Acknowledgments

First and foremost, I would like to thank my committee members, Trudi Sandmeier, Alison Hirsch, and Brian Tichenor. Without their teachings, guidance, and expertise this thesis would not have come to fruition. Also, the most heartfelt thanks and appreciations to Ingrid P. Wicken, whose previous research and outstanding collection of ski resources and ephemera at the California Ski Library, made this thesis possible. Without her help and work in the preservation of ski history, SoCal ski hills would be much more of a distant memory. Particular thanks to those who provided images: Ingrid Wicken, Terry Graham, the Special Collections Archives at the University of Idaho Library, the Museum of History & Industry in Seattle, the USC Digital Collections, the Los Angeles Public Library, the Ketchum Community Library, Somewon Snow Collective, Annija Gaskell, and others. Last, but certainly not least, my deepest thanks to friends and family – particularly my parents, Lloyd and Wendy – for their unwavering and unconditional support in all of my endeavors, efforts, and adventures, both on and off the snow.
TABLE OF CONTENTS

ACKNOWLEDGEMENTS ........................................................................................................... ii
LIST OF FIGURES ................................................................................................................ v
ABSTRACT .......................................................................................................................... viii

INTRODUCTION .................................................................................................................... 1

CHAPTER 1 – SKI HILL AS A TYPOLOGY
INTRODUCTION ..................................................................................................................... 4
TOPOGRAPHY ....................................................................................................................... 5
SNOWFALL ............................................................................................................................ 6
ACCESS & INFRASTRUCTURE .......................................................................................... 6
Railways & “Ski Trains” ..................................................................................................... 7
Highway Development ................................................................................................. 10
Parking ............................................................................................................................ 12
Air Travel .......................................................................................................................... 13
SKI LIFTS .......................................................................................................................... 14
SKI TRAILS ......................................................................................................................... 21
BASE LODGE ..................................................................................................................... 26
Mid-Mountain & Summit Lodges .................................................................................... 29
UTILITIES .......................................................................................................................... 31
Snowmaking ....................................................................................................................... 31
SKI RESORTS: Additional Amenities & Urbanization of the Ski Hill ............................. 33
Seasonality Diversification ............................................................................................ 35
SNOWBOARDING ........................................................................................................... 35

CHAPTER 2 – DEVELOPMENT OF SKIING IN SOUTHERN CALIFORNIA
EARLY CALIFORNIA ........................................................................................................ 42
SOUTHERN CALIFORNIA ................................................................................................. 44
Early Southern California ............................................................................................. 44
Winter Carnivals ............................................................................................................. 45
Ski Jumping ....................................................................................................................... 48
Development of Downhill Skiing ................................................................................... 49
Advances in Ski Equipment .......................................................................................... 50
Post-war Skiing Boom .................................................................................................... 56
Stagnation and Decline of Skiing .................................................................................. 59
Snowboarding in Southern California .......................................................................... 61
Contemporary Skiing in Southern California ................................................................. 63

CHAPTER 3 – EVOLUTIONS OF A SKI HILL: BIG PINES TO MOUNTAIN HIGH
BIG PINES .......................................................................................................................... 66
Geographical Context ...................................................................................................... 66
Early Development of Big Pines: 1851-1924 ................................................................. 67
Big Pines Recreation Camp: 1925-1941 ....................................................................... 68
LIST OF FIGURES

Figure 1.1: View from Holiday Hill, CA ................................................................. 5
Figure 1.2: Party on ski train to Snoqualmie Pass, circa 1939. ............................. 8
Figure 1.3: Automobiles on paved Big Pines Highway near Blue Ridge, in CA ....... 11
Figure 1.4: J-bar lift at Soda Springs, California .................................................... 15
Figure 1.5: Magic Carpet lift at Mammoth Mountain, CA ...................................... 16
Figure 1.6: Ski school at Snow Valley, CA and rope tow, circa 1952 ....................... 18
Figure 1.7: Chairlift at Sun Valley’s Rudd Mountain, circa 1938 ........................... 19
Figure 1.8: Gondola loading terminal at Mammoth Mountain, CA ....................... 20
Figure 1.9: Skiing at Snow Valley, CA, circa 1958 ................................................. 22
Figure 1.10: Snowboarders and skier using a traverse trail at Mammoth Mountain, CA, 2013 .......................................................... 23
Figure 1.11: Cleared and groomed ski trail at Lake Louise, Canada with Rocky Mountains in the background, 2010 .................................................... 25
Figure 1.12: Stowe, Vermont ................................................................................. 27
Figure 1.13: Holiday Hill base lodge, situated between the parking lot and the ski lift .................................................................................. 29
Figure 1.14: “McCoy Station” mid-mountain lodge and gondola terminal at Mammoth Mountain, CA ................................................................. 30
Figure 1.15: Air snow guns at Mountain High West ................................................ 33
Figure 1.16: Challenger Inn at Sun Valley, circa 1936 ............................................. 34
Figure 1.17: Slopestyle competition in terrain park, 2011 ....................................... 40
Figure 1.18: Professional level half-pipe at Canada Olympic Park, Canada ......... 41
Figure 2.1: Big Pines Arch and Snow Blower ......................................................... 45
Figure 2.2: Orange Grove and Snowy Mountains postcard .................................... 47
Figure 2.3: Ski school at Snow Valley, CA and rope tow, circa 1952 ....................... 51
Figure 2.4: Advertisement for U.S. Star Ski Binding ................................................ 53
Figure 2.5: Snowboarder riding a “pillow line” in the backcountry ....................... 56
Figure 2.6: Inventory of Southern California ski hills .......................................... 58
Figure 2.7: Map of major ski hills of Southern California, current and historic ...... 59
Figure 2.8: Architectural rendering for Rebel Ridge Alpine Village & Lodge, Big Bear, CA .......................................................... 61

Figure 3.1: Location map of Wrightwood, California ............................................. 66
Figure 3.2: 1930s map of routes from Los Angeles to Big Pines Recreation Camp ..... 68
Figure 3.3: Swarthout Valley Lodge, Big Pines Recreation Hall, and cabins on the rear slope, circa 1933 .......................................................... 69
Figure 3.4: Big Pines Arch with the two lodges in the background, circa 1926 ... 70
Figure 3.5: Toboggan slope at Big Pines, circa 1928 .......................................... 73
Figure 3.6: Crowd watches as ski jumpers compete at Big Pines, circa 1925 ......... 74
Figure 3.7: Big Pine Camp ski trail map, circa 193575 ........................................ 77
Figure 3.8: Blue Ridge rope tow ................................................................. 77
Figure 3.9: Overlay map of contemporary Mountain High, illustrating the three originally independent ski hills, the contemporary names, as well as historic names 78
Figure 3.10: Periods of development of Blue Ridge/Mountain High West ......................... 79
Figure 3.11: Blue Ridge single chairlift and lift line.......................................................... 80
Figure 3.12: Blue Ridge double chairlift with parking lot and base facilities in background, circa 1960................................................................. 81
Figure 3.13: Blue Ridge location and trail map, circa 1975................................................ 82
Figure 3.14: Periods of development of Holiday Hill/Mountain High East.................... 84
Figure 3.15: The Benedikter chairlift at Holiday Hill......................................................... 85
Figure 3.16: Photo of Holiday Hill with double chairlift.................................................... 86
Figure 3.17: Postcard of Holiday Hill with base facilities, original double chairlift, parking lot, and “Olympic Bowl.” ................................................................. 87
Figure 3.18: Trail map of Holiday Hill............................................................................... 88
Figure 3.19: New summit lodge at Holiday Hill, circa 1968.............................................. 90
Figure 3.20: Chairlifts and ski trails at Holiday Hill, circa 1974........................................ 90
Figure 3.21: Photograph of Mountain High East, formerly Holiday Hill....................... 91
Figure 3.22: Periods of development of Table Mountain/Ski Sunrise/Mountain High North ........................................................................................................ 93
Figure 3.23: Rope tow drive engine at Table Mountain..................................................... 94
Figure 3.24: Ticket booth at Table Mountain/Ski Sunrise.................................................. 94
Figure 3.25: Table Mountain Trail Map, circa 1960.......................................................... 97
Figure 3.26: Skiers on Table Mountain advanced terrain with poma lift in the background........................................................................................................ 98
Figure 3.27: The original day lodge rebranded................................................................. 99
Figure 3.28: Mountain High West, formerly Blue Ridge.................................................. 102
Figure 3.29: Mountain High East ski school on beginner slopes with base area below. 103
Figure 3.30: Mountain High trail map with West (right) and East (left) areas illustrated, circa 1981................................................................. 104
Figure 3.31: Comparison of North, East, and West Resorts Lifts and Trails (2013-2014 season)........................................................................................................ 106
Figure 3.32: Periods of development of Blue Ridge/Mountain High West.................... 107
Figure 3.33: Periods of development of Holiday Hill/Mountain High East.................... 108
Figure 3.34: Periods of development of Table Mountain/Ski Sunrise/Mountain High North ........................................................................................................ 109

Figure 4.1: Front elevation, with ground floor entrance of National Historic Landmark Timberline Lodge, Mount Hood, Oregon................................................................. 116
Figure 4.2: Village from Sun Valley Lodge, circa 1940..................................................... 118
Figure 4.3: Aspen Boat Tow............................................................................................. 122
Figure 4.4: Abandoned ski trail at Mountain High North with evident erosion patterns 122
Figure 4.5: Tower 4 Mad River Glen single chairlift, Vermont, circa 2006..................... 125
Figure 4.6: Swarthout Valley with Mountain High East in the distance.......................... 128
Figure 4.7: Hole 6 on “Frisbee-Golf” course at Mountain High North............................ 130
Figure 4.8: Intersection on Big Pines Highway with Big Pines Lodge and remnants of the Big Pines Arch. Right turn-off leads to Mountain High West, far left to Mountain High North................................................................. 132
Figure 4.9: Mountain High West parking lot with lodge on right.................................. 132
Figure 4.10: Road from Big Pines Highway to Mountain High North............................ 133
Figure 4.11: *Mountain High North* “upside-down” orientation with parking lot at top of “North Pole Tubing Park.” ................................................................. 133

Figure 4.12: Base lodge at *Mountain High West.* ................................................ 135

Figure 4.13: Cabins adjacent to “Easy Street,” *Mountain High West.* ................... 135

Figure 4.14: “Roadrunner” and “Coyote” double chairlift loading terminals, *Mountain High West.* ................................................................. 136

Figure 4.15: *Mountain High East* “Olympic Bowl and original base lodge.” .......... 136

Figure 4.16: Original *Table Mountain Lodge* at *Mountain High North.* .......... 137

Figure 4.17: *Table Mountain* rope tow drive terminal at *Mountain High North.* .... 138

Figure 4.18: *Table Mountain* 1960 poma lift drive terminal at *Mountain High North.* 138

Figure 4.19: *Mountain High West* on Blue Ridge................................................. 140

Figure 4.20: Surface parking lot and “Easy Rider” chair and beginner area at *Mountain High East.* ................................................................. 140

Figure 4.21: Original *Table Mountain* ski trail at *Mountain High North.* ............ 141

Figure 4.22: 1960s advanced terrain *Table Mountain* expansion .......................... 141

Figure 4.23: Ski trail at *Mountain High North* looking out over the Mojave Desert. .... 142

Figure 4.24: *Table Mountain* era poma lift unloading terminal............................ 145

Figure 4.25: *Table Mountain* era poma lift unloading terminal at *Mountain High North.* ................................................................. 146
ABSTRACT
Ski hills are complex cultural landscapes. Changes in the ski industry, the rise of environmentalism, and the onset of climate change and the resulting shifts in weather patterns, have had a dramatic impact on this now somewhat threatened resource type. These issues have affected ski hills throughout North America, but especially in the context of Southern California, where winter recreation has always had a tenuous existence due to inconsistent snowfalls. This thesis analyzes and outlines the typological elements of ski hills as cultural landscapes, with a particular focus on historic Mountain High, California. Through site analysis and examination of a handful of precedents, this thesis develops a framework for the evaluation and conservation of ski hills as cultural landscapes.
INTRODUCTION

A news publication in Whistler, British Columbia – home of the famous Whistler-Blackcomb Ski Resort – produced an article that discussed how the massive tourism aspect that drives the resort has displaced the local skiers from the ski hill. The substantial development of the area, which peaked leading up to the Vancouver 2010 Winter Olympics, has completely altered the character of the hill, further alienating denizen skiers. This article speculates about the creation of a new hill, one that would embrace a more traditional “rootsy” ski experience, beyond the tourism oriented chaos of the Whistler-Blackcomb village.¹ Although this article discuses new tangible developments rather than the conservation of a previous one, it is advocating for the conservation of intangible cultural aspects that have been lost in the wake of large scale resort development and shifting use patterns. For those that partake in the sport, the ski hill can be a very meaningful place. Ski hills are where memories are created, relationships are built, nature is celebrated, personal improvement comes to fruition, tragedy occurs, and history is appreciated. The ski hill is a cultural landscape.

Of the contemporary discussions occurring in the field of heritage conservation, one of the most complex is that of the cultural landscape. Cultural landscapes, according to the National Parks Service, are complex resources that feature a combination of natural and topographical aspects of the environment that have either been deliberately designed by humans, have associative ethno-cultural meanings, are the site of an important historic event, or are shaped by peoples daily activities.² Essentially, almost any part of our environment could be considered a cultural landscape, although people tend to associate significance with certain places instead of others. For those of the skiing and snowboarding community, the ski hill can be a very significant space.

Southern California is a particularly fascinating region within the context of skiing and snowboarding. Traditionally, Northern California is associated with the sport, particularly the resorts within the Lake Tahoe area. Southern California, due in large part

to its Mediterranean climate, is more commonly associated with surfing, skateboarding, golf, and other sports that are somewhat adversative with snow. However, Southern California has also been an integral region in the development of winter recreation not only in the state, but also in North America. With rising temperatures, erratic snowfall, competition between ski hill operations, and increasing tourism access to large destination ski resorts, the ski hills of Southern California are a threatened landscape. 

North American ski hills are all facing these issues, but their effects resonate with the ski hills of Southern California. Of the dozens of ski hills that were once in operation around the southland, only five remain operating. *Mountain High*, which serves as a case study for this thesis, has an extensive history and significance as a recreational center within Southern California. It is of particular importance as the location of some of the earliest, and most prominent, winter carnivals held in Southern California, which served as a catalyst for downhill skiing in the region. The evolution of *Mountain High* reflects the challenges that other ski hills are facing both in terms of conservation and evolving trends in the ski industry.

The first chapter examines the ski hill as a cultural landscape typology. Ski hills are multifaceted landscapes. They rely on a combination of natural and manmade elements that must appear to be limited in invasiveness, yet construct the necessary recreational spaces. Ski hills have grown increasingly more complex as tourism and real estate development have taken an increasingly larger role in the evolution of these places. The essential typological features of the North American ski hill will be examined, including those elements that are directly correlated with the proliferation of snowboarding in North America.

The second chapter will outline the historical context of downhill skiing within Southern California. In order to fully understand the evolution of these landscapes, it is essential that the general trends and evolution of the sport, as well as its supporting subcultural base, be illustrated.

The third chapter will provide specific historical and developmental background of *Mountain High*, including the role of the Big Pines Recreation Camp, the development of the three individual ski hills – *Blue Ridge*, *Holiday Hill*, and *Table Mountain/Ski Sunrise* – as well as their consolidation as the contemporary *Mountain High Resort*. The
chapter includes a discussion of these places in the context of regional downhill skiing and analysis of the typological evolution of the landscapes associated with *Mountain High*.

The fourth chapter will examine the framework for cultural landscape conservation, as it exists contemporarily, as outlined the National Parks Service. Addressing ski hills as landscapes worthy of conservation through this framework is a recent phenomenon; with only a handful of precedents, which have varied in approach, methodology, and success. These examples are applied to *Mountain High* in order to better understand these complex cultural landscapes.
CHAPTER 1 – SKI HILL AS A TYPOLOGY

The ski hill is an advanced modern cultural landscape that has evolved in a number of ways, depending on the socio-cultural and geographical conditions of the specific area in which it is situated. However, like any cultural landscape, there are certain parallels between sites that assist in determining basic typologies to increase our understanding of these complex systems and socio-culturally significant spaces. Trying to define the ski hill as a cultural landscape in North America is not as easy as one might first envision. Ideally, a ski hill would be defined as a location where the sport of downhill skiing and snowboarding is conducted. There might have been an instance that such a definition would be sufficient, but contemporary ski hill developments and configurations have provided a multitude of examples that range from small weekend operations to the urbane international destination resorts. These two extremes, and everything between, can be considered a ski hill under such a broad definition, but clearly the patterns of development and specifics of a particular place have created the conditions for variance within the ski hill typology. In the Urban Land Institute’s Resort Development Handbook, the authors have defined four major types of ski hill areas:

- “Type 1: a true international destination resort…”
- “Type 2: similar in scope, but less established the marketplace and offers fewer cultural and social opportunities…”
- “Type 3: facility that features high-quality skiing but, for a variety of reason, offers little in terms of real estate development…”
- “Type 4: very small ski operation is often operationally marginal and usually operates only on weekends.”

This categorization is engineered from a real estate development standpoint, but can offer some insight into the complex nature of how ski hills have developed. However, in order to understand what defines a ski hill as a cultural landscape, one must examine the fundamental components, the history, socio-cultural conditions, and the numerous aspects of the environment within the context of a particular place. Foremost, in order for a ski

---

hill to exist, there are a few traditionally essential geographical conditions that must be in place: varied topography, snow, and access.

**TOPOGRAPHY**

The topography is the defining feature of a ski hill. It consists of the vistas, views, ecologies, settings, and spaces that are significant components of a ski hill. (Figure 1.1) Traditionally, all one really needed was a slope of minimal steepness in order to participate in downhill skiing, but the evolution of the sport has pushed the limits far beyond this humble necessity for a simple gradient. Each site has its site-specific qualities and characteristics, but incline is still absolutely necessary.4

Figure 1.1: View from *Holiday Hill*, CA. Photo courtesy of the California Ski Library.

---

SNOWFALL

Snow is paramount to the successful operation and ultimate existence of a ski hill.\(^5\) Without it, a ski hill cannot function. This goes beyond the simple reality of whether snow exists or not, because the amount of snow throughout a season often dictates the success of the operation. For example: the ski season of 2013-2014 has been dismal for \textit{Mammoth Mountain} of Mammoth Lakes, California. With low snowfalls in the Sierra Mountains, \textit{Mammoth Mountain} was unable to fully open their operations until February 13, 2014, well after the peak holidays.\(^6\) With only sixty inches of snow falling before January 31, 2014, \textit{Mammoth Mountain} is facing a revenue loss of $17.1 million with skier visits down 37% from the previous season.\(^7\) This loss of income and inability to open the entirety of the ski hill meant that many employees were facing drastically reduced hours and potential lay offs.\(^8\) These numbers are just for the ski hill. The adjacent town site and the amenities there that are correlated with the resort will undoubtedly be dealing with similar issues as well.

