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The Solitary Place Shall Be Glad for Them: Understanding and Treating Mormon Pioneer Gardens as Cultural Landscapes

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THE SOLITARY PLACE SHALL BE GLAD FOR THEM: UNDERSTANDING
AND TREATING MORMON PIONEER GARDENS AS
CULTURAL LANDSCAPES

by

Emily Anne Brooksby Wheeler

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF LANDSCAPE ARCHITECTURE

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ABSTRACT

The Solitary Place Shall Be Glad for Them: Understanding and Treating
Mormon Pioneer Gardens as Cultural Landscapes

by

Emily Anne Brooksby Wheeler, Master of Landscape Architecture

Utah State University, 2011

Major Professor: Michael Timmons
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The gardens of early Mormon pioneers are a unique cultural resource in the western United States, but little guidance has been provided for understanding or providing landscape treatments for Mormon landscapes. Mormon pioneers came to Utah and the Great Basin to escape religious persecution and build their own holy kingdom. In relative geographical isolation, they built towns that have a distinctive character delineating a Mormon cultural region in the West. Self-sufficiency was an important feature of these towns and of the religious culture of early Mormons, both because of their geographical isolation and their desire to be independent of the world, which they viewed as wicked. This emphasis on self-sufficiency made gardens and gardening an important part of every household, encouraged by religious leaders and individual need. The cultural and personal preferences of individuals did influence the style and contents of Mormon pioneer gardens, but perhaps not to the extent that the religious culture of self-sufficiency did.

When managing or treating Mormon pioneer landscapes or gardens, it is helpful to

start by assessing any historic features that still exist. Then, the property owner or manager can choose one of the standard landscape treatments of preservation, rehabilitation, restoration, or reconstruction, or opt for some combination of these treatments. Because Mormon pioneers brought plants from all over the world, a large selection of heirloom plants may be suitable for historic Mormon landscapes. A few historic plants are no longer appropriate in Western landscapes because of ecological concerns such as invasiveness or water efficiency, but substitutions for these plants can be found by considering the plant's form, function, and meaning in the historic landscape.

(137 pages)

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Emily Wheeler

To Spanish Dan,
Scourge of the Battlefield

CONTENTS

	Page
ABSTRACT	iii
ACKNOWLEDGMENTS	v
INTRODUCTION	1
Literature Review	3
THE CONTEXT FOR MORMON PIONEER GARDENS	8
The Historical Context	8
The Physical Context	13
The Cultural Context	26
Individual Context	44
SELECTING PLANTS FOR MORMON PIONEER LANDSCAPES	47
Treatments for Historic Landscapes	47
Appropriate Plants for Mormon Pioneer Landscapes	52
Making Plant Substitutions in the Historical Landscape	74
CONCLUSIONS	82
REFERENCES	84
APPENDICES	91
Appendix A: Fruits, Nuts, and Berries Known to be Cultivated in Utah During the Pioneer Period	92
Appendix B: Vegetables, Herbs, and Field Crops Known to be Cultivated in Utah During the Pioneer Period	100
Appendix C: Ornamental Trees and Shrubs (Except Roses) Known to be Cultivated in Utah During the Pioneer Period	109
Appendix D: Ornamental Herbaceous Plants Known to be Cultivated in Utah During the Pioneer Period	113
Appendix E: Roses Known to be Cultivated in Utah During the Pioneer Period	117
Appendix F: Native Plants Known to be Cultivated in Utah During the Pioneer Period	121

Appendix G: Invasive or Potentially Invasive Plants in the Mountain West
Region (Including the Mormon Cultural Region)123

INTRODUCTION

And he hath cast the lot for them, and his hand hath divided it unto them by line: they shall possess it for ever, from generation to generation shall they dwell therein. The wilderness and the solitary place shall be glad for them; and the desert shall rejoice, and blossom as the rose. (Isaiah 34:17-35:1, King James Bible)

This Biblical prophecy that the desert shall “blossom as the rose” was frequently repeated by the members of The Church of Jesus Christ of Latter-day Saints, or Mormons, as they fled from religious persecution to the semi-arid lands of the Great Basin to make a new home for themselves. This new home was a place they hoped they would “possess for ever,” as stated in Isaiah, and a place where they could build their holy city, or Zion. Their beliefs were etched in the ground as they worked to cultivate the land, construct fences, dig irrigation ditches, and build homes and gardens in the Utah Territory. Every act of gardening, grafting, weeding, and harvesting was, potentially, a holy act, part of the process of creating a sacred space. The results of their labors are still visible today in historic landscapes throughout Utah and portions of the Intermountain West settled by Mormons.

Books on historic landscape preservation usually overlook the Intermountain West region, and Utah in particular, often grouping it in the general category of “the West,” yet Utah has a unique landscape style and history that should be considered when working with its historic landscapes. In order to preserve, restore, rehabilitate, or reconstruct early Utah Mormon landscapes, it is important to understand the people who created these landscapes, in addition to the plants they used and the way they arranged

their spaces. Understanding what gardens meant to Utah's Mormon pioneers will allow historic property owners and managers to make context-sensitive decisions about treatment options for historic Utah landscapes.

Historic landscapes represent an educational opportunity. They place historic buildings in their proper context and help give places a more historical feeling. They also help people understand the people of the past and their world views. Seeing or growing historic plants in their proper context, especially with some understanding of what the plants and gardens meant to those who grew them, is a way for people to connect with history (Larkin 2008, 241). Historic plants are a living connection to the past, but preservationists and designers must understand their context. Garden historian Ann Leighton (1987, 15) suggests that, in historic landscapes, "Copying without knowing why will miss the whole point." She goes on to say:

One must seek to know the early owners and workers, the explorers and the nurserymen, to listen to the visionaries, read their authorities, learn the history behind each flowering plant . . . And in the end we will really know the gardens.

For this reason, the careful treatment of historic landscapes is not only important to historic preservation, but can also be rewarding for individuals.

Though Utah has a unique cultural landscape history, it does share some landscaping concerns, such as invasive species and water conservation, with neighboring states. Because of these and other concerns, it is sometimes necessary to make substitutions in the landscape. Understanding the context—historical, geographical, and cultural—of early Utah gardens will help the landscape preservationist maintain the cultural significance of Utah's early landscapes and make sensitive and appropriate decisions about which plants to substitute in historical landscapes.

This thesis will aid historical landscape preservation by discussing the context for pioneer gardens and identifying some of the plants used by Mormon pioneer settlers of Utah from their arrival in 1847 until 1869 when the Transcontinental Railroad increased connection with the rest of the nation. It will also offer suggestions on choosing substitutions for historic plants that are not available or appropriate in today's landscapes. Its focus is on Mormon vernacular residential landscapes during this time period, including the trees, shrubs, flowers, and vegetables grown on the lots around homes, here referred to collectively as gardens. It will give a brief overview of the design of early Mormon gardens and explore the meanings of the gardens to those who tended them. It will also give readers an introduction to principles of historic preservation and to some of the plants used historically in Utah, both to help them decipher existing information about historic gardens and to make historically appropriate choices when selecting plants for historic homes and landscapes.

Literature Review

Though a few written works have examined the unique characteristics of the Mormon landscape in Utah, none of them have focused on the early Mormon pioneer period and the preservation of these landscapes. This thesis will address that need, while building off of previous works on Mormon landscapes and historic landscape preservation.

Ester Truitt's (1986) University of Connecticut thesis, "Home Gardening on City Lots in the Salt Lake Valley, 1847-1918," provides a good overview of gardening among early Mormons. Truitt's thesis examines the changing role of gardens in the Mormon

landscape over time, and discusses how this reflects other changes in Mormon society in the Salt Lake Valley, as well as gardening trends in the larger world. She provides some discussion of the general character and layout of Salt Lake City during the pioneer era, as well as some of the plant material used in Mormon pioneer gardens. This thesis will expand on Truitt's by providing more detail about the plant materials used by Mormon pioneers, as well as practical advice for restoring or reconstructing early Mormon landscapes. This thesis has a more focused chronological scope and broader geographic one, looking at the scattered Mormons settlements as part of the larger Mormon landscape.

In *The Mormon Landscape: Existence, Creation, and Perception of a Unique Image in the American West*, geographer Richard V. Francaviglia (1978) documents the existence of a uniquely Mormon landscape and examines the features and influences that created these landscapes. Though his concern is with the appearance of modern landscapes, he is interested in the historical roots of the modern appearance. He shows the influence of Mormon religious organization on the organization of the landscape and certain of its features, which makes the landscape a reflection of cultural and political influences among the early Mormon settlers of Utah. His book is a good overview for understanding historic Utah landscapes, though he gives very little detail about plant materials. Also, since he is focused on modern landscapes, he does not always distinguish between the phases of early landscape development, sometimes grouping together all the changes of the first five decades of Utah landscape history into the category of the pre-1900s.

Rudy J. Favretti and Joy Putman Favretti have written several excellent guides for restoring and managing historic landscapes, including *Landscapes and Gardens for Historic Buildings: A Handbook for Reproducing and Creating Authentic Landscape Settings* (1978). Their books give an overview of styles and trends in American landscapes from colonial times to the present, and give in-depth advice on researching historic landscapes for restoration, including practical advice on dealing with modern problems in historic landscapes. Unfortunately, their work is very geographically limited, with considerations of North and South, but generally not West.

Dr. Denise Wiles Adams, plant historian and horticultural consultant, gives general advice for restoring mid-nineteenth century gardens in the introduction to her encyclopedia of historic plants, *Restoring American Gardens: An Encyclopedia of Heirloom Ornamental Plants, 1640-1940* (2004). She also briefly discusses the need to make plant substitutions in historic landscapes. Unfortunately, in the encyclopedia portion of her book, Adams lumps Utah into the generic category of the “West” with the Pacific Northwest and California, so the information she provides is not particularly helpful for Utah gardens. She devotes one paragraph to Utah landscape history, and spends most of it discussing one garden from the 1920s. Also, she begins her list of common plants for the West in 1870, presumably when gardening catalogs, one of her main sources for information on plant materials, became more prevalent in the western United States. This means her book, while an excellent resource for other areas, falls short in helping Utah garden designers and landscape preservationists make informed choices about plants to include when restoring or reconstructing early Utah gardens.

American Gardens of the Nineteenth Century: "For Comfort and Affluence," by Ann Leighton (1987), is a detailed look at gardening trends and important figures in nineteenth-century garden design. She discusses the tremendous impact of expanding frontiers and new technologies on gardens and plant materials. In her appendix she includes a very thorough list of plants common in nineteenth-century gardens. Her book is not intended as a guide for restoring nineteenth-century gardens, but instead as a way of understanding them and the people who cared for them. This book is helpful for understanding the background of nineteenth-century gardeners, but does not contain much practical information for someone trying to reconstruct or restore a historic garden.

Because of the scarcity of information directly related to the topic of early Mormon pioneer gardens, this thesis draws on a variety of primary sources to provide a context for those gardens and their preservation. Many published and unpublished diaries, autobiographies, and letters of both Mormon pioneers and non-Mormon visitors contain clues about the appearance and contents of early Mormon gardens and hints about what they may have meant to the Mormon pioneers. In the 1930s the federal Works Progress Administration sponsored the collection of interviews and personal histories from surviving Utah pioneers. Copies of the resulting histories are available in the Utah State University archives, and they provide numerous details about early crops and food of the Mormon pioneers since several of the standard interview questions used in the project addressed those topics. The *Journal of Discourses*, a collection of speeches made by early Mormon leaders in Utah for distribution among Mormons abroad, offer some religious and cultural context for gardening in pioneer-era Utah. The early issues of the *Deseret News*, established in 1850, frequently contain articles and advertisements related

to gardening, and articles published around the time of the centennial celebration of the Mormons' arrival in Utah also sometimes focused on the Mormon pioneers' gardening legacy. Finally, the minute book of the Deseret Agricultural and Manufacturing Society and the account book of early Mormon nurseryman Joseph Ellis Johnson were valuable resources for gathering a substantial list of the names of many of the plants that were imported to Utah and that Mormon pioneers may have grown in their own gardens.

THE CONTEXT FOR MORMON PIONEER GARDENS

The Historical Context

Mormon history to 1847. The Church of Jesus Christ of Latter-day Saints was organized in upstate New York in 1830 by Joseph Smith, Jr. The members of the Mormon church were initially known among themselves as “Saints” and to their detractors as Mormons, though church members eventually adopted the term Mormon as well. In the Mormon church’s early history, church members were forced by persecution to relocate frequently, moving farther west in a search for a place where they could build their ideal holy society without conflict with their neighbors. In 1830, the body of the church moved to Ohio, though within a year some of them were relocating to Missouri. The Mormon church actively sought new members, and by 1837 it starting sending missionaries overseas. They first went to the British Isles, but soon church leaders and missionaries were traveling to more exotic destinations, starting with Palestine in 1841. By the late 1830s, many Mormons had gathered to Missouri, but conflicts with their neighbors there led to the arrest of Joseph Smith and the proclamation of an extermination order that forced church members to flee or face imprisonment or execution.

The Mormons regrouped again in Commerce, Illinois, which they renamed Nauvoo, a name that Joseph Smith said meant “beautiful,” and developed it into the second largest city in the state. The Mormon church enjoyed relative peace until 1844 when Joseph Smith and his brother Hyrum were killed by a mob. Most Mormons regrouped under the leadership of Joseph Smith’s close associate Brigham Young.

Pressure against the Mormons mounted until, in the winter of 1846, they began to leave their homes in Illinois, heading west across the frozen Mississippi River. After many years of fleeing homes to escape persecution, many Mormons felt embittered toward the U.S. government and the nation as a whole and were ready to leave the U.S. for Mexican territory in the West.

While the Mormons were encamped in the outskirts of the nation, they came to an agreement with the U.S. government to send troops to aid in the Mexican War. Though some Mormons thought the government was extraordinarily audacious to allow them to be driven from their homes and then ask for their help, Brigham Young encouraged many young men to enlist in the Mormon Battalion (T. Kane 1850, 181). This provided money to aid the Mormon migration as well as an opportunity to become familiar with the western half of the country during their long march, which ended in California.

Under the leadership of Brigham Young, the first party of Mormon pioneers began their journey across the Great Plains in 1847. William Clayton, a prominent Mormon in Brigham Young's company, declared that in the first party there were

. . . a total of 148 souls who have started to go West of the mountains as Pioneers to find a home where the Saints can live in peace and enjoy the fruits of their labors, and where we shall not be under the dominion of Gentile [non-Mormon] governments, subject to the wrath of mobs and where the standards of peace can be raised, the Ensign to the nations reared and the Kingdom of God flourish until truth shall prevail, and the Saints enjoy the fullness of the gospel. (Clayton 1991, 297)

Early Utah History. At the time that Brigham Young began to lead his people west, the future state of Utah was occupied by various tribes of native peoples, including the Southern Paiutes in southwestern Utah, the Ute in the central part of the state, and the Shoshone in the north. In 1776, two Spanish padres had become the first known white

explorers to visit the region, and they were followed by Mexican and Spanish traders who visited the region to trade with Native American tribes. Some of these early visitors to the region had thought it a place that had good soil and might be capable of supporting some settlements (Escalante 1776, 221-222; Lienhard 1846, 224). In 1824, mountain man Jim Bridger and his associates became some of the first of the fur traders to explore the area. Subsequent traders and mountain men would settle in the area and even establish some forts, such as Fort Buenaventura, built by Miles Goodyear in the Ogden region in 1844-1845, and later purchased by Mormon settlers.

Despite these early forays by non-native people into the area, the Great Basin was generally considered inhospitable by Anglo-Americans in the nineteenth century. Mormons arrived in the Salt Lake Valley in 1847 and quickly began irrigating the ground and planting crops. They struggled for the first few years to survive, often resorting to eating native greens and berries and trying to defend their crops from insects and drought, until they were finally able to establish themselves. Once they did, they were acknowledged, even by their enemies, to be good farmers (Dixon 1867, 366-367). Mormon agriculture played a pivotal role in the westward expansion of America as they sold or traded their surplus food to immigrants traveling to California and miners working in nearby states.

The Mormons did not get the total isolation they hoped to find in the Rocky Mountains. In 1848, the portion of Mexico in which they had settled became a part of the United States, and in 1850 Utah Territory was incorporated. The discovery of gold in California in 1848 had a tremendous impact on Utah history. Brigham Young wanted to keep the Mormons as isolated as possible and discouraged mining because of the

negative activities often associated it, but miners and immigrants passing through Utah brought supplies that they were willing to trade for food when they stopped in Salt Lake City on their way to the gold fields. Salt Lake City became an important stopping point on the journey west, and many of these early travelers left accounts, both positive and negative, of life in Utah. The most frequently discussed aspect of Mormon life was the practice of polygamy, which became a publicly acknowledged practice of some Mormons in 1852.

Despite the backlash against the Mormons over polygamy, church membership continued to grow, especially among foreign converts. Many of them came from the poorer classes of the British Isles and Scandinavia, but missionaries traveled to many parts of the world to gather converts. These missionaries also searched for plants and other resources that might be useful for enriching the Mormon settlements in Utah. As Mormon immigrants came to Utah, often traveling by boat and then wagon or sometimes handcart across the Great Plains, Brigham Young sent them out to form colonies in other parts of Utah and the Great Basin. Settlers went south, especially, where they could grow important crops like cotton that did not thrive in the Salt Lake Valley.

The growth of the Mormon church and Brigham Young's seemingly absolute control over its members, as well as the ongoing practice of polygamy, led to conflicts with the U.S. government. The Utah Territory created by Congress in 1850 was smaller than the State of Deseret that Mormon leaders had proposed, and further congressional acts would shrink the territory more as they tried to continue to restrict the power of the Mormons in the West through the 1860s (Reeve 2006, 43-45, 58; Walker 1980, 254). In 1857-1858, the Utah War, a mostly bloodless conflict, occurred when President James

Buchanan sent troops to remove Brigham Young as territorial governor and install his own appointee. Though there were no major battles as part of the war, it introduced the permanent presence of U.S. troops into Utah and heightened tensions between Mormon and non-Mormons in Utah Territory. Settlers abandoned their homes during the Utah War for safety, though some returned after the conflict was resolved. After the Civil War, pressure mounted to solve the “Mormon Problem.” The territory’s efforts to gain statehood were continually blocked, while anti-Mormon feeling grew over polygamy and the church’s political control in the territory (Reeve 2006, 58).

In addition to conflicts with their own government, the Mormons also fought sporadically with the local Native Americans. The Walker War of 1853 between white settlers and Native Americans was one of several conflicts that caused Brigham Young to encourage Mormons to live in forts in early days, and led to the building of tall walls around many early houses and settlements. The last major conflict between whites and Native Americans was the Black Hawk War in 1865-1869.

The 1860s saw increasing connections between Utah and the rest of the nation. The Pony Express, and then the telegraph, provided for faster communication. Finally, in 1869, the Transcontinental Railroad was completed at Promontory Point, Utah. This brought more goods from the eastern United States, a large step toward ending the relative isolation of Utah during the pioneer period. It also brought more non-Mormons into the territory, some with the express purpose of solving the “Mormon Question” (Mulder and Mortensen 1958, 357). This was met by resistance to outside influence, at least by the Mormon leaders, who sometimes discouraged Mormons from trading with non-Mormons or adopting their fashions in clothing, food, and even language (Mulder

and Mortensen 1958, 357-358, 373, 387). Following this pattern, while some Mormons were probably strongly influenced by outside trends in gardening, others may have clung to traditional gardening styles and fashions. The early history of the Mormons created a people who were generally distrustful of outside influences and valued isolation and self-reliance.

