp;B</td>
</tr>
<tr>
<td>2</td>
<td>Carya illinoiensis</td>
<td>Pecan - variety &quot;Burkett&quot;</td>
<td>3&quot;-3 1/2&quot; cal.</td>
<td>B&amp;B</td>
</tr>
<tr>
<td>16</td>
<td>Pinus eldarica</td>
<td>Mondel Pine</td>
<td>12' high</td>
<td>B&amp;B</td>
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<tr>
<td>Quantity</td>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Description</td>
<td>Size</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------</td>
<td>--------------------------</td>
<td>------------------------------</td>
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</tr>
<tr>
<td>3</td>
<td>Hibiscus syriacus</td>
<td><em>Hibiscus syriacus</em></td>
<td>Althaea Tree</td>
<td>5'-6' high</td>
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<tr>
<td></td>
<td>&quot;Collie Mullen&quot;</td>
<td></td>
<td>Lavender</td>
<td></td>
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<td>2</td>
<td>Sophora secundiflora</td>
<td><em>Sophora secundiflora</em></td>
<td>Texas Mountain Laurel</td>
<td>6'-8' high</td>
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<td>3</td>
<td>Lagerstroemia indica</td>
<td><em>Lagerstroemia indica</em></td>
<td>Crape Myrtle Tree</td>
<td>6'-8' high</td>
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<tr>
<td></td>
<td>&quot;Glendora White&quot;</td>
<td></td>
<td>White Flowering</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Lagerstroemia indica</td>
<td><em>Lagerstroemia indica</em></td>
<td>Crape Myrtle Tree</td>
<td>6'-8' high</td>
</tr>
<tr>
<td></td>
<td>&quot;Muskogee&quot;</td>
<td></td>
<td>Lavender Flowering</td>
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<td>3</td>
<td>Myrica cerifera</td>
<td><em>Myrica cerifera</em></td>
<td>Southern Wax Myrtle Tree</td>
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<tr>
<td>1</td>
<td>Prunus persica</td>
<td><em>Prunus persica</em></td>
<td>Peach - Variety</td>
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<td>Selected by owner</td>
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<td>Prunus armeniaca</td>
<td><em>Prunus armeniaca</em></td>
<td>Apricot - &quot;Moorpark&quot;</td>
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<td>&quot;Moorpark&quot;</td>
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<td>Ilex vomitoria</td>
<td><em>Ilex vomitoria</em></td>
<td>Yaupon Tree - 3 trunks</td>
<td>8'-10' high</td>
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<td></td>
<td></td>
<td>Female Plant</td>
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<td>6</td>
<td>Prunus caroliniana</td>
<td><em>Prunus caroliniana</em></td>
<td>Cherry Laurel Tree</td>
<td>2&quot;-2 1/2&quot; cal.</td>
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<td>8'-10' high</td>
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<tr>
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<td>Magnolia grandiflora</td>
<td><em>Magnolia grandiflora</em></td>
<td>Southern Magnolia</td>
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<td></td>
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<td>12&quot; high</td>
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<td>Cercis canadensis</td>
<td><em>Cercis canadensis</em></td>
<td>Texas Redbud</td>
<td>5'-6' high</td>
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<td>Texensis</td>
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<tr>
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<td>Rhus virens</td>
<td><em>Rhus virens</em></td>
<td>Evergreen Sumac</td>
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<td>Heavy Plant</td>
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<td>#</td>
<td>Species (Latin Name)</td>
<td>Common Name (Variation)</td>
<td>Plant Type</td>
<td>Size</td>
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<td>-------------------------------------------</td>
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<td>2</td>
<td>Ternstroemia gymnanthera</td>
<td>Cleyera</td>
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<td>104</td>
<td>Ilex vomitoria Nana</td>
<td>Dwarf Yaupon</td>
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<td>Raphiolepis indica &quot;Clara&quot;</td>
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<td>Nandina domestica</td>
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<td>17</td>
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<td>Photinia fraseri</td>
<td>Fraser Photinia</td>