Snowfall is the lifeblood of ski hills and, as the aforementioned example exhibits, could have substantial long-term implications for the operation of ski hills. Luckily, snowfall trends tend to be cyclical, meaning that for every dismal season there happens to be a record-breaking one a few years later. This means that ski hill operations have to be oriented around these cycles. There have been efforts to mitigate the effects of poor snowfall, but these results are somewhat mixed and insignificant in their impact upon the cultural landscapes of ski hills when compared to a substantial winter storm system.

ACCESS & INFRASTRUCTURE

One of the most fundamental components of the ski hill typology is infrastructural access. Whether it is the local hill, or a far-off destination resort; without the ability for the skier to reach such a location, the ski hill itself would be hard-pressed to remain

\(^5\) Experimentations in alternative ski surfaces will be investigated in Chapter 2 with specific examples from Southern California.
\(^8\) Ibid.
operational and exist in any form. Ski hills are usually located in remote areas with varied topography and are prone to snowfall. This presents infrastructural challenges that have to be taken into consideration, leading to investments in highways, rail systems, airports, snowplows, and other access infrastructure necessities.

When skiing was first introduced to North America, the automobile was still a relatively new invention. In addition, the quality of roads with access to these locations, in addition to snow removal techniques, was precarious at best. There were a few instances where early local ski areas could be accessed by automobiles, but other, more reliable, transportation methods were necessary for the development of the skiing.

**Railways & “Ski Trains”**

The concept of a railway transportation service designed specifically for skiers had been implemented in European resorts for a number of years, but the first North American implementation of rail travel specific to skiers was in the Laurentian Mountains of Quebec, Canada. The Canadian Pacific and the Canadian National Railway both offered services starting in 1927 that would transport the skiers to the new ski hills fifty miles beyond the city of Montreal.\(^9\) The idea was implemented in the United States in 1931 when members of Ski Clubs based out of Boston started to charter trains to reach the early ski destinations, the specific location of which was often chosen based upon the best snow reports. The first trains were said to have served as clubhouses as jubilant skiers boarded and left the city for a weekend of snowy slopes and other festivities.\(^10\) (Figure 1.2) These trains became increasingly popular and many clubs in Boston, New York, New Haven, Philadelphia, Washington DC, and others, started to adopt the idea. Many who started to take the trains knew absolutely nothing of the sport, but were enticed by the camaraderie and socializing that had created a romantic escape from the city. The railways soon carried rental equipment and hired ski instructors and coaches in order to accommodate the beginners.\(^11\) This access to equipment, instruction, socializing, and the early ski hill made the ski train an essential catalyst for development of the North

---

\(^11\) Ibid., 106-107.
American ski hill. This model was particularly successful in the North Eastern region of the United States, where many of the mountain ranges and ski areas were not that far removed from the major population centers. It was expanded to other areas of the country throughout the 1930s.

The early ski hills that were developing in the west had a different set of circumstances that helped in their development: rugged topography, smaller population centers, heavier snowfall, and larger distances. However, transportation via train was still an important component to early ski hill development. As in the East, much of the first rail access to ski areas was provided along the Canadian Pacific, particularly to Banff and Lake Louise, where grand hotels owned and operated by the Canadian Pacific offered many the opportunity to experience a multitude of recreational opportunities that were provided all year round by the Canadian Rockies. The Ski Train model of ski

---

orientation transportation was still implemented, albeit on a smaller scale, in the western United States as well. Smaller population centers and larger distances meant that the ski trains were not as pervasive as they were in the east. The Cascade Mountains were serviced through Seattle, Washington; the Sierra Nevadas via San Francisco, California; and the Rocky Mountains via Denver, Colorado; the latter of which did not actually stop at a destination, but slowed to the point where the skiers on board could hurl their equipment off the train and jump into the snow banks that lined the railway.\(^{13}\) The most important development in terms of railway access came in 1936 with the opening of Sun Valley in Idaho.

The major railroad companies all played a substantial role in promoting tourism during the early years of twentieth century, particularly within the National Parks throughout the West. Each railroad company promoted the natural scenery of the parks they had access to in a tireless fashion in the hopes of boosting long distance ticket sales. The Great Northern had Glacier National Park, the Santa Fe helped develop the Grand Canyon National Monument, the Northern Pacific advertised Yellowstone, and the Southern Pacific provided access to Yosemite and Sequoia National Parks.\(^{14}\) This correlation between the railroads and the American landscape as a tourist commodity was firmly established by 1935 when Union Pacific Chairman, W. Averell Harriman sought to establish a winter destination resort.\(^{15}\) The only railroad company that did not have a substantial investment in an area of immense natural beauty was that of the Union Pacific. The competing companies all had these destinations where thousands paid the long-distance ticket prices to visit throughout the year. Harriman was well aware of the Canadian Pacific’s success with resorts in the Rocky Mountains and felt a similar model of would be beneficial to Union Pacific ticket ridership.\(^{16}\)

The town of Ketchum, like so many throughout the mountain West, was a former mining town that had long since gone bust, which was only enhanced further by the crippling economic climate of the 1930s. The community was almost entirely isolated in

\(^{13}\) Allen, *From Skisport to Skiing*, 108-109.
\(^{16}\) Ibid., 38.
the winter due to lack of snow removal and only a limited amount of rail service. In 1935, Harriman hired Count Felix Schaffgotsch to scout suitable locations for a brand new Union Pacific-owned ski resort.\textsuperscript{17} He identified a windless valley just a mile outside the sleepy village of Ketchum, Idaho. Construction began immediately on the “Shangri-La of America” and the first ski destination resort in North America was built in only seven months and touted some of the most luxurious accommodations and amenities of the day.\textsuperscript{18} The appropriately named \textit{Sun Valley} was an instant sensation among those who could afford to stay there, as well as the Union Pacific ticket that would take them to this new winter playground of the rich, famous, and beautiful.

Rail access to ski resorts, although still very popular throughout Europe and influential in the development of North American skiing, has diminished in importance since the widespread adoption of the automobile as the main form of transportation.

\textbf{Highway Development}

Road access to ski hills was always a necessity, but the challenges of developing and maintaining this essential infrastructure has always been an issue. The topography leading towards many ski hill locations is almost always mountainous, which can present a number of engineering challenges and increase the overall construction costs when developing road access. The presence of snow and harsh weather patterns presents a different set of challenges as these slow construction, make driving conditions dangerous, and can lead to avalanches that potentially block mountain passes for extended periods of time. Regardless of these dangers and challenges, the highway and access road is crucial to the North American ski hill typology. (Figure 1.3)

\begin{footnotesize}
\begin{enumerate}
\item John C. Jay, \textit{Ski Down the Years} (New York: Award House, 1966), 103.
\end{enumerate}
\end{footnotesize}
There are countless examples that illustrate the importance of highway development and correlation to ski hill development. In 1925, the Mount Hood Loop Highway was constructed, linking the city of Portland, Oregon to the rich recreationally rich forests surrounding Mount Hood. With this access established, the demand for more recreational facilities increased. There was the modest Cloud Cap Inn, but this nineteenth century building was seen as inadequate and antiquated.\textsuperscript{19} The onset of the great depression pushed back initial plans to establish another mountain lodge, but these plans were resumed by the Roosevelt administrations Works Progress Administration (WPA) working with the CCC and the US Forest Service to construct the Timberline Lodge. The highway would be upgraded further as construction materials and employees congregated on the side of Mt. Hood to build one of the most iconic ski lodges in the United States.\textsuperscript{20}

Another iconic highway development was that of Highway 40, which transverses the infamous Donner Pass in California’s Sierra Nevada Mountains. This region is known for particularly heavy snowfalls that can make travel perilous even in contemporary times. Highway 40 allowed for people to travel from San Francisco and the Central Valley to the Tahoe region in just a few hours, rather than a few days. This highway allowed for a

\textsuperscript{19} Smith, \textit{American Ski Resort}, 26.
\textsuperscript{20} Ibid., 26-27.
number of different ski hills to develop, including the Disney-backed *Sugar Bowl*, which opened in 1939.\(^{21}\) One of the most important highway developments in relation to a ski hill was that of the Interstate Route 70, which runs through the Colorado Rocky Mountains. Pete Seibert and Earl Eaton began planning what would become one of the largest ski hills in North America; *Vail*, Colorado.\(^{22}\) Seibert and Eaton, along with the backing of some Denver-based investors, began purchasing ranching land along U.S. Highway 6 in the hopes of developing a ski area in the Gore Creek Valley. They formally received their use permit from the US Forest Service and instantly started making the necessary installations to establish their ski area, which opened in December of 1962.\(^{23}\) This route was designated for the new Interstate 70, which is one of the most impressive engineering projects of the interstate system. The entrepreneurial spirit, bordering on boosterism, coincided with the opening of this impressive access route and created the necessary catalysts to catapult *Vail* from a small ranching area to one of the premier ski destinations in North America.\(^{24}\)

**Parking**

Alongside the increasing number of automobiles that were bringing skiers to the hill, the need for parking facilities became increasingly important. For the early destination resort, *Sun Valley*, this was not a pressing concern as many of the patrons came to the remote Idaho valley by the Union Pacific Railway. However, for those ski hills accessible by highway, particularly those that were oriented to weekend skiers from relatively local population centers, the importance of parking became a very pressing matter. Many parking lots were situated near the lifts, cleared of vegetation, and graded to accommodate a few hundred cars. For those early ski hills within National Parks and Forests, the young men of the Civilian Conservation Corps conducted much of the work necessary for parking lot construction.\(^{25}\) As the number of skiers increased after the Second World War, so did the need for parking capacity. Surface parking lots, the most economic and easily constructed option, are certainly the norm for ski hill development.

---

\(^{21}\) Smith, *American Ski Resort*, 32-34.

\(^{22}\) Clifford, *Downhill Slide*, 15.

\(^{23}\) Ibid., 15.

\(^{24}\) Smith, *American Ski Resort*, 82.

\(^{25}\) Ibid., 21.
Sometimes topographical limitations made the expansion of surface parking lots difficult, if not outright impossible. New parking lots were sometimes constructed at a site removed from the base lodge area. These lots were often accessed through a series of road loops that would circulate past the main base lodge, allowing the skier to drop off equipment and passengers before proceeding to necessary parking lot. This also helped to creation a processional series of views, vistas, and experiences leading up to the arrival of the ski hill.26 This scenario can be exacerbated if circulation of automobiles is poor around the base lodge facilities. Limited surface parking often forces many to park along the shoulder of the access highways leading to many ski resorts, increasing the distance one must walk with all their necessary gear before they reach the lift, which can cause the guest substantial discomfort.27 Some resorts have installed shuttle services to removed parking areas, whereas others have explored parking structure facilities to alleviate the situational parking challenges; however, this tends to only exist at major destination ski resorts due in large part to their high construction and maintenance costs.28

Air Travel

Early air travel to ski hills was relatively limited in scope and scale, focusing particularly in the New England region from the major cities.29 However, with the widespread adoption of jet-engine airplanes, the impact of air travel has had a great effect on North American ski hills. In the same time skiers could drive to their local hill, they might also be able to fly to their destination ski resort of choice. This was detrimental in many ways to the smaller ski hills, as skiers opted to travel to the large destinations that offered ideal snow conditions, varied terrain, and a multitude of amenities. This competition was crippling for many of the smaller ski operations and forced many of the larger resorts, which are not within a few hours drive of a major city, to invest in the

27 Richard J. Diedrich, Building Type Basics for Recreational Facilities (Hoboken: John Wiley & Sons, 2005), 82.
28 Ibid., 82.
29 Allen, From Skisport to Skiing, 147.
development of their very own airports.\textsuperscript{30} Mammoth Mountain, Vail, Aspen, Sun Valley, and Jackson Hole are a few such remote ski resorts that have developed extensive airport facilities in the hopes of increasing patron numbers, with mixed results.\textsuperscript{31} Air access is an essential component of major resort destinations, mostly because this allows for an increase in major market accessibility and convenience of travel. The number of flights, variance of airfares, market interest, and quality of airport facilities can all play substantial roles in the creation and maintenance of successful air access.\textsuperscript{32} The real-estate investment website RealtyTrac stressed the importance of air access when they released an article to aid those contemplating investing in a ski-oriented property. The piece lists the towns that they claim to be the most sound for investment in conjunction with their reasoning behind why these towns would be best. Airport access was listed as the first because “the property should be easy to get to for both you and other vacationers.”\textsuperscript{33} Air travel access has quickly become one of the primary concerns when discussing the viability of all ski hills. For destination resorts, it allows for more patrons to utilize their services and facilities, but for the smaller operations it can equate to an increased number of competitors outside of their traditional region of business.

\textbf{SKI LIFTS}

The invention and subsequent widespread adoption of the ski lift has left an irreversible and lasting affect on the landscape of the ski hill. These are the primary modes of transportation of the skier through the ski hill landscape. The evolution in ski lifts was driven mostly by the simple desire for more runs down the slope. This initially meant getting an individual up to the top as fast as possible with as little effort as possible, but with the explosive growth and diversification of the sport, this meant that lifts had to be engineered to carry substantially more people at even faster rates to new and varied terrain, previously inaccessible.

\textsuperscript{31} Ibid.
There are generally two major types of ski lifts: aerial and surface. Aerial lifts are those that involve transportation of the skiers by an elevated system, such as chairlifts (detached and fixed), aerial trams, and gondolas. Surface lifts usually employ a system where a skier remains on their skis and is subsequently pulled up the mountain. This includes early lift types - rope tows, handle tows, J-bars, T-bars, and pomas - but also includes the recent development of the “magic carpet,” which is essentially a moving walkway oriented for beginner skiers. 34 (Figures 1.4, 1.5, 1.6)

Figure 1.4: J-bar lift at Soda Springs, California. Photo courtesy of the California Ski Library.

Like so many other commonplace elements of the ski hill typology, the ski lift has somewhat ambiguous beginnings. There are accounts of late nineteenth century skiers in Johnsville, California, implementing mechanized mining infrastructure as a way to ascend the hills by simply riding in the ore buckets.35 A steam-powered toboggan tow was built in Truckee, California for their Winter Carnival in 1910 to facilitate the popular activity of sledding, but would be put to further use by the Truckee Ski Club after their formation in 1913.36 Aside from these few examples of early North American lift systems, the main methods of ascension usually meant that the skier hiked up the slope by foot with all of the necessary equipment in hand, or by strapping into their skis and sidestepping up the hill.37 These exhaustive forms of scaling ski slopes would become somewhat obsolete in the winter of 1931 as the first rope-tow style surface lift was installed in the Laurentian Mountains. Alex Foster, a ski jumper from Montreal, constructed this early rope tow on “The Big Hill” outside the town of Shawbridge,
Quebec, and was comprised of a four-cylinder Dodge sedan engine set on cement blocks and 2,400 feet of hemp rope, which ran around a system of pulleys and a tireless wheel. The first in the United States was at Gilbert’s Hill near the town of Woodstock, Vermont, which was almost identical to the invention by Foster, except it employed a Model-T Ford engine and a tire tractor as the main drive system. It pulled skiers up the 900 foot slope at a rate of five to ten miles per hour, reaching the top in approximately one minute, which was an ecstatically received improvement to the previous fifteen minute hike.

An invention of humble means, the rope tow allowed for the skier to grab hold and be pulled - or more often dragged – up to the top of the ski area in a short period of time, allowing for a previously unimaginable number of runs over the course of the day. (Figure 1.6) The simplicity of the invention and the luxury it provided by eliminating the strenuous on-foot methods of ascending the ski slope made this a catalyst for development of the sport. There were some that felt this was against the original ideals and motivations behind the sport, celebrating one’s own athletic ability and cohabitation with nature, but the vast majority of people saw the rope tow as a boon to the sport. This ingeniously unassuming, yet relatively effective, system soon permeated throughout North America as the premier ski lift type for the next several decades, making it available to anyone with access to a snow covered slope and a few scrap parts for their lift. Although less physically demanding that hiking up the slopes, the early rope tows were difficult to use. Many who were unsure on skis fell and were dragged up the hill, while more accomplished skiers struggled to remain standing. The ropes could slip or cause rope burn, so special devices or gloves were created to alleviate these issues. All difficulties aside, the rope tow was an essential advance in ski lift technology.

---

40 Allen, *From Skisport to Skiing*, 111.
41 Fry, *The Story of Modern Skiing*, 44.
The invention of the rope tow only preceded other lift developments by a few years. The single-passenger J-bar was introduced to the U.S. in 1935 near Dartmouth College at Hanover, New Hampshire; the double-passenger T-Bar was introduced at Pico Peak, Vermont in 1940; and the world’s first chairlift was developed at the newly christened Sun Valley in Idaho.42

Union Pacific Engineers were put to work in the summer of 1936 to design a new lift system to be employed at this ski paradise in Idaho. Jim Curran, one such engineer, took inspiration from banana hoists he had seen at loading docks in Honduras, which he altered by replacing the hanging basket with a single chair. The Union Pacific Rail yards in Omaha, Nebraska became his testing ground for this new contraption prior to its eventual installation at Sun Valley.43 (Figure 1.7) The chairlift, although considerably

43 Needham, Ski: Fifty Years, 113.
more expensive to manufacture and install, became the workhorse of the ski lift systems over the following decades. The comfort, relative ease, and rate at which skiers could ascend the slopes were seen as incalculably beneficial over the physically demanding and somewhat unreliable rope tow.

This new design became one of the staples in Ski Hill development over the following decades, leading to new configurations that would accommodate two (“double chair”), three (“triple chair”), four (“quad”), and six (“six-pack”) skiers on a single chair. Chairlifts are also much faster now have, moving up to 4,000 persons an hour at five meters/second on the detached chairlift, which allows for maximum transit speeds, but
slower speeds at both terminal stations for easier and more accessible loading and unloading.44

Other aerial lifts, like gondolas, aerial trams, and cabriolets, have appeared on North American ski hills over the last few decades. (Figure 1.8) These lifts are considerably more commonplace within the context of European ski resorts, which is where they were primarily developed as means of experiencing breathtaking views in the alpine setting.45 The appeal of these particular lift types is the ridership capacity, their speed, their accessibility, and their overall comfort. As opposed to chairlifts, most of these types involve closed cabins that protect the riders from the elements outside. In major resort developments these types can be employed not as a ski lift, but as a method of transportation to move people across the varied elevations and distances of the base village.