The Physical Context

Utah Territory. Geography had an important impact on Mormon gardens, both in terms of what the Mormons had access to and what they could grow. There were many apparent contradictions, however, in geography's impact on Mormon landscapes. Utah Territory was relatively isolated from the rest of the nation, yet it was centrally located in terms of westward movement and exploration, which made it hub for trade in the West. Also, to many the land seemed like a desolate desert. The portions of Utah where most of the Mormons settled consist of high elevation north-south oriented valleys on the western edge of the Rocky Mountains and the eastern edge of the Great Basin. The valleys are semi-arid, dominated by sagebrush, but with soil that proved to be fertile and water flowing down from the eastern mountains to provide irrigation (Francaviglia 1978, 3-4).

William Clayton, who climbed ahead of Brigham Young's 1847 advance party to view the Salt Lake Valley before the first Mormon pioneers entered it, described it thus:

The intervening valley appears to be well supplied with stream, creeks and Lakes some of the latter are evidently salt. There is but little timber in sight anywhere, and that is mostly on the banks of creeks and streams of water which is about the only objection which could be raised in my estimation to this being one of the most beautiful vallies and pleasant places for a home for the Saints which could be found . . . In some places

may be seen a grove of small fir or Cedar or Pine, and in the vallies some Cotton wood and other small timber . . . There is no prospect for building log houses without spending a vast amount of time and labor, but we can make Spanish brick . . . or we can build lodges as the Pawnee Indians do in their villages . . . For my own part I am happily disappointed in the appearance of the valley of the salt Lake, and if the land be as rich as it has the appearance of being, I have no fears but the saints can live here and do well while we will do right . . . Give me the quiet wilderness and my family to associate with, surrounded by the saints and adieu, adieu to the Gentile world . . . (Clayton 1991, 362)

Not all of the early pioneers were as optimistic about their new home. Elizabeth Kane reported a story she heard about Harriet Page Wheeler Decker Young (whom she called “Helen” to protect her identity), one of the three women who traveled in Brigham Young’s pioneer party. Kane said Harriet’s family told her that:

They reached the promised land and looked down on the Salt Lake Valley. There were about six small cottonwood trees then in all the valley, and Helen looked at them a long time. Then she said to her husband, “Father, we have come fifteen hundred miles in wagons, and a thousand miles through the sage-brush; and I’d get into the wagon tomorrow, and travel a thousand miles farther, to see shade trees instead of these rocks and sands.” (E. Kane 1974, 86)

Though she experienced numerous setbacks, especially from the grasshoppers and Mormon crickets that swarmed through and ate even the young trees, Harriet did eventually get a house surrounded by shade trees in Utah.

The geography and climate of Utah were not ideal for farming. Late frosts often destroyed crops (Snow 2000, 223-224). Mountain man Jim Bridger, who was familiar with Utah, encouraged Brigham Young to settle farther south or west of the Salt Lake to find better prospects, though there was already one farm established in Ogden when the pioneers arrived (Clayton 1991, 350-352). For the first few years the Mormon settlers did struggle to grow their own food, and there were periods of food shortages during the

pioneer period, but most visitors to Utah were impressed with what the Mormons had accomplished in terms of agriculture and gardening.

Utah proved to be a somewhat challenging place to settle, but its semi-arid valleys and mountains became part of a sacred landscape for the early pioneers. Though it lacked timber in the valleys, the mountains provided some lumber, and its good soil and available water were quickly put to use by the pioneers. The climate limited what they could grow in northern Utah, but this led them to send out colonies, and through these colonies they found themselves connected with, and providing connections between, other outposts of Euro-American settlement. Despite these connections, the geography of Utah provided them to some extent with the isolation and protection they desired. It proved to be what they hoped they would find on leaving Nauvoo, as expressed by Eliza R. Snow:

Let us go – let us go to a country whose soil
Can be made to produce wine, milk, honey & oil –
Where beneath our own vines we may site and enjoy
The rich fruit of our labors with none to annoy. (2000, 122)

Though Eliza Snow, like many of the Mormon pioneers, thought the Mormons would go all the way to the Pacific coast, Utah proved to be more suitable for providing an isolated location where they could “sit under their own vines and fig-trees and inhabit their own houses, having none to make them afraid” (Young 1849, 229).

Many visitors to Utah found it an unappealing place. Elizabeth Kane, who visited in winter, wrote of one pioneer’s enthusiasm for Utah:

She seemed entirely contented, and praised her new home as much as if it lay in our green forest land, instead of among the dreary valleys of Utah. T[homas] reminded me that our valleys, too, were snow-covered at this season, and that the plains of which she spoke would soon be a grassy sea, abounding in beautiful

flowers. But what can atone for the absence of trees in a landscape? (E. Kane 1974, 61)

The barrenness of the land was a blessing, according to Brigham Young, because it kept non-Mormons from trying to take it from them (Francaviglia 1978, 82).

The geographic isolation of Utah made self-sufficiency a prime concern for church leaders and members. Getting food or supplies from the East or West Coast was slow, uncertain, and expensive. Early Utah settlers had to grow their own food, as well as other useful items like fiber and medicinal plants. This led to the abundance of orchards, vineyards, and gardens on which visitors often commented.

Geographical isolation also allowed for expansion. The Mormons needed more space for the flow of converts arriving in Utah since the Salt Lake Valley could not support them all, and Utah provided many valleys to settle. Brigham Young sent colonizers south to grow crops not suited for northern Utah's cold climate. The settlers found southern Utah to be even more desolate and barren than northern Utah. The Virgin River was muddy and subject to frequent flooding, and the land was hot, dry, and barren. Still, after several hard years, the settlers in Utah were successful in farming the land and starting their gardens. Charles Lowell Walker reported in 1866, "The leaves on the trees begin to appear fresh and green; also the pretty fruit blossoms delight the eyes and gladden the heart, after 5 years toil to accomplish the beautifying of the desolate and forbidding desert region" (1980, 254-255).

Walker wrote a poem about the difficulties of pioneering in southern Utah:

All tourists declare 'tis the Land Desolation,
And marvel how white folk can live here and thrive;
They know not we starved while at work on half rations,
'Twas grit that kept body and soul just alive.

The grub that we ate was in no way inviting,
 Hard flapjacks of caneseed with boiled lucern greens;
 And burnt pungent treacle in which ants were fighting,
 Whilst flies buzzed by millions for lack of wire screens.

Our works on the Virgin admit of no shaming,
 Oft vexed words escaped with a taint of profane,
 Our living was made by continually damming,
 Meantime we were hoping and praying for rain.
 The rain when it came often bursted our ditches,
 And dams were torn out by the mad raging flood;
 Like Beavers we worked in the stream without breeches,
 'Twas that or starvation in farming for food. (1980, xvii)

Irrigation was an important component of the Mormons' success, as Walker's poem suggests. Cities were laid out with open irrigation ditches along the streets, and each property owner got a water turn where he or she could divert the water for irrigation purposes. One of the first acts of the pioneers on arriving in the Salt Lake Valley was to begin digging irrigation ditches, and William Clayton reported that "this land is beautifully situated for irrigation" because of the streams running out of the mountains (1991, 364). The cooperative effort required to create these irrigation systems made them an unusual feature in Western landscapes, and their remnants are still visible today, especially in Utah towns where the old irrigation systems are still used.

Geography and climate may have limited what the Mormon pioneers could grow, but not what they could try. If anything, their relative isolation seems to have made them horticulturally adventurous, willing to try to grow everything available to them. They brought native plants down from the mountains, and their early ties to California and their worldwide missionary efforts allowed them to import a number of exotic plants. Though many of these could hardly have thrived in Utah's climate, the Mormon pioneer horticulturalists were willing to try anything they could manage to get to Utah.

Brigham Young was said to have advised:

The earth is a good earth. The elements are good if we will use them for our own benefit, in truth and righteousness. Let the people build good houses, plant vineyards and orchards and make good roads, build beautiful cities in which may be found magnificent edifices for the convenience of the public, handsome streets skirted with shade trees, fountains of water, crystal streams, and every tree, shrub and flower that will flourish in this climate, to make our mountain home a paradise, and our hearts wells of gratitude to the God of Joseph. (*Deseret News* 1938)

Many of the Mormons did find inspiration and beauty in their new home, especially in the mountains. Charles Walker, after travelling through the mountains of southern Utah and enjoying a stop to admire the scenery, reported that “I left the spot deeply impressed with the great works of the creator” (1980, xiv). The mountains not only provided inspiration, they also offered isolation and protection from the enemies of the Mormons in the rest of the country (Clayton 1991, 374; Mulder 1957, 191). There was also a belief among the Mormons that the dry desert climate, high in the mountains, would result in a healthier people (Clayton 1991, 374).

The location of Utah in the mountains had spiritual implications as well. The Mormons regarded themselves as the fulfillment of prophecy from the book of Isaiah, including Isaiah 2:2:

“And it shall come to pass in the last days that the mountain of the Lord’s house shall be established in the top of the mountain, and shall be exalted above the hills; and all nations shall flow unto it.” (King James Version)

The establishment of Salt Lake City and its temple in the mountains, and the flow of immigrants there from throughout the world, were particularly identified with this prophecy (Clayton 1991, 328, 373-374). The Mormons also hoped for protection in the mountains, as in Isaiah 11:9: “They shall not hurt nor destroy in all my holy mountain”

(King James Version). The geography of Utah became both temporally and spiritually important to the Mormon pioneers.

Mormon landscape design. Geographer Richard V. Francaviglia (1978) identified a large portion of the Great Basin as a Mormon cultural region. This Mormon cultural region is the area influenced by early Mormon settlement of the West. It is centered in Utah, but its sphere of influence, determined by where Mormons settled during Brigham Young's leadership, extends into Idaho and far eastern Oregon, east into the western portions of Wyoming, Montana, and Colorado, south into Arizona and New Mexico and even northern Mexico, and west into southern Nevada and southern California (Francaviglia 1978, 72, 94). Francaviglia identified several aspects of the landscape that are common in the Mormon culture region and date back to its pioneer days, such as wide streets laid out on North-South grid, roadside ditches, public squares in the center of towns, barns and other trappings of farm life on city lots, large open fields outside of the towns, Lombardy poplars, and central-hall type homes (69). These and other landscape elements form the immediate physical context for Mormon pioneer gardens.

Not every town, or every home, in the Mormon sphere of influence would have followed the pattern of Mormon landscapes, especially in diverse areas such as southern California, but historic homes in this region have the potential to have been influenced by Mormon design patterns. Also, because some elements and plants of the Mormon landscape were determined by very practical considerations or common nineteenth-century landscape design trends, other settlers in these regions may have used them as well.

Homes in the Mormon culture region were rarely built of wood due to the scarcity of timber. Instead, abode was the most common building material, or sometimes brick (E. Kane 1974, 7; Tracy 1945, 301). Several layouts might be used, but the central-hall plan house was the most common (Francaviglia 1978, 16). Greek Revival was the most popular style, especially for public buildings (32). Homes were meant to be neat and convenient. At least one home in Provo had a porte-cochere connecting the house to the barn and wood-shed for protection during stormy weather (E. Kane 1974, 10). Barns and other farm-related outbuildings were placed on the town or city lots with the houses, with outhouses often located near the property line (Francaviglia 1978, 21, 27). Homes generally stood separately on relatively large lots, and each had their own gardens, vineyards, and orchards, which were usually surrounded by fences or adobe walls (E. Kane 1974, 23-24; Tracy 1945, 301). Fence styles were varied. A picture of Brigham Young's home from the early 1860s shows adobe fences, picket fencing, and a fence made of juniper poles (Whitley 2002, front piece, 126).

Howard Stansbury, who arrived in Salt Lake City in 1849 to carry out a federal government survey of the Great Salt Lake and the surrounding region, left a description of the city two years after it was settled:

A city had been laid out upon a magnificent scale, being nearly four miles in length and three in breadth; the streets at right angles with each other, eight rods or one hundred and thirty-two feet wide, with sidewalks of twenty feet; the blocks forty rods square, divided into eight lots, each of which contains an acre and a-quarter of ground. By an ordinance of the city, each house is to be placed twenty feet back from the front line of the lot, the intervening space being designed for shrubbery and trees. (Stansbury 1852, 128)

Stansbury reported that the city was protected by walls and fences with gates, and that each city ward was surrounded by a communal fence, to be replaced when time allowed

by fences around each individual lot (126, 130).

Elizabeth Cumming, who came to Utah with her husband Governor Alfred Cumming, Utah's first non-Mormon governor, in 1858, gave a fairly detailed account of the Salt Lake City home of William Staines. His home is not necessarily typical, both because he was well off and because he was a professional gardener, but her description can still help us understand the layout of lots and gardens in Salt Lake City:

I wish I had a picture of it for you - for it is very pretty. It stands about 130 feet back from the street - flowers etc in front - peach and other small trees on each side of the house & extending to the street - a large garden behind & on each side. The house is built like an English cottage - a piazza in front, with flat open work pillars, for vines - & a piazza above the first (Cumming 1958, 309)

The garden provided vegetables and strawberries for the Cummings when they settled into the city, which had been abandoned by most of its residents at the time (311).

Outlying towns were laid out in a manner similar to Salt Lake City, focused around a central square with wide, straight streets at right angles, lined with shade trees—often cottonwoods that branched across the streets during the pioneer era—and open irrigation canals running along the streets (E. Kane 1974, 23, 100-101; Tracy 1945, 301). Many towns, including Salt Lake City, started out as forts, built in blocks, with the buildings forming the outside walls (Josselyn 1949, 236; Stansbury 1852, 126). As threats from Native Americans and the U.S. government diminished, however, the cities spread out into their typical pattern. The towns often resembled a collection of small farms (Francaviglia 1978, 8). One block might have only four homes on it (16). The homes were often grouped on the corners of blocks, reducing some of the social isolation that might be caused by having homes in the middle of large, rural blocks (16).

This style was based on the Plat of Zion, a utopian city design influenced in part by New England town design, nineteenth century utopianism, and Mormon religious beliefs, which was sketched by Joseph Smith and put into practice by Brigham Young (Nelson 1952, 38-40). The Plat of Zion called for wide streets laid out on a grid, and houses with a small front yard for a “grove,” with the rest of the property behind the house reserved for gardens. The homes were to be brick or stone, and each was to have its own small farm, with the growth of the individual town limited by larger agricultural fields surrounding the town. Though not all of these concepts were unique in utopian planning, their use together in Utah gave many Mormon towns a distinct look (Francaviglia 1978, 81).

The gardening culture of mid-nineteenth century America was also pervasive in Utah. One thing that is interesting to note in all of the visitor accounts of gardens during the pioneer period is that none of them found anything foreign about the gardens. In fact, unfortunately for those recreating gardens, the layout of flower and vegetable gardens is rarely described, suggesting they were not unusual for the time period. In one exception, Elizabeth Kane, who was visiting Utah during the winter, remarked that at one house in Cedar City, “They had a garden behind the house which must have been very pretty in summer, the large beds having neat box edges, and the main walk passing between fine peach trees” (1974, 111). In Ephraim, beginning in the 1860s, the Peterson family had a garden for medicinal and culinary herbs, a long walk, a wild garden with well-tended paths and benches, and a summer house covered in grape vines (Moyle 1940). Vine-covered summerhouses were popular at this time in American gardens (Favretti and Favretti 1978, 113).

Garden beds are mentioned by many visitors, so it is possible that many of these gardens followed what Denise Adams (2004) calls the “ancient style” of simple square or rectangle beds for vegetables, herbs, and flowers, with walkways between them, and a few vines or shrubs, usually fragrant, around the front of the house, under windows, and possibly lining the garden paths. Shrubs were often planted around the borders of the garden (Favretti and Favretti 1978, 62). Shade trees might also have been used around a house, though not where they would shade the garden (Adams 2004, 27; Favretti and Favretti 1978, 62). This style was ubiquitous in mid-nineteenth century America in all but the more wealthy homes. Carpet bedding is not frequently mentioned in accounts of early Mormon gardens, and may have not been commonly used during this time period because of the time and labor required to maintain them.

The one trait that did seem to stand out to early Utah visitors was the abundance of fruit trees on every lot. Mormon homes almost always seem to have had an orchard behind and around the sides of the house, regardless of the nationality of the owner. This may be one of the most important features of the early Mormon landscape because it seems to have been one of the common design elements in the Mormon cultural region that stood out from other American gardens.

Even in their towns Mormons followed some established landscaping trends. Street tree planting, for instance, was a popular movement through America (Favretti and Favretti 1978, 78). Mormons did not, for the most part, create park-like cemeteries as was the trend in some cities at the time. They adopted an older style of cemetery design, which was to keep the cemeteries bare except for possibly a few trees. During the Nauvoo period there are records that some Mormons planted flowering plants on their

loved ones' graves. One woman planted a morning glory on her husband's grave, and a man planted roses on his wife's (Abbot 1936; Snow 2000, 217). This tradition may also have been carried on in Utah by some pioneers.

British traveler Sir Richard Burton gave a fairly detailed description of Salt Lake City in 1860 (1862). The homes, he said, were almost all adobe with gray shingles. The city was still surrounded by a crude wall, though it had grown out beyond it. Each home was placed on 1.5 acres surrounded by gardens in the city proper. The farm lots outside the city walls were 5 to 10 acres, with the lots getting larger as they got farther from the city, and they contained fields of corn and sorghum. There were "dark clumps and lines of bitter cottonwood, locust, or acacia, poplars and fruit trees, apples, peaches, and vines" (330), which provided a welcome contrast to the surrounding desert. He noted a surprising lack of "churches and steeples" (330). The roads were dirt, laid out in a grid. The roadside ditches ran with fresh water, and could be crossed by wooden planks. The houses looked the same to him, "a barn shape, with wings and lean-tos, generally facing, sometimes turned endways to the street" (331). Each house had a chimney and an outhouse. The windows were small due to the scarcity of glass. The best homes had flat roofs and "shady verandas" (331). Fences lined the road, usually post and rail on the outskirts and palings in the heart of the city. Main Street had a sidewalk, and all the streets were lined with shade trees, locusts being the most common.

Burton also described the gardens. He said:

The garden plots were small, as sweet earth must be brought down from the mountains; and the flowers were principally those of the Old Country – the red French bean, the rose, the geranium, and the single pink; the ground or winter cherry was common; so were nasturtiums; and we saw tansy, but not . . . mint. The fields were large and numerous. . . weeds

overspread the ground; often the wild sunflower tops outnumbered the heads of maize. (331)

His mention of bringing soil down from the mountains is not repeated in other sources, so it is difficult to gauge how common this practice may have been. He continued by describing peaches and vines whose flowers had been killed by late frost, and said the watermelons were tasteless. He reported that he had some good apples, though, and said that there were good potatoes, onions, cabbages, cucumbers, tomatoes, wheat, and hay.