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<td>Lavandula latifolia</td>
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<td>Prostrate Rosemary</td>
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<td>Autumn Sage</td>
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</tr>
<tr>
<td>1</td>
<td>Camellia sasanqua &quot;Shishi-Gashira&quot;</td>
<td>Rose-Red Sasanqua</td>
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<td>2 gal. can</td>
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<tr>
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<td>Camellia sasanqua &quot;White Doves&quot;</td>
<td>White Sasanqua</td>
<td>Heavy Plant</td>
<td>2 gal. can</td>
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<tr>
<td>Item</td>
<td>Plant Name</td>
<td>Variety</td>
<td>Size</td>
<td></td>
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<td>-----------------------------</td>
<td>--------------------------</td>
<td>--------------------</td>
<td></td>
</tr>
<tr>
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<td>Aspidistra elatior</td>
<td>Aspidistra</td>
<td>Heavy Plant</td>
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<td></td>
<td></td>
<td></td>
<td>2 gal. can</td>
<td></td>
</tr>
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<td>Viola odorata</td>
<td>Evergreen Violet</td>
<td>Heavy Clump</td>
<td></td>
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<tr>
<td></td>
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<td>&quot;Royal Robe&quot;</td>
<td>4&quot; pot</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Liriope muscari Variegata</td>
<td>Variegated Liriope</td>
<td>Heavy Clump</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 gal. can</td>
<td></td>
</tr>
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<td>Hemerocallis Varieties</td>
<td>Day Lily</td>
<td>Heavy Clump</td>
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<tr>
<td></td>
<td></td>
<td>Mixed Colors</td>
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<td>Kniphofia &quot;Wayside Flame&quot;</td>
<td>Torch Lily</td>
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<tr>
<td></td>
<td></td>
<td>Orange Red</td>
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</tr>
<tr>
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<td>Heavy Plant</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 gal. can</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>Chrysanthemum maximum &quot;Snowcap&quot; var. &quot;Snow Cap&quot;</td>
<td>Shasta Daisy</td>
<td>Heavy Clump</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>4&quot; pot</td>
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<tr>
<td>2,656</td>
<td>Liriope spicata</td>
<td>Liriope Ground Cover</td>
<td>Division B.R.</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Equals 1/3 of 1 gal. can</td>
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</tr>
<tr>
<td>4,652</td>
<td>Trachelospermum asiaticum</td>
<td>Asian Jasmine</td>
<td>Heavy Vines</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4&quot; pot</td>
<td></td>
</tr>
<tr>
<td>414</td>
<td>Potentilla verna</td>
<td>Potentilla</td>
<td>Heavy Plant</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4&quot; pot</td>
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<td>Hedera helix &quot;Needlepout&quot;</td>
<td>Needlepoint</td>
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<td></td>
<td></td>
<td>Ivy Vine</td>
<td>1 gal. can</td>
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<td>4</td>
<td>Parthenocissus tricuspidata</td>
<td>Boston Ivy Vine</td>
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<td></td>
<td></td>
<td></td>
<td>1 gal. can</td>
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<tr>
<td>No.</td>
<td>Plant Name</td>
<td>Description</td>
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<td>Rosa banksiae Lutea</td>
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<td>Heavy Canes</td>
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<td>Campsis tagliabuana &quot;Madame Galen&quot;</td>
<td>Trumpet Vine &quot;Madame Galen&quot;</td>
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<td>Gelsemium sempervirens</td>
<td>Carolina Jessamine Vine</td>
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<td>8</td>
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<td>Grape - Varieties selected by owner</td>
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Appendix G