Figure 1.8: Gondola loading terminal at Mammoth Mountain, CA. Photo courtesy of Annija Gaskell.

Lifts have come a long way in their evolution: from the most vernacular and accessible, albeit haphazard, beginnings, to multi-million dollar investments. Once only an engine, a rope, and a series of pulleys, chairlifts now require a team of engineers, construction crews, bulldozers, helicopters, and environmental impact reports in order to install one of the most necessary components of the ski hill landscape.46

Today, most North American ski hills and resorts employ a number of different lift configurations in their operations, including any combination of surface and aerial lift systems. What is installed and operated often depends on the skiable acreage, the total vertical rise of the slope, economics, ridership, skier circulation, and the varying difficulty of the terrain at the specific location.47

**SKI TRAILS**

The ski trail, or “run,” is to skiing what the football field is to football. It is the primary facility where the sport is actually performed. The ski trail, in downhill skiing, is usually a vertically oriented circulatory space that interacts with the topography and landscape to provide the skier with a set of tangible and intangible experiences.48 Ski trails can be purely manufactured through the clearing of vegetation and the moving of earth, or they can be based entirely upon natural features with no, or very little, intervention. They are the medium at which the skier experiences the sport itself, the outdoor setting, and the traditions associated with ski community culture. (Figure 1.9)

---

48 Ibid.
Figure 1.9: Skiing at Snow Valley, CA, circa 1958. Photo courtesy of USC Libraries Special Collections/Los Angeles Examiner Collection, 1920-1961; filename EXM-N-12289-073-9 (http://digitallibrary.usc.edu/cdm/compoundobject/collection/p15799coll44/id/64281/rec/68).

The earliest ski trails in North America were simply just natural clearings in slope-side vegetation. In other instances, particularly in the mining camps of California, many of these slopes had already been cleared through various industrious processes, allowing for skiing once the snow fell. These open spaces would prove to be the training grounds for the earliest downhill skiers.\textsuperscript{49} As individuals started to develop their own hills and ski-designated areas, they would often clear sections of vegetation to create open spaces for the purpose of skiing. This usually involved augmenting natural clearings in the vegetation on the slope, to save time, labor, and money. In the 1930s, when the sport of downhill skiing was first becoming popular and starting to surpass ski jumping and cross-country, the need for more trails was growing. This coincided with a time where many in the United States were faced with unemployment, so the Roosevelt

\textsuperscript{49} Jay, Ski Down the Years, 25-27.
Administration founded the Civilian Conservation Corps (CCC). Thousands of people were put to work, particularly in the US Forests and National Parks where they constructed and expanded upon existing recreational infrastructure and facilities, including the clearing and grading of ski trails. Many of the early ski hills around the United States have trails that were shaped by the efforts of the CCC.\textsuperscript{50}

The Second World War stopped all ski hill development, but in the years following the war, the sport took off and reached an epochal “golden age.” This surge of popularity meant that ski hills had to expand not only to accommodate the number of patrons, but to compete with other hills as well. Clearings near the base had to be widened to allow for the runs to funnel into a central space, thus removing any bottlenecks on the hill. Earth had to be moved to shape certain aspects of the terrain, particularly traverse trails that are implemented as a way for skiers and grooming machines to access different areas of the mountain, as well as to provide an “easy way down” for those that might have been too ambitious prior to their arrival at the top lift terminal.\textsuperscript{51} (Figure 1.10)

\begin{figure}
\centering
\includegraphics[width=\textwidth]{Figure1.10.jpg}
\caption{Snowboarders and skier using a traverse trail at Mammoth Mountain, CA, 2013. Photo courtesy of James Kasyhap.}
\end{figure}

\textsuperscript{50} Allen, \textit{From Skisport to Skiing}, 142.
\textsuperscript{51} Schwanke, \textit{Resort Development Handbook}, 152.
The most successful hills are those that have ski trails that can cater to the widest range of skier abilities. It is almost essential for a ski hill to have the trails that cater to the beginner, intermediate, and expert terrain.\textsuperscript{52} An issue for many of the earlier hills as they exist today is that they cannot offer the extensive trail variety that is crucial for a hill to remain successful. This is due in large part to either siting, lack of topographical variance, or environmental restrictions that do not allow for expansion. These resorts have ski trails that may have once been deemed “difficult,” but in the contemporary perceptions of the sport these trails are now “intermediate.” One way many of these resorts have dealt with this dilemma is by marketing themselves specifically to beginners or to families. Other ski hills have a plethora of expert and advanced terrain that would not be suitable for beginners, limiting their audience.

Ski trails are an essential part of the hill’s branding and a substantial contributor to a sense of place. Contemporary planners aim to establish a trail based on a number of tangible components – steepness, orientation with the sun, bailout positions for stopping without interrupting ski traffic, circulation, uphill capacities, and wind shelter – as well as the more intangible, like creating a sequence of experiences for the skier. Planning the ski trail so that a number of ski speeds, terrain types, personal perceptions, views, and vistas are established helps to achieve some of these more intangible aspects associated with skiing.\textsuperscript{53} (Figure 1.11)

\textsuperscript{53} Schwanke, \textit{Resort Development Handbook}, 152.
Contemporary trail planning must also take into account snowboarding. This sport, albeit very similar to skiing, has some logistical peculiarities that must be considered when planning ski trails. Areas where there are level-grade transitions, or “flats,” can be extremely problematic for snowboarders. Skiers have had very little difficulty with these flat areas because of the mobility that their equipment can provide, which is reminiscent of traditional Nordic skiing. However, snowboarders are strapped into a single board, meaning their mobility, once gravity and inertia are not in play, can

---

be very limited. It is common to see snowboarders unstrapping from their bindings in flat areas and walking to the next point on the trail where they can continue their descent. This can create bottlenecks on the trail, which is annoying, as well as a safety hazard to snowboarders and skiers alike. Snowboarders, because of the mobility difficulties that this can cause, often avoid ski hills with expansive flat spots.55 Given the popularity and proliferation of snowboarding, ski hills need to take snowboard-mobility in relation to flat spots and fall lines into account when developing new trails.

BASE LODGE

Skiing, by its very nature, is a sport that places an individual in harsh climatic conditions. Mountainous regions are susceptible to dramatic and dynamic weather patterns throughout the year, but the below-freezing temperatures that can be experienced with skiing exacerbate the impact these patterns can have on the human body. Shelter from the winter elements has been an absolute necessity since the first ski area opened in North America. This has been manifested on ski hills in a number of ways over the years, reflecting upon numerous architectural styles, amenities, services, and developmental approaches. Regardless of the variance, these buildings are often defined by the same term: the lodge.

In New England, where modern North American downhill skiing became popular, the summer vacation towns in New Hampshire, Vermont, and throughout New York, were easily adapted to winter use. Skiing - cross country and the emerging downhill variety – allowed for the continuation of business in the winter months instead of closing for the season, which incentivized many New England resort towns to establish themselves as ski centers.56 These picturesque New England villages – like Franconia, New Hampshire and Stowe, Vermont – served as some of the first ski resorts, although they were not designed with the intent of being such.57 (Figure 1.12)

57 Ibid., 17-18.
In the more isolated and less developed areas, the built elements of the early ski hill environment could be very haphazard. Often, a series of buildings were erected for to perform a particular function: a ticket booth, outhouses/restrooms, concession stands, and a shelter.\textsuperscript{58} At Alex Foster’s “Big Hill,” the site of the first rope tow in the Laurentian Mountains, the base lodge consisted of a crude log shack outfitted with a wood-burning stove, with adjacent outdoor restrooms.\textsuperscript{59} This became the first designed North American ski hill in that all of the necessary typological elements were there. Along with Foster’s rope tow, many started to emulate the warming hut, from which a ski hill operator would often sell simple concessions to those who used the hill. This connection between the lifts, the ski trails, and the base lodge, remains to be the most definitive pattern of the ski hill typology.

The earliest lodges, or warming huts as they were sometimes referred to, were nothing more than log cabins or shacks. These vernacular buildings were simple in style, often constructed out of readily available, unrefined, and locally sourced materials,

\textsuperscript{58} Big Pines Winter Sports Carnival brochure, courtesy of the California Ski Library, Wicken collection.
\textsuperscript{59} Fry, \textit{The Story of Modern Skiing}, 16.
contributing to a regionally rustic appearance. These modest buildings were soon inadequate as the popularity of downhill skiing continued. New buildings would be required to meet the growing needs of skiers, so many ski hill operators sought to build larger, more effective, and formalized spaces that used architecturally stylistic elements as a form of place-making and brand marketing.  

The lodge typology is usually one of the central features of the ski hill. It is often situated between the parking facilities and the base of the hill where the lift entrance terminals are located. (Figure 1.13) This means that the ski hill patron usually walks through the lodge, where they can often purchase lift tickets, visit rental shops, acquire equipment, procure food and beverages, indulge in après ski culture, register for ski lessons, or simply just warm up between runs. Because of its position, the lodge serves as an entrance as well as an egress point. This means that lodges often feature two facades: one that faces the parking and access circulation, while the other faces the base of the ski hill and is the prominent building within the context of the base activities. 

---

60 Margaret Suplee Smith’s book, *American Ski Resort: Architecture, Style, Experience* develops the lodge and resort typology further, discussing the evolution of style, forms, and the development of the ski resort through the first ski hills to the modern day.  
Some lodges go beyond the facilities mentioned above to include accommodations, ski patrol services, administration offices, and other amenities while other lodges only feature a handful of the aforementioned services, leaving the remainder to be located in adjunct buildings. With this much variance and style, it is difficult to define what constitutes a base lodge, yet an individual can recognize it instantly through its siting and orientation within the landscape.62

**Mid-Mountain & Summit Lodges**

These lodges, similar in many ways to the base lodges in style and form, however they are different in their orientation within the ski hill landscape, as well as services provided. Mid-mountain and Summit lodges are mostly implemented as shelters and rest areas that can be utilized at essential points throughout the circulation of a ski run. They

---

usually offer food and beverage services, expansive seating areas, restrooms, and large outdoor patios. These lodges are usually oriented in a way that provides the skier with commanding views and vistas, while providing a degree of comfort away from the elements.\textsuperscript{63} Also, the importance of these building types is becoming more pronounced as the general demographic for skiers is aging. The need for rest and respite from the outdoors and the sport can be very important.\textsuperscript{64} With the relatively recent proliferation of the Gondola lift type into the North American ski hill typology, many summit and mid-mountain lodges are being incorporated into the gondola loading and unloading terminals.\textsuperscript{65}  (Figure 1.14)

Figure 1.14: “McCoy Station” mid-mountain lodge and gondola terminal at Mammoth Mountain, CA. Photo courtesy of Annija Gaskell.

\textsuperscript{63} Diedrich, \textit{Building Type Basics for Recreational Facilities}, 87.

\textsuperscript{64} Ibid., 87.

\textsuperscript{65} Ibid., 87.
UTILITIES

The earliest ski hills were simple in their use of resources in terms of operation. The first rope tows were often run through the use of car engines, so gasoline was necessary; the first warming huts used wood burning stoves, so wood harvested from the local forests was implemented for heating fuel; and the first sewage systems were as simple as a hole in the ground. As ski hills grew in size and scale, these simplistic means were not enough to provide the level of service and comfort that was expected at ski hills. One of the main issues that had to be dealt with when developing utilities at a ski hill is the remote location of the site. This is not always the case, but more often than not ski hills are removed from population centers, making certain utility connections impractical and expensive. The distance from municipal systems means that the hill operators must account for water, electricity, heating, and waste management in their master plan. Solutions vary widely due to the ski hill geography, spatial relations, and the political situation of a particular region. However, infrastructure to provide utilities will always be required at ski hills.

Snowmaking

Early on, ski hill operators realized that the erratic natures of snowfall patterns were not conducive to steady business. Poor seasons with low snowfall left many facing substantial deficits, which could ultimately put a ski hill operator out of business. In the hopes of combatting the unstable and tumultuous nature of snowfall, many started experimenting with artificial snowmaking systems. One of the first was Walter R. Shoenknecht, the owner of Mohawk Mountain in Cornwall, Connecticut. In the 1949-1950 winter season, Shoenknecht broke up almost 500 tons of ice blocks and spread the chips across the slopes of Mohawk Mountain. The first mass-produced machine made snow was also produced in Connecticut, when three engineers managed to create twenty inches of snow using a small compressor, a garden hose, and a spray nozzle of their own.

66 Fry, The Story of Modern Skiing, 16.
67 Schwanke, Resort Development Handbook, 139-140.
The technology has come a long way over the last sixty years, with the invention of a number of different systems, machines, and utilities that are to produce the snow many ski hill operations depend on to stabilize their season. The two main types of contemporary snowmaking systems are the air-gun and the fan-gun. The air-gun relies on a complex network of compressors and water lines that are stretched across the mountain slope, which can prove to be expensive and precarious to operate. Fan-guns require only the water lines and are cheaper to operate, but much more expensive to procure. The systems have a multitude of other components, which can range in complexity and level of technology. The specifics of the system often depend on the ski hill, its location, snowfall, budget, and utilities infrastructure.

The process of installing snow equipment now is particularly expensive, because environmental assessments must be conducted, miles of pipes must be laid, wells are often drilled, reservoirs established, and the snowmaking machines themselves can reach prices of $50,000 each. This increasing cost for installing and operating new and high quality artificial snowmaking systems can be so prohibitive that only the large scale resorts can manage to install them, leaving many of the smaller ski hill operations with smaller and less efficient snow-making systems. The quality of artificial snow has increased as well to higher standards with technological improvements, but many in the industry recognize that it is no substitute for natural snow. This is really just a tool for many hills to supplement natural snowfall and increase operating stability. However, snowmaking has become an absolute necessity for a ski hill operation to survive in this competitive market. (Figure 1.15) As a result, much of the seasonal improvements and investments at ski hills all around the nation are aimed specifically at increasing the hill’s snowmaking capacity.

---

69 Selingo, “Machines Let Resorts Please Skiers When Nature Won’t.”
70 Selingo, “Machines Let Resorts Please Skiers When Nature Won’t.”
72 Ibid.
SKI RESORTS: Additional Amenities & Urbanization of the Ski Hill

In December of 1936, the ski hill in its simplest and most elemental form was already somewhat outdated, long before many had a chance to clear their first runs, build their first rope tow, or erect their first warming hut. *Sun Valley*, the Union Pacific’s American alpine village, had opened and pushed the basic typology of the ski hill to a new realm that would ultimately culminate in the mega-resorts that have become synonymous with the sport. The *Sun Valley* development included food and beverage facilities that one would expect of a ski hill, but it also included ice skating rinks, event venues, a hospital, heated pools, cocktail bars, gourmet restaurants, luxury shopping, hair salons, a bowling alley, and a movie theater.74 These amenities were all oriented in a pedestrian-friendly village format, which cohesively featured Tyrolean and Bavarian architectural detailing. (Figure 1.16) This helped to establish the impression of an alpine village, as well as create a brand that one would experience and associated with the overall resort.75

---

75 Ibid., 50-51.
These traditionally urban amenities, which are not necessary to the sport of skiing itself, have become heavily integrated into many ski hills around North America. Other resorts have also adopted the use of architectural forms -- common theme, form, motif, or style will be used throughout a ski resort village to establish a sense of place, shape one's experience, and further establish place as a company brand.

*Sun Valley* established a model of ski resort development in North America. Some ski resort “villages” would involve entirely new construction at a previously remote site designed entirely for the purpose of being a destination ski resort, like that of *Vail*, Colorado. Other instances involved the incorporation of pre-existing town-sites into the overall scheme of the ski resort “village,” like in *Aspen*, Colorado.\(^{76}\) Either way, these developments represent substantial amounts of investment, urbanization, and alterations to the landscape in the hopes of establishing a place of leisure, recreation, and consumerism within the setting of North American mountain ranges.

The urbanization of these environments increased as the development of private vacation homes and condos were developed adjacent to the central ski resort villages or

---

ski trails, thus providing the luxury of “ski-in ski-out accommodations.” This influx of private ownership leads to the development of further amenities and can create a centralized and relatively dense urban environment, which uses the surrounding natural elements to perpetuate the illusion of a picturesquely rural setting. Real estate and resort development continues to be a constant component within many ski hill master plans.  

**Seasonality Diversification**

Just as the summer resort communities of early twentieth century New England had seen an opportunity in accommodating winter recreation, the ski hills of today are attempting to diversify with the addition of summer activities. One of the most common and easiest ways is through the introduction of mountain biking. The lifts and trails are often employed, with minimal alterations and terrain park-like additions, to accommodate downhill mountain biking enthusiasts of varying experience. Other activities and amenities that have been developed can include rock climbing, golf, white-water rafting, all terrain vehicle tours, Frisbee-golf, horseback riding, hiking, zip-lining, environmental tours, and cultural events. These activities largely depend on the specific site and resort infrastructure, but many ski hills with the capacity are exploring options to diversify their revenue bases and appeal to future investment.

**SNOWBOARDING**

Just as skiing had become a way of life for so many over the course of the twentieth century, the meteoric rise of snowboarding in the last quarter of the twentieth century has left a lasting mark on the ski industry. Once touted, ironically so, as the antagonistic “mortal enemy” of skiing, the widespread adoption of snowboarding has

---

78 Ibid., 151.
79 Although off-season diversification is becoming a greater component of ski hill development, the focus of this scholarship is on the ski hill typology as it has evolved under the developments of ski and snowsport culture. This section is to acknowledge that these developments are having an impact on the relationship and the future of ski hills; however, the focus shall remain on winter related activities and amenities.
done more for the Ski Industry than many first imagined. The impact this relatively new sport has left on the landscape of ski hills especially important in the context of Southern California.

Snowboarding as a sport was first explored in the 1920s, but it did not really become a somewhat marketable form of recreation until the 1960s. The rise of surf culture was having a profound effect in the United States by feeding off the antiestablishment ethos of the counter culture that was rising at the time; the very same that was giving rise to the “hotdogger” and freestyle skiers. In a much more literal translation, surf culture was being applied to a snow-filled setting far away from any ocean: Muskegon, Michigan. Sherman Poppen was sledding with his children on Christmas day in 1965 and saw his children try to stand up on one of their sleds, inspiring him to lash two skis together with a string attached at the nose. The “Snurfer” idea was licensed to Brunswick Bowling, who ended up manufacturing the product that sold over 500,000 units across the United States from 1966-1977. This early manifestation of the snowboard caught the imagination of a few during this time frame, particularly Tom Simms and Jake Burton Carpenter, who started developing their own interpretation of the concept in the late 1970s. These two enterprising individuals, their different perspectives on the sport, and the intense rivalry that formed from their competing companies, took snowboarding from its humble backyard beginnings to the level it exists at today. Burton Carpenter was from Vermont and came from a skiing oriented background, whereas Tom Sims was from Southern California and came from the early surfing and skateboarding scenes that had established themselves there. These two aspects, which at seemed to be complete opposites of the time, ended up forming a synthetic experience, which in turn evolved into the varied cultural and stylistic sport one can experience today.