Even Mark Twain (1872) had positive things to say about Mormon gardens after his visit in 1861. The streets, he said, were wide and straight with

. . . a limpid stream rippling and dancing through every street in place of a filthy gutter; block after block of trim dwellings, built of “frame” and sunburned brick—a great thriving orchard and garden behind every one of them, apparently—branches from the street stream winding and sparkling among the garden beds and fruit trees—and a grand general air of neatness, repair, thrift and comfort . . . (345)

He thought that the state’s beehive emblem was very fitting for the busy city he visited.

It was Brigham Young’s intention to keep the people busy. He said:

My policy is to keep everybody busy in building up this kingdom; in building houses; in breaking up land; in setting out fruit and ornamental trees; in laying out fine gardens, pleasant walks, and beautiful groves; and in building academies, and other places of learning. (1854, 145)

Though of course not everyone followed Brigham Young’s advice, it is clear that enough of the Mormons did that the Mormon cultural region formed with a distinctive landscape style. The wide, straight streets with their irrigation ditches and shade trees, and each house its own small farm surrounded by orchards and gardens, gave Utah a distinctive look that can still be seen in older towns today, and forms the landscape context for early Mormon gardens.

The Cultural Context

Mormon religious culture. The Mormon cultural region was a creation of geographical and cultural forces. The culture formed by the Mormon pioneers was a mixture of the native cultures of the Mormons and the new religion they practiced relatively isolated from larger cultural trends. The Mormon culture had a strong influence on the forms and meanings of early Utah landscapes and gardens.

Self-sufficiency was an important element of Mormon culture, not only for geographic reasons, but also because of the Mormons' religious outlook. Mormon experiences in the United States had left Utah's early pioneers bitter, and their leaders characterized the nation they had left behind as "wicked Babylon," inhabited by non-Mormons, or "Gentiles," while their new kingdom would be "righteous Zion" (Clayton 1991, 373.). Zion was to be independent of Babylon, with only minimal contact. At times Mormons were discouraged from transacting much business with or working for non-Mormons (Walker 1980, 198-199; E. Kane 1974, 108). Church leaders frequently lamented the influence of outside merchants on the Mormons, even in their isolated valleys (Walker 1980, 199). A lingering fear of the U.S. government also existed among the Mormons, especially among the leaders (Stansbury 1852, 144). In their view, Zion should be able to produce everything it needed so it could be independent and leave Babylon to its own destruction (Walker 1980, 216).

A poem or song recorded by Martha Haven on leaving Nauvoo expressed this feeling:

No longer let us linger here.
The world is doomed to woe and fear
This *Gentile* race the *Priesthood* hates

We have no home within the States
 Let us away to seek our rest
 Our home's not here; it's in the *West*. (1846, 175)

Many Mormons experienced a sense of separation from the larger world, and watched with interest to see if the judgments of God would be poured out upon it. For instance, in his journal, Charles Lowell Walker reports famines and other disasters in foreign countries with a mix of sympathy and morbid interest, making sure to assign the blame to wickedness wherever possible (1980, 137-140, 214). He and others watched the Civil War especially with a sort of smugness, with Walker apostrophizing to the States:

The Lord did once offer peace and Salvation to you but ye would not have it so now take your own course Well I am glad that I live in the Vallies of the mountains far away from turmoil and Strife and blood shed. The people here are quiet and enjoying themselves in the Dance and Social entertainments; none to molest them or make them afraid, with the light of truth to guide them in the way of the Lord. (158)

It is interesting to note that Walker was not a direct victim of the persecutions of the early Mormon church, having arrived in the U.S. from England in 1849, and not reaching Salt Lake City until 1855 (vii). Still, the pervasive culture of aloofness from the rest of the world had integrated itself into his journal writings, and he may have been echoing the sentiments of church leaders and members who expressed similar feelings (Stansbury 1852, 144).

At the same time that they watched for God's judgments on the wicked, many Mormons boasted of Zion's successes, especially its agricultural success. On October 17, 1860 in the *Deseret News*, Edward Hunter of the Deseret Agricultural and Manufacturing Society wrote:

It is no exaggeration to say that our habitations, our farms and our gardens are without their equal in the world, when our past and present

circumstances and peculiar locations and general disadvantages are considered. Proverbially ‘a thousand miles from everywhere,’ in a land, without our increasing labor, fit only for the habitation of the degenerated red skins, the roving wolf, the prowling bear, the citizens have almost performed miracles of physical labor, and approached the nearest to creating a world out of nothing than to anything we have yet heard of or ever expect to learn.

Interestingly, it was the Mormons who performed this miracle of creation in

Hunter’s account, not God. Hunter goes on to say:

We are here, then, where right is right, where wrong is wrong, where measure is measure and weight is weight. The screws of the great machinery are in their place, and the freaks of fortune and the concatenation of events, that have betimes elevated a Pharaoh to a throne and cast a Joseph to a dungeon, are here unknown. Favored thus, the citizens of Utah have to realize that their destiny is in their own hands, and direct their energies in that channel, which must inevitably lead to success and mutual advantage. The industry that has turned the desert into a fruitful field, and made the wilderness blossom with the rose . . . leads us to sanguinely hope for an early future of honorable usefulness

Self-reliance was a supremely important virtue to the early Mormons. Hunter said:

Satisfied that the future of any people is more dependent on their own hands, brains, untiring perseverance, and unconquerable will than on the best and most unbounded foreign assistance, we confess to something bordering on an enthusiastic liking to the productions of our own Territory and the workmanship of our own hands.

He was not alone in this feeling. Charles Walker went to the Deseret Fair in 1860 and felt “highly gratified and pleased” by the displays of home produced goods (1980, 141). In 1865 he also attended the first fair held in St. George to demonstrate the products of the Cotton Mission in the south, including home-grown, spun, and dyed linen and less cold-hardy crops like peaches, figs, and grapes (249). Mormon leaders frequently

emphasized the importance of self-reliance to the Mormons, and the fairs were a way of promoting that goal.

Self-reliance was both personal and for the larger community. When Eliza R. Snow, one of Brigham Young's wives, found that he was leaving the valley when she first arrived in 1847, she asked him "who was to be [her] counsellor for the year to come," and his response was "Eliza R. Snow" (1885, 174-175, 199). Individual men and women, families, communities, and the entire extended community of Mormons were to become self-sufficient. For the most part they were successful. When the U.S.-appointed Governor Alfred Cumming and his wife moved into the deserted city of Salt Lake City, they were able to supplement their very meager rations with produce from the garden of the home where they were staying (Cumming 1958, 310-311).

Brigham Young and other church leaders emphasized the importance of the Mormons building their own Zion or heaven on earth (Walker 1980, 168; Grant 1854). Young said they should not rely too heavily on the outside world or when it fell they would be "pretty destitute," and that they should provide their own food and clothing, even once it became more readily available (Young 1872, 389). He was proud of the Mormon's accomplishments in building what they could themselves, and astonished one eastern visitor by showing him the chandelier that he had made himself, when the visitor assumed it must have been shipped from New York (Ludlow 1864, 351). He warned church members away from mining, and they said if they turned to mining instead of farming they would starve (Josselyn 1849, 236). He also boasted of the Mormons' success, proclaiming that in a short time they had nearly as much variety of vegetables as could be found anywhere, and an abundance of other food as well (Young 1849, 229).

Young was said to more proud of his agricultural success than any other of his accomplishments (Dixon 1867, 367). Forty-niners and emigrants passing through to the gold fields of Oregon also reported that enough extra food was available for trade, especially wheat, corn, potatoes, turnips, beets, and cabbage (Josselyn 1849, 235; Zumwalt 1954, 240).

Despite their hard work, most of the Mormons attributed their agricultural success to God. Brigham Young was vocal in doing so (Mulder and Mortensen 1958, 383). Charles Walker attributed his good crop of fruit, and even the beauty of fruit and flower blossoms and singing birds, to God's providence (1980, 267, 287). In her 1885 autobiography, Sarah DeArmon Pea Rich, one of Utah's earliest pioneers, expressed the belief that all that they had came from God. She said the land had been given to them by God as an inheritance and they were to work it and care for it and God would make it prosper. In her view, she and the other pioneers left their homes and everything they had to come to the desert and build a community in which they could await the Second Coming of Christ. She expressed anger or resentment toward non-Mormons who, at the time of her writing, were moving into the valley and enjoying the riches of the land without working for them as she and the other Mormon pioneers had worked (1885, 49-54).

Many of the Mormons saw themselves as working for God. They believed He had given them the land as an inheritance, and their duty was to work the land for God and to help others (Mulder 1957, 193; Walker 1980, 159). This view was also promoted by Mormon leaders, who reminded the Mormons that everything belonged to God, and that they were only stewards who were to use their resources to build God's kingdom (Walker

1980, 161, 168, 233). Brigham Young taught that “He that was at work making roads or adobies, quarrying rock, building Bridges, was fulfilling his mission just as much as him that was preaching the Gospel” (Walker 1980, 193). In this way, the work that they did for their own survival was also holy work done for God, and their acts of working and gardening, as well as the land they worked, became sacred.

David Chidester and Edward T. Linenthal describe a sacred space as a space set apart from the world, where the faithful can control and ritualize or act out the ideal. Sacred spaces are owned by a group, and that possession is part of its sacredness, as is the exclusion of those who are not a part of the sacred. Sacred places are also remote in some way, and appeal to those who need to define their space in the world. Sacrifice, worship, pilgrimage, and prayer are all rituals that create sacred spaces (1995, 8-10). Though Utah never entirely lived up to the ideal the Mormons sought, and outsiders were never entirely excluded from it, it still fits the criteria for a sacred space, or sacred landscape, for the Mormon pioneers.

Utah became a new Canaan or promised land for the Mormons, following their long exodus from their own Babylon or Egypt (Reeve 2006, 16-17). Many saw Salt Lake City as a new holy city, and it was well known to non-Mormons that this was the Mormon view (Cumming 1958, 314; Burton 1862, 329). One British adventurer compared the immigrant Mormon pioneers to Muslim hajji making their pilgrimage to Mecca. He said there was general rejoicing among immigrant groups when they reached the valley. Many cried, laughed, danced, cheered, and celebrated with psalms (Burton 1862, 329).

Brigham Young also compared the Mormon exodus to Utah to the ancient Israelite exodus, including its miraculous nature (Walker 1980, 179). The Salt Lake Valley was dedicated to God as a home for the Mormons when they arrived (Clayton 1991, 364). Utah was meant for the Mormons, in their opinion, and they worked hard to build it up for God, and for themselves. This was in preparation for the time, they believed, that the whole would be taken from the wicked and given to them if they were righteous (Walker 1980, 141). They believed their actions were in fulfillment of prophecy, right down to eating their own corn and wine (Clayton 1991, 373). When the world was perfected after Christ's Second Coming, they believed that it would still have the farms, orchards, and flowers that they were working hard to cultivate (Pratt 1854, 333).

Even for those who did not expect to see the Second Coming, care of personal property took on a spiritual meaning. Caring for the possessions and resources with which God had entrusted them in this life showed that they would be prepared to receive more in the next life (Walker 1980, 230). There was no real separation between worldly things and spiritual things in the early Mormon worldview, but they were all connected and considered to be part of spiritual or religious life (230). Mormon church meetings reflected this in that they often dwelt on temporal subjects like agriculture, fences, and roads (266). Thus, the man or woman who was working in the garden was not just producing food or pleasant flowers, they were proving that they were fit for the Kingdom of God.

The settlers whom Brigham Young sent out to colonize also viewed their towns as sacred places, part of God's Kingdom, set apart from the world as consecrated ground

(Reeve 2006, 192-193). One town in southern Utah was even named Hebron, after the Old Testament place where Abraham went to separate himself from others and offer sacrifices to God (19-20). In a place-making ritual, the Mormons dedicated their towns, and centered them on a plan that reflected their own cosmology, with the sacred buildings of temples or church houses in the center (16-20).

In 1861, when Brigham Young instituted the Cotton Mission, members of the church were called, like missionaries, to go south and grow cotton and other crops that were too cold-tender for Salt Lake and Utah Valley. Church leaders were direct on the subject of the duties of the Mormons in raising crops for self-sufficiency, including cotton, indigo, sugar, tobacco, wine, and olive oil (Walker 1980, 201). It is interesting that these settlers went, not as individuals seeking a better life for themselves, but as men and women on a religious mission to make their people as a whole more self-sufficient. Elizabeth Kane said of the settlers of these outlying communities, “Any reasonable people would have given up trying to produce fruit, but the Mormons are quite unreasonable in matters of faith . . . They persevered, and so I know what perfectly delicious apples they now harvest” (1974, 68).

After so many years of forced migration, in the Utah Territory the Mormons had finally found a home that they could create to their liking, and gardening and farming the land was a way of staking their claim. In April of 1859, Heber C. Kimball told Mormons “to live our religion, do right, to put in our crops, lay up grain and take care of it, to repair our houses and fences as tho we were going to live here forever” (Walker 1980, 65). The people were called on to build permanent buildings (Francaviglia 1978, 85). Despite this, many people were called to go to new settlements just as they started their own

successful homes. Charles Walker, who was called to the Cotton Mission in 1862, said of being called:

Well here I have worked for the last 7 years thro heat and cold, hunger and adverse circumstances, and at last have got me a home, a Lot with fruit trees just beginning to bear and look pretty. Well I must leave it and go and do the will of My Father in Heaven. . . . (1980, 239)

When he actually left Salt Lake City, Walker wrote:

This was the hardes[t] trial I ever had and had it not been for the gospel and those that were placed over me I should never have moved a foot to go on a such a trip, but then I came here not to do my will but the will of those that are over me, and I know it will be all right if I do right. (240)

Walker wasn't alone in feeling a bit discouraged, perhaps, by being called to leave all of his hard work, the sacred space he had created, but also in his willingness to go. Of course not everyone accepted the call, but most did. The new settlements were a way of claiming the space before Anglo non-Mormons could (Reeve 2006, 87). In fact, federal officials noted that, by controlling Utah's arable valleys and water, the Mormons held a very real control over Utah, and that the land was a natural defense against anyone who wanted to take control of the land from them (Mulder 1957, 191).

The Mormons were to use the surrounding elements not only to sustain themselves, but to make themselves and those around them comfortable and happy (Walker 1980, 238). Some found this hard, especially when faced with what seemed like a barren land. Charles Walker said of Saint George when he arrived that it was barren, dusty, and dry, with the muddy water from the Virgin River unpalatable. He went on:

And this is the country we have to live in and make it blossom as the Rose. Well its all right; we shall know how to appreciate a good country when we get to it, when the Lord has prepared the way for his People to return and build up the waste places of Zion. (241)

He saw this new mission as preparation for something greater in the future, a millennial time when God would give him a “good country.” He went to work on his 2 ½ acre lot building a home, fencing his property, and grubbing, planting, and irrigating his lot (241).

Not only was Utah a sacred promised land, with each town dedicated to God through a formal ritual, but individual homes were also regarded as sacred. When Charles Walker got married and was preparing his new home for his wife, he dedicated the home and all he possessed to the Lord through a formal prayer ritual (1980, 201). A home owner in Sanpete County even went so far as to have “Holiness to the Lord” inscribed on his house, a phrase that is usually reserved for temples, the most sacred space in Mormon theology (Moyle 1940). Such an inscription equates the home to the temple in sacredness, a significant distinction. If the work of building up Zion and making it self-reliant was sacred, then the work of maintaining and beautifying the home took on a special religious meaning.

In seeking self-reliance, church leaders were gathering more than converts to Zion. Church missionaries sought skills, knowledge, and goods that would help to build Zion. The General Epistle of December 23, 1847 called upon the Mormons scattered in foreign countries to come quickly to Zion, “. . . bringing with you all kinds of choice seeds, of grain, vegetables, fruit, shrubbery, trees and vines, everything that will please the eye, gladden the heart, or cheer the soul of man, that grows upon the face of the whole earth” (Young 1948, 22). Zion was not meant to be only functional, it was also to be beautiful. Nauvoo was called “the beautiful,” and the Mormons remembered it as full of flowers and fruit trees; they took those ideals with them when they were forced to abandon the city and once again move west (Snow 1885, 19; Francaviglia 1978, 93).

A quote supposedly spoken by Brigham Young and frequently repeated, with slight variation, said: “Some will say that it is not worth while to plant around a log cabin. I say to you that it is worth while. Plant vines over your door, and trees, fruits and flowers so that every one who passes by will say ‘What a lovely little cottage’.” (Moyle 1950; *Deseret News* 1938). Certainly if Brigham Young didn’t give that exact advice, he frequently exhorted the Mormon settlers to make their homes and gardens beautiful (Francaviglia 1978, 84-85). Brigham Young was not the only church leader to give such advice. In June of 1860, Heber C Kimball told listeners at the Tabernacle “to adorn and improve [their] houses, farms, Gardens, &c.” (Walker 1980, 127). At least some of the Mormons did adorn their homes with plants. When Elizabeth Kane visited Mormon homes in Utah she noted that “trailing plants climbed round the windows” (1974, 17). In another home she even found geraniums growing in the window during the winter (110).

Apparently not everyone heeded the advice to beautify their homes, however. Martha Heywood reported that in the fort at Salt Creek settlement (Nephi, Utah), on one rainy day the men “worked heartily at clearing away our chip piles and filth from out the Fort and will give the people a start to keep their door yards in better order” (Heywood 1978, 99). Brigham Young chastised the Mormons of Salt Lake City for being lax in planting trees and making improvements, saying it was a “neglect of duty” and would bring on them “the power of the Devil” (Francaviglia 1978, 86). George A. Smith, another church leader, told the settlers at Parowan, Utah, to clean up their yards and keep them looking nice (103). Still, some visitors found Salt Lake City disappointing, thinking it looked “poverty-stricken and temporary” (118).

There was also a general belief among the Mormon pioneers that hard work, especially in the garden, encouraged right living, good behavior, and good health. A contributor to the *Deseret News* wrote, “Flowers are innocent and instructive companions for your children, and their cultivation will employ much time that might otherwise be less profitably spent, and the sweet, truthful influence they exert upon the youthful mind is never forgotten” (Johnson 1863).

In fact, it is interesting to note that gardening seemed to be an activity practiced and enjoyed by a broad cross-section of Utah society. Brigham Young entered his produce in the agricultural fairs, as did a Native American chief in St. George (Clayton 1991, 350-352), and even the humble immigrants who had never had their own land to till learned to garden. Both men and women spoke of working in their gardens in diaries and letters, and children often helped alongside their parents. Husbands and wives sent each other letters about their gardens as well as seeds and plants when they were separated (Rich 1885, 79; Rasmussen 1977).

Gardening and farming were also the subjects of frequent metaphors, reinforcing their physical and spiritual importance and interweaving them with the Mormon culture. The church and gospel were often compared to trees or vines, giving nourishment (Walker 1980, 226). Church leaders reminded members that they reaped what they sowed both in their gardens and in life (Young 1862, 285). They even taught that farming and gardening were part of the Mormon religion (Young 1853, 335).

In Mormon culture, the garden was an important part of the religious landscape. It provided the Mormons’ Zion with self-reliance and reduced its dependence on the “wicked” outside world, and its cultivation proved the faithfulness of communities and

individual members to their assignments. In the larger sacred landscape created by the Mormons, gardens were an individual expression of faith with very practical benefits.