Letter to Lady Bird Johnson
March 23, 2001

Mrs. Lady Bird Johnson
LBJ Ranch Stonewall
Austin, TX 78701

Dear Mrs. Johnson,

As a ‘non-traditional’ student, I am conducting graduate research, on a thesis entitled “Roots and Shoots of the H. Dan Heyn Vision: Indigenous Planting Design, 1950-1980.” Dan, a Texas landscape architect who practiced from the early 1950’s, actively studied and utilized the native flora. I believe he is the first landscape architect in Texas to utilize native plants, especially the species of Mexican Plum, Crossvine, Southern Wax Myrtle, and Possumhaw. These species are now more common, but Mr. Heyn experienced a great struggle to introduce them to clients and the landscape nurseries prior to 1980.

While living in Dallas, Texas in the early 80’s I had the pleasure of working with Mr. Heyn on landscape projects and from this design interaction sensed his greater contribution to the understanding and use of native plants. I was fortunate to receive graduate research funding to interview Mr. Heyn and other associates in the fall of 2000 to study his work.

During the time I interviewed Dan in Richardson, Texas, Mr. Heyn presented to me a 1967 photo from Karnack, Texas, a copy of which is enclosed. The photo shows you, Mr. Heyn, and the architect who worked on the new post office building. Mr. Heyn further relayed the story of his specification in the landscape design of local plant species, and of the wonderful day spent with you and the architect discussing how to implement the landscape plan, with resolution to collect plants from the local woodlands. He respected your understanding of the local plant species. (He also regretted not being able to accept your subsequent invitation to visit the White House).

Mr. Heyn is not well known in the world of native plant enthusiasts, due mostly to his preference for solitude and humility. However, I feel that his contribution to furthering the cause of conserving native plants and demonstrating how to use them in developed landscapes is great. Through this research I have viewed planting plans from Dan’s office which document Mr. Heyn’s use of native species for clients in designed landscapes. From my work thus far, I have not found any other landscape architect
practicing in Texas during this time period that studied, loved, and understood the native species as did Mr. Heyn.

This photo of you with Mr. Heyn raises questions in my mind. I hope that this query finds you in good health. Your contribution to the understanding of native plants is monumental, through the establishment of the National Wildflower Center, among other accomplishments. Would it be presumptuous on my part to believe that Mr. Heyn, through his interaction with you on the Karnack Post Office, introduced you, or somehow influenced your thinking on the possibilities of the use of native plants in the landscape? Perhaps you had other influences. But this photo, and the timing of it, and knowing the battle Mr. Heyn fought to use native species, naturally peaks my curiosity.

I have enclosed another sketch of Mr. Heyn, a sketch drawn by an architect associate, which captures the spirit of Mr. Heyn’s at work—coming back to the office after time spent collecting native species.

Any insight or recollection from you would be much appreciated. I sincerely thank you for your time in contributing to this research endeavor.

Sincerely,

Elizabeth A. Heiny-Cogswell
Appendix H

Letter from Lady Bird Johnson
DEAR MS. HEINY-COGSWELL,

MRS. JOHNSON ASKED ME TO RESPOND TO YOUR LETTER CONCERNING YOUR THESIS ABOUT H. DAN HEYN.

MRS. JOHNSON ATTRIBUTES HER LIFE-LONG LOVE AFFAIR WITH NATURE TO THE DAYS OF HER CHILDHOOD. HER MOTHER DIED WHEN SHE WAS FIVE AND THERE WERE FEW PLAYMATES IN THE SMALL TOWN WHERE SHE GREW UP IN DEEP EAST TEXAS. SHE SPENT MUCH OF HER TIME EXPLORING THE PINEY WOODS WITH THE NEEDLES RUSTLING BENEATH HER FEET, LOOKING FOR THE FIRST VIOLETS OF SPRING. SHE RECALLS THE DOGWOOD AND REDWOOD TREES OF THE AREA AND THE WILD ROSES THAT CLIMBED THE FENCE ROWS.

TOO, THE TEXAS HIGHWAY DEPARTMENT HIRED ITS FIRST LANDSCAPE ARCHITECT, JAC GUBBELS, BACK IN THE EARL 1930'S. ONE OF HIS FIRST PRIORITIES WAS TO MAKE THE PUBLIC CONTRACTORS AND HIGHWAY ENGINEERS AWARE OF PRESERVATION NEEDS. AS A TRAVELER, MRS. JOHNSON'S APPRECIATION FOR NATIVE PLANTS GREW.

MRS. JOHNSON BELIEVES THE COPY OF THE PHOTOGRAPH YOU ENCLOSED WAS TAKEN AT THE DEDICATION OF THE NEW POST OFFICE. SOME OF THE BRICKS FROM HER FATHER'S STORE WERE USED IN ITS CONSTRUCTION. THROUGH THE MISTS OF TIME SHE DOESN'T RECALL OTHER DETAILS, ALTHOUGH SHE WAS CERTAINLY PLEASED TO READ YOUR DESCRIPTION OF MR. HEYN'S WORK.

WITH MRS. JOHNSON'S GOOD WISHES TO YOU,

SINCERELY,

BETTY TILSON
ASSISTANT TO MRS. LYNDON B. JOHNSON
Appendix I

World Cat Records
**WORLDCAT RECORDS**

Worldcat search results for “Native Plants for Cultivation” 9 February 1999.