The influence the sport would have on the landscape was certainly minimal in the early days of snowboarding, because many of the ski hills around North America did not

---

83 Fry, The Story of Modern Skiing, 236.
allow people on snowboards to utilize their operations. There was an extensive list touted by ski organizations and ski operators to enforce this exclusion. First and foremost, this new winter sport was seen as very dangerous and a potential liability. Another reason often used was that the broad shaped boards ultimately served as giant scrapers, removing moguls and pushing large swaths of snow down the slope, thus ruining the conditions for all patrons. Snowboards were also seen as uncontrollable and dangerous, but the technology had been innovated upon so rapidly that the garage-made equipment of the late 1970s were becoming more standardized and safer with each passing season.86 The sideways stance that snowboarders use can leave a blind spot to either side, which is a concern for many skiers today, although responsible riding techniques can mediate this, just as blind spots in automobiles and responsible driving. Lastly, many in the ski community feared change brought about the predominantly young-male demographics that snowboarding was introducing to the hill. The proliferation of punk music, rebellious attitudes, grunge attire, and overall disrespect of rules, authority, and others, fashioned the stereotype of the snowboarder that continued to live on until the mid-2000s.87

In 1983, Stratton Mountain, Vermont was the first large-scale ski hill to allow snowboarders access to their lifts, runs, and facilities.88 Others soon followed as the formal and direct pressure from snowboarding organizations, like Jake Carpenter’s Burton Snowboards, increased throughout the 1980s. The other factor that helped open up ski hills to snowboarders was that skiing had plateaued in popularity, and the increasing number of snowboarders presented the opportunity to increase lift ticket sales.89 Snowboarding is now a commonplace activity on all ski hills in the United States, except for three that still maintain their snowboard-restrictions.90

Once snowboarders were permitted to use the ski hills, they eventually started to have an effect on the landscape, the most iconic and noticeable of which is that of the terrain park. The terrain park, much like the sport itself, had the most humble of

86 “We Ride: The Story of Snowboarding.”
87 Fry, The Story of Skiing, 239-240.
89 Ibid., 22-23.
beginnings. Tom Simms and his team of snowboarders had their background in the early skateboard movement in Southern California, where many sought after empty pools where they could skate and practice their tricks. They were used to practicing on the fringes of what was deemed as acceptable societal behavior, so being inventive with snowboarding beyond the ski hill was a somewhat natural, perhaps even celebrated, environment for those with Simms. In 1982 word had reached Tom Simms about a natural “quarter-pipe” near Tahoe, California, that kids were using for snowboarding.91 The Simms crew made the trip to Tahoe where this “quarter-pipe” was situated and instantly started to implement their skateboarding techniques in this snowboard setting. The notion of a quarter-pipe outside of the skateboarding realm of wood, cement, and the urban fabric was relatively unheard of. The “Tahoe City Half-Pipe,” as it is known in snowboarding legend, was an old landfill that had been shaped by bulldozers moving earth into the forms that, when covered with snow, was perfectly suited for skateboard-style snowboarding.92 It was at this location that freestyle snowboarding was born.

This landfill site outside of Tahoe was effectively the very first incarnation of the terrain park. The skateboard influenced freestyle riding that the Simms team developed would become the hallmark and popular driver for the sport as it became included in competitions, which were originally geared towards more traditional Alpine events. Spectators gathered around the competitions in increasing numbers to watch all aspects of this new sport, but the freestyle events, like the half-pipe, were always the crowd favorites.93 Snowboarders everywhere were starting to implement parts of the ski hill (picnic tables, railings, traverse lips, etc.) as features that could serve as points where tricks could be performed, much in the same way that skateboarders use elements of the urban fabric for their recreation.94 Ski hill operators, which had already began to realize the financial benefit of being open to snowboarders, were still dealing with some

---

91 Howe, (Sick), 28-29.
92 Ibid., 29.
93 “We Ride: The Story of Snowboarding.”
94 This recreational appropriation has been extended further over the years and many snowboarders now use the built environment within cities during the winter for “jibbing,” which is essentially the performance of tricks on a manmade feature. This urban freestyle riding is popular particularly in the North East, where access to ideal snow conditions and more challenging terrain is limited, thus pushing the individual to adapt and find challenging situations within their urban context. There are many film production companies that focus entirely on this style of riding. This style has since been adopted by young skiers as well and emulates the urban snowboarding tradition in numerous ways.
backlash from the Ski community about the reckless abandon with which the snowboarders used these features. The natural progression was to humor both sport enthusiasts by sectioning off specific sections of the mountain for freestyle snowboarding, which were full of features that could be implemented by those adventurous enough, but still separated from the traditional ski runs. This separation of snowboarders from skiers helped to incubate the developments within snowboard culture, as well as fuel the feud with the skiing community. The terrain park quickly became an essential component in drawing snowboarders to the ski hill. This was stressed further by the decline in skiing and the sharp growth in snowboarding. Ski hills had to adapt to the changing demographics on the ski hill, or face decreasing revenue, so the widespread proliferation of the terrain park forever affected the ski hill typology.

Terrain Parks are separated and enclosed elements of ski hill landscape and still contain many of the same types of features. Terrain parks vary in size, scale, and types of features that are offered, but most consist of jumps, boxes, rails, and other manmade elements. (Figure 1.17) Many hills have gone so far as to include more than one terrain parks on their hills to provide different levels of difficulty. These elements can require extensive amounts of maintenance, especially at the professional level. These larger features, which are used almost entirely for competitions in both skiing and snowboarding events often require earth to be moved to shape the monumental sized features where athletes continue to push the limits of freestyle sport. (Figure 1.18) The amount of capital required to create these competition features is substantial, which means that only major resorts tend to invest in their creation. Given the nature of landscaping that is required to create them, once a ski hill invests in the earthwork related features, they are there for seasons to come.

---

Figure 1.17: Slopestyle competition in terrain park, 2011. Photo courtesy of Somewon Snow Collective.
The popularity of the terrain park has also created the need for ski hills to focus snow-making efforts and specific lift installations, which are intended to service only the park, creating a circulatory environment that is even further removed in some ways from the rest of the ski hill landscape. Safety is also a major concern, so a Ski Patrol and first aid presence is constant at all terrain parks.96

The numbers indicate that snowboarding has plateaued and decreased, while skiing is on the rise.97 The two sports, which were once pitted against each other on the ski hills of North America, now feed off each other in a state of cohabitation. Where skiers and snowboarders were once strictly self-segregated by the sport one practiced, groups now often consist of individuals who ski, snowboard, or those who are adept at both sports.

---

96 “History of Terrain Parks.”
97 Martin, “Snowboard Craze Fades.”
CHAPTER 2 – DEVELOPMENT OF SKIING IN SOUTHERN CALIFORNIA

Skiing in California is usually associated with the regions of Northern California, conjuring up images of the Lake Tahoe area, which is famous for its collection of expansive ski resorts, impressive snowfalls, and hosting the 1960 Winter Olympic games. It comes as somewhat of a surprise to many that there is a rich tradition of skiing within a few hours drive of the palm tree lined boulevards of Los Angeles. The cliché that one can both surf and ski in the same day in California is not without its truth, becoming a widely publicized and celebrated component of the California landscape since winter sports first became integrated into the recreational ethos of the region in the 1920s. The mountain ranges are considerably more limited in terrain options, snowfall, and appropriate ski temperatures, but these formidable challenges did little to deter the individuals that established downhill skiing in the region.

EARLY CALIFORNIA

Downhill skiing first appeared in California in the years that followed the Gold Rush of the mid-nineteenth century. Skiing already existed in North America, but it was primarily in the Nordic traditions that more closely resembled contemporary cross-country skiing and embodied the notion of Idraet; an ethos of masculinity and strength through endurance, perseverance, and outdoor sport. The skiing practiced in California was a world apart from this Scandinavian tradition in that it was secular and was more reflective of sport purely in the name of recreation and leisure. Mining camps had been moving beyond the streambeds of California for a number of years as the promise of gold continued to bring in thousands of people to the region in the hopes that they too would strike it rich. Camps were soon established in areas of the Sierra Nevada that receive infamously heavy snows during the winter months. Miners first used skiing simply as a means of transportation, most famously as a way to bring the postal service to the far-
flung and otherwise inaccessible camps. The use of the “Norwegian Snowshoe,” which was the common name for skis at the time, became popular because of individuals like John A. “Snowshoe” Thompson, a Norwegian immigrant who famously carried mail throughout the region to the mining camps and towns with relative efficiency and consistency, which was somewhat of a marvelous feat at the time. Eventually, the use of skis evolved from utility to sport. Places that were snowed in for several months used skis as a recreational way to pass the time until the snows receded. Furthermore, it provided an opportunity for competition and gambling.

Early ski races were organized in the mining camps of the 1860s and would provide entertainment and a social element to those in these remote areas of the Sierra Nevada. These races would usually entail several men lining up at the top of a steep slope wearing twelve-foot long skis that were coated in homemade wax, which were pointed downhill and helped these early skiers achieve speeds over sixty miles per hour. Clubs started to form around this sport and whole winter carnivals would be organized around the spectacle of these downhill races, which could offer the winner a substantial purse, usually upwards of $1,000. This was not only limited to the men of the mining camp, but became a relatively universal activity as many women and ethnic groups outside of the Anglo-American dominant demographic would also participate, including the Chinese. Granted, these events were still very segregated, but even in the early days of the sport there was a hint that the sport of skiing was capable of transcending prejudices and contributing to an overall positive atmosphere and experience. As the popularity of these early races grew, the organization of the races became a much more serious and formalized affair. Judges and timers would be employed and courses would be cleared of vegetation and other obstacles for about 2,000 feet down a slope, which ultimately served as the earliest example of the ski trail type in California. This spectator-centric embodiment of the sport would by-and-large disappear as many mining camps turned

101 Allen, *From Skispport to Skiing* 16-17.
103 Allen, *From Skispport to Skiing*, 21.
104 Ibid., 25.
105 Ibid., 25.
into ghost towns, but skis would remain as an important piece of equipment in the Sierra Nevada not only as a transportation implement, but for recreation.\textsuperscript{106}

SOUTHERN CALIFORNIA

Early Southern California

The earliest known written account of skiing in Southern California comes from Joseph and Charles Tyler, who were two brothers that had come to the San Bernardino Mountains to begin a sawmill operation in 1871 after almost a decade of mining for gold in the Sierra Nevada.\textsuperscript{107} It is very likely that the two brothers had learned about and utilized skis during their years in the mining camps of Northern and Central California, ultimately importing the idea to the Big Bear Valley when they relocated to the area. Ski racing did not become the phenomenon in Southern California as it had in the mining camps located further north, but the Tyler brothers and others certainly would have implemented them as a method of transportation when heavy snowfalls did blanket the region’s mountain ranges, making more conventional means of getting around difficult.\textsuperscript{108} As the region began to become more accessible with increasing road improvements, the ski would lose its already limited use as a means of transportation and become implemented increasingly as a form of recreation. Ski touring – more along the lines of cross-country than downhill – would become the most popular manifestation of ski sport in the region. This form would be practiced in relatively small numbers and usually through the efforts of organizations that viewed outdoor recreation as a celebration of nature, like the Sierra Club.\textsuperscript{109} The popularity of downhill skiing started to grow in Southern California with the invention of the Winter Carnival and the spectacle that was ski jumping.

\textsuperscript{106} Allen, From Skisport to Skiing, 28.
\textsuperscript{108} Ibid., 5.
\textsuperscript{109} Ibid., 6.
Winter Carnivals

In the early twentieth century, access to the mountain communities of Southern California during the winter was still limited to skis, sleds, horse-drawn sleighs, and snowshoes. Many would often leave the mountains and spend these months in San Bernardino, Redlands, and other communities nestled in the foothills of the surrounding ranges, waiting for access routes to open up in the spring. Even then, roads were primitive and often resulted in a lengthy journey. New routes were constructed, improvements were made, and snow removal techniques were developed so that by the early 1920s, the once isolated mountain communities could be accessed throughout the entire year.110 (Figure 2.1) This increased access meant that a number of recreational opportunities were now readily available, including those that required snow.

Figure 2.1: Big Pines Arch and Snow Blower. Photo courtesy of the California Ski Library.

---

110 Wicken, Pray for Snow, 6-7.
At the turn of the century, organized winter sport activities, although likely a familiar concept to many who relocated to Southern California, were by and large non-existent. Many California residents had immigrated from other areas to escape snow and enjoy the famous Mediterranean climate that the region offers, so the notion of embracing winter sports seemed ridiculous for many, yet nostalgic for others. In fact, those with interests in promoting the land of “sunshine and roses” sought to quash this notion of winter sport in Southern California, fearing that it would detract from the image that many were bolstering to the rest of the world.¹¹¹ Regardless, a few individuals and the Baldwin Lake Chamber of Commerce started to organize the region’s very first Winter Carnival. The affair was held over three days in February 1924 at Baldwin Lake in the San Bernardino Mountains, a few miles east of Big Bear Lake. The carnival featured a series of events, including tobogganing, curling, ski jumping, skating, snowshoeing, and ski races.¹¹² These winter carnivals continued at a handful of locations for a number of years following, but it was still a struggle overall to promote the recreational and economic possibilities of winter sport in an area that was selling the image of sun, sand, and citrus fruit. (Figure 2.2)

The State Chamber of Commerce, finally convinced of the potential that winter recreation possessed in the economic sense, created the Southern California Winter Sports Association in 1929, which was charged with organizing events, establishing new facilities, and promoting skating, tobogganing, and skiing throughout the southern counties.\textsuperscript{113} The winter carnivals had been increasingly popular affairs in the year’s prior, but with the increasing investments in promotional materials and organization, the carnivals would exceed expectations in terms of attendance. The Camp Seeley Snow Carnival took place in January of 1930, just a few months following the creation of the Southern California Winter Sports Association, and approximately 15,000 people were in attendance, jamming the highways leading towards the camp.\textsuperscript{114} Local business interests


\textsuperscript{114} Wicken, \textit{Pray for Snow}, 20.
realized the opportunities that winter sport provided and investments in winter tourism throughout Southern California increased accordingly. The following season featured a winter sporting event each and every weekend and attendance numbers multiplied exponentially. Southern California was quickly establishing itself as a leader in the pursuit of winter recreational activities.\textsuperscript{115}

These carnivals and winter sport events usually took place at either at private resort spaces already established in the mountains or at recreational camps that were leased and operated by municipal or country governments. The infrastructure and landscape differed, depending on the specifics of the location, but there were a few consistent features. Slopes and outruns designated for tobogganing were cleared of vegetation and other obstacles, occasionally with permanent slide structures built out of lumber and sheet metal. When lakes and other naturally occurring bodies of water were not present, skating rinks were built in natural or artificial clearings to accommodate the thousands who would partake in the activity. Campsites varied, but many were built to accommodate automobiles and would feature cooking shelters and rudimentary rest room facilities.\textsuperscript{116} Some more permanent accommodations would exist in the form of cabins, lodges, and hotels, but this depended on the specifics of the location and proximity to established municipalities.

\textbf{Ski Jumping}

Ski jumps were the most impressive features of these early winter carnival landscapes as they were often the largest structures and provided the necessary setting for the spectacle of ski jumping. Ski jumping was introduced by Scandinavian immigrants to North America at the end of the nineteenth century and continued to rise in popularity well into the 1930s.\textsuperscript{117} This form of skiing could be conducted in any given location, just so long as the infrastructure of the jump was in place. Jumps usually incorporated slopes and other topographical features into their design, moving earth and constructing other elements in order to shape the staging, takeoff, and landing components. In Southern

\textsuperscript{117} Fry, \textit{The Story of Modern Skiing}, 7.
California ski jumps were often built in locations that would eventually evolve into the contemporary ski hills, particularly the established recreational areas in the San Gabriel and San Bernardino Mountains. The more prolific of these recreation areas would often build a series of jumps, to accommodate ski jumpers of varying proficiency from beginners to the world-record-breaking masters.\(^\text{118}\) The popularity of ski jumping as a spectacle led to the construction of demonstration jumps being established at the Hollywood Bowl, as well as the Los Angeles Coliseum in 1935 and 1938, respectively.\(^\text{119}\) Ski jumping events were a large draw for the thousands that ventured to the winter carnivals, but the dangerous nature of the sport made it inaccessible for the general population as a participatory recreational option.

**Development of Downhill Skiing**

There are a few accounts of downhill skiing existing in the early twentieth century, but these are usually specific instances where an individual, usually of Germanic origin, would descend a mountain in the region by skis. The sport as it exists in the modern sense of downhill skiing really did not gain momentum until the 1930s. Ski jumping and touring were the previous incarnations of ski-related sports and they both presented a number of issues regarding accessibility with the population at large. Ski jumping was primarily an activity for those brave enough to ascend to the top of any one of the given jumps. Many shared the sentiment that skis offered a number of recreational possibilities outside the realm of jumping.\(^\text{120}\) Ski touring, on the other hand, was considerably more accessible to the public at large, but it still required a great deal of athleticism, endurance, and a decent understanding of the outdoors. Downhill, which was emerging as a sport in the 1920s and 1930s, quickly established itself as the most enjoyable, accessible, and popular form of skiing. The Winter Sports Committee of California State Chamber of Commerce outlined in a 1937 report that downhill skiing was the best manifestation of skiing and the state desperately needed new lifts, trails, and

\(^{118}\) Wicken, *Pray for Snow*, 22.


\(^{120}\) “Ski Trails at Big Pines,” *Trails Magazine*, V.2 N.4, Autumn 1935, 14.
facilities in order to attract and accommodate this growing sport.\textsuperscript{121} The CCC, WPA, and many of the early ski clubs had already cleared trails of vegetation, built warming huts, and established other facilities in the mountains of Southern California for ski touring, which became more than ample places for downhill to take place. New trails were cleared, existing trails were widened, a few lifts were installed, and ski schools were established so that the techniques of downhill skiing could be taught to anyone willing to participate. By the season of 1938-1939 there were several rope tows operating in Southern California, providing the necessary infrastructure for downhill skiing to make the sport truly accessible to the general population.\textsuperscript{122}

**Advances in Ski Equipment**
Skiing in Southern California, and the shape of the ski hills that were created there, were greatly influenced by changes that were occurring in the sport, particularly the innovations in skiing techniques and ski equipment. These improvements would allow skiers to access and utilize terrain that would have been considered impossible with previous knowledge and equipment. The technology behind the equipment itself has had a significantly larger impact on the ski hill landscape.