National cultures. In their efforts to create a holy society, Mormon church leaders faced the challenge of trying to unify a diverse group of immigrants. Some had been with the church since its early days, while others were very recent converts. Some Mormons were rich, but many were very poor, especially after the long journey to Utah. The converts came from countries all over the world, and were expected to put aside prejudices and unite under the umbrella of faith. Everyone was encouraged to learn English and live together peacefully, but national prejudices sometimes encouraged friction between groups. While for the most part the various immigrant groups did live together harmoniously, many of them did not quickly abandon their national cultures and traditions. Though there is little direct mention of national or ethnic influences on gardening, it is reasonable to assume that Mormon converts would not have immediately given up their national tastes and styles in relation to gardening.

Mormon immigrants tended to settle with others of their own nationalities, and sometimes even people they knew from their homelands, though Brigham Young discouraged homogenous settlements (Mulder 1957, 195). Charles Walker, a native of England, reported in his diary spending many evenings “chatting” with people from his home town, on one instance holding a discussion about the Irish (1980, 112, 184). Members of the same nationalities also formed clubs and celebrated Old World holidays, or holidays unique to their national origins, such as the Scandinavian celebration of the founding of the Mormon church’s Scandinavian Mission (Henrichsen et al. 2010, 11-12). In Santa Clara, the Swiss and English settlers had separate choirs (Hafen 1938, 49).

Sometimes the grouping of settlers was deliberate based on their skills. A group of Swiss immigrants, for instance, was called south to be part of the Cotton Mission because, as a national group, they had experience growing grapes (31). Some Danes were skilled at using flax to make linen in addition to the oil produced by its seeds and were called to do so (Mulder n.d.).

For the most part, these groups lived in harmony with each other. In America in the latter part of the nineteenth century, Scandinavians were not well regarded, even being called unfit as Americans. In Utah, however, there was somewhat better regard for Scandinavians (Henrichsen et al. 2010, 18). A Dane in Utah noted that his little group of fellow Danes lived among English settlers in peace (Mulder 1957, 199). Mary Ann Hafen said that the earlier settlers in southern Utah treated the later Swiss immigrants kindly as well (1938, 44).

Sometimes conflicts occurred because of distinctions between national cultures or practices. The Swiss who were called to the Cotton Mission to grow grapes and other warm-weather crops relied primarily on small farms and gardens for their survival, while earlier Mormon settlers in the area had turned to ranching for their livelihood. When the livestock of the earlier settlers ruined many of the gardens of the Swiss settlers, the contention between the groups nearly turned violent. Edward Bunker, Sr. was called to be a bishop at Santa Clara to calm the situation, which he did with the practical solution of installing fences (Walker 1980, notes to 247). At other times the day-to-day friction between neighbors may have sometimes taken on racial overtones (Henrichsen et al. 2010, 21-22).

The tension between conforming and national pride was seen in the use of language among Scandinavian pioneers. Some pioneers were proud of their native language, while others disguised their “foreignness” as much as possible. Many Scandinavian Mormons were concerned to maintain their distinct national cultures, though non-Scandinavians often lumped them into the same group. Foreign speaking Mormon immigrants were required to attend English services, but were also permitted to hold services and other church and cultural activities in their own language as well. The overarching culture of the Mormon church did help to create a sense of community between ethnic groups, even though those groups were not completely assimilated. In fact, church leaders usually respected cultural diversity, as long as that diversity rested under the umbrella of Mormonism (Henrichsen et al. 2010, 8-9, 15-20).

With these examples of immigrants persisting in their national traditions, it is not surprising that people’s backgrounds influenced their local landscapes. Though colonies of just one nationality were discouraged, and there were always some mixed nationalities in settlements, there were still settlements or neighborhoods with distinct national flavors (Mulder 1957, 195-196). Many pioneer homes reflected the homelands of their owners. For instance, the Petersens, who came from Aalborg, Denmark to Ephraim, Utah, created a Danish-style home and garden including a medicinal and herb garden (Moyle 1940). William Staines’ home was like an English cottage, reflecting his national origins (Cumming 1958, 309). Elizabeth Kane noted that the nationalities of the women who kept the homes she visited on her trip through Utah was evident in the foods that they served and some of their styles of housekeeping, such as how they set the table (1974, 8, 26). Unfortunately, Elizabeth Kane visited in the winter when she did not have a

great chance to observe gardens, but it is reasonable to assume that the different national styles spilled over into gardens, especially since different national foods were served by the women of different nationalities.

Some of the Mormon immigrants must have felt homesick for reminders of their native lands, even if those places were part of “Babylon,” and plants from the old countries would have helped them to feel more at home in a very foreign and sometimes unfriendly environment. It was also practical to build using techniques and materials with which settlers were already familiar. This reality left evidence of various national influences in Mormon landscapes, like Dutch brickwork, willow-woven fences used by the Swiss, and in at least one case, a rock wall around a Swedish immigrant’s home like those in her homeland (Francaviglia 1978, 92). In this way, not only home, barn, and fence styles, but also the plants in a person’s yard may have helped to identify their country of origin. In 1885, Anne Widtsoe sent money to her sister who was emigrating from Norway and asked her to bring, “. . . two myrtles with strong roots, several bulbs of Mrs. Rian’s white lilies, as many bulbs as you can secure of Jacob’s lilies . . .” (Widtsoe 1966, 84). By this late date most goods could be ordered and shipped via rail to Utah, and the state was no longer as isolated, so Anne could have gotten her lilies from somewhere else, but she wanted the ones from home. Certainly she was not the only person to bring or request plants from their home town to Utah, and many earlier pioneers probably did so as well.

Some people substituted native plants for the ones from their homeland. Ann Gunnell missed the trees in England, so in 1855 she transplanted a box elder into her yard (Jarvik 1985). We do not know if she found the tree an acceptable substitute for

England's lush greenness. An anonymous writer in 1863, however, had had enough of native wild roses and longed for the roses he was accustomed to, probably those from England (*Deseret News*, 1863). Mary Ann Hafen's mother had trouble adjusting to southern Utah's red rocks and rough rivers after the mountain streams and green vegetation in her native Switzerland (Hafen 1938, 32). In her garden, however, she planted the seeds she had "carefully carried from the old country" even when she had to leave many other valuables and necessities behind to cross the plains (21, 34).

Mormons also kept traditional associations they had with plants. Eliza Snow used some of these attributes in a poem. The rose was beautiful, the violet was modest and lovely, and the lily was fair and charming (1885, 156). Also in Snow's poems, a young child who died was "Like a rose-bud fast unfolding" (170) or "A rose bud borne away" (209). A happy meeting was "like clusters of grapes by the wayside" (186). Because plants had specific cultural meanings to different groups, they would have been important cultural connections for immigrants.

Mormon gardeners apparently did not start any new gardening trends, though they adapted them to their own meanings, and their gardens may have been somewhat more practical than those of their eastern counterparts. Elizabeth Kane, a non-Mormon from Pennsylvania, found little that was unusual in the styles of the homes or gardens of the Mormons she visited on her trip to Utah in 1870; they seemed to be relatively in keeping with the fashions, at least by that time (1974, 8). Mormons were slow to adopt non-Mormon fashions, both due to physical and cultural isolation, and this may have extended to garden styles (Francaviglia 1978, 96). Pioneers sharing their stories during the Great Depression felt that they grew the same things at that time that they had when

they arrived in Utah during the pioneer period (J. Barton 1941; L. Barton 1941). At the same time, however, Mormon horticulturists and nurserymen were seeking out plant materials all over the world, including new introductions. These new introductions may have been scattered among various immigrant groups and communities, serving to provide some unity to their landscapes.

There was also a movement among the Mormon leadership to have a homogenous culture. Church leaders traveled from town to town giving advice on even mundane details like planting fruit trees, fences, and building homes (Francaviglia 1978, 84-85). Also, ideas would have been spread from Salt Lake City via the General Conferences there, when Mormons were to gather and hear from church leaders (89). In Salt Lake City, there were laws requiring the planting of street trees, and even suggesting which varieties to use (Truitt 1986, 21, 23). Church leaders oversaw the distribution of trees and nursery stock, at least in some cases, like that of James Starley, whom Brigham Young sent to start a nursery in Fillmore. Though local leaders and members had some latitude in how they carried out beautification, and were even encouraged to look abroad for inspiration, they were chastised if they did not do it at all (Francaviglia 1978, 89). It would be interesting to know if the pressure to conform to the society of Zion encouraged a general mixing of plant and garden styles, or if gardens provided a small way for people to rebel against the constant pressure to conform. Certainly the pressure to conform was real. Charles Walker reported in his journal that he had finally finished his fence, which was “now as good a fence as any in the ward” (1980, 174).

The church’s influence probably served as a unifying factor in the landscape, especially on the community level, but it seems likely that individual gardens still

reflected some of the national culture of the people who lived in the home, providing them with familiar food, medicine, and plants as well as a link to their homelands. For some this may have been a way of expressing national pride, while for others it may have been simply convenient and practical. Yet with the church's constant scouting for and distribution of new, useful plants, and the sharing between neighbors that likely happened, the distinctions between most gardens were probably small as time passed.

Individual Context

Another context that must be considered for pioneer gardens is the personal context. Though feelings toward gardens and gardening might have been shaped by larger cultural influences, they were also very personal. The agriculture page of the *Deseret News* for April 15, 1863 reflects this. One anonymous contributor derided wild roses, saying it was a distortion of the Queen's English to call them roses because of their dissimilarity to the plant they were accustomed to call roses and that "they must give place to the more elegant Souvenirs, Victoires and everblooming Roses"—those that were popular at that time, and probably the ones the author was accustomed too. He showed a loyalty to the plants that were familiar to him, and clearly held the plants he found in Utah in low regard.

On the same page, however, is an article by a recent emigrant from the eastern United States with a broader appreciation for flowers. He first notes that he thinks not enough homes have flowers (though he ran a nursery, so he may have been biased), and extols flowers by quoting from Alexander Pope's "Cowley: The Garden," mentioning roses, carnations, lilies, and tulips (Johnson 1863). He then goes on to praise native

flowers transplanted from the mountains to his yard, and encourages others to do the same if they cannot buy plants or seeds. He then uses the poem “April” by Nathaniel P.

Willis to describe early-blooming native wildflowers:

There is to me
A daintiness about these early flowers
That touch me like poetry. They blow out
With such a simple loveliness among
The common herbs of pasture, and breathe
Their lives so unobtrusively, like hearts
Whose beatings are too gentle for the world

These two writers came from the same larger Mormon cultural context, though possibly from different national backgrounds, but found very different things to love in their gardens. Their yards undoubtedly had very different plants growing in them.

Though gardens had a practical function, especially in the early days of Utah’s settlement, gardening was also an activity that many people found personal satisfaction in. Sarah Rich recounted with great satisfaction that she was the first person in the Salt Lake Valley to get a tame rose to bloom, beating out professional gardener William Staines by one day for the honor. It is interesting that in the friendly competition of gardening, men and women both cooperated and competed against each other. Mrs. Rich had gotten the rose cuttings from her husband, Charles C. Rich, that she then shared with Staines and raced him to get to bloom. She felt great pride in her newly learned skills in budding and growing both orchard trees and roses, and in her family’s self-sufficiency. She felt that the fruits of her orchard were a reward for all of her hard work (Rich 1885, 79-80).

William Staines reported that he suffered not only from hunger and discouragement when locusts ate his early attempts at gardening, but also from heartache

(E. Kane 1974, 89). To this gardener, growing things was not just necessary for survival, but also for his happiness. Likewise, early pioneer Harriet Young convinced her husband, Lorenzo Dow Young, to get permission to settle outside the early fort in Salt Lake City so she would have more room for tending her own garden and orchard; her health was languishing without being able to do so (86).

Many settlers and visitors enjoyed the gardens of pioneer Utah, especially in contrast to Utah's semi-arid climate. One soldier entering Salt Lake City during the Utah War in 1858 noted that he saw around each house, "That which one so longs to see from long familiarity with these deserts – perfectly bright green and luxuriant trees and shruberry" (Tracy 1945, 301). Charles Walker, after a bad morning in May 1859, spent the afternoon walking around Salt Lake City, "viewing the gardens, trees, &c." (1980, 69). On another occasion, April 6, 1862, he noted: "Nice day. The fruit trees are out in blossoms, the Shade trees look fresh and green, the grass and wheat are springing up and look well, and the little birds make music sweet to the ear" (226).

Although for some pioneers gardening may have been simply a necessity, or a religious act, for many others it was clearly an enjoyable activity. These gardeners each had favorite plants, perhaps those with special sentimental meaning to them, and their gardens would have reflected their individual tastes and abilities. This shows that, though it is possible to make general statements about early Utah gardens, research must be done on individuals to determine more detail about their own gardens and what meanings they found in them.

SELECTING PLANTS FOR MORMON PIONEER LANDSCAPES

Treatments for Historic Landscapes

To make decisions regarding historic preservation of landscapes it is helpful to know some terms and theories of historic preservation. The Secretary of the Interior's Standards for the Treatment of Historic Properties is the resource used most often in the United States for guiding historic preservation efforts. According to this document, there are four treatments to choose from for historic and cultural landscapes: preservation, rehabilitation, restoration, or reconstruction. In addition to these official treatments, property owners or managers may choose another way of treating a historical landscape.

Preservation involves trying to protect a landscape as it exists now. This is generally used on landscapes that are in good condition and reflect the historical significance of a site, for instance in an old cemetery that has not been changed for many years, or a historic building that has been well-cared for. The changes that have occurred over the years are all preserved, so there may be features from several different time periods existing together in the landscape. In this form of treatment, the property manager documents the important historic features that still exist, including plants and landscape features, and tries to protect those features from being damaged or degraded. In preservation, if vegetation must be replaced, it is almost always replaced by the exact same species and cultivar of plant. Substitution of plant material is only acceptable when the historic plant is not available due to being extinct, too disease-prone to plant, or a noxious weed (US Department of the Interior 1995).

Rehabilitation involves preserving the most important features of a site while changing the function of the site from its historic one to a compatible use. An example of this would be turning a historic farm into a museum or an old church building into a restaurant. The most important features of the landscape and structures would be retained and protected, and new additions, such as parking lots, would be designed so they did not disrupt the historical characteristics of the site. New plantings may be added along with other new features, but they should mimic the historical plantings on the site, like adding a new row of shrubs or shade trees similar to those that already exist (U.S. Department of the Interior 1995).

Restoration means trying to make the property look exactly as it did historically. Someone who has purchased a historic home and wants to put it back the way it was in the past may be interested in this form of treatment. Ideally, no guesswork is involved, and thorough historical research is done before making any changes to the property. The plants used should be those used in the historic period being represented, unless there is a pressing need to replace them. Then the replacement should be as close as possible to the historic materials (U.S. Department of the Interior 1995).

Reconstruction is the treatment involved in completely recreating a vanished historic site. It also can only be done when there is good evidence of what was on the site historically. This might be done, for instance, if someone had pictures and descriptions of a historic school house and wanted to recreate it exactly. A very accurate reconstruction might involve archeological work and even taking samples of historic pollen to determine the exact plants that were on the site. The plants used in a reconstruction project should be as close to the plants used historically as possible. As in restoration, guesswork should

be avoided in reconstruction, and nothing should be done to imply that something existed historically unless its existence can be documented (U.S. Department of the Interior 1995).

Sometimes, due to budget or other practical constraints, a property owner or manager may want to give a site a historic feel without using one of these standard types of historic landscape treatment. This might occur if someone purchases a historic home with a modern landscape and wishes to create a historic looking landscape, but does not have the means to do the research necessary for a complete restoration or reconstruction project. In another example, someone may be rehabilitating an old farm as a reception hall and wants it to look historic, but does not want weedy-looking trees or plants that make the site an unattractive venue for weddings or other events. In these cases, some guesswork or substitutions may be an acceptable alternative to simply creating a modern landscape around a historic building. It is important for the sake of historical integrity, however, not to state or imply that a historic-looking landscape is an actual restoration or reconstruction.

Property owners or managers may also want to make a site look fairly historically accurate without reconstructing what was actually there. For instance, historic gardens may have looked unkempt compared to modern ones, so a property owner may wish to “clean up” the landscape a little by mowing the grass or removing some weeds. When a museum or similar site is trying to reconstruct a historic landscape, they will need to find a balance between historical accuracy and aesthetics for the sake of visitors and donors, who need to find the landscape relatively appealing to modern sensibilities (Adams 2004, 24). Once property managers know as much as possible about the history of the site and

the plants used on it they will have to start filling in blanks and deciding what to keep and what to replace.

Unless they are preserving the landscape as it exists, the property owner must also decide which era they want to reflect in their landscape, or which is the most important to their site. This is known as the period of significance, the era most important to the site's history. The style of the home or a particular famous person who once occupied the home may be a good starting point for deciding on the period of significance (Adams 2004, 19). In some cases, property owners may want to preserve parts of several past eras (Adams 2004, 19; Favretti and Favretti 1978, 99).

Before starting a project of restoration, reconstruction, or rehabilitation, an inventory must be completed of what exists on the site and what is relevant to the period of significance to be reflected. This includes identifying plants in the landscape as well as their condition. Some plants may stand alone, such as an old shade tree, while others may be important as part of a group, such as a hedge or orchard (Olmsted Center for Landscape Preservation n.d.). Some pioneer trees and shrubs may still be growing in yards and parks, or their stumps may still be visible. Paths that have disappeared may still be lined with flowers, or the location of the long-abandoned outhouse marked by fragrant shrubs. Early pictures or descriptions of homes may also contain enough clues to be reasonably certain about the plants growing in historic landscapes.

Whenever possible, to retain the historic character of a site, the original plants should be retained or replaced with the same variety of plant. Old orchards and fields may contain unknown varieties of heirloom fruit trees. These can be the source for cuttings of heirloom trees to be grafted and grown as replacements for dying trees. Some

companies will clone existing trees to get an exact genetic replica. An advantage of using clones of historical plants is that this encourages genetic diversity, which generally makes for a healthier ecosystem, provided the original tree was not unusually disease prone. Several companies specialize in heirloom varieties of trees, shrubs, roses, and flowers that can be used to replace plants that have been lost in the landscape over the years. If possible, it is even better to get the plants locally, as some heirloom varieties have been preserved by gardeners from generation to generation (Adams 2004, 24). Local gardeners, especially older ones, can also be a good source of information about what was grown on a site or in an area historically, though this isn't always the most reliable method of gathering information since memories can be dim after many years (Favretti and Favretti 1978, 99).

Maintenance of historic properties should also be considered in the planning and treatment process. Some plants may be only acceptable in modern landscapes if they are well-maintained—for instance, if they are kept from stress so they stay healthy. Also, choices like whether to use period or modern maintenance techniques must be considered. Expectations of owners and visitors may be a factor in making these decisions. For instance, many people may expect a well-manicured lawn, while historical lawns, when they existed at all, were kept short by grazing animals or cut with a scythe. Compromises may need to be found, like using a sickle-bar lawn mower and mowing less frequently. Also, spraying for weeds should be kept to a minimum. Of course, truly invasive species need to be removed, but some common weeds like dandelions were not only allowed to grow in lawns, they also provided an additional source of food for some pioneers. Sometimes the question of maintenance becomes more complicated, such as

when a modern pest is the problem, so that the very presence of the pest detracts from the historic character of the site. When organic methods cannot be used to get rid of these pests, it may be best to have a professional spray for them to remove them from the historic site. One of the goals of maintenance should always be to protect and preserve the historic materials on a site (Favretti and Favretti 1978, 177-180).