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Appendix J

HSIRB Approval Letters
Date:  11 October 2000

To:    David Lemerg, Principal Investigator
       Elizabeth Heiny-Cogswell, Student Investigator for thesis

From:  Sylvia Culp, Chair  Sylvia Culp

Re:    HSIRB Project Number:  00-10-01

This letter will serve as confirmation that your research project entitled “Roots and Shoots of the H. Dan Heyn Vision: Indigenous Planting Design, 1950-1980” has been approved under the expedited category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination:    11 October 2001
Date: February 23, 2001

To: David Lemberg, Principal Investigator
    Elizabeth Heiny-Cogswell, Student Investigator for thesis

From: Michael S. Pritchard, Interim Chair

Re: Changes to HSIRB Project Number: 00-10-01

This letter will serve as confirmation that the changes to your research project “Roots and Shoots of the H. Dan Heyn Vision: Indigenous Planting Design, 1950-1980” requested in your memo dated February 14, 2001 have been approved by the Human Subjects Institutional Review Board.

The conditions and the duration of this approval are specified in the Policies of Western Michigan University.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: 11 October 2001
Appendix K

HSIRB Consent Forms
Western Michigan University
Department of Geography

Roots and Shoots of the H. Dan Heyn Vision: Indigenous Planting Design

Principle Investigator: Dr. David Lemberg
Student Investigator: Ms. Elizabeth A. Heiny-Cogswell

I have been invited to participate in a research project entitled "Roots and Shoots of the H. Dan Heyn Vision: Indigenous Planting Design." This research is part of a Master’s Thesis research project for Ms. Elizabeth Heiny-Cogswell in the Department of Geography at Western Michigan University. The research is intended to study the history, objectives and constraints on the use of native plant species in Texas. The various participants in the movement will be identified and their efforts examined in the course of this research.

I will be asked to participate in one half-hour to one-hour interview with one of the principle investigators. I will be asked to respond to a series of questions about my views on the history, trends, and objectives of native plant design and production, in terms of my interests and/or my department’s interests in indigenous plant design, restoration, research, and education.

As in all research, there may be unforeseen risks to the participant. If an accidental injury occurs, appropriate emergency measures will be taken; however, no compensation or treatment will be made available to me except as otherwise specified in this consent form.

I may benefit from this project in that this research is aimed toward formulating goals and policies that encourage the planting of native species.

All of the information collected from me is confidential. This means that my name will not appear on any papers on which this information is recorded, unless I give express permission to be quoted. All forms will be retained for three years in a locked file in the principal investigator’s laboratory.

I may refuse to participate or quit at any time during the study without prejudice or penalty. If I have any questions or concerns about this study, I may contact either Dr. David Lemberg at (616) 387-3408 or Elizabeth Heiny-Cogswell at (616) 375-4409. I may also contact the chair of Human Subjects Institutional Review Board at 387-8293 or the vice president for research at 387-8298 with any concerns that I have.
This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner of each page. Subjects should not sign this document if the corners do not have a stamped date and signature.

My signature below indicates that I have read and/or had explained to me the purpose and requirements of the study and that I agree to participate.

I do give permission for the researchers to quote my responses, after review of thesis.

I do not give permission for the researchers to quote my responses.

(Check one of the above)

Signature: [Name]
Date: Oct. 17, 2000

Consent obtained by: [Signature]
Initials of researcher: [Initials]
Date: 10-17-00
This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner of each page. Subjects should not sign this document if the corners do not have a stamped date and signature.

My signature below indicates that I have read and/or had explained to me the purpose and requirements of the study and that I agree to participate.

I do give permission for the researchers to quote my responses.

________ I do not give permission for the researchers to quote my responses.

(Check one of the above)

Signature: 

Date: 10/19/00

Consent obtained by: 

Initials of researcher: 

Date: 10/19/00
This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner of each page. Subjects should not sign this document if the corners do not have a stamped date and signature.

My signature below indicates that I have read and/or had explained to me the purpose and requirements of the study and that I agree to participate.

I do give permission for the researchers to quote my responses.

I do not give permission for the researchers to quote my responses.

(Check one of the above)

[Signature]
Consent obtained by: [Initials of researcher]

[Date]
[Oct 18, 2000]
This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner of each page. Subjects should not sign this document if the corners do not have a stamped date and signature.

My signature below indicates that I have read and/or had explained to me the purpose and requirements of the study and that I agree to participate.

✓ I do give permission for the researchers to quote my responses.

☐ I do not give permission for the researchers to quote my responses.

(Check one of the above)

Signature: John M. Davis  Date: 10-20-00

Consent obtained by: [Signature]  Date: 10-10-00

Please send me a copy of the final Thesis.

Thanks!
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