The nuances of ski technique is not something that will be explored at great lengths, but the evolution and innovation of which has had lasting impacts on the landscape reflected in the ski trails around North America. From the Arlberg technique, which was popular prior to the Second World War; to the parallel turn, the quintessential form of modern skiing; to the snowplow, which is the staple to every beginner, skiing technique has played an important part in defining where one can ski and how one can ski.\textsuperscript{123} (Figure 2.3)

\textsuperscript{122} Wicken, *Pray for Snow*, 23.
Skis were originally homemade creations that could vary in length and wood type, but with the standardization of manufacturing processes in the early twentieth centuries, the ski became a much more consistent piece of equipment.124 The early downhill skis were constructed out of ash, maple, and hickory, the latter of which was considered to be the best. Although they were originally comprised entirely of wood, steel edges were eventually introduced to allow the skier better control and stability, ultimately making the carving turn possible. These early steel edges were originally a series of small steel pieces that one could insert into the ski. The continuous edge was developed in the 1960s.125 One of the more substantial developments in ski technology came when Howard Head developed a metal ski that was assembled from aluminum alloy sheets, steel edges, new adhesives, and sidewalls that were strong enough to withstand increasing

124 Allen, From Skisport to Skiing, 63.
lateral pressure.\textsuperscript{126} This combination of materials and sandwich construction made for a new ski that was considerably more durable, easier to initiate turns with, and had more torsional stability that its wooden predecessors.\textsuperscript{127} This allowed skiers to exercise increased control on different terrain types, particularly steeper slopes and sections with natural hazards and features.

The experimentation would continue with materials and construction types, but the next big evolution with ski technology came with the introduction of the shaped ski. This hourglass shape essentially shortened the ski length by a significant amount while maintaining the contact edge, thus making turn initiation easier and the ski lighter without compromising edge hold or strength. This technology was adopted in 1992 after the introduction of snowboarding to the ski industry.\textsuperscript{128} The influence of snowboard technology in the 1990s and 2000s can certainly be felt in the ski industry. It was during this time that the “twin-tip” skis, adopting the side profile of a snowboard, became popular and allowed for skiers opportunity to ride backwards and have a greater range of play when performing tricks.\textsuperscript{129}

The ski binding is one of the more essential, yet unsung, components of the equipment required. Its function is simple: keep the skier attached to the skis when skiing, but be able to safely eject the skier when a potentially dangerous fall occurs. One of the earlier downhill binding types was the “bear trap.” It received this moniker because it was comprised of fixed metal toe irons and a heel strap that did not allow for one to release from the ski.\textsuperscript{130} This inability for release from the skis was a major safety concern and spurred much of the further development in binding technology, in addition to convenience. From the 1950s onwards there were a number of binding types that were created to allow for upward, torsional, and other forms of release in the hopes of reducing traumatic ski injuries.\textsuperscript{131} These included the “cubby,” “metal plate bindings,” “step-ins,” and “heel release” bindings.\textsuperscript{132} (Figure 2.4)

\begin{itemize}
  \item Fry, \textit{The Story of Modern Skiing}, 75-76.
  \item Ibid., 77.
  \item Ibid., 89.
  \item Ibid., 358.
  \item Ibid., 350.
  \item Ibid., 86-88.
  \item Needham, \textit{Ski: Fifty Years in North America}, 104-108.
\end{itemize}
In addition to safety, these new binding forms allowed for skiers to have increased torsional control, stability, and turn initiation, progressing the sport to new levels while drastically reducing the number of injuries on hill. With the reduction of injury through binding safety improvements, skiers could take on the challenge of skiing new terrain types and expand the definition of the ski trail with new confidence.

It is almost cliché within the ski community, but the ski boot is the most important piece of equipment. In the earliest form, the ski boot was just that; a leather boot that could be clipped into the binding by a metal clip in the toe. The ankle, instep, arch, and lateral support that these boots provided was negligible at best. This meant that the skier was limited in power, stability, turn initiation, and overall control, although they were

---

often thought to be relatively comfortable. The first advancements were to simply increase the thickness and stiffness of materials in the boot, particularly along the sole and instep. Comfort features were added, such as padding along high-pressure areas and the introduction of a “double-tongue” feature, to keep snow from entering the boot.135

The most substantial improvement in boot technology came during the 1960s with Robert B. Lange’s plastic boots. Lange had been experimenting with plastic boot designs in the hopes of creating something stiff and supportive to take the sport to new levels. Though many of his early designs were influential, the moment of change came in 1966 when his polyurethane boots were being used in ski racing competitions.136 The design continued to evolve as Lange tried to make it more marketable to the average consumer, which came to include a higher cuff and a more comfortable liner. There were still many issues with the Lange product, but the industry soon changed around it as countless companies started to innovate and improve upon the plastic boot to provide an ideal level of performance and comfort for every level of skier.137 The new level of performance that advancements in boot technology provided meant terrain types and areas that were once not conceivably skiable were open to the masses. This shift in perception of difficulty had a substantial impact on the definition of what could be considered a ski trail.

These advancements in ski technology of the 1960s and 1970s coincided with the rise of the freestyle skier, or the “Hot Dogger” as they are nostalgically called. These few wild-eyed individuals, often associated with the counterculture of the era, started to incorporate features of the mountain that were largely off-piste – skiing areas that are not located on traditional ski trails, usually involving steeper terrain, natural features, and hazards - and seen as very dangerous.138 The earliest examples of freestyle were often very fast, uncontrolled, and alcohol fueled runs that would send the individual off various features - both natural and the manmade “mogul” - in an often-catastrophic display of

---

134 Fry, The Story of Modern Skiing, 97.
136 Fry, The Story of Modern Skiing, 83-84.
137 Ibid., 85.
138 “Off-piste” is a term that refers to skiing terrain that is in a more natural state, rather than a traditionally cleared ski trail. Off-piste trails retain natural features and hazards such as cliff bands, rock outcroppings, trees, and other vegetation types. Off-piste usually implies a lack of grooming, no snowmaking, and challenging terrain.
tumbles and tricks. These individuals, and those that followed in their increasingly extreme wake, have helped to challenge the traditional perception of what comprises a ski “run.” This has left a lasting impression on the cultural landscape of the ski hill, opening up a number of terrain types to skiers far beyond the traditional cleared ski trail.

Other equipment advances that have helped to progress alpine sports include goggles, avalanche gear, wax, outerwear fabrics, helmets, ski touring equipment, orthotics, braces, ski poles, personal protective padding, and many others. All of these elements, in addition to the aforementioned, have allowed skiers to go bigger, faster, and further than they had been able to before, thus altering what places one could consider “skiable.” All of these changes in the skier’s perception of the terrain have led to multiple impacts on the landscape by blurring the lines between a traditional ski trail and the overall mountain environment. In a sense, the ski trail is no longer just a downhill swath through the vegetation on a hillside; it is wherever the skier chooses to point the tips of their skis. This includes glades, chutes, bowls, cliffs, cliff spines, cornices, “pillow lines,” and any other geographical feature that one might encounter in the backcountry. (Figure 2.5)

\[\text{139 Fry, The Story of Modern Skiing 219-220.}\]

Post-war Skiing Boom

When the United States entered the Second World War in 1941, the growth of skiing came to an instantaneous halt. The manpower and resources that had been creating the equipment, developing technique, building the facilities, and altering the landscape, were directed entirely towards the war effort. Most ski hills and plans for expansion were on hold while the war raged on in Europe and the Pacific. Once the conflict was over,

As of the first season following the conclusion of the Second World War, there was only one chairlift in all of Southern California: the single-chair at Mount Waterman. Just ten years after, the regions ski infrastructure would include thirteen chairlifts, sixty-four rope tows, and three poma-lifts throughout the mountain ranges surrounding Los Angeles, particularly around Big Bear Lake and Lake Arrowhead in the San Bernardino Mountains.\footnote{Wicken, Lost Ski Areas, 16.} Big Bear Mountain actually had the largest number of ski lifts in the entire United States upon the completion of their first single-chair lift in 1949.\footnote{Ibid.} Beyond the more established Big Bear Mountain, many of these early ski hill operations were modest and family run. Regardless of how a ski area came into existence, operators found it necessary to make immediate improvements and upgrade from rope tows to chairlifts, widen and expand ski trails, create new parking facilities, and construct modern base amenities, all in order to stay competitive in the growing ski industry of Southern California. Not only was the popularity of the sport was growing exponentially; the population of the region was exploding as well during the post-war decades.\footnote{Joan and David Landman, Where to Ski: Ski Guide to the U.S. and Canada (Boston: Houghton Mifflin Company, 1949), 271.} Southern California was quickly becoming one of the largest markets in the United States as the population increased, so many of the more entrepreneurial ski hill operations sought to capitalize on this.

The rapid growth of ski hills in Southern California resulted in dozens of operations of varying size and scale, all in direct competition with each other. (Figure 2.6, 2.7) These were sometimes located a few minutes drive from each other, ultimately intensifying competition. This period of rapid ski hill development created too much supply, overshooting demand for skiing facilities in the region. This meant that many of the early areas, particularly the smaller family-owned operations, were defunct, abandoned, or appropriated in the span of a few seasons.\footnote{Wicken, Lost Ski Areas, 16.} The erratic snowfalls and lack of modern infrastructure exacerbated the ability of the smaller ski hills to compete with
the more established operations of the region. Many started to combat this direct correlation between business viability and snowfall by exploring artificial alternative surfaces and snowmaking.146

<table>
<thead>
<tr>
<th>Historic Name(s)</th>
<th>Contemporary Name</th>
<th>County</th>
<th>Closest Municipality</th>
<th>Year Founded</th>
<th>Current Status</th>
<th>Founder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mt. Waterman, Angeles Crest Resort</td>
<td>Mt. Waterman</td>
<td>Los Angeles</td>
<td>Altadena, CA</td>
<td>1938</td>
<td>OPEN</td>
<td>Lynn Newcomb Sr.</td>
</tr>
<tr>
<td>Kratka Ridge, Snowcrest, Angeles Crest</td>
<td>Kratka Ridge</td>
<td>Los Angeles</td>
<td>Altadena, CA</td>
<td>1950</td>
<td>CLOSED</td>
<td>San Gorgonio Ski Club</td>
</tr>
<tr>
<td>Buckhorn Ski Area</td>
<td>Buckhorn Ski Area</td>
<td>Los Angeles</td>
<td>Altadena, CA</td>
<td>1948</td>
<td>OPEN</td>
<td>Santa Monica Ski Club</td>
</tr>
<tr>
<td>Blue Ridge</td>
<td>Mountain High (west)</td>
<td>Los Angeles</td>
<td>Wrightwood, CA</td>
<td>1937</td>
<td>OPEN</td>
<td>Tom Triol, Frank Springer</td>
</tr>
<tr>
<td>Holiday Hill</td>
<td>Mountain High (east)</td>
<td>Los Angeles</td>
<td>Wrightwood, CA</td>
<td>1949</td>
<td>OPEN</td>
<td>Sepp Benedikter</td>
</tr>
<tr>
<td>Table Mountain, Ski Sunrise</td>
<td>Mountain High (north)</td>
<td>Los Angeles</td>
<td>Wrightwood, CA</td>
<td>1938</td>
<td>OPEN</td>
<td>Harlow Dormier</td>
</tr>
<tr>
<td>Mt. Baldy Ski Tows</td>
<td>Mt. Baldy</td>
<td>Los Angeles</td>
<td>San Antonio Heights, CA</td>
<td>1944</td>
<td>OPEN</td>
<td>Jim Chaffee, Herb Leffler</td>
</tr>
<tr>
<td>Movie Slope</td>
<td>n/a</td>
<td>Los Angeles</td>
<td>San Antonio Heights, CA</td>
<td>1938</td>
<td>CLOSED</td>
<td>Carl Mentz</td>
</tr>
<tr>
<td>Moonridge, Giddmine</td>
<td>Bear Mountain</td>
<td>San Bernardino</td>
<td>Big Bear Lake, CA</td>
<td>1943</td>
<td>OPEN</td>
<td>Lori's Candy</td>
</tr>
<tr>
<td>Snow Summit</td>
<td>Snow Summit</td>
<td>San Bernardino</td>
<td>Big Bear Lake, CA</td>
<td>1952</td>
<td>OPEN</td>
<td>Tommi Tyndall</td>
</tr>
<tr>
<td>Fish Camp</td>
<td>Snow Valley</td>
<td>San Bernardino</td>
<td>Big Bear Lake, CA</td>
<td>1935</td>
<td>OPEN</td>
<td>unknown</td>
</tr>
<tr>
<td>Lodge Hill Ski Tow</td>
<td>n/a</td>
<td>San Bernardino</td>
<td>Lake Arrowhead, CA</td>
<td>Unknown</td>
<td>CLOSED</td>
<td>Les Salm</td>
</tr>
<tr>
<td>Hook Hill</td>
<td>n/a</td>
<td>San Bernardino</td>
<td>Lake Arrowhead, CA</td>
<td>Unknown</td>
<td>CLOSED</td>
<td>unknown</td>
</tr>
<tr>
<td>Blue Jay</td>
<td>n/a</td>
<td>San Bernardino</td>
<td>Lake Arrowhead, CA</td>
<td>1948</td>
<td>CLOSED</td>
<td>unknown</td>
</tr>
<tr>
<td>Harmony Ski Tows</td>
<td>n/a</td>
<td>San Bernardino</td>
<td>Lake Arrowhead, CA</td>
<td>1947</td>
<td>CLOSED</td>
<td>Walt &amp; Wayne Harmon</td>
</tr>
<tr>
<td>Ski The Rim</td>
<td>n/a</td>
<td>San Bernardino</td>
<td>Lake Arrowhead, CA</td>
<td>1965</td>
<td>CLOSED</td>
<td>Bob French</td>
</tr>
<tr>
<td>Green Valley Lake</td>
<td>Snow Bowl</td>
<td>San Bernardino</td>
<td>Running Springs, CA</td>
<td>1945</td>
<td>CLOSED</td>
<td>Larry Ferguson, Joe Fax, Ernest C. Vawter</td>
</tr>
<tr>
<td>Trinity Mountain Resort</td>
<td>San Bernardino</td>
<td>Running Springs, CA</td>
<td>1945</td>
<td>CLOSED</td>
<td>John Sipe, John Webster</td>
<td></td>
</tr>
<tr>
<td>Green Valley Lake</td>
<td>San Bernardino</td>
<td>Running Springs, CA</td>
<td>1937</td>
<td>CLOSED</td>
<td>Les Salm</td>
<td></td>
</tr>
</tbody>
</table>
| Grout Creek Ski & Rec. Area            | San Bernardino    | Big Bear Lake | 1948/1951            | CLOSED       | John Wilson, J.P. McVeth, Austin Glaz, Ray Kious, D. M. Gage |%
| Happy Hill Ski Tow                     | n/a               | San Bernardino| Big Bear Lake, CA   | 1947         | CLOSED        | John Sipe, John Webster                      |
| Upper Miller Creek Ski Bowl            | n/a               | San Bernardino| Big Bear Lake, CA   | 1947         | CLOSED        | John Sipe, John Webster                      |
| Swiss Ski Tows                         | n/a               | San Bernardino| Big Bear Lake, CA   | 1947         | CLOSED        | John Sipe, John Webster                      |
| Snow White Ski Tow                     | n/a               | San Bernardino| Big Bear Lake, CA   | 1947         | CLOSED        | Bill Good                                    |
| Lone Star Tow, Crystal Ridge           | Snow Forest       | San Bernardino| Big Bear Lake, CA   | 1947         | CLOSED        | Max Fees                                     |
| Lynne Sling Lift, Clifford Lynn Lift Area, Snow Forest | San Bernardino | Big Bear Lake, CA | 1947     | CLOSED        | Clifford Lynn                                 |
| Little Siberia, Snow Forest            | San Bernardino    | Big Bear Lake | 1947                 | CLOSED       | unknown                                  |
| Lower Mill Creek Ski Bowl              | San Bernardino    | Big Bear Lake | 1947                 | CLOSED       | John Sipe, John Webster                      |
| Upper Miller Creek Ski Bowl            | San Bernardino    | Big Bear Lake | 1947                 | CLOSED       | John Sipe, John Webster                      |
| Stillwell Ski Tows                     | n/a               | San Bernardino| Big Bear Lake, CA   | 1954         | CLOSED        | Stillwell                                    |
| Rebel Ridge                            | n/a               | San Bernardino| Big Bear Lake, CA   | 1955         | CLOSED        | Chuck Smith                                  |
| Lagomita Lodge                         | n/a               | San Bernardino| Big Bear Lake, CA   | 1947         | CLOSED        | unknown                                      |
| Camp O’Dinga Ski Tows                  | n/a               | San Bernardino| Lake Arrowhead, CA  | 1945         | CLOSED        | Tom Preston                                  |
| Running Springs (Martin Tows)          | Running Springs, CA | San Bernardino | Running Springs, CA | 1940     | CLOSED        | Howard Martin                                |
| Running Springs (Soutar Tows)          | Running Springs, CA | mid-1950s     | Lloyd Soutar        | 1948         | CLOSED        | Bob O’Donnell                                |
| Halona Hill                            | Riverside         | Idyllwild, CA | 1948                 | CLOSED       | unknown                                  |
| Hidden Lodge                           | Riverside         | Idyllwild, CA | 1946                 | CLOSED       | Tommi Tyndall                                |
| Mt. San Jacinto                        | Riverside         | Palms Springs, CA | 1939-1963  | CLOSED       | Francis Crocker                              |
| Palomar Mountain                       | n/a               | San Diego     | Pauma Valley, CA     | 1966         | CLOSED        | Charles H. Darby                            |
| Mt. Laguna                             | n/a               | San Diego     | Alpine, CA           | 1938         | CLOSED        | San Diego Ski Club                          |
| Cuyamaca Mountains                     | n/a               | San Diego     | Alpine, CA           | 1938         | CLOSED        | San Diego Ski Club                          |
| Ski Villa                              | n/a               | San Bernardino| Chino, CA            | 1939         | CLOSED        | John Kramer                                  |
| Pine Needle Ski Slope                  | n/a               | Los Angeles   | North Hollywood, CA  | 1966         | CLOSED        | Sepp Benedikter                              |

Figure 2.6: Inventory of Southern California ski hills. Compiled by author, source information; Wicken, *Pray for Snow* (2001) & *Lost Ski Areas of Southern California* (2012).