Appropriate Plants for Mormon Pioneer Landscapes

This thesis will help designers and property owners select plants that are most appropriate for Utah's pioneer era. It will also help them to have a general knowledge about the plants they may encounter in their research. It is important to remember that plants went through fashions like everything else, so while these plants may still have been available in later times, their use may or may not have continued on a site past the pioneer period. The appendices contain lists of plants known to have been grown in Mormon pioneer gardens and a list of many of the invasive species that may need to be removed from historic landscapes, whether or not they were present historically.

When a landscape designer or property owner is not sure about the exact plants used in a landscape, he or she may have to make an educated guess based on what plants were available during the property's historic period. Though each individual would have had his or her own plant preferences, the pioneers dealt with common environmental constraints in plant availability and cultivation, and were involved in the social process of belonging to several distinct cultural groups being blended into one new culture. Utah gardeners had a wide variety of plants available to them, and while we do not have a complete list, we do know many of the plants used in historic Utah landscapes.

Even as the Mormons left Illinois, plants were beginning to flow with them toward Utah. Elder Eli B. Kelsey sent his wife grapes, currants, gooseberries, and other plants given to him by Mormons from England where he was serving his mission (Truitt 1986, 25). Early Utah horticulturists got plants from whatever sources were available to them. Pioneers remembered growing anything they could get to thrive (Badger 1937; J. Barton 1941). They ordered exotic plants by way of California, and sent scouts and missionaries to Europe to bring the best plants back from Europe. They experimented with plants to see what they would be able to grow in the unfamiliar climate, and seemed willing to give every plant its chance to grow in Zion. Brigham Young sent the first party south to California to bring back plants and seeds in 1847, shortly after the Mormon pioneers arrived, and as members of the Mormon Battalion were arriving in Utah from California (Snow 1885, 207, 212). Sarah Rich got seeds of fruit trees from her husband who had been sent to San Bernardino, California. He sent apricots and plums, as well as rose cuttings that were, according to Rich, the first tame roses to bloom in the valley (1885, 79).

Once plants reached Salt Lake City, they were then disseminated again, officially or unofficially, by church leaders and members. This was the case with fruit trees as well as shade trees like locust and Lombardy poplar (Francaviglia 1978, 89). This sharing of plant materials may have had a unifying effect on the gardens of pioneers, and it also means that it is very possible that an old rose or apple tree growing in a nearby field or lot was also present on other local or even distant sites. It is important to consider, however, that not everyone had the same taste in plants or might have shared their plants as readily as others.

In some cases the pioneers had also collected plants as they crossed the Great Plains. Patty Sessions, who crossed the plains in 1847, reported that members of their camp were gathering wild strawberry vines and currant bushes to take with them (Sessions 1847, 182). As they approached their new home, with no prospect of food except what they could produce themselves, these native berries must have been a welcome addition to their provisions, and no doubt found a place in many new home landscapes.

Some pioneers brought plants with them to Utah. Utah tradition remembers the pioneers carrying precious plant slips and seeds across the plains with their few meager possessions to beautify their new desert home (Moyle 1950). Harriet Young, one of the first pioneers, brought with her fruit tree kernels and seeds (E. Kane 1974, 86). Mrs. Eliza Saunders Johnson, a young mother perhaps 16 years old, walked across the plains carrying her baby so her wagon could be filled with plants, which she carefully watered whenever her party stopped near a river (Moyle 1948). While such stories may have been romanticized over time, it is certain that some pioneers did go to great lengths to bring plants across the plains with them. Another women, Elizabeth Payne Hobbly, carried a rose in a tea pot all the way from England to Utah, where she continued to grow it indoors until an accident revealed it could survive outdoors (Moyle 1948). Edward Whiting brought peonies and roses across the plains (*Deseret News* 1948c). These settlers probably did this for both practical and emotional reasons. From a practical stand point, growing plants they were already familiar with was easier for pioneer settlers. From an emotional stand point, it probably helped them feel a connection to the home they left behind.

Mormon pioneers also may have brought plants with them from Nauvoo. Colonel Thomas L. Kane visited Nauvoo shortly after it has been deserted by the Mormons and recorded that the city had been beautiful and fruitful. He said: "If I went into the gardens, clinking the wicket-latch loudly after me, to pull the marigolds, heartsease, and ladyslippers . . . knocking off with my stick the heavy-headed dahlias and sunflowers, hunted over the beds for cucumbers and love-apples" he saw no people or even dogs (1850, 197). These and other plants grown in Nauvoo probably found their way to Utah with the Mormon pioneers.

Once they were established in Utah some settlers sought out more plants. The Swiss settlers charged with growing grapes and other fruit in the warm climate of southern Utah took a wagon to California to buy fruit trees and cuttings of grape vines (Hafen 1938, 45). Those Mormons who did not have the ability or inclination to get plants from afar got them from neighbors. Sometimes cuttings were given away, sometimes traded, and sometimes sold. In the barter economy of early Utah, trading for plants may have been common (Walker 1980, 112).

A few early nurserymen, botanists, and gardeners kept Utah in touch with plant developments in the outside world. Joseph Ellis Johnson, for instance, kept up correspondence with several leading gardeners of the day on the east coast and in California, including Charles Downing, from whom he got numerous seeds and cuttings to grow in St. George where he lived at the time (1868-1872). Not long after the pioneers arrived in the Salt Lake Valley, Brigham Young's gardener, William C. Staines, used his savings to import ten thousand fruit trees (E. Kane 1974, 87). Though the locusts ate many of these trees, enough survived for him to distribute them among other pioneers.

When necessary due to availability or lack of funds, settlers also got plants from their new surroundings. Charles Lowell Walker, who had had some difficulty trading for fruit trees, reported in his journal that he dug up some wild currant and plum bushes to transplant into his yard (Walker 1980, 169). He also bought some currants and fruit trees.

The diversity of plants in Utah and the horticultural experimentation of the Mormon pioneers led to a variety of foods and other plants not previously known to many of the pioneers. Elizabeth Barrows, who came to Utah as a child, tried her first tomato when she got to Utah (1938). As pioneers learned to grow new exotic and native plants they also may have shared them with friends and neighbors.

Like the pioneers, modern landscape designers and property owners may need to be creative to find their plant material. If they need a species-type plant and one is not available in commerce, they can let modern hybrids go to seed to get plants similar to what pioneers may have grown from seed. Also, as they do research they may come across people with older plants that they are willing to share. They can even use their hunt for plants as part of a publicity campaign if they are creating public gardens (Favretti and Favretti 1978, 116, 120).

Fruit, nuts, and berries. Fruit trees were some of the most commonly mentioned features of pioneer gardens. In fact, one visitor from the east said that Mormon villages looked like large orchards with houses placed in them here and there (E. Kane 1974, 7). She described one village as being “buried in fruit-trees” (62). Along with nut trees, these plants gave the pioneers an important source of food. One of the first things church leaders asked settlers to do was to plant apple seeds and peach pits (Clayton 1991, 366).

Harriet Young, one of the first three women to settle Salt Lake Valley, brought with her a bushel of fruit tree kernels, among other seeds (E. Kane 1974, 86).

Pioneers learned to graft trees and tried growing many varieties from seed.

Women who had previously tended other types of gardens turned their hand to raising fruit orchards (Rich 1885, 1-7; E. Kane 1974, 87). Peaches and apples were the most prominent fruit, followed by plums and apricots. Cherries and pears were also important fruit trees. Chokecherries, currants, wild plums, and serviceberries were among the native fruit trees to be used by pioneer settlers, both by gathering the fruits from the wild and by bringing the plants into their yards. Elizabeth Kane, who visited Utah in the winter of 1870, reported eating “. . . apple-fritters, wild-plum, cranberry-, and currant-jellies, a profusion of vegetables; and then mince pies . . . smoking plum-puddings . . . pears, peaches, apples, and grapes . . . preserves, and tarts . . .” as well as homemade wine (1974, 9).

On the subject of apples, Elizabeth Kane said “Our bedroom at Fillmore had a great basket full of them, golden and rosy, sweet and tart, pippins and Spitzenburghs” (1974, 68). Other visitors were also impressed with Mormon fruit production. Fitz Hugh Ludlow commented that the closest he came to being converted by the preaching of Mormon leaders on his visit was when eating apples and apricots right out of the orchard, and “having sound doctrine poked down our throats with gooseberries as big as plums” (Ludlow 1864, 353). By 1872, there were entries in the Deseret Agricultural and Manufacturing Society Fair for olive oil, figs, and quinces as well as more traditional fruits (Deseret Agricultural and Manufacturing Society 1863-1874).

Brigham Young's orchard contained peaches, pears, apples, and walnuts, and the gardens included strawberries, other berries, peas, and other vegetables. There was a bowery in the gardens where the family would gather and have a festive time while preparing the harvest. Mulberry trees were planted for silk production, and bees provided honey. In fact, Brigham Young took great pride in his family's self-sufficiency (*Deseret News* 1938).

Grapes were also important in the landscape, and many houses had their own vineyards, especially in the southern portion of the state. Elizabeth Kane notes that the streets of St. George were lined with trees with grape vines growing on them, and that each house had its own vineyard as well as figs and peaches (1974, 138). Many other small fruits and berries were grown, including raspberries, gooseberries, and strawberries, and native and imported currants and elderberries. Currants seem to have been another popular small fruit, mentioned in many journals. Hop vines were used both for ornament and to make beer (Mulder 1957, 190). Along with grapes, this is the vine most often mentioned in association with Mormon landscapes.

The nut tree mentioned most often in pioneer gardens is the black walnut, though almonds and chestnuts were also grown. Black walnut not only provided nuts, but also had wood that was prized as lumber.

Many heirloom fruit trees are still available, especially of apples. Some of these varieties have excellent flavors or other good qualities, but it is important to select varieties that are not especially susceptible to disease. This becomes even more important if a historic property is near a commercial orchard where disease-susceptible heirloom varieties may introduce disease problems. Local county extension agents may be able to

help identify areas where particular diseases are more common and help historic property owners or designers select heirloom varieties that will do well in their area. Appendix A contains a list of fruits, berries, and nuts known to be available during the early pioneer period in Utah, though other heirloom varieties may also be appropriate where they can be documented or are more ecologically sound than the documented varieties.

Vegetables, herbs, and medicinal plants. The first priority of the pioneers was to provide themselves with food. Brigham Young even sent people ahead to start planting potatoes before the first party of pioneers reached the Salt Lake Valley (Clayton 1991, 363). Corn was the first grain planted by the pioneers (E. Kane 1974, 29-30). Potatoes and turnips were also early staple foods (Clayton 1991, 364). Planting these crops was essential for the survival of the pioneers and those who would follow. In the meantime they ate wild berries and dried fruit, including apples and pumpkin (Snow 1885, 210).

An important ongoing aspect of self-sufficiency for the pioneers was growing their own field crops, vegetables, herbs, and medicinal plants. Greens, carrots, peas, turnips, and other early vegetables were important staples in the diet. Potatoes, onions, and cabbage were frequently mentioned. Squash and melon seem to have been an important feature of most vegetable gardens, and tomatoes were common as well. Corn and wheat were the most frequently grown grains. Beets were often grown for producing sugar, as were imphee and sorghum. Madder was a source of red dye, and indigo was used for blue. Some dyes came from native sources, like evergreen brush, dock roots, coperas, and berries (Hafen 1938, 46). Though church leadership discouraged tobacco smoking, the Mormons grew a great deal of tobacco, presumably for medicinal use and trade with non-Mormons.

It was important to many of the Mormons, especially those in outlying communities, to be able to provide for themselves, and much of their diet came from what they could raise themselves. Sometimes they were very creative, especially in finding sources of sugar. Martha Spence Heywood, who was living in the Salt Creek settlement (now Nephi, Utah), reported that at the one-year anniversary of the town they had a feast consisting entirely of food they had raised themselves: “chickens cooked in various ways, vegetables, preserves made with water melon molasses, cake, bread of flour . . . wine of choke-cherries . . .” (1978, 84) On a visit to Hobble Creek (Springville, Utah), their host prepared a hasty but bountiful meal of squashes, pumpkin, beets, and watermelon, among other foods (65).

When her children were ill, Martha Heywood had to treat them with her own medicines, often things that she may have grown in her own garden. Some of her home remedies included saffron and sage tea, lobelia (obtained from a neighbor woman), Caster oil, rhubarb, and onion (1978, 116-117). Other pioneer remedies were made from elderberry, grape, or wander milkweed roots, or a tea made of sage brush and quaking aspen bark (Allen 1937). In 1872, some plants listed as medicinal in the Deseret Agricultural and Manufacturing Society minute book included lobelia, bayberry root, golden seal, black root, white pong lily, namdrake, merrine, dandelion, cayenne pepper, yarrow, tansy, hyssop, pennyroyal, peppermint, colombo (possibly either columbo or columbine), saffron, anise, caraway, and white and black mustards. Many of the pioneers had enjoyed the luxury of doctors before coming Utah, but once they were settled in isolated towns most of them had to learn medicine and home remedies in the absence of doctors (Hafen 1938, 48). In fact, Mormon leaders preached in favor of natural remedies,

telling members “when sick not to take the deadly poison and minerals of the Doctors but to use mild herbs [and] plain diet, exercise, &c.” (Walker 1980, 185).

On the trip across the plains in 1847, a man in the first party of Mormon emigrants was bitten by a rattlesnake, and he was treated with tobacco and turpentine applied to the wound, and Lobelia, alcohol, and water to drink (Clayton 1991, 320-321). He did survive the incident, as no member of the first pioneer company died on the journey. Eliza Snow took a tea made of spotted cranesbill, also called wild geranium or alum root, when she was ill on the journey to Utah, possibly with dysentery (1885, 133). If, as Peter Dendle and Alain Touwaide suggest (2008, 2-3), the medical practices of the pioneers are viewed in their cultural context rather than as medical mistakes, it reveals a cultural belief in the importance of self-reliance and that God had placed everything His people needed on the earth for their benefit.

Many of the vegetables, herbs, and medicinal plants used by pioneers are still used in gardens today, though finding heirloom cultivars may be challenging for some crops. Many plants once considered medicinal are still used as ornamental flowers, though again they may be found under cultivar names rather than as species as may have been more common historically. Appendix B contains a list of vegetables, herbs, and other crops that can be documented in Utah in the pioneer period, and other heirloom varieties may have been used as well. Occasionally a crop that was used historically may be banned for use in some regions if it presents a threat to commercial farming in the area. County extension agents are a good resource for determining if a crop has been banned locally.

Ornamental trees, shrubs, and vines. Trees were an important element in early Mormon landscapes. Most of the pioneers were accustomed to the presence of large trees in the landscape, so trees were important to their comfort in Utah. Both native and exotic trees were used, especially if they were fast-growing, providing quick shade and possibly lumber. Trees were used to line streets and to shade homes.

Native trees were scarce in the valleys of Utah, but the few Fremont poplars and junipers that existed were valued by the settlers (*Deseret News* 1948). When the first settlers were dividing lots at the new settlement of Salt Creek, Martha Heywood recorded that, “That portion of the creek that we desire is beautifully adorned with trees according to my heart’s desire” (Heywood 1978, 66). Some trees were also transplanted from the mountains. Native junipers and box elders were brought into the cultivated landscape with some frequency (Truitt 1986, 23). To so many of the settlers who had come from wooded areas, the trees must have been important in an otherwise very unfamiliar landscape.

Some tree seeds were also brought to Utah. Missionaries brought Catalpa seeds back from Australia (Truitt 1986, 23). Eliza Johnson brought black willow among the many trees in her wagon (*Deseret News* 1948b). Other early trees brought to the valley were black walnut, poplars, hackberry, locust, and possibly American elms (*Deseret News* 1948b; Jarvik 1985). Osage orange was planted as early as the 1860s (*Deseret News* 1969). Pioneers from the South supposedly carried the seeds of osage orange from their homes when they came to Utah, and honey locust seeds were said to be carried by some of the earlier pioneers in the fingers of their gloves (Jarvik 1985).

Shade trees were a common and important element in the Utah landscape. In the Cotton Mission, some settlers planted trees even before they had reliable irrigation, and carried buckets of water from a spring a mile and a half away to water their trees (Hafen 1938, 35). The most common shade trees were cottonwoods, black locust, and honey locust, with Lombardy poplar frequently used as a windbreak. Balm of Gilead, another poplar, was also used (Truitt 1986, 23). Black locust was supposedly the first shade tree planted in Utah (21). These are all fast-growing trees, which was probably a large part of their appeal.

Lombardy poplars have come to symbolize the Mormon landscape for many, and they were certainly very common even in the early Utah landscape (Stegner 1981). According to Richard Francaviglia, however, there is no evidence that Mormons gave any particular meaning to the tree beyond its practical value as a fast-growing windbreak (1978, 90). Today Lombardy poplars are still common elements in many Utah landscapes, but they are prone to disease, pests, and weak limbs, making them somewhat troublesome trees in spite of their association with Mormon pioneers.

Shrubs also had important practical uses in nineteenth century landscapes. Many of them were fragrant, masking otherwise unpleasant odors, and may have been planted near the house for this reason. Lilacs and roses were the most important shrubs for this purpose. Shrubs were also appreciated for their flowers and many provided fruit. If Utah gardens followed general practices in the United States for the time, they also used shrubs for hedges, screens, and windbreaks, though sources do not mention this use as being common. Foundation plantings, also, were not yet fashionable and are not appropriate for pioneer era homes unless their presence can be documented (Adams 2004, 102-103).

Vines provided beauty and shade. Denise Adams considers the presence of vines on or around the home quintessential to historic American gardens. Hops vines were commonly used for this purpose in Utah gardens, which may be a unique Utah feature, since Adams does not even mention their use elsewhere in the U.S. Madeira vines, morning glory, vinca, sweet peas, roses and groundnut were also used. The vines Adams does mention as being popular elsewhere in the U.S., such as honeysuckle and clematis, may have also been used by Mormon pioneers (2004, 133-135).

Early Mormon settlements and homes would have enjoyed the practical and aesthetic benefits of trees, shrubs and vines. Though fruiting plants dominated the landscape, fast growing street trees and shade trees and fragrant shrubs and vines were also common elements in the Mormon pioneer landscape. Many of the fast-growing trees used by Mormon pioneers are considered weedy trees today, but they or their improved cultivars can still have a place in public and private historical landscapes. Others, such as Tree-of-Heaven, that are now considered invasive species can be replaced with suitable substitutes. Appendix C contains a list of ornamental trees and shrubs that were grown in Utah during the pioneer period, and Appendix G contains a list of plants that are now considered invasive in all or parts of the Mormon culture region.