146 There are examples of several ski hills that used alternatives to snow in Southern California. *Pine Needle Ski Slope, Mount Baldy, and Ski Villa* are examples of hills that used substitutions for snow that are well documented in *Lost Ski Areas of Southern California* and *Pray for Snow*, both by Ingrid P. Wicken.
Stagnation and Decline of Skiing

The sport of skiing plateaued and then declined through the 1970s to the beginning of the twenty-first century. Snowmaking, ski hill expansion, amenities improvement, environmental review processes, and improved sporting equipment all contributed to the rising cost of the sport. This in itself has made skiing less accessible for many Americans. This was exacerbated further by the energy crisis and recessions of the 1970s, which drove operation costs higher for ski hills, leading to higher lift ticket prices. All of these factors had a lasting impact on the ski hills in Southern California.

Snowfall is the barometer for whether a particular season will financially successful or disastrous, especially for the ski hills of Southern California. The invention and installation of snowmaking systems was key to alleviating the financial and operational pressure from poor snow conditions. This was unattainable for many resorts, because they did not have access to the water resources required for snowmaking, or the capital was not available to install and operate snowmaking equipment. Snowmaking allowed for a handful of the resorts to stay operational, while others sat snowless, underutilized, and eventually unviable. Following the implementation of the National Environment Policy Act of 1970, even investigating the potential implementation of artificial snowmaking became a lengthy and expensive process. This was true not only for snowmaking, but any expansion to the operations of a ski hill that resided on publicly

---

147 Fry, The Story of Modern Skiing, 294.
148 Wicken, Lost Ski Areas, 16.
held lands.\textsuperscript{149} The ski hills of Southern California are largely situated within the boundaries of the US National Forests, so any expansion to the operational capacity – new lifts, trails, lodges, snow-making, parking – had to be studied, planned, and presented before any construction could take place. This was an important milestone in field of conservation, but proved to be a hindrance to the expansion and operation of ski hills all around the United States.\textsuperscript{150}

In light of these changes to the process of expansion, many of the ski hills in Southern California chose instead to adjust to the modern perceptions of skiing in order to stay viable in an increasingly competitive market. Many of the hills expanded lodges, built new parking lots, continued their investments in snowmaking, built faster ski lifts, and expanded new terrain when possible. (Figure 2.8) Expansions used to be conducted by a group of committed individuals and extensive hours of manual labor. However, towards the end of the twentieth century, ski hill expansion and innovation required vast amounts of investment capital and planning.\textsuperscript{151}

\textsuperscript{149} Fry, \textit{The Story of Modern Skiing}, 294.
\textsuperscript{150} Fry, \textit{The Story of Modern Skiing}, 294.
\textsuperscript{151} Ibid., 297-299.
The family-owned operation largely became a thing of the past as investment groups, usually associated with resort and recreational property management bought up the most profitable of the Southern Californian ski areas. It was with this new corporate influx of capital that many of these changes to the ski hills could be made. Regardless of these changes and improvements to ski hill infrastructure that many of these corporations provided, the sport had become stagnant in terms of growth.\textsuperscript{152} Ski hills desperately needed renewed energy, passion, interest, and lift ticket sales.

\textbf{Snowboarding in Southern California}

Snowboarding was not necessarily invented in Southern California, but it certainly was an incubator for the sport. Long known as a place for surf and skateboard culture, many young males in Southern California explored this new sport applying their

\textsuperscript{152} Fry, \textit{The Story of Modern Skiing}, 64-68.
techniques, knowledge, and sub-culture to this snow-covered context. This was both positive and negative for the proliferation of the sport. It was positive in that many pushed the limits of the sport, capitalizing through invention with the pioneering spirit that was associated with snowboarding during the late 1980s and early 1990s. However, the negative aspect was that this “skate-punk” subculture often fueled the fears held by many in the ski industry, resulting in the overall ban from most ski hills. When tensions between snowboarders and ski hill area management were increasing around the country, Southern Californian operators jumped at the opportunity to increase revenue by allowing snowboarders access to their slopes. The cultural prevalence of single-board sports in the region transferred directly into ridership numbers at many resorts once snowboarders were granted access. At Bear Mountain during the 1992 season, the percentage of snowboarders on hill could vary between 35% to 60%; substantial when compared to the national average that same year of 17%.154

The following season, Ski Green Valley near Running Springs, California, attempted to capitalize on the growing craze of snowboarding by making the resort snowboard-only. The name was changed to Big Air Green Valley with the hope that this would further cater and entice the snowboarders of Southern California by using freestyle-oriented lexicon. The ski runs and facilities of the hill itself were small in comparison to hills in the immediate region, but the features of the terrain park and snowboard friendly atmosphere were intended to compensate for the more typological and topographical shortcomings of the operation. Poor snowfall and lack of snowmaking eventually lead to the closure of this hill a decade later, but it was important in its efforts to cater to the growing number of snowboarders in Southern California.155 Now every ski hill in the region has a number of terrain parks to cater to freestyle snowboarders and the growing number of freestyle skiers. In fact, Bear Mountain is widely considered to possess one of the best collections of terrain parks and freestyle features in the world, placing in the top rankings of the best terrain park destinations every season.156

154 Ibid.
155 Wicken, Pray for Snow, 134.
Contemporary Skiing in Southern California

There were once dozens of ski hill operations of varying sizes throughout the mountain ranges of Southern California, but only five ski areas remain operational today: Big Bear, Snow Summit, Snow Valley, Mount Baldy, and Mountain High. These active ski hills are the product of the aforementioned development of the sport in the region, as well as the resulting adaptations and impacts on these intricate cultural landscapes. The main reasoning for their longevity is that these operations have managed to adapt to evolutions in the sport, changes in the ski industry, and the climatic challenges of operating in a relatively dry temperate region. Most of these remaining areas feature varied ski trail types, extensive snowmaking capabilities, modern lift systems, and additional amenities that have allowed them to stay competitive in an increasingly difficult market. Regardless, these ski hills are not safe from obsolescence.

Skiing and snowboarding are sports that are under threat in Southern California, more so than most regions in North America. The contemporary season of 2013-2014 has been the worst snowfall season on record for California, which not only has repercussions for the ski industry, but will also exacerbate the ongoing drought. Of the five ski resorts still operating, none are operating at full capacity with the entirety of their terrain open. The lack of snowfall and unseasonably high temperatures is one of the primary concerns facing ski hill operations. Extensive snowmaking capacities have helped stave off some of the financial hardship that can accumulate from a poor season, but this can only do so much. Mount Waterman, the location of Southern California’s first chairlift, relies entirely on natural snow and has been inoperable for several seasons, leaving the future of this once prominent ski area in a state of uncertainty. The areas surrounding

159 Information was derived from the trail status reports from each resort’s website (see bibliography). Accessed February 19, 2014.
Big Bear Lake are in a better position than most given their access to the lake as a water source for snowmaking. This ready source of water has allowed for Bear Mountain, the largest of the resorts in the area, to expand its snowmaking capabilities to cover 100% of its cleared ski trails without the concerns of water access and environmental concerns that many of their regional competitors face.\textsuperscript{161} Snowmaking has become increasingly essential for ski hills in the region and the improvement of these systems is one of the biggest points of investment.

In addition to snowfall, the type of terrain available at ski hills in Southern California is an issue that plagues many of the operations. It is well known within the skiing community of the region that the best terrain available to Southern California skiers, without boarding an airplane, exists at Mammoth Mountain. This hill, although not technically in Southern California, is often considered to be associated with the region because of the relatively easy access to or from the southland. Mammoth Mountain offers an extensive area, more amenities, longer ski trails, faster lifts, and higher volumes of natural snowfall than the immediate ski areas of Southern California. All of these offerings result in many making the five-hour drive through the Owens Valley to Mammoth Mountain, rather than frequenting the more convenient local hills.\textsuperscript{162} The regional hills cannot compete at the same level with the mega-resort of Mammoth Mountain, so they have had to establish their own niches within the regional ski industry and aggressively market these attributes accordingly. One can see numerous billboards along the highway leading to Mammoth Mountain that advertise the ski hills of Southern California, adorned with slogans like “you could be skiing by now,” which reflect their closer proximity and subsequently shorter commutes. This competition between the smaller ski hill operations and the mega-resort now extends beyond regional constraints. Air access provides the opportunity for many to go to the resorts of their choosing, which often depends on snowfall, terrain quality, as well as vacation amenities. With numerous direct flights between Los Angeles and the major western resorts -particularly the ski

\textsuperscript{161} Bentley, “Big Bear Lake a Boon to Southern California Ski Resorts.”
\textsuperscript{162} “Southern California Ski Resort Reviews & Statistical Comparison.”
destination resorts of Colorado and Utah- the immediate regional hills now have competition on an increasingly national level.163

CHAPTER 3 – Evolutions of a Ski Hill: Big Pines to Mountain High

BIG PINES

Geographical Context

The Big Pines Recreation Area is located in the San Gabriel Mountains of the Angeles National Forest. It is situated within the Swarthout Valley, four miles west of the town Wrightwood, California, at an elevation between 6,000 and 10,000 feet above sea level. (Figure 3.1)

![Location map of Wrightwood, California. Illustration by author and Google Maps.](image)

Its position within the higher elevations of the San Gabriel Mountains gives it a climate that the U.S. Forest Service has identified with the zone name, “The Angeles High Country.” Steep slopes, rounded mountaintops, and deep ravines characterize the topography of this ecological and geographical region.164

Big Pines is home to a variety of fauna and flora. The most primary vegetation includes Douglas and White Fir; Lodgepole, Coulter, Ponderosa, and Jeffery Pine;

---

California Live Oak, Cottonwood and Incense Cedar; Chamise, Ceanothus, Scrub oak, and Toyon shrubs; and a wide ranging number of wildflowers.\textsuperscript{165}

**Early Development of Big Pines: 1851-1924**

The site where Big Pines is located was first settled by Anglo-Americans in 1851 by Nathan and Truman Swarthout; two Mormon brothers who attempted to establish ranching and farming in the valley that now bares their name.\textsuperscript{166} The brothers abandoned the endeavor when the Mormons of the area moved back to Salt Lake City, ultimately leaving the land available. Local rancher Sumner Wright acquired over 3,300 acres of the valley over a number of years with the intentions of planting apple orchards and to continue using it for ranching.\textsuperscript{167} By the 1920s, Wright was in financial trouble and sold off his land to a number of different buyers, including the Los Angeles County Board of Supervisors, who managed to acquire 760 acres for $60,000.\textsuperscript{168} (Figure 3.2) R.F. McClellan, chairman of the Board, was a crucial player in acquiring the land to develop an outdoor camp where Angelinos could “have a place to enjoy the outdoors without restraint.”\textsuperscript{169} In 1923, the Los Angeles County Department of Parks and Recreation began building the initial tourist infrastructure in order to open the park to the public. This included construction of the administrative building, recreation hall, coffee shops, the main lodge, a central campground, housing for employees, and improvements to the access road, which was constructed by a large number of contract employees and convict labor.\textsuperscript{170} Utilities were also established during this time with a water distribution system, a telephone switchboard, a trash incineration facility, a chlorination plant, and an electrical power transmission system.\textsuperscript{171}

\textsuperscript{165} USDA Forest Service, “Corridor Management Plan”, 19.
\textsuperscript{166} Ibid., 19.
\textsuperscript{170} “County Starts Improvements,” *Los Angeles Times*, March 8, 1925.
The park opened on Labor Day of 1924 and became a popular destination almost overnight. Construction continued throughout the fall of 1924 in preparation for the first winter season of the park. This was to include the slopes necessary for ski touring and tobogganing, as well as trails that would be suitable for sleigh rides.\footnote{Krig and Van Houten, \textit{Wrightwood and Big Pines}, 69.}

Due to the success of Big Pines Park, the LA County Department of Parks and Recreation wanted to acquire another 3,500 acres west of the initial property from the US Forest Service.\footnote{Ibid., 26.} The Forest Service resisted, but with the help of sympathetic members in the House of Representatives, a resolution was passed in 1925 allowing the County to use the new 3,560 acres with a free lease, while the Forest Service retained ownership.\footnote{Wicken, \textit{Pray for Snow}, 26.}

\textbf{Big Pines Recreation Camp: 1925-1941}

With the new lands secured, the County continued its construction of the camp facilities. First, a new road that was suitable for increased automobile traffic had to be
constructed. The highway was intended to open up the expanded area to further recreational development and enjoyment.175 A second lodge, known eventually as Big Pines Lodge, was built next door to the original lodge. This was to house a general store, post office, and dining hall/restaurant. A number of rental cabins were built on the slopes behind the lodge to serve as accommodations for the park patrons. (Figure3.3) The two lodges were connected by an elevated walkway constructed of rough stone masonry and unpeeled logs, lending to the rustic aesthetic of the park itself.176 (Figure 3.3) The architecture of the lodge was very similar to the first Recreation hall; both were Arts and Crafts with the rustic stylizations that were derived from the “National Park Rustic” style that had been created and popularized by the work of Gilbert Stanley Underwood and many of the his iconic buildings within the National Park system.177

![Figure 3.3: Swarthout Valley Lodge, Big Pines Recreation Hall, and cabins on the rear slope, circa 1933. Photo courtesy of Terry Graham.](image)

175 “County Starts Improvements.”
176 Krig and Van Houten, *Wrightwood and Big Pines*, 74-77.
177 Christine Barnes, *Great Lodges of the West* (Bend: W.W. West Inc., 2002), 123.
The iconic Big Pines gateway arch that spanned the highway adjacent to the Lodge and recreation hall was completed in 1926. It was designed by architect William Davidson of Los Angeles and served as an elevated pedestrian walkway, connecting the recreation hall and Big Pines Lodge with the central campground and recreation area across the highway. In addition to its programmatic role and function as a pedestrian bridge, it was fitted with a jail cell reserved for unruly park patrons. The gateway was composed of two massive turret structures on either side of the highway with a connecting arch. The gateway was composed of rough masonry and monumental in its massing. (Figure 3.4) It quickly became centerpiece of the park and a symbol of Big Pines’ golden age.

Figure 3.4: Big Pines Arch with the two lodges in the background, circa 1926. Photo courtesy of the Los Angeles Public Library/Big Pines View collection; image 00071050 (http://jpg3.lapl.org/pics43/00071050.jpg). Permission pending.

178 Krig and Van Houten, *Wrightwood and Big Pines*, 72.
Further development continued throughout the 1920s and 1930s. At its height of popularity, it was not uncommon for 10,000 people to come to Big Pines for a weekend.\(^\text{179}\) This made improvements to roads leading to, and around, Big Pines absolutely essential to the development of the area. The once seemingly impassible San Gabriel Mountains were soon made accessible so that people could flock to Big Pines from a number of directions.\(^\text{180}\) Maintenance programs in the summer, and snowplowing in the winter helped keep access open to the county park. Good roads were also fundamental for the park rangers and firefighters to have access to supplies and areas of Big Pines in event of a forest fire. This has been a constant consideration in managing the area.\(^\text{181}\)

Big Pines has three access points. Two are situated along the “Angeles Crest Highway,” or the eastern portion of California State Route 2, which was started in 1929, but would not be fully completed until 1956.\(^\text{182}\) The southern access on Route 2 is approached from Wrightwood, and the western access is an extension of the Glendale Freeway, which runs its course through the San Gabriel Mountains. The northern access point is along the “Big Pines Highway,” or County Road N-4, which ultimately leads out of the Angeles National Forest towards the Antelope Valley, the city of Palmdale, and the Mojave Desert.\(^\text{183}\) Los Angeles County built the Big Pines Highway and the southern access from San Bernardino via the Cajon Pass during the 1930s.\(^\text{184}\)

The recreational facilities underwent a widespread expansion during the 1930s. The Civilian Conservation Corps (CCC) built campgrounds, picnic sites, and campsites throughout the valley in the early 1930s. Some of the more established areas had large stone stoves for cooking, shower facilities, piped water, and electric lighting, while others were more modest with a simple fire-pit and cleared vegetation.\(^\text{185}\) A community of larger cabins, named McClellan Flats, was built on the slopes near Table Mountain to provide a

---

\(^{179}\) Krig and Van Houten, *Wrightwood and Big Pines*, 69.


\(^{181}\) Krig and Van Houten, *Wrightwood and Big Pines*, 107.


\(^{183}\) USDA Forest Service, “Big Pines Recreation Area.”

\(^{184}\) “World Ski Champions in Contests on Program – All rRads to County Playground Clear of Snow to Permit Trip Without Skid Chains,” *Los Angeles Times*, January 18, 1931.

\(^{185}\) Krig and Van Houten, *Wrightwood and Big Pines*, 92-93.
more modern and comfortable lodging option for the park supervisors and more influential patrons.\textsuperscript{186} Swimming pools, playgrounds, stables, rodeo grounds, fishing ponds, softball fields, further hiking trails, and expansions to Jackson Lake were all built to add to the recreational infrastructure within Big Pines. The Park staff also created a number of well-organized events, activities, classes, and festivals to further enhance the repertoire of recreation that one could enjoy while staying at Big Pines.\textsuperscript{187} The vision for the camp extended beyond just recreation and embraced early ideas of outdoor and natural education, by establishing an early wildlife park. It housed a number of different animals, including bears, reindeer, elk, and buffalo, which the patrons could visit and even feed. The park was ultimately disbanded and the animals were sent to zoos in the early 1930’s and most of the animals were moved to the Griffith Park Zoo in Los Angeles, except for the Bison, whom remained at Big Pines until 1939.\textsuperscript{188}

As mentioned previously, winter sports were particularly popular with the patrons of Big Pines. Part of this was through the promotion of winter recreation through the popular Big Pines Winter Carnival. Those native to Southern California saw the winter carnival as a fascinating novelty, whereas those originally from other regions that were no stranger to winter could embrace old activities for nostalgia with the promise of sunshine when they return to their homes.\textsuperscript{189} The several day spectacle of the Winter Carnival started to develop in the winter of 1926 with a large effort to promote winter sports, and would come to fruition in the early months of 1927.\textsuperscript{190} Jackson Lake was used for ice-skating and a new 20,000 square foot skating rink was built near the recreation hall to further increase the capacity for the sport.\textsuperscript{191} Trails were cut and cleared, often by the Civilian Conservation Corps (CCC), through the valley for ski touring, sleigh rides, and dogsledding. Tobogganing was also popular in the park. People would often slide down the hills that were abundant in the valley, but the park had also built special

\textsuperscript{186} Krig and Van Houten, \textit{Wrightwood and Big Pines}, 101.
\textsuperscript{187} Ibid, 94-98.
\textsuperscript{188} Ibid., 102-103.
\textsuperscript{189} “Snow Plentiful at All Near-By Mountains,” \textit{Los Angeles Times}, December 20, 1931.
\textsuperscript{191} “Winter Sports – Fact Sheet,” Los County Department of Parks and Recreation, 1938, courtesy of the California Ski Library, Wicken Collection.
toboggan slides out of sheet metal bent into a U-Shape and supported by wooden frames.  

Cross-country ski races would take place, as well as the famous “Mutt-Dog Derby,” which involved a race where children were pulled by dogs on small sleds. The most popular of all the events that took place was ski jumping, which could draw thousands of spectators who would come to see the professionals attempt to set new world records, as well as the amateurs who attempted to simply land without injury. In 1929, a new 1,150-foot ski jump, the world’s longest at the time, was built in the hopes that it would allow for Los Angeles to host not only the Summer Olympics in 1932, but the Winter Olympics as well. In its debut at the third annual Big Pines Winter Carnival, some of the

---

192 Krig and Van Houten, *Wrightwood and Big Pines*, 80-86.
194 Ibid.
world best ski jumpers were there to compete and set a number of world records. The Winter Olympics ultimately went to Lake Placid, NY, but the facility was still integral to the area and the development of skiing in Southern California.\textsuperscript{195} Big Pines would continue to expand their ski jumping facilities over the next several years, establishing it as one of the premiere ski jumping locations in the world. This included a series of ski jumps that would cater to beginners, novices, intermediates, and the professionals. With each passing year, a new world record was set on the slopes of Big Pines as international competitors awed the spectators that gathered around the outrun of the Master’s Jump, which is where the professionals and bravest amateurs competed.\textsuperscript{196} (Figure 3.6)

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image.png}
\caption{Crowd watches as ski jumpers compete at Big Pines, circa 1925. Photo courtesy of the Los Angeles Public Library/Big Pines Camp Collection; image 00070935 (http://jpg3.lapl.org/pics42/00070935.jpg). Permission pending.}
\end{figure}

\textsuperscript{195} Wicken, \textit{Pray for Snow}, 26-27.
\textsuperscript{196} Ibid., 28.
Ski touring was also a popular, and much more accessible, recreational activity at Big Pines. By 1935, the CCC had constructed and cleared four different trails that navigated over five miles through the forested slopes of the Big Pines area. (Figure 3.7) Each trail had its own characteristics and level of difficulty, which could range from very accessible to those that were steep and difficult enough that they warranted a warning from park officials. In addition to these trails, a ski lodge that provided overnight accommodation was constructed at the summit of Blue Ridge, which involved a 1,600-foot ascent.197 Ski touring, although much more accessible than ski jumping, was still a rigorous endeavor and did not capture the imagination of the overall public.

Figure 3.7: Big Pine Camp ski trail map, circa 1935. Image courtesy of the California Ski Library.

By 1934, there was a new skiing event on the Winter Carnival bill at Big Pines – slalom. This new event implemented the techniques from the emerging sport of downhill skiing. It was seen as much more enjoyable and much more accessible to the general public. Downhill skiing was still very rudimentary, with skiers hiking up the hill for just a few quick, yet enjoyable, descents down the slopes. With no lifts and few trails, the early skiers often were forced to share cleared areas that were used for sledding and tobogganng, which often resulted in crashes, confrontations, and injury. This created the need for ski specific trails and lifts, which not only made the day more enjoyable by eliminating the descent, it also established a circulation system that would improve safety by removing those ascending from the paths of those descending. By 1940, there were two rope tows – one at Table Mountain and one at Blue Ridge - in operation and several downhill skiing specific trails that were cleared of brush, vegetation, and stumps by the US Forest Service, the CCC, and a few enterprising individuals. (Figure 3.8) With these improvements, downhill skiing ultimately surpassed ski jumping in popularity and accessibility. In 1940 the once world-class ski jump at Big Pines was dismantled and replaced by a toboggan slide.

By 1934 the Great Depression was having an increasingly negative effect on the park’s operations. Los Angeles County began reaching out to the US Forest Service in the hopes that they would take Big Pines off their hands and incorporate the area back into the National Forest system. These negotiations were lengthy and contentious. By 1940, the US Forest Service and the County came to an agreement and Big Pines Recreation Area was re-incorporated into the Angeles National Forest in 1941.

World War Two meant that the activities in the park decreased significantly. The heyday of the Big Pines Recreation Park had, by and large, come to an end.

---

204 Krig and Van Houten, Wrightwood and Big Pines, 121.
The rise of Big Pines as an important area in winter recreation helped to institute the foundations for three individual ski resorts to be established within the area: Blue Ridge, Holiday Hill, and Table Mountain/Ski Sunrise. These small, often family-run, operations would grow substantially over the following decades. The three ski hills are all now incorporated as parts of the Mountain High resort area, which is one of the largest and most established ski hills in Southern California. (Figure 3.9)
Figure 3.9: Overlay map of contemporary Mountain High, illustrating the three originally independent ski hills, the contemporary names, as well as historic names. Diagram by author and Google Maps.
Blue Ridge/Mountain High West

Frank Springer and Tom Triol, two local ski enthusiasts, started to clear and develop a number of ski trails on the Slopes of Big Pines in the season of 1937-1938. (Figure 3.10) Their extensive efforts would result in the opening of the Blue Ridge ski area in 1941, which featured a rope tow and several trails that were situated on the site of the original Big Pines slopes.

Figure 3.10: Periods of development of Blue Ridge/Mountain High West. Illustration by author and Google maps.

---

205 Wicken, *Pray for Snow*, 166.
206 “History,” Mountain High.
The outbreak of the Second World War ground development of the area to a standstill and a fire in 1945 set Triol and Springer back as their lift system was destroyed. Undeterred, Springer installed a replacement rope tow that was considerably faster, featuring a sixty-five horsepower engine that powered the rope tow up the 600-foot slope. Another rope tow was planned and installed soon after, which opened up new terrain near where the Big Pines slalom course was once located and the Big Pines warming hut.207 With further investment, Triol and Springer pushed ahead plans for expansion and managed to complete Blue Ridge’s first chairlift in 1947 after over a year of work. The single chairlift was 2,000 feet long, covered a 700-foot vertical rise, and had the capacity to move up to 450 skiers per hour.208 (Figure 3.11) It extended from the bottom of the original Big Pines jumping hill to the summit of Blue Ridge. From there a skier could take one of the five main ski trails to the base. Three new trails and two new rope tows were installed near the top of the lift in the subsequent seasons.209

Figure 3.11: Blue Ridge single chairlift and lift line. Photo courtesy of the California Ski Library

207 “Western… Ski Slopes,” Western Skiing, October 1945, V.1 N.1, 3.
208 Information derived from Blue Ridge/Big Pines Advertisement in Western Skiing, March 1947, V.2 N.5, 28.
209 Wicken, Pray for Snow, 167.
The *Blue Ridge* operation was very small and lacked many of the formal buildings typical of ski hills. It relied heavily on the pre-existing facilities of the former Big Pines Recreation Camp, including the small dirt parking lot, which was located nearby. Shuttles transported skiers from the highway next to Big Pines Lodge up to the base of the lift. These shuttles were eventually made obsolete in 1955 when Springer and Triol constructed their second chairlift; a double chair that extended 2,000 feet from the road to the existing lift network, which also opened up new terrain to their patrons.\(^{210}\) (Figure 3.12)

Few improvements were made to *Blue Ridge* over the following two decades. In 1975 the ski hill, its few lifts, limited ski trails, and its rich history, were sold and incorporated as *Mountain High*.\(^{211}\) (Figure 3.13)

---


\(^{211}\) Ibid., 167.
Holiday Hill/Mountain High East

The early development of *Holiday Hill* was the product of a collaborative effort between John Steinmann and the ski hall of famer, Josef “Sepp” Benedikter. Benedikter, an Austrian-born downhill skiing pioneer, had been active in the United States for a number of years, most famously working as a ski school instructor at *Sun Valley*, Idaho for their premiere season in 1936-1937. Benedikter would travel around the United States in the following years, promoting skiing, and ultimately arriving in Southern California to establish the *Pine Needles Ski Slope* in North Hollywood for the summer of 1939. He would return to *Sun Valley* to resume teaching the following season. Although the Second World War effectively put a pause on most skiing operations, Benedikter remained in Idaho where he taught recreational skiing to soldiers stationed in the state, in addition to establishing a winter carnival for those who were at the Naval Hospital established at the then repurposed *Sun Valley*. Following the end of the Second World War, Benedikter arrived back in Southern California once again to establish the “Sepp Benedikter Ski School” in the region, which operated at many of the ski hills, but particularly focused on the Big Pines area.

---

214 “Sun, Moon, & Starlets,” *Ski Magazine*, December 1, 1948, 16-17.
While operating in Big Pines, Benedikter, whom had plenty of experience in planning ski hills, sought to establish his own operation adjacent slopes to Blue Ridge. The topography features a broad ridge that rises from the valley floor to intersect with yet another broad ridge, creating a series of steep canyons and bowls, as well as gentle slopes better suited for the beginner skier.215 Benedikter chose the location because of the northern exposure, established access infrastructure, and varied topography, which he claimed was “suitable for every need of the experience and inexperienced skier.”216 He started clearing six ski trails in the summer of 1948, making sure they were sure they were completely cleared of rocks so minimal snowfall would be required to operate. An 800 foot-long rope tow was installed for the 1949-1950 season, some of the earliest infrastructure of Holiday Hill.217 Benedikter had ambitious plans for the emerging ski hill, but lacked capital. In order to improve the budding operation, Benedikter formed a partnership with John Steinman, who invested heavily in Holiday Hill in preparation for the 1950-1951 season. This would include the installation of a new double chairlift that would measure 5,800 feet in length and have a rise of 1,600 feet; almost double the length of any other lift in the region.218 (Figure 3.15, 3.16) Benedikter had done much of the construction work for this new lift himself; installing the concrete foundations, clearing the lift lines, and building the lift towers from logs that remained from the clearing efforts. Despite these efforts, the partnership between Steinman and Benedikter became contentious, resulting in litigation and forcing Benedikter out of the operation in the late months of 1951.219

With Steinman as the sole proprietor, the expansions of Holiday Hill continued. By the beginning of the 1955 season, Holiday Hill had two chairlifts – a single (2,500’) and a double (5,800’) - two rope tows, toboggan hills, a skating rink, and a base lodge that included ski rentals, a repair shop, and a first aid station.220 (Figure 3.17)

217 Ibid.
218 Wicken, Pray for Snow, 171.
219 Ibid., 171.
Figure 3.14: Periods of development of *Holiday Hill/Mountain High East*. Illustration by author and Google maps.
Figure 3.15: The Benedikter chairlift at Holiday Hill. Photo courtesy of the Los Angeles Public Library/David Siddon Collection; image 00109397 (http://jgp1.lapl.org/00109/00109397.jpg). Permission pending.
Figure 3.16: Photo of Holiday Hill with double chairlift. Photo courtesy of the California Ski Library.
New trails were cleared, particularly an area called “Christmas Run,” which ran off the summit of Holiday Hill down a wide and gentle slope, which was perfectly suited for beginners and intermediates. In addition, a warming hut reminiscent of a goat house, aptly named “Heidi’s House,” was constructed at the summit of Holiday Hill that featured concession services, spectacular views of the surrounding area, and actual live goats. Another single chairlift was installed in 1954, which ran alongside the original double chairlift, but only went half the distance, providing a mid-mountain unloading point and alleviating some of the congestion that was already occurring. A brand new, single story, 4,000 square foot base lodge was constructed this year as well. (Figure 3.17) This lodge was much more modern in appearance compared to the Swiss influenced “Heidi House” that was at the summit of Holiday Hill. By the end of the initial expansion period in 1959, Holiday Hill had three rope tows, a double chairlift, and two single chairlifts. (Figure 3.18)

Figure 3.17: Postcard of Holiday Hill with base facilities, original double chairlift, parking lot, and “Olympic Bowl.” Photo courtesy of the California Ski Library.

---

221 Sims, “Speaking of Holidays,” 27.
222 Holiday Hill Advertisement in Far West Ski Association’s The Skier, November 1955, V.9 N.7, 6.
223 Wicken, Pray for Snow, 172.
Expansion of the facilities at *Holiday Hill* continued rapidly in the decade following. The summit lodge was replaced by a brand new facility (after the original burned down in 1968), larger and still featuring fantastic views. (Figure 3.19) Existing trails were widened; new trails were cut, and even the iconic “Olympic Bowl” was slightly graded in the hopes that it would not provide such an intimidating sight as it
was one of the most visually prominent features of the hill and was suspected of scaring off potential patrons.\textsuperscript{224}

The original chair was replaced by a considerably faster double chair in 1968, and the parallel single chairlift was converted to a double in 1974 in the hopes of further alleviating congestion.\textsuperscript{225} (Figure 3.20)

Just as with other ski hills in Southern California, the benefits of artificial snowmaking systems became apparent to the Steinman family, so in 1963, they installed their first snowmaking system, which was doubled and expanded upon every season following through the 1970s.\textsuperscript{226} The Steinman family sold \textit{Holiday Hill} in 1978. They had managed to turn the small rope tow operation of Sepp Benedikter into one of the most established ski hills in Southern California with four chairlifts, two poma-lifts, a rope tow, expansive paved parking lot, maintenance facilities, base lodge facilities, a newly remodeled “American Alpine” summit lodge, and a snowmaking system that covered seventy-five acres with manmade snow.\textsuperscript{227}

The new ownership started to make improvements, most notably a new beginner oriented ski area, but \textit{Holiday Hill} was bought again in 1981 before any major changes could be implemented. However, future changes were certain as the new owner was their longtime competitor and neighbor, \textit{Mountain High}.\textsuperscript{228} (Figure 3.21)

\begin{quote}
\textsuperscript{225} Wicken, \textit{Pray for Snow}, 171-172.
\textsuperscript{227} Holiday Hill Press Release, “Fact Sheet,” March 5, 1979, courtesy of the California Ski Library.
\textsuperscript{228} Wicken, \textit{Pray for Snow}, 172.
\end{quote}
Figure 3.19: New summit lodge at *Holiday Hill*, circa 1968. Photo courtesy of the California Ski Library.

Figure 3.20: Chairlifts and ski trails at *Holiday Hill*, circa 1974. Photo courtesy of the California Ski Library.
Figure 3.21: Photograph of Mountain High East, formerly Holiday Hill. Photo courtesy of the California Ski Library.
Table Mountain/Ski Sunrise/Mountain High North

Skiing on Table Mountain began during the 1920s when people, particularly the member of the Big Pines Ski Club, started to use the terrain for ski touring. Access was somewhat limited until 1926, when a dirt road was constructed from the valley floor to the summit to reach the newly constructed Smithsonian Institution Solar Observatory. The introduction of this road made the slopes of Table Mountain much more accessible to the early ski enthusiasts. As part of the Big Pines Camp area, Table Mountain’s recreational potential was developed through the efforts of the CCC during the 1930s. By the season of 1935-1936, two of the major ski trails in the Big Pines network: trails 1 & 1A began at the observatory and descended 800 feet of Table Mountain, providing the skier with differing levels of difficulty.

The Big Pines Ski Club, which had been steadily growing in members since skiing had become a popular recreational form at Big Pines Recreation Camp, was hoping to build a rope tow on the slopes of Table Mountain in 1936. The rope tow would not come to fruition until a Special Use Permit was established with the US Forest Service in 1939, which allowed for the construction of the lift and a warming hut. These efforts were spearheaded by Harlow “Buzz” Dormer, one of the founding members of the Big Pines Ski Club. Dormer was an experienced outdoorsman and early ski enthusiast who served as an Assistant Chief Ranger at the Big Pines Park for a number of years. His familiarity and expertise with the topography of the site and proved beneficial when he and others started to clear the trails, build the lift, and construct the warming hut that would eventually develop into the Table Mountain Ski Area. By the time the United States entered the Second World War, Table Mountain was outfitted with a single rope tow - 950’ in length with a rise of 200’ – a ticket booth, as well as a simple lunch stand. (Figure 3.22, 3.23, 3.24)

---

229 Wicken, Pray for Snow, 165.
230 W.A. Treadmill Jr., ”The Ski Hills of Big Pines,” Trails Magazine V.2 N.4, Autumn 1935, 25
231 Ibid., 70.
232 Wicken, Pray for Snow, 165.
Figure 3.22: Periods of development of Table Mountain/Ski Sunrise/Mountain High North. Illustration by author and Google maps.
Figure 3.23: Rope tow drive engine at *Table Mountain*. Photo courtesy of the California Ski Library.

Figure 3.24: Ticket booth at *Table Mountain/Ski Sunrise*. Photo courtesy of the California Ski Library.
One of the most interesting aspects of the landscape at Table Mountain that came out of these developments of the late 1940s and 1950s is its “upside-down” orientation.\textsuperscript{234} The majority of ski resorts follow the pattern where one parks adjacent to the base of the ski hill, then walks to where the lifts are situated, which then takes the skier up the hill for their descent. Where Table Mountain differed is that one parked near the summit of the ski hill and was able to descend the ski trails to the bottom of the lifts. These lifts then took the skier to their unloading terminus, which was either adjacent to the parking lot or situated above it, allowing for the skier to ski down towards the parking lot. This orientation of the parking facilities, ski trails, and ski lifts created a circulation of convenience that Table Mountain was very vocal about in their marketing of the ski hill.\textsuperscript{235} (Figure 3.25)

Howard More, an early ski pioneer from Colorado, bought the Table Mountain lease in 1943 and quickly set to upgrading and expanding the area in the hopes that it would become a popular destination once the war had been concluded and recreational activities could resume.\textsuperscript{236} When Table Mountain was able to open again for business for the 1945-1946 season, More’s efforts from the previous years were made clear when it was published that the ski area now had an operational warming hut, new ski trails, and two rope-tows that a skier could take in succession, equaling up to a length of 1,900’ and a vertical rise of 500’.\textsuperscript{237} Accessing these new lifts was still problematic as many were forced to park their automobiles down in the valley in the limited spaces surrounding the Big Pines Arch. From there one would take a shuttle to the summit, given that the roads had been cleared of snow. The need for an improved roadway and surface parking at the summit of Table Mountain became one of the most pressing concerns, which was addressed over the following seasons. By 1951, Table Mountain could boast having a fully paved access road and parking lot that could accommodate several hundred vehicles.\textsuperscript{238} Other improvements to the trails, lifts, and amenities were needed if the budding Table Mountain were to compete with the surrounding ski areas of Blue Ridge.