Roses. Roses deserve special mention outside of the category of other flowering shrubs because they were a common plant in early Mormon landscapes, and a very popular one from that time to today. They are also the plant mentioned in association with taming the Utah landscape, or making “the desert blossom as the rose.” Many of the old garden roses used by the pioneers are still available from specialty mail order companies today, and they are often hardier, more fragrant, and easier to grow than more

modern roses. Some bloom only once in the early summer, but by the mid-nineteenth century re-blooming, or remontant, roses were wildly popular, and many found their way to Utah. Bourbon and hybrid perpetual roses are two classes of remontant old garden roses that were common in pioneer gardens, while old once-blooming Gallica and moss roses, which are somewhat more cold hardy, were also grown. Even wild roses found a place in early Mormon landscapes.

According to Sarah Rich's autobiography, she got the first tame rose to bloom in Salt Lake Valley from a cutting her husband sent her from California around 1851 (1885, 79). Unfortunately, she does not mention what kind of rose this was. She does, however, say that she grafted it into a wild rose that she had growing in her door yard. This shows that even in the first few years of settlement at least some of the pioneers had adopted wild roses into their yards, and soon after tame roses were available as well. Using wild roses may not have been unusual, as they were already used occasionally in eastern American gardens (Adams 2004, 268). Sarah Rich's success in getting the first tame rose to bloom was still a source of pride to her several decades later, showing the significance of roses to her and other settlers.

Roses had cultural meanings both from a secular and religious standpoint. The Mormons were trying to make the desert blossom as the rose, as stated in the Biblical prophecy that they frequently quoted. Eliza R. Snow's poetry describes young children who die as "rosebuds," and in one poem for a man who lost his wife during the upheaval of the Mormons leaving Nauvoo she writes:

O'er her grave the roses flourish
Which your hand has planted there
And their sweet & luscious fragrance

Oft perfumes the ambient air. (1885, 217)

Roses may have had individual significance to the people mentioned in Snow's poems, who may have used them to remember loved ones.

There are some discrepancies over the popularity of roses in pioneer gardens. On April 15, 1863, an unnamed columnist wrote in the *Deseret News*, "Except with a few, the luxury of the fragrant and beautiful rose has not as yet been enjoyed by the people of Deseret." Yet in 1860, Sir Richard Burton commented that roses were common in Salt Lake City gardens (1862, 331). This may mean that wild roses were more common than tame ones, or that the first author simply thought they should be used more abundantly.

The author of the *Deseret News* article (1863) acknowledges the presence of wild roses in some yards, but he thinks these are far inferior to the tame roses, and that "they must give place to the more elegant Souvenirs, Victoires, and everblooming roses." The author then adds instruction from the *Gardener's Monthly* on roses:

The ribbon system of planting beds can be beautifully carried with Everblooming roses. Suppose that we have an oval bed with Souvenir de la Malmaison, Sombrenil and Madam Bosanquet, along the top, in a row, and three feet apart, and three feet from the bed; a ring of Hermosa, Archduke Charles, Pink Daily, etc., three feet apart, also in a row, and three feet from the latter; and a ring of Louis Philippe, Abbe Moland, Eugene Beauharnais, etc., say thirty-three inches apart in the row – what a most beautiful effect it would give to the lawn or flower-garden! If the bed is a circle Glorie de Dijon in the centre, or a Geant des Batailles or Prince Albert, each of stately growth The beds should not be elevated, or but very slightly No other flowers should be planted among them. Cultivators should consider roses to be flowers of themselves, and grow them to perfection.

Whether anyone except perhaps the author took this advice to heart is difficult to ascertain, but certainly there were some rose gardens in pioneer yards. Brigham Young's gardener, William Staines, had an impressive rose garden during the pioneer period

(Moyle 1950). During this time in American gardens, roses could be used in mixed shrubberies, as hedges, in their own beds, or trained to climb (Adams 2004, 271-272).

The roses popular during this time were mostly the Bourbon and Hybrid Perpetual classes, as well as the teas and Chinas where they were hardy, and the occasional moss rose (Adams 2004, 269-270). Harison's (or Harrison's) Yellow rose is the famous pioneer rose that, according to popular lore, was carried across the Plains by settlers to beautify their new homes. The plant was apparently popular for its hardiness and its color. It certainly made its way to Utah at some point, as it can still be found growing along roadside ditches and in fields where pioneer homes once stood. The list of roses sorted by class in Appendix E reflects the most popular classes of roses used in mid-nineteenth century America, though many of the roses mentioned are not readily available today. Some of them may still be growing in old cemeteries or homesteads, though it would take a good deal of work to find these roses and match them to period descriptions. Unless a particular rose was known to be used in the landscape, some of the roses in Appendix E still available in commerce today would be good choices for Mormon pioneer landscapes.

Perennial and annual flowers. Because the early Mormon settlers were supposed to beautify their homes as well as make them productive, pioneer gardens usually featured flowers. Many of the common flowers grown seem to have been perennials, though annuals and bulbs were also used. Garden writers of the time made little distinction between perennials and annuals, and they were usually used together to line paths and sometimes in flower beds (Adams 2004, 155-156). Sometimes they were also used with shrubs (156). Bedding schemes were popular at this time (208-209), but are not

particularly mentioned by pioneers, who perhaps were too busy to create them. Season-long bloom was desirable, and tall plants were usually used in the back with lower plants in the front (157).

Some of the most common Mormon pioneer flowers seem to have been roses, peonies, various pinks, and geraniums, though other popular flowers of the time, such as dahlias, phlox, hollyhocks, asters, and lilies were also widely available. By 1872, the Deseret Agricultural and Manufacturing Society's minute book listed prizes given for roses, china asters, balsams, verbenas, delphiniums, peonies, lilies, tulips, phlox, chrysanthemums, hollyhocks, and trofocoluns. According to Mrs. John D. Spencer, a daughter of Brigham Young, at Brigham Young's Beehive House, old clove pinks lined the paths, and the yard contained lilacs, old roses, red "pinney" [peony] flowers, and other shrubs, flowers, fruit trees, and vines (*Deseret News* 1938). Charles Lowell Walker, whose diary contains numerous entries about garden work, only mentions a very few specific plants. As a bachelor getting his home in Utah started, he says that he planted pinks after spending a cold day running errands (Walker 1980, 66).

Sunflowers were another common plant in the Mormon landscape. Sunflowers were sometimes considered a weed, though certain varieties were grown ornamentally. They withstood drought well, and produced seed which could be eaten or, more commonly, used for animal feed (McConnell 1920). Sunflowers were common in Salt Lake City, if not always appreciated, and were sometimes associated with Mormons (Truitt 1986, 17).

Though bulbs are not frequently mentioned, they have always been popular in American gardens, and they were likely common among the pioneers too (Favretti and

Favretti 1978, 111). Tulips and lilies, perhaps brought over by missionaries or converts from the Netherlands and Denmark, were mentioned by pioneers, and it is reasonable to assume that other bulbs were available as well.

In addition to flowers, some early settlers grew various types of groundcovers in front of their homes. In his garden and account book, Joseph E. Johnson recorded that he used alfalfa (lucerne) in front of his house. A home in Salt Lake City had clover planted in front of it (Truitt 1986, 46). By 1872, the Deseret Agricultural and Manufacturing Society was offering prizes for the best alfalfa, clover, and tame grass at the fair. Martha Heywood recorded a dream in which a neighbor's house had grass growing in front of it, a sign of the soil's "thriftiness," as well as hops vines growing on the house for shade (1978, 122-123).

Though garden historian Ann Leighton (1987) says that there was little evidence of people growing plants indoors during the nineteenth century, it was certainly done on occasion, especially in the absence of greenhouses (318-320). Elizabeth Kane reported seeing a geranium growing in a kitchen in winter (1974, 110). Sometimes beloved plants not hardy for Utah were also kept indoors (Moyle 1948).

Perennial flowers are an ephemeral element in the landscape because, with a few exceptions like peonies and some bulbs, they tend to be relatively short lived and subject to changing landscape styles. This is even more true of annuals, which may have been less common if they needed a lot of attention or a greenhouse to be grown in Utah. Still, flowers were an important element in the Mormon pioneers' efforts to beautify their home, and would have been found in most early Mormon gardens. Appendix D contains

a list of herbaceous ornamentals documented as growing in Utah during the pioneer period.

Native plants. There has been some debate in restoration circles about the popularity of native plants in historic landscapes. Mid-nineteenth-century garden designers and horticulturists did promote native plants, but not always to a receptive audience. Wild gardens featuring native plants became popular in the nineteenth century, but not until the end or just after the pioneer period. Whether out of necessity or an appreciation of their intrinsic value, native plants did find a place in pioneer gardens. Pioneers had little use for sagebrush, but they did go to the mountains and canyons to gather many other types of plants for their yards. Native trees and fruiting shrubs were probably the most important contribution to Utah's pioneer landscapes. This followed the general pattern in America at the time in terms of appreciation for and use of native trees (Adams 2004, 58-60).

The Mormon pioneers' dependence on native plants began with their journey across the plains. Fruiting plants, especially, brought variety to their diets, which were sometimes quiet meager. The pioneers were keenly interested in the plants that they found on their journey, sampling fruits and even taking cuttings. They were interested in native fruit both for its immediate uses and for its potential long-term contributions to their livelihood. Eliza Snow noted that she thought the pioneers were creative people, because, despite the scant provisions on the trip, there was "plenty of cooking going on" (1885, 195). On their descent into the Salt Lake Valley, William Clayton, with the first pioneer party, reported passing wild currants, hop vines, elderberry, black birch, and willows, as well as wild apples and roses with pretty blossoms, and sampling some of the

fruits (1991, 353, 357). Patty Sessions, who also crossed the plains in 1847, reported that everyone in her company collected and ate wild berries, especially currants (1847, 181). Eliza Snow also ate currants and chokecherries, which she thought tasted better than eastern chokecherries; some of these berries were baked into pies (1885, 187,190). On her entrance into the Salt Lake Valley she noted, “oak, maple, and elder, ozier &c” (204)

Even after they arrived, the pioneers continued to rely on native plants to round out their diets. Once she reached the valley in October of 1847, a woman sent Eliza Snow bread and elderberry sauce, almost certainly made from native elderberries, and another man brought mince pie (1885, 212). Later that winter she noted in her diary feasting on coffee, pancakes with molasses, biscuits made from flour they had ground locally, butter, dried beef, peach sauce, custard pie, fried cakes, and tea (217). In the summer of 1848, Eliza Snow recorded eating currants until the serviceberries were ripe enough to eat (225). The pioneer’s willingness to try new plants sometimes had fatal consequences, such as when F.K. Shed died early in 1848 from eating poisonous “vegetables” (219).

Mountain men and Native Americans already had knowledge of some of the useful native plants, and the pioneers adopted some of these. Jim Bridger told the first group of Mormon pioneers about Utah’s oaks, pines, “sugar maples,” a cedar that produced yellow fruits, cherries, berries, wild flax, grass, clover, and sage (Clayton 1991, 350-352). In some cases, native plants may have come from some of the native people of Utah. At the first agricultural fair held in St. George in 1865, first prize for corn went to a local chief, Tut-se-gavit (Walker 1980, notes to 249). Whether this was a native corn or an introduced one isn’t mentioned in the source. Native Americans in the area did grow corn, beans, squash, and possibly wheat (Bigler n.d.; Brown 1972, 39-40, 54-57). There

is little information about horticultural interactions between Mormon pioneers and Native Americans, but some exchange of plants and knowledge did take place (Brown 1972, 51-57).

Not everyone embraced native plants. On April 15, 1863, an anonymous writer in the *Deseret News* complained about the inferior aesthetic appeal of natives in Utah gardens, particularly wild roses saying:

True, we have the common wild, single species, found growing on the banks of creeks, in the valleys and in the canyons. These may have served to tamely represent what we have previously been accustomed to call the rose; but the likeness is so slightly perceptible as to make it a question whether it is admissible to longer distort the Queen's English by applying that name to these wild briars. In the past, when flowering plants were rare among us, it may be confessed that they were preferable to the barren, dry, sun-bleached, unsightly space in those days of primeval nothingness generally constituting the adornment of the grounds immediately in front and elsewhere adjacent to the dwellings . . . As with the bleak-looking, ill-starred cottonwoods brought from the mountains and during years of successive failures determinately transplanted in the valleys, but now, at length generally, if not wholly discarded; so with these wild, massy clumps of briars . . .

Not everyone shared this author's sentiments, however. In the next column of the same paper, J.E. Johnson, from Spring Lake Villa, encourages the planting of native plants in yards, and even describes the plants he has transplanted from the mountains:

. . . The modest snow drop, the gay gillia, the beautiful scarlet parstamon [penstamon], the beautiful lilly (segoes), the gaudy columbino [columbine], the fragrant sweet pea, phlox, and half a score of others as sweet and fine.

It is likely that these two gardeners represent the extremes, and that most people fell in between, using some native plants, but preferring those to which they were accustomed.

Many gardens did include native plants, especially trees. The Petersen garden in Ephraim had a walk that terminated at an old native juniper tree. They also had a wild garden, including native plants like roses, chokecherries, elderberries, and strawberries. In 1861, Edward Whiting brought a juniper tree down in a cup from the mountains, and carefully transplanted it facing the same direction it had faced in the mountains (*Deseret News* 1948a). Ann Gunnell transplanted a box elder into her yard from the mountains in 1855, though probably more because she wanted some kind of tree than for any particular regard for the specific species (Jarvik 1985). The settlers in the Cotton Mission lined their new streets with cottonwoods (Hafen 1938, 40). Before a church house was built, they also held church meetings under a cottonwood tree (1938, 44). In 1888, the *Deseret News* reported on a box elder tree from the early days of Salt Lake City that was tapped for sugar like an eastern maple. The tree had been moved as a seedling from an orchard to be used as a street tree (Penrose 1888). Some of the settlers enjoyed the scenery in Utah, especially in the mountains, where they would go for recreation (Walker 1980, 248). It is possible these pleasure trips are what inspired some of them to bring native plants into their yards.

Native plants that produced fruit especially seem to have been adopted by early settlers into their yards. Charles Walker reported bringing currants and plums into his yard (1980, 169). Other plants were used where they grew in the wild, like willows that were often used in building early homes, furniture, and fences, and even eaten in extreme circumstances, and even the fluff from cattails, which could be stuffed to fill pillows (Hafen 1938, 34; Badger 1937). Wild weeds, such as pigweed, thistles, and wild artichokes were an important source of food as vegetables grew or when crops failed

(Hafen 1938, 34; Andrews 1939; Badger 1937). Many native berries were used, both in yards and in nature, including chokecherries, elderberries, serviceberries, currants, raspberries, strawberries, gooseberries, and thimbleberries (Allen 1937; Badger 1937). A plant called secarta was used as feed for animals. Yucca roots, called oose or soap root, were used to make a general purpose soap, and water was softened with cottonwood ash (Hafen 1938, 41).

Though Mormon gardens were probably not ever composed entirely of native plants, the use of natives, especially trees and fruiting shrubs, seems to be appropriate for historical Utah landscapes. Appendix F contains a list of native plants mentioned in historical sources as growing in Mormon pioneer gardens. The advantages of using native plants in the landscape is that they are generally low maintenance and are well suited to the local climate. Also, they are often available as species instead of cultivars, which reflects more closely the plants as the pioneers would have known them. Native plants should generally not be gathered from the wild because this can deplete native plant populations and is illegal in some circumstances, but many native plants are available through local nurseries.

Making Plant Substitutions in the Historical Landscape

The need for substitutions. In most cases, it is preferable to use original plants or identical plants in the landscape. The best case scenario is to replace older plants with cuttings or clones of the same plant or of the same variety from a local source. The next best solution is to replace it with the same species and cultivar, if known. There are, however, several cases where this is not practical.

In some cases, the original plant may not be known. For instance, it may be clear that a tree was once planted in front of a house, but it may not be practical to find out which type. Though some modern landscape archeology methods might be able to determine the type of tree, this may not be feasible on the site. In this case, it may be necessary to choose a historically appropriate tree to replace it. Similarly, it may be known that a lilac bush once grew in a yard, but there is no way to determine which type of lilac. In this case, again, choosing a historically available substitute may be necessary. In other cases, there may simply not be enough evidence to know what plants were used on a site historically. If an examination of evidence like diaries, property deeds, local newspapers, old photographs, and the existing conditions of a property do not yield information about the plants in a yard that is to be restored, the landscape designer or owner must use his or her knowledge of what was locally appropriate to try to restore the landscape.

Another reason that it may not be possible to replace a plant with its equivalent is if the plant has died or was removed and it is no longer available in commerce. Some old varieties of fruit trees, while possibly still alive in an old orchard somewhere, may not be readily available. If the landscape preservationist can find a nearby historical orchard they may have a reasonable chance of finding the same tree, but otherwise a similar tree that was known to grow in the area would be the best substitute. Also, some old garden roses are known due to their descriptions in period publications, but are no longer found in commerce. Unless they can be found in an old lot or cemetery, these roses may be best replaced by a rose from the same class with a similar color and form.

Finally, a historical plant may not be suitable for a landscape. The plant may be susceptible to a fatal or disfiguring disease or pest which has become problematic since the pioneer era. It may use too much water when a property owner or manager needs to reduce water use. It may be a species that has since become invasive and should not be planted in the region. It also may pose other hazards, such as dangerous thorns too near a walkway that children or visitors will frequent. In these cases, the closest possible substitute should be chosen.

When using substitutions in a historic landscape, especially a public one that is meant to be educational in any way, it is important to distinguish between plants that are historic or exact replacements of historic plants, and those that are substitutions. By educating visitors on these distinctions, property owners or managers can not only create a reasonable historical feel for a site, but also help visitors understand how landscapes change over time, and what ecological concerns are a problem in modern landscapes.

Choosing substitutions. In her encyclopedia of historic plants, Denise Adams (2004) discusses the need for plant substitutions in historic landscapes. She recommends only making substitutions in cases where it is necessary, such as when the plant is invasive or severely affected by modern diseases. When dealing with plants that are currently unpopular for other reasons, she encourages her readers to try to understand why the plant was used by the historic property owners and to appreciate it for those qualities. She suggests taking the same approach when looking for plant substitutes. The plants may have been used for fruit, flower, or form, or played some other role in the overall garden design. Also, the plants may have had sentimental value to the owner. She recommends trying to understand the perspective of the garden's designer and take into

account the physical, emotional, cultural, and practical processes and constraints on historic landscapes. By looking at the larger picture of the landscape, a modern designer can understand the historic landscape better and treat it more appropriately, considering not only its plants but also the story it tells about the past.

When choosing a substitute, there may not always be an obvious choice. That is why it is necessary to understand the context for the plants. It is important to try to find plants that are historically appropriate for the site, not only to give a building and its landscape the correct look, but also to better understand the people who grew the plants and the world they lived in and understood. Deirdre Larkin, historical horticulture specialist at The Cloisters at the Metropolitan Museum of Art, argues that historical gardens are a way to enter the world of the past, and that every aspect of historical life can be understood through seeing and learning about historic plants (2008, 229). Getting to know historical plants and their meanings and uses allows us to understand the historical people who grew, tended, used, and enjoyed the plants, and to make appropriate substitutions where necessary (236).

Many pioneer plants were chosen for their functional characteristics. Fast-growing trees provided shade. A plant may have added fragrance to the yard, provided fruit, or both. Especially in early Mormon landscape, shade and fruit were important functions of plants. If these seem to have been the most important characteristics of a plant, then another plant that fills the same function should be chosen. Though in some cases the function of the plant may be the most important consideration, form, size, and other physical or sentimental characteristics should also be considered, as should the existence of the plant during the site's period of significance. For instance, heirloom

apple trees have varying sizes and shapes, and if possible one should be chosen that is similar to the historic tree being replaced.

Finding substitutes may not be a simple task. For instance, chicory is a blue-flowered herb used as a coffee substitute that has now become invasive. Both its use and its appearance are difficult to replicate with other plants, so it may best be replaced with an entirely different historical herb. Other substitutes are not as difficult to choose, especially for ornamental plants. Ox-eye daisy is an invasive that was grown for its white daisy-type flowers. Another historically available white daisy, such as the related but less invasive Shasta daisy, would provide a similar function in the landscape. The invasive ornamental dame's rocket can be replaced with garden phlox, which also has a similar appearance.

Fast-growing shade trees that were valuable to the pioneers are in some cases now considered weedy or even invasive. Tree of Heaven is an example of a pioneer-era shade tree that has since become invasive. There are several historical shade trees that would make suitable substitutions, depending on the situation, including black walnut, honey locust, and black locust (U.S. Department of the Interior 2009). Also, Kentucky coffee tree may have been used during the pioneer era, and is another good shade tree with compound leaves similar to those of Tree of Heaven. Black locust itself is susceptible to a borer that can disfigure or kill the tree, honey locust is subject to some disease and pest problems, and black walnut and Kentucky coffee tree can litter the ground, so the right substitution will depend on the situation and the priorities of the property owner or manager (Dirr 1998).

Sometimes plants were chosen for their forms, sizes, or other aesthetic characteristics. Two examples of these in Utah landscapes are Lombardy Poplars, a fast-growing, narrow tree often used for windbreaks and characteristic of rural Utah scenes, and the weeping willow, a popular element in many Victorian landscapes. When these trees existed on site but are not suitable for the location any more, trees with similar forms should be sought. This means that, in replacing a Lombardy poplar, a columnar tree of a different species may be more appropriate than a broad-spreading but related cottonwood tree. Some trees that were used a species historically, like the black locust, are more common today as cultivars with unique, non-period features. A contorted 'Twisty Baby' black locust would not be an appropriate substitute for a species black locust used as a shade tree in a historical landscape.

Tamarisk is a unique-looking ornamental that is a serious problem along streambeds, where it sucks up tremendous amounts of water and crowds out other valuable plants. Though introduced after the pioneer period, it is present on many historic sites, and it is a good example of the challenges of making substitutions for some plants. Tamarisk is a unique looking plant and pretty when in bloom, and it is hard to find a substitute that is a look-alike; its general size and shape as well as its use as a flowering ornamental must instead be considered when choosing a replacement. Desert willow might work as a substitute of similar size and texture. Other blooming riparian shrubs used historically, including elderberry, chokecherry, and serviceberry, could also be considered as replacements where, for historical or ecological reasons, tamarisk cannot simply be removed.

Riparian areas are sensitive to invasive historical plants other than tamarisk. Siberian elm is a fast growing tree introduced to the U.S. in the 1860s that has become invasive (U.S. Department of the Interior 2009). The National Park Service's Alien Plant Working Group recommends chokecherry as a substitute for Siberian elm, though the appropriateness of this suggestion depends on the situation. Purple loosestrife, *Lythrum salicaria*, is another riparian invasive introduced as an ornamental in the 1800s. Native *Liatris* plants would be a good alternative, and were used as ornamentals in the U.S. historically (U.S. Department of the Interior 2009; Adams 2004, 191). Where these plants, and other invasive species introduced after the pioneer period like Russian olive, exist in the riparian landscape they should be removed and replaced with plants that are appropriate to the ecosystem in order to prevent the invasive species from returning and to restore the ecosystem to its historical functions. Sometimes in these cases native plants may be the best substitute even if they may not have been present on the site historically. In the case of vegetative or ecological systems like riparian areas, treatments focus on the processes or functioning of the system, and not necessarily on individual plants, making it acceptable to add native plants to an area where they did not necessarily exist historically (Olmsted Center for Landscape Preservation, n.d.).

Plants' meanings are another factor that may play a role in choosing substitutions. It is not always possible to know what specific plants meant to a home's occupant, unless a diary happens to exist and to mention the owner's feeling about the plant. In cases where a sentimental meaning is known or suspected for a plant, however, the landscape preservationists should attempt to find a plant that would convey a similar meaning. For instance, a plant that reminded a person of their home country might be replaced with

another plant from the same country. A native plant that a person transplanted from the mountains could be replaced with another native plant of similar size and form. A plant that an ancestor carried across the plains and lovingly cared for may be important to a family, and if it cannot be replaced, the family might be able to suggest a similar plant as a replacement that also has meaning in their family's history.

Though it is usually better to choose historical plants as substitutes, there are times when modern ones are more appropriate. This is especially true when the historical plant has since become subject to a disease or pest that was not present historically. The American elm is a good example of this. Elms were once very popular trees, but a blight has since greatly reduced their numbers. Where they exist in historic landscapes and are healthy they should be preserved, but where they must be replaced, one of the modern cultivars being tested for disease resistance would be a more appropriate choice than the species, which would likely succumb to the disease again if planted. Trees with a similar vase shape, such as a zelkova, may also be acceptable substitutes.

Substitutions should be used sparingly in historic landscapes wherever possible. The original function, form, and meaning of a plant should be considered, and the closest possible substitute used that reflects the original importance of the plant in the landscape. The right substitute is not always easy to identify, especially for plants that have unique functions or appearances. In these cases, the landscape preservationist must decide on the best way to reflect the original use of the plant in the landscape.

CONCLUSIONS

When they migrated to Utah, Mormon pioneers came to create their new holy city, a place meant to fulfill Biblical and modern Mormon prophecy and “blossom as the rose.” With a utopian vision as a guide, they created agricultural towns, meant to be self-sufficient as well as beautiful. To this end, they brought with them and imported a variety of plants that reflected their era’s interest in seeking out new, interesting, and useful plants. In growing crops and tending gardens they saw themselves as not only creating a home that was to be a safe haven for themselves, but also as working to build God’s kingdom, creating their own sacred space set apart from the world, and enjoying the many bounties the world had to offer.

A typical Mormon pioneer home was situated in the midst of orchards and gardens. Peaches and apples were perhaps the most important fruits, but many others were grown, along with small fruits like grapes and native currants. Their gardens boasted a variety of vegetables to sustain them and to sell to immigrants heading further west, as well as herbs believed to have medicinal properties. In their door yards they also grew roses, peonies, pinks, geraniums, and other popular flowers, while vines adorned their houses and shade trees lined their streets and sometimes graced their yards.

In trying to restore or reconstruct pioneer gardens, it is important to try to find out what plants were used in the landscape, and also to understand why those plants were used. Some were simply convenient, while others had personal meaning to the home’s occupants, but all represented the effort to build Zion in Utah. Understanding these meanings will help landscape designers and property owners in choosing treatments for

historic landscapes and making sensitive decisions when they need to make substitutions for historical plant materials. It will also allow the landscapes to fulfill their educational role in helping people to better understand the past.

There are several areas of research related to this thesis that require further study. The sources used in this thesis offer only partial descriptions of the designs of Mormon pioneer gardens. More information about the layout of both professional and vernacular designed gardens would be valuable for understanding and treating historic Utah landscapes, whether gained through historical or archeological research. Also, if appropriate sources can be found, an in-depth study of the design, content, and cultural meanings of ethnic gardens would provide insight into garden design as well as the ethnic subcultures that existed within the framework of the larger Mormon culture. Information about agricultural exchanges between Mormons pioneers and Native Americans would help to shed light on the complicated interactions between these groups. The influence of the transcontinental railroad on gardening and garden design in Utah is beyond the scope of this study, but would provide further information for historic preservation and possibly about cultural resistance and assimilation in post-1869 Utah. The lists of plants provided in the appendices of this thesis are not meant to be exhaustive; undoubtedly there are other unpublished sources that could add to the lists of plants grown by Mormon pioneers. Finally, a valuable resource could be created by examining the pioneer-era plants that might require substitutions in modern landscapes and creating a database of suggested substitutes based on a variety of criteria.

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APPENDICES

Appendix A: Fruits, Nuts, and Berries Known to be Cultivated in Utah During the Pioneer Period

The following lists represent plants named in pioneer sources used in this thesis. Plants not named in these lists may still have been grown in Utah, and may be appropriate for historic sites if documentation is found of their existence there historically.

Bolded names indicate varieties still available today; names in brackets represent a best guess in correcting an apparent spelling error.

Key to sources. The following sources provided the names found on this list. The source is listed in parenthesis after the name of the plant variety.

DN1863 – T.W. Ellerbeck, “Strawberry Plants,” *Deseret News*, April 15, 1863, p. 335

Benson – Elder Ezra T. Benson, “The Vine and Fig Tree - Duties of Saints,” *Journal of Discourses*, Volume: 3 Pages: 75-79

DAMS – Deseret Agricultural and Manufacturing Society minute book

DN1866 – “Apples,” *Deseret News*, March 28, 1866, p 1

Hunter - Edward Hunter, “Report of the Board of Directors of the Deseret Agricultural and Manufacturing Society on the Exhibition of 1860”

J9 – Joseph Ellis Johnson, Garden Journal number 9

NYT1861 – New York Times correspondent, Affairs in Utah, “The Deseret Agricultural and Manufacturing Company’s Fair—The Mormon Conference—A Cotton Country in the South Part of the Territory, &c.”

Rich – Sarah DeArmon Pea Rich autobiography

Truitt - Esther Truitt, "Home Gardening on City Lots in the Salt Lake Valley,
1847-1918"

Walker - *Diary of Charles Lowell Walker*, vol. 1

Apples:

American Golden Pippin (J9)

Baldwin (DN1866)

Belmont (DN1866)

Ben Davis (J9)

Canada Rennette [Reinette] (J9)

Carolina Stripped June (DN1866)

Clepps Favorite (J9)

Cogswell (J9)

Dutch Musgrove (J9)

Early Harvest (DN1866)

Easapsus or Esopsus Spitzenburgh (H, J9, DN1866)

Fallwater (DN1866)

Fall Golden Pippin (J9)

Fall Strawberry (DN1866)

Fall Cheese (DN1866)

Garretson's Early (J9)

German Golden Pippin (J9)

German Pippin (J9)

Hall Golden Pippin (J9)

Hulton (J9)

Jonathan (J9)

Keswick Codlin (DN1866)

Ladys Sweet (J9)

Lake (J9)

Large Apple from Oregon (DN1866)

Late Wine (J9)

Limber Twig (DN1866)

Mammoth Pippin (J9)

McClellan (J9)

Mother (J9)

Mountain Chief (H, DN1866)

Northern Spy (J9)

Porter (DN1866)

Pride of the Valley (Hunter)

Pumpkin Vine Baldwin (DN1866)

Red Astrachan (DN1866)

Red Russet (J9)

Rhode Island Greening (Hunter)

Rome Beauty (J9)

Sassafras Sweet Strawberry (J9)

Sharp's Russett, Neal's, or Roxbury Russet (Hunter, J9, DN1866)

Spice Apple (Hunter)

Sweet Bough (DN1866)

Twenty ounce (DN1866)

Virginia Greening, Green Winter, or Oregon Greening (DN1866)

Washington (J9)

White Winter Pearmain (DN1866)

Wine sap (DN1866)

Woods Sweet (J9)

Yellow Newton Pippin (DN1866)

Apricots:

Blenheim (J9)

Kashia (J9)

Mosha (J9)

Peach (J9)

Pineapple (J9)

Royal (J9)

Cherries:

Belle de Orleans (J9)

Brant (J9)

Delicate (J9)

Downing Red Check (J9)

Dwarf cherry, *Cerasus pumila* [sand cherry] (J9)

German Pume (J9)

Grapes:

Alvey (DAMS)

Black cluster (J9)

Bonood Muscat (J9)

Bucklands Sweet Water (J9)

Canby's August (DAMS)

Catawba (J9)

Clinton (DAMS, J9)

Concord (DAMS, J9)

Curling (J9)

Delaware (DAMS, (J9)

Deveraux (DAMS)

Diana (DAMS, J9)

Golden Hamburgh [Black muscat] (J9)

Hartford Prolific (DAMS)

Ivie's seedling (DAMS)

Jo Kalon (DAMS)

Lady Downs (J9)

Maxatawney (J9)

Muscat Hamburgh (J9)

Norton Virginia [Norton] (DAMS)

Rebecca (DAMS, J9)

Red French (J9)

Rose Chassalu (J9)

Royal Muscadine (J9)

Tokalou (J9)

White chassalu (J9)

Pears:

Belle Lucration (J9)

Bloodgood (J9)

Bose (J9)

Brandywine (J9)

D'Anjou (J9)

Davies Hovey (J9)

De d'et [Doyenne d'Ete] (J9)

Duchess an Solen [Duchess d'Angouleme] (J9)

Ellis (J9)

Fond Dulce (J9)

Josephine De Malines (J9)

Lawrence (J9)

Paradise d'Automne (J9)

Rostiezer (J9)

Sheldon (J9)

Tyson (J9)

Waiter Nellis [Winter Nellis] (J9)

White Dozeline (J9)

Plums:

Be Giffant (J9)

Bradshaw (J9)

[Coe's] Golden Drop (DAMS)

Coes Violet Golden Drop (J9)

De Montfort (J9)

Dennison [Denniston's Superb] (J9)

Green Gage, Reine Claude (J9, Rich)

Hudson Gage (J9)

Imperial Gage (DAMS)

Imperial Ottoman (J9)

Oulins [Oullins'] Golden Gage (J9)

Purple Favorite (J9)

Red Diasse (J9)

Red Gage (J9)

Royal Hative (J9)

Schenectady Catherine (J9)

Schuyler Gage (J9)

St. Catherine (J9)

Wild plums [Potawatomi] (Walker)

Strawberries:

Scarlet Magnate (DN1863)

Vicomtesse (DN1863)

Victoria (DN1863)

Wilson's Albany (DN1863)

Other fruits and berries:

Dorchester blackberry (DN1863)

English black currants (DN1863)

English red currants (DN1863)

Mulberries (Truitt)

Native black currants (NYT1861)

Quince (DAMS)

Red giant raspberry (DN1863)

White gooseberries (DAMS)

Nuts:

American Chestnut (J9; Benson)

Black Walnut (Truitt)

Willow twig almond (J9)

**Appendix B: Vegetables, Herbs, and Field Crops Known to be Cultivated in Utah
During the Pioneer Period**

The following list represents plants named in the pioneer sources used in this thesis. Plants not named in these lists may still have been grown in Utah, and may be appropriate for historic sites if documentation is found of their existence there historically.

Key to sources. The following sources provided the names found on this list. The source is listed in parenthesis after the name of the plant variety.

Clayton - *An Intimate Chronicle: The Journals of William Clayton*

DAMS – Deseret Agricultural and Manufacturing Society minute book

LSH – L.S. Hemenway, “Cabbage Seeds!” *Deseret News*, April 15, 1863, p. 334.

Hunter - Edward Hunter. “Report of the Board of Directors of the Deseret Agricultural and Manufacturing Society on the Exhibition of 1860”

J – Joseph Ellis Johnson’s nursery catalog, in Ester Truitt’s “Home Gardening on City Lots in the Salt Lake Valley, 1847-1918”

J9 – Joseph Ellis Johnson, Garden Journal number 9

WPA – Works Progress Administration Pioneer Interviews

Young – Brigham Young, “Building up and Adornment of Zion by the Saints,”
Journal of Discourses, Vol. 9

Beans:

Bird’s egg horticultural (J)

Broad lima (J)

Case knife (J)

Early China (J)

Early Valentine (J)

Scarlet runner (J)

Beets:

Early Bassano (J)

Early blood turnip (J)

Long Scarlet (J)

White sugar (J)

Cabbage:

Buist's early York (J)

Late drumhead (J)

Red Dutch (J)

Winnestadt (LSH)

Carrots:

Long Orange (J, Hunter)

St. James (Hunter)

Corn:

King Philip (J)

Old Colony (J)

Popcorn (J)

Smith's Early White (J)

Stowell's Evergreen Sweet (J)

Cucumber:

Early Cluster (J)

Long Green (J)

Egg plant:

Large purple (J)

Scarlet (J)

White and yellow (J)

Lettuce:

Early white (J)

Red bordered head (J)

Scarlet head (J)

Melon:

Apple pie melon (DAMS, J)

Custard (J)

Fine Netted Excelsior (J)

Fine Rough Netted Muskmelon (J)

Honey Dew (J)

Ice Rind Watermelon (J)

Long Stripe (J)

Mountain Sweet (J)

Nutmeg (J)

Mustard:

Black (J)

White English (J)

Okra:

New Dwarf (J)

Tall (J)

Onion:

Large Red (J)

Red (Hunter)

Red Dutch onion (DAMS)

Silver (Hunter)

Stradsburgh (Hunter)

Wethersfield (J,Hunter)

White (Hunter)

Yellow (Hunter)

Yellow Dutch onion (DAMS)

Parsley:

Double curled (J)

Plain or Single (J)

Parsnip:

Long Smooth (J)

Peas:

Early Garden (J)

Large Imperial (J)

Tall sugar (J)

Peppers:

Red Cherry (J)

Small India (J)

Pumpkins:

Kentucky Field (J)

Radish:

Early long scarlet (J)

Early scarlet turnip (J)

White Naples (J)

Rhubarb:

Mammoth (J)

Squash:

Boston Marrow (J)
Fine cream winter (J)
Hubbard squash (DAMS, J)
Long crookneck (J)
Long green summer (J)

Spinach:

Early round leaf (J)

Tomato:

Feejee Island (J)
Fig (J)
Large red (J)
Large yellow (J)
Pear shaped (J)
Red perfected (J)
Strawberry (J)

Turnip:

Flat Dutch (J)
Rutabaga white (J)

Herbs:

Annis (J)

Balsams (DAMS, 1863)

Bee balm (J)

Chicory (J, DAMS, 1863)

Dill (J)

Egg, in scarlet, white, or purple (J)

French mint (J)

Hyssop (J)

Lemon balm (J)

Peppermint (J)

Saffron (J)

Sage (J, DAMS, 1863)

Savory (J)

Scoke, poke or garget (J)

Sweet marjoram (J)

Wormseed or Jerusalem oak (J)

Yeast plant (J)

Other garden crops:

Castor oil bean (J)

Chufaus or Earth Almond (J)

Madder (DAMS, J)

Opium poppy (J)

Peanuts (J)

Pie plant (DAMS; WPA)

Sunflower (J)

Field crops:

Alfalfa (J9)

Black imphee (DAMS)

Broom corn (J)

Buckwheat (Clayton)

Chinese sugar cane or sorghum (DAMS, J)

Cotton, North Carolina (DAMS)

Cotton, Sea Island upland (DAMS)

Highland rice from Japan (DAMS)

Potatoes, Early rose (DAMS)

Potatoes, Goodrich (DAMS)

Potatoes, Mechanic (DAMS)

Tobacco, Ambalema (DAMS)

Tobacco, Connecticut leaf (J)

Tobacco, Kentucky long green (J)

Tobacco, Large Frederic (J)

Tobacco, Large Graham (J)

Tobacco, Maryland (DAMS)

Wheat, African bearded (DAMS)

Wheat, Siberian (DAMS)

Wheat, Toas (Young)

Appendix C: Ornamental Trees and Shrubs (Except Roses) Known to be Cultivated in Utah During the Pioneer Period

The following list represents ornamental plants named in pioneer sources used in this thesis. Plants not named on this list may still have been grown in Utah, and may be appropriate for historic sites if documentation is found of their existence there historically.

Bolded names indicate the name found in historical sources; names in brackets represent a best guess in correcting an apparent spelling error. Denise Adams' book, *Restoring American Gardens: An Encyclopedia of Heirloom Ornamental Plants 1640-1940*, was an invaluable resource for comparing historic and modern scientific names for historic ornamental plants.

Key to sources. The following sources provided the names found on this list. The source is listed in parenthesis after the name of the plant variety.

Cent - *Deseret News*. "Centenarian Patriarchs Prove Foresight of Pioneers," October 17, 1948

DAMS – Deseret Agricultural and Manufacturing Society minute book

DN1940 - Hazel D. Moyle, "Early Pioneer Gardens Brought Astonishment to Utah Visitors," December 14, 1940

DN1969 - *Deseret News*. "Plaque Salutes Three Pioneer Trees," April 19, 1969

J9 – Joseph Ellis Johnson, Garden Journal number 9

Spngvl – *Deseret News*. "Springville Keeps Pioneers' Trees," September 18, 1948

Truitt - Ester Truitt "Home Gardening on City Lots in the Salt Lake Valley, 1847-1918"

Trees:

Acacia, probably honey locust, *Gleditsia triacanthos* (DAMS)

Acer platanoides, Norway maple (J9)

Acer rubrum, red maple (J9)

Acer saccharum, **sugar maple** (J9)

Acer striatum, snake bark maple (J9)

Ailanthus altissima, **tree of heaven** (Truitt)

Betula, birch (J9)

Catalpa, **Catalpa** (Spngvl)

Cedrus libani [libani], Cedar of Lebanon (J9)

Cercis [Cercis] *siliquestium*, possibly Judas tree or European redbud (J9)

Cornus florida, flowering dogwood (J9)

Cornus mas, Cornelian cherry dogwood (J9)

Crataegus, **Hawthorn** (Truitt)

Cupressus lawsoniana, Port Orford cedar (J9)

Cupressus macrocarpa, Monterey cypress (J9)

Eucalyptus globus [globulus], possibly blue gum (J9)

Fraxinus excelsior, **European Ash** (J9)

Larix, **larch** (J9)

Magnolia glauca, sweet magnolia (J9)

Magnolia macrocarpa [macrophylla], possibly bigleaf magnolia (J9)

Paeonia suffruticosa, **tree peony** (DN1940)

Picea abies, **Norway spruce** (J9)

Picea pectinata, silver fir (J9)

Pippen tree (J9)

Pinus maritime, maritime pine (J9)

Pinus nigra, **Austrian pine** (J9)

Pinus strobus, eastern white pine (J9)

Pinus sylvestris, Scotch pine (J9)

Ponciana [Poinciana] *regia*, royal poinciana (DAMS)

Populus candicans, **Balm of Gilead** (Truitt)

Populus nigra italica, **Lombardy poplar** (Truitt)

Pyrus amcananie [aucuparia or americana], possibly European mountain ash or American mountain ash (J9)

Rhamnus curobinimus, possibly a buckthorn (J9)

Robinia pseudoacacia, **black locust** (Truitt)

Salix babylonica, **weeping willow** (J9)

Salix nigra, **black willow** (Cent)

Sassafras, **sassafrass** (J9)

Sequoia gigantean, giant redwood (J9)

Shrubs:

Cornus senquiuinus [sanguinea], possibly red twig dogwood (J9)

Lamicerca [Lonicera] *Aurea Reticula*, variegated Japanese honeysuckle (J9)

Maclura pomifera, **osage orange** (DN1969)

Pinus montana, mountain pine or possibly mugo pine (*Pinus mugo*) (J9)

Rhus cotinus, smoke tree (J9)

Syringa, **lilac** (J9)

Weigela, **wijelia** [Weigela] (J9)

Appendix D: Ornamental Herbaceous Plants Known to be Cultivated in Utah

During the Pioneer Period

The following list represents plants named in pioneer sources used in this thesis. Plants not named in these lists may still have been grown in Utah, and may be appropriate for historic sites if documentation is found of their existence there historically.

Key to sources. The following sources provided the names found on this list. The source is listed in parenthesis after the name of the plant variety.

DAMS – Deseret Agricultural and Manufacturing Society minute book

H- Edward Hunter. “Report of the Board of Directors of the Deseret Agricultural and Manufacturing Society on the Exhibition of 1860”

J – Joseph Ellis Johnson’s nursery catalog, in Ester Truitt’s “Home Gardening on City Lots in the Salt Lake Valley, 1847-1918”

J9 – Joseph Ellis Johnson, Garden Journal number 9

Kane - Elizabeth Wood Kane, *Twelve Mormon Homes Visited in Succession on a Journey through Utah to Arizona*

Truitt – Ester Truitt, “Home Gardening on City Lots in the Salt Lake Valley, 1847-1918”

Walker – *Diary of Charles Lowell Walker*, vl. 1

Widtsoe – *In the Gospel Net. The Story of Anna Karine Widtsoe, 1849-1919*

Plants:

African Hibiscus (J)

American Centuren (J)

Apple balsam (J)

Cacalia or Tassel flower (J)

Camilla in mixed colors (J)

Camilia poppy (J)

Candytuft, white (J)

Canterbury bells in mixed colors (J)

Carnations (J9)

China aster (J)

China pinks, double (J, J9)

Chriseis, yellow and white (J)

Clover (Truitt)

Clover Ball (J)

Cockscomb (J)

Convolvuius (J)

Coreopsis in many colors (J)

Crocus (J9)

Cucumber balsam (J)

Dahlias (J9) (In 1872 he had John Downie, Mrs. Dorling, Este, Jenny Deans, and

Immortal)

Datura (J)

Delphiniums, double (J)

Double balsams (J)

Double helianthum (J)
Double hollyhocks (J)
Double paeonin poppy (J)
Double zinnia (J)
Eternal flower (J)
French aster (J)
French marigolds (J)
French pinks, blue bottle (J)
Flax, red, white, and blue (J)
Geraniums (Kane)
German aster (J)
German stocks (J)
Gilia, pink and tri-color (J)
Grass pinks (J)
Hollyhocks (DAMS)
Ice plant (J)
Jasmin (J)
Lemon plant (J)
Lilies (Widtsoe)
Madeira vine (J)
Marvel of Peru (J)
Mignonnette (J)
Morning glory or Ipomea (J)

Monks hood (J)

Mourning bride (J)

Myrtle (Widtsoe)

Nemophila Maculata (J)

Pansies (J9)

Peonies (J9)

Phlox (J9)

Pot marigold, double (J)

Portulacca (J)

Prince's Feather (J)

Silk poppy (J)

Snapdragon, Antirrhinum (J)

Sweet sultan (J)

Verbena (DAMS)

Wild cucumber (J)

Appendix E: Roses Known to be Cultivated in Utah During the Pioneer Period

The following list represents plants named in pioneer sources used in this thesis. Plants not named in these lists may still have been grown in Utah, and may be appropriate for historic sites if documentation is found of their existence there historically.

Bolded names indicate varieties still available today; names in brackets represent a best guess in correcting an apparent spelling error. Special thanks to Gregg Lowry of Vintage Gardens and Heather Campbell of High Country Roses for their assistance in identifying the classes of many of the roses on this list that are no longer available in commerce, and for suggesting possible corrections of names due to spelling errors. Colors are indicated for many of the roses to assist in identification or finding appropriate replacements where necessary.

Key to sources. The following sources provided the names found on this list. The source is listed in parenthesis after the name of the plant variety.

J9 - Joseph Ellis Johnson, Garden Journal number 9

Roses - *Deseret News*, "Planting Roses," April 15, 1863

Bourbon:

Blanche Lafitti [Lafitte] – white (J9)

Duchess Thaingé [Duchesse de Thuringe] – white, light pink (J9)

Louis Chaux [Louis Chaix] (J9)

Louis [Louise] **Odier** - pink (J9)

Mrs. Bosanquet (or a Bengal) - white, very lt. pink (J9)

Sir Joseph Paxtir [Paxton] - red (J9)

Souvenir de la Malmaison – white (J9)

China, Indica, or Bengal:

Agrippina (or a Noisette) – red stripped (J9)

Cels Multiflora (or a Tea) (J9)

Cramoise Supina [Cramoisi Superieur] - red (J9)

George Peabody (J9)

Glede Rosaimmi [Gloire des Rosomanes] - red (J9)

Hermosa (J9)

Louis Phillippe – deep crimson (J9)

Gallica:

Victoire rose [La Victoire] (Roses)

Hybrid Perpetual and Portland (Damask Perpetual):

Alphonse Dumaison [Alphonse Damaizin] – crimson (J9)

Baronne Adolphe de Rothchild (J9) – pink (J9)

Compti Bubinsky [Comte de Brobinsky] (J9)

Comte d'Eu (J9)

Gen. Jacquemenot [General Jacqueminot] (J9)

General Washington (J9)

Giant of Battles [Géant des Batailles] - red (J9)

Glory de Somlenay [Gloire de Santenay] (J9)

Lion of Combat [Lion des Combats] - red (J9)

Marquiles Poacilla [Marquesa Boccella] - pink (J9)

Mrs. Elliott [Eliot] (J9)

Sidonia Dorsey [Sidonie or Sydonie, introduced by Dorisy] – pink (J9)

Vulcan - dark red (J9)

Moss:

Md. Wm. Paul – pink (J9)

Noisette:

Jaques Armzat [Jacques Amiot] - pink (J9)

Joan of Arc – white (J9)

Lady Emily Peel – white (J9)

Lamarque – white or pale yellow (J9)

Marshall Neil [Marechal Niel] (J9)

Species:

Native rose [Woods rose] (Roses)

Tea:

Belle Isador [Isidore] – light pink (J9)

Fleur de Cynun [Fleur de Cypris] – light pink (J9)

Madam Russell [Madame Roussel] – climbing, light white (J9)

Unknown class:

Amalulis Allen (J9)

Chinera (maybe Andre Chenier, a hybrid perpetual) (J9)

Chionotille (J9)

Empress Eugene [Eugenie] (J9)

Ganne (J9)

Gemmel Santas (J9)

Hofinson kock (J9)

Madam Fealer (J9)

Souvenir de la Compte Cavez (J9)

Appendix F: Native Plants Known to be Cultivated in Utah During the Pioneer Period

The following list represents plants named in sources used in this thesis.

Native plants not named on this list may still have been grown ornamentally in Utah, and may be appropriate for historic sites if documentation is found of their existence there historically.

Key to sources. The following sources provided the names found on this list. The source is listed in parenthesis after the name of the plant variety.

JEJ – Joseph Ellis Johnson, “Culture of Fruits and Flowers,” *Deseret News*, April 15, 1863

Cent - *Deseret News*, “Centenarian Patriarchs Prove Foresight of Pioneers,” October 17, 1948

J9 – Joseph Ellis Johnson, Garden Journal number 9

DN1888 - Charles W. Penrose “A Remarkable Tree,” *Deseret News*, April 17, 1888

DN1940 - Hazel D. Moyle, “Early Pioneer Gardens Brought Astonishment to Utah Visitors,” *Deseret News*, December 14, 1940

Roses – *Deseret News*, “Planting Roses”, April 15, 1863

Spngvl - *Deseret News*. “Springville Keeps Pioneers’ Trees,” September 18, 1948

WPA – Works Progress Administration Pioneer Interviews

Woody plants:

Box Elder (DN1888)

Chilopsis linearis (J9) – possible reference to growing it, certainly aware of it

Chokecherries (DN1940)

Cottonwood (Cent)

Currants (J9)

Elderberries (DN1940)

Fremont Poplar (Spngvl)

Juniper (DN1940, Spngvl)

Raspberries (WPA)

Serviceberries (WPA)

Thimbleberries (WPA)

Wild rose (Roses, DN1940)

Herbaceous plants:

Columbine (JEJ)

Gillia [sic] (JEJ)

Phlox (JEJ)

Scarlet Penstamon [sic] (JEJ)

Sego lily (JEJ)

Snow drop (JEJ) – Snow drops are not native to Utah, and the plant referred to as a native by this name is unknown

Strawberries (DN1940)

Sweet pea (*Lathyrus* spp.) (JEJ)

**Appendix G: Invasive or Potentially Invasive Plants in the Mountain West Region
(Including the Mormon Cultural Region)**

This list represents invasive species in the Mormon Cultural Region, including Utah and portions of Idaho, Wyoming, Colorado, Arizona, Nevada, and California. Not all of these invasive plants are necessarily ornamentals, but those that are should be avoided. Those that are not ornamental should be removed from and watched for on a site if landscape renovations are occurring. Most of these species were introduced after the pioneer period, so efforts should be made to remove them from historic sites even if they are not invasive in the region. If a plant is invasive in one area it may become so in another.

This list is based on information from Denise Adams' *Restoring American Gardens: An Encyclopedia of Heirloom Ornamental Plants 1640-1940* and the U.S. Department of Agriculture Natural Resources Conservation Service's PLANTS database and state noxious weed lists.

Plants:

Abutilon theophrasti, velvetleaf

Achnatherum brachychaetum, puna grass

Aegilops cylindrica, jointed goatgrass

Ailanthus altissima, tree of heaven

Alhagi maurorum, camelthorn

Alternanthera philoxeroides, alligatorweed

Ambrosia tomentosa, skeletonleaf bursage

Amorpha fruticosa, false indigo

Anoda cristata, spurred anoda
Anthemis arvensis, scentless chamomile
Anthemis cotula, mayweed chamomile
Arctium minus, common burdock
Artemisia absinthium, absinth wormwood
Arundo donax, giant reed
Asphodelus fistulosus, onionweed
Brassica tournefortii, Asian mustard
Bromus rubens, red brome
Bromus tectorum, downy brome, cheatgrass
Cardaria chalepensis, lens podded hoary cress
Cardaria draba, hoary cress
Cardaria pubescens, hoary cress, whitetop
Carduus acanthoides, plumeless thistle
Carduus nutans, musk thistle
Carum carvi, wild caraway
Cenchrus echinatus, southern sandbur
Cenchrus spinifex, field sandbur
Centaurea calcitrapa, purple starthistle
Centaurea diffusa, diffuse knapweed
Centaurea iberica, Iberian starthistle
Centaurea maculosa, spotted knapweed
Centaurea melitensis, Malta starthistle

Centaurea repens, Russian knapweed
Centaurea solstitialis, yellow starthistle
Centaurea sulphurea, Sicilian starthistle
Centaurea virgata, squarrose knapweed
Chondrilla juncea, rush skeletonweed
Cichorium intybus, chicory
Chrysanthemum leucanthemum L., oxeye daisy
Cirsium arvense, Canada thistle
Cirsium vulgare, bull thistle
Clematis orientalis, Chinese clematis
Conium maculatum, poison hemlock
Convolvulus arvensis, field bindweed, morning glory
Coronopus squamatus, creeping wartcress
Crupina vulgaris, common crupina
Cucumis melo, Queen Anne's melon
Cuscuta, dodder
Cynodon dactylon, Bermuda grass
Cynoglossum officinale, houndstongue
Cyperus esculentus, yellow nutsedge
Cytisus scoparius, Scotch broom
Dipsacus fullonum, common teasel
Dipsacus laciniatus, cutleaf teasel
Drymaria arenarioides, alfombrilla, lightning weed

Eichhornia azurea, anchored water hyacinth
Eichhornia crassipes, floating water hyacinth
Elaeagnus angustifolia, Russian olive
Elymus repens, quackgrass
Erodium cicutarium, redstem filaree
Euphorbia cyparissias, Cypress spurge
Euphorbia dentata, toothed spurge
Euphorbia esula, leafy spurge
Euphorbia myrsinites, myrtle spurge
Euryops multifidus, sweet resinbush
Gypsophila paniculata, baby's breath
Halogeton glomeratus, halogeton
Hesperis matronalis, dame's rocket
Helianthus ciliaris, Texas blueweed
Hibiscus trionum, bladder ketmia, Venice mallow
Hieracium aurantiacum, orange hawkweed
Hieracium caespitosum, meadow hawkweed
Hydrilla verticillata, hydrilla
Hyoscyamus niger, black henbane
Hypericum perforatum, St. Johnswort
Ipomoea alba, moon flower
Ipomoea batatas, sweet potato vine
Ipomoea xmultifida, cardinal climber

Ipomoea purpurea, morning glory
Ipomoea quamoclit, cypress vine
Ipomoea tricolor, morning glory
Iris cristada, crested iris
Iris ensata, Japanese iris
Iris germanica, German iris
Iris pallida, bearded iris
Iris pseudacorus, yellow iris
Iris pumila, dwarf iris
Iris sibirica, Siberian iris
Iris xiphium, Spanish iris
Isatis tinctoria, dyer's woad
Kochia scoparia, burning bush
Lepidium latifolium, perennial pepperweed
Lespedeza cuneata, sericea lespedeza
Linaria dalmatica, broad-leaf Dalmatian toadflax
Linaria genistifolia, narrow-leaf Dalmatian toadflax
Linaria vulgaris, yellow toadflax
Lythrum salicaria, purple loosestrife
Medicago polymorpha, burclover
Milium vernale, milium
Myriophyllum spicatum, Eurasian watermilfoil
Nardus stricta, matgrass

Nassella trichotoma, serrated tussock
Onopordum acanthium, scotch thistle
Onopordum tauricum, scotch thistle
Orobanche ramosa, branched broomrape
Panicum miliaceum, wild proso millet
Panicum repens, torpedo grass
Peganum harmala, African rue
Pennisetum ciliare, buffelgrass
Pennisetum setaceum, fountaingrass
Portulaca oleracea, common purslane
Potentilla recta L., sulfur cinquefoil
Pueraria montana var. *lobata*, kudzu vine
Rorippa austriaca, Austrian fieldcress
Saccharum ravennae, ravenna grass
Salsola spp. Russian thistle, tumbleweed
Salvia aethiopsis, Mediterranean sage
Salvinia molesta, giant salvinia
Saponaria officinalis, bouncingbet
Schismus spp.
Senecio jacobaea, tansy ragwort
Solanum carolinense, Carolina horsenettle
Solanum elaeagnifolium, silverleaf nightshade
Solanum rostratum, buffalobur

Solanum viarum, tropical soda apple
Sonchus arvensis, perennial sowthistle
Sorghum halepense, Johnsongrass
Striga, witchweed
Taeniatherum caput-medusae, Medusahead
Tamarix spp., tamarisk
Tanacetum vulgare, common tansy
Trapa natans, water chestnut
Tribulus terrestris, puncturevine
Tripleurospermum perforatum, scentless chamomile
Ulex europaeus, European gorse
Ulmus pumila, Siberian elm
Verbascum blattaria, moth mullein
Verbascum thapsus, common mullein
Zygophyllum fabago, Syrian beancaper