\textsuperscript{234} Table Mountain Trail Map,” c. 1955, courtesy of California Ski Library.
\textsuperscript{235} “Table Mountain Has Slopes for Everyone,” The Skier, V.9 N.7, January 1955, 6.
\textsuperscript{236} Wicken, Pray for Snow, 165.
and Holiday Hill. A new three-story day lodge was constructed for the 1952-1953 winter season. It was built of local stone and lumber that was acquired from the expansion and clearing of the adjacent ski trail network.\textsuperscript{239} The lodge housed ticket sales, administration offices, first aid facilities, concession services, a rental shop, and modern restrooms.\textsuperscript{240} The 2,700 square foot lodge was similar in style to many lodges of the time, evoking Tyrolean and Swiss Chalet forms, although executed in a more a much more American rustic interpretation. (Figure 3.27) There was a central fireplace comprised of native stone and an expansive sundeck that extended out from the lodge, offering views of the surrounding forest and the Mojave Desert below.\textsuperscript{241}

The expansions of the ski hill infrastructure continued so that by the season of 1955-56 Table Mountain featured a poma lift, seven rope tows, and an entirely new ski trails geared towards beginners and intermediate skiers.\textsuperscript{242} In the years following, Table Mountain was starting to experience a series of financial and operational issues. This was due in large part to poor snowfall, short operating seasons, and difficulty competing with the nearby resorts of Blue Ridge and Holiday Hill. One of the major issues facing Table Mountain in terms of competition was the type of terrain its ski trails offered skiers. The majority of the trails had a gentle incline, so they were cleared and widened to serve as ideal beginner and intermediate trails. This was included as part of their marketing campaign as they often branded themselves as a family-oriented ski hill, which was less crowded and more beginner friendly than the other ski areas in the Big Pines region.\textsuperscript{243} This niche of being a family hill was limiting, so expansion to include more challenging types of terrain was necessary.

By 1960, another poma lift was installed, 2,200 feet in length with a vertical rise of 754 feet. This new lift serviced an area that featured steeper terrain that was gladed and altered into an expansive bowl, contributing much more challenging terrain into the ski trail network of Table Mountain. (Figure 3.25, 3.26) Other trails in this new area were cleared and graded in a way that would allow more intermediate and beginner skiers the

\textsuperscript{239} “Table Mountain Ski Area Adds Facilities,” \textit{Wrightwood News}, V.1 N.4, December 1952, 2.
\textsuperscript{240} “Table Mountain Trail Map,” c. 1955, courtesy of California Ski Library.
\textsuperscript{241} “Table Mountain Ski Area Adds Facilities,” 2.
\textsuperscript{243} “Table Mountain Trail Map,” c. 1960, courtesy of California Ski Library.
option of an easy route to the loading terminal of this new lift. This area of expansion was ultimately closed off, although the remnants from the poma lift and trail alterations are still plainly visible.

Figure 3.25: Table Mountain Trail Map, circa 1960. Image courtesy of the California Ski Library.

244 Wicken, *Lost Ski Areas*, 74.
More, the owner of Table Mountain, was trying to combat the issue of poor snowfall by installing a snowmaking system, similar to those that were being installed at Holiday Hill and Blue Ridge. There is lengthy correspondence between More and the US Forest Service, outlining the concerns of both parties in relation to maintaining the watersheds of the region as well as being able to stay in business. More began his proposals in 1968 for the installation of wells and storage tanks for a snowmaking system, but the concerns for water levels and the previous use of the watershed for the other resorts of the area stalled the proposals and ultimately demanded further environmental review. This continued for several years, which lead to further frustrations at Table Mountain. In a letter to the US Forest Service from Howard More, dated May 26, 1972, More stated: “I have been almost overcome with discouragement when I

---

contemplate all of the obstacles which appear to lie ahead… I hope that we can accomplish the preliminary objectives we had hoped to accomplish in the 70-71 season, or 71-72 season, in the 72-73 season. To do this, we must try snowmaking on the areas requested in our original proposal.” In 1973, the year following this letter to the US Forest Service, More sold his operation to Tamount, Inc.

When Tamount, Inc. took control of Table Mountain, it possessed three poma lifts, three rope tows, some grooming equipment, the day lodge, fully equipped rental shop, and the small snowmaking operation that was limited to the beginner terrain and the trail west of the intermediate poma lift. It was under this new management that changes to the resort were planned, including a new chairlift, increased snowmaking, and a new name, Ski Sunrise, to further illustrate the transition of ownership.

Figure 3.27: The original day lodge rebranded. Photo courtesy of the California Ski Library.

---

The chairlift took several seasons to come to fruition, evolving from a triple to a quad chair, which was eventually installed in 1979. Tamount Inc. also had financial problems with the resort during its time of operation, which led to Howard More becoming the owner once again in 1993 after the operation was foreclosed upon. Upon receiving control of the ski hill again, More began investing approximately $360,000 in upgrading the lifts, acquiring new equipment, and expanding what small snowmaking the mountain possessed. This proved to be too little too late. Poor snowfall, limited snowmaking, lack of investment capital, and competition became far too overwhelming for the small ski hill. Ski Sunrise saw ridership of 12,000 during 1997-1998 season drop to just 750 the following season. Many of the lifts fell into disrepair or were closed with all efforts concentrated along the remaining quad chair and the ski trails it serviced. The 100-acre operation, its day lodge, and one remaining lift was sold to Mountain High in 2004.

Mountain High: 1975-2012

Mountain High first evolved from the remnants of the Blue Ridge ski area, which was sold by Springer and Triol to Dick Woodworth in 1975. The name change from Blue Ridge to Mountain High signaled the new ownership. Woodworth instantly started implementing his plans, which called for upgrades to the lift systems, a new sundeck and modern restrooms for the mid-mountain lodge, new ski rental equipment, and portable snowmaking systems. Prior to starting their first season under the new ownership, five new intermediate and beginner trails were cleared, and existing trails were cleared of buckthorn bushes that had taken root on the slopes. A new double chairlift was installed with the use of a helicopter, which transported the ten massive lift towers to their respective locations along the lift line up the slope. The use of helicopters in aerial ski lift installation is common practice in contemporary times, given the substantial weight of the lift towers, but the aforementioned instance was a first within the Angeles

248 Wicken, Lost Ski Areas, 74.
249 Wicken, Pray for Snow, 166.
250 Wicken, Lost Ski Areas, 74-75.
251 Ibid., 167.
National Forest. It was recognized that a modern base lodge was required in order for *Mountain High* to assert itself in the already competitive region. Temporary structures were put in place to address the immediate lack of proper base facilities and Woodworth purchased the historic Big Pines Lodge, which was then renovated and used by the resort. The following season, additional improvements to the landscape began when the US Forest Service approved *Mountain High’s* Ski Area Master Plan. This plan outlined a number of projects for the 1977-1978 season, including a new 2,100-foot double chairlift; a new lodge with septic systems, installation of lights for night skiing operations, and ski trail improvements that required grading. The plan also outlined substantial expansion of their snowmaking system with over 21,000 feet of underground piping, twenty-one snow guns, new wells, a new pump house, relocation of a 250,000-gallon water storage tank, and a new 450,000-gallon storage tank for their water reserves. Regardless of a positive reception to these changes and improvements, the resort became mired in financial troubles when the primary shareholder of *Mountain High* went bankrupt during the 1978-1979 season.

Terry Tongnazzini, the owner of several hotels and avid skier, bought the resort and continued to make improvements. In 1980, *Mountain High* had been expanded to include the new double chair included in the previous master plan, two new triple chairs – 3,360 and 1,060 feet long – new lighting for night skiing, a 1,300,000-gallon water storage system for snowmaking, and new compressors. Ski trails also were the focus of a lot of work with the expansion of six of the major runs, as well as the creation of steeper terrain oriented for advanced skiers. (Figure 3.28)

---

257 Ibid., 167.
Figure 3.28: *Mountain High West*, formerly *Blue Ridge*. Photo courtesy of the California Ski Library.
A new beginner ski slope and ski school area was cleared on the site of one of the old Big Pines campgrounds, adjacent to the Big Pines cabins. The cabins themselves were renovated and provided an onsite accommodation option. This area featured was 400 feet wide on a gentle slope and featured its own beginner-oriented chairlift that was 1,200 feet in length and moved at a slower pace allowing for easier loading and unloading. (Figure 3.29) New infrastructure projects were conducted as well, with particular focus on drainage pipes, culverts, and a paved surface parking lot at the base lodge that could accommodate 1,100 automobiles. The parking lot measured 230,000 square feet and required over twenty feet of elevation to be removed from the preexisting hill, which was then used as fill for the expansion of the lower parking lot facilities.

Figure 3.29: Mountain High East ski school on beginner slopes with base area below. Photo courtesy of the California Ski Library.

258 “Get a Mountain High,” The Skier, November 1, 1980, 9.
Mountain High expanded exponentially once again in 1981 when Tongnazzini acquired the neighboring Holiday Hill, integrating it into the operation as Mountain High East, making the ski area one of the largest and most popular in Southern California.²⁶⁰ (Figure 3.30)

![Mountain High Trail Map](https://example.com/mountain-high-map)

Figure 3.30: Mountain High trail map with West (right) and East (left) areas illustrated, circa 1981. Photo courtesy of the California Ski Library.

Improvements continued under Tongnazzini, with the addition of a new intermediate ski trail, wider existing trails, further expansion of the snowmaking system, increasing lift capacity, and the introduction of California’s first high-speed detachable quad chairlift, the “Mountain High Express.”²⁶¹ The new chair was located on Mountain High East and could transport 2,000 skiers per hour to the top in just six minutes, whereas the Steinmann era chair that ran parallel could only transport a fraction of the people in over double the amount of time.²⁶² During this time attendance had reached 350,000 skiers a year, making Mountain High the second most visited ski hill in the region. This declined significantly in the following years, particularly during the early 1990s, as the Southern Californian economy slowed down and capital for further

²⁶² Wicken, Pray for Snow, 172.
improvements became harder to acquire. This was somewhat alleviated with the introduction of snowboarding, which *Mountain High* sought to promote and capitalize on with the introduction of snowboard lessons to their ski school program in 1990.

Business continued to decrease regardless, which left the existing base lodge facilities - a collection of portable trailers filled with nothing more than video games and vending machines - in an increasing state of neglect. This, in addition to the 14-25 year old male “newcomers,” managed to deter many skiers, particularly families, from coming to *Mountain High* and using their facilities.

Tognazzini ended up selling *Mountain High* in 1997 to Mountain High Holdings, Inc, part of the venture capital company Oaktree Capital Management, which immediately started working on the ski hill. They instigated an aggressive marketing campaign and made improvements to the operations of the ski hill, as well as aesthetic improvements to the base facilities at both resorts. All of these efforts resulted in 1998-1999 being one of the best seasons with almost 400,000 skiers and snowboarders coming to *Mountain High*. The new owners continued to invest millions of dollars into the ski hill, which included the removal of the “Blue Ridge Triple” chairlift and the installation of *Mountain High*’s second high-speed “Blue Ridge Express” quad chairlift. Improvements to the lift systems and snowmaking system of *Mountain High East* and *West* would continue over the following decade.

*Mountain High* would expand again in November 2004 with the purchase of the *Ski Sunrise* operation, renaming it *Mountain High North*. This newly acquired 100 acre area would largely stay inoperable, until the 2011-2012 season when the former *Holiday Hill* beginner slopes were converted to a tubing park.

---

263 “History” *Mountain High*.
268 Ibid., 174.
269 Wicken, *Lost Ski Areas*, 75-76.
Contemporary Mountain High

*Mountain High* exists on 515 acres of the Angeles National Forest, which is permitted for special use as a ski hill. Of that permitted acreage, 219 acres are considered skiable with 80% of that terrain having access to artificial snowmaking. The season typically starts in November and finishes in April and typically operates seven days a week, but this is subject to snowfall levels and weather conditions. *Mountain High* is comprised of the three original resorts that make up the *East*, *West*, and *North* locations. Although each area is within the operation of *Mountain High*, they are occasionally marketed as individual resorts, stressing the specific qualities and amenities of that particular area. (Figure 3.31)

Although the three areas are considered to be part of the same resort, the developmental history, present condition, and overall lack of physical integration with each other means that each area – *East*, *West*, *North* – shall be addressed as individual spaces.

<table>
<thead>
<tr>
<th>Resort</th>
<th>Surface Lift*</th>
<th>Double Chair</th>
<th>Triple Chair</th>
<th>Quad Chair</th>
<th>Beg. Trail</th>
<th>Int. Trail</th>
<th>Adv. Trail</th>
<th>Exp. Trail</th>
</tr>
</thead>
<tbody>
<tr>
<td>West</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>12</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>East</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>North</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*All surface lifts are of the “Magic Carpet” conveyor belt type.

Figure 3.31: Comparison of *North, East, and West* Resorts Lifts and Trails (2013-2014 season). Figure by author.
Mountain High West, which evolved from Blue Ridge, is the main area of the resort and features the primary base lodge, administrative offices, maintenance facilities, après ski location, ski school, and other amenities. (Figure 3.32) It has 1,000 feet of vertical and is where the resort’s night skiing infrastructure is situated. The terrain caters to skiers of all ability, with a number of advanced runs, as well as the primary beginner slopes. This area is also oriented towards a younger demographic with terrain park features that are located throughout the ski trail network, après ski facilities, and concert venue spaces.270

Figure 3.32: Periods of development of Blue Ridge/Mountain High West. Illustration by author and Google maps.

270 All information for this section, unless stated otherwise, was accessed through the Mountain High Resort Website, March 10, 2014, http://www.mthigh.com/.
**Mountain High East**, which evolved from *Holiday Hill*, has 1,600 feet of vertical and has some of the longest ski trails in Southern California. (Figure 3.33) It is known for its more traditionally alpine orientation and advanced technical terrain, including glades, bowls, and mogul trails. Although much quieter and less busy than *Mountain High West*, it still features many amenities, including base lodge facilities and summit restaurant.

Figure 3.33: Periods of development of *Holiday Hill/Mountain High East*. Illustration by author and Google maps.
Mountain High North, site of the former Table Mountain and Ski Sunrise, is seldom operated as a ski hill, but still offers 600 feet of vertical over seventy acres of beginner oriented terrain. (Figure 3.34) Most of the former advanced terrain is no longer accessible by ski lifts and remains permanently closed. These closed areas, original lodge, and remnants of the earlier ski hill operations contribute to the historic integrity of this particular area, which *Mountain High* outlines in their descriptions and marketing of the *North* resort. This area of the resort is now used for the “North Pole Tubing Park.” This involves sliding on inner tubes down large landscaped slides and chutes that have been constructed adjacent to the parking lot. One series of chutes has a steeper grade than the other, allowing for “fast” and “slow” alternatives. These tubing facilities have two of their own specific surface lifts from the tubing slide outruns to the top. *Mountain High North* is also where the summer “disc-golf” facilities are installed, which ensures the continued utilization of the landscape and association with the historic fabric that remains.

Figure 3.34: Periods of development of *Table Mountain/Ski Sunrise/Mountain High North*. Illustration by author and Google maps.
CHAPTER 4 - CONSERVATION OF SKI HILLS

The notion of ski hills as landscapes worthy of conservation efforts is a relatively new concept. It first became apparent with the rise of environmental awareness in the 1960s and 1970s, following the exponential increase in ski hills of the postwar years.\(^ {271}\) The expansion of ski hills created a number of environmental issues: waste disposal, watershed depletion, deforestation, destruction of wildlife habitat, and other issues more indicative of an increasingly urbanized setting. This expansion of ski hills also resulted in the creation of large destination ski resorts. Resort property management companies often bought these larger ski hills and implemented them as a central element to develop vacation real estate, leading to the development of massive ski resort villages and towns. Many see these large-scale ski resorts as a corporate interpretation of what an ideal and picturesque ski town, often drawing a comparison to Disneyland in its fabrication.\(^ {272}\) This heavily engineered and orchestrated environment, although popular with the majority of skiers, was not enough to satisfy all. The craving and pursuit of an “authentic experience” is as alive in the recreational sub-culture of skiing as it is in any other cultural facet of our societal makeup. This, in combination with a nostalgic appreciation for the colorful history and traditions of the sport, has created the impetus to conserve the ski hills and significant landmarks of the skiing and snowboarding community.

LANDSCAPE CONSERVATION FRAMEWORK

Practices of conserving the built and natural environment is a process that has been evolving for centuries, but has only been codified in the U.S. by a regulatory framework in the last fifty years. The National Environmental Protection Act and the National Historic Preservation Act are the fundamental pieces of legislation in these fields.\(^ {273}\) These documents addressed the conservation of natural and historic resources, but did so in a way that viewed the two as being separate. Buildings, sites, structures, and


objects were viewed differently than the natural environment, even though these elements have a direct correlation with each other. In the last few decades there has been serious discussion about how these two forms of conservation are inherently intertwined, particularly through the exploration cultural landscapes.

**Types of Cultural Landscapes**

Cultural landscapes are often complex resources that can vary greatly in size and scale, which feature a combination of natural and topographical aspects in conjunction with some form of human interaction. In a sense, almost any aspect of our environment could be addressed as a cultural landscape. The conservation of all landscapes is impractical and completely unattainable as the environment is very dynamic and ever-changing. However, landscapes of significance warrant conservation. These means that in order to successfully and realistically conserve cultural landscapes, a balance between “change and continuity” must be established and maintained.274

In order to better understand the concept of cultural landscapes, the National Park Service has outlined four specific types:

1. **Historic Designed Landscapes** – “a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturalist according to design principles, or an amateur gardener working in a recognized style or tradition… Aesthetic roles play a significant role in designed landscapes.”

2. **Historic Vernacular Landscapes** – “a landscape that evolved through use by people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes.”

3. **Historic Site** – “a landscape significant for its association with a historic event, activity, or person.”

4. *Ethnographic Landscape* – “a landscape containing a variety of natural and cultural resources that associated people define as heritage resources.”

These definitions, although helpful to conceptualize and identify the complexity of cultural landscapes, are rigid in their orientation. Ski hills can be in several of the aforementioned categories.

They are *historic designed landscapes* in that many ski hills are carefully planned when it comes to ski lift circulation, trail development, and the siting of base facilities. They are *historic vernacular landscapes* through the association of natural and topographical features through use. For example, free-ride snowboarders use vegetation, rock outcroppings, and other elements as features in their descent, often attributing associative ownership towards these elements. A ski hill could be a categorized as a *historic site* if it was the host location of the Winter Olympic Games. Lastly, a ski hill could be significant in the *ethnographic* sense because of the role that Scandinavian or Germanic immigrants had in the proliferation and development of the sport in North America.

**Cultural Landscape Conservation**

As with the conservation of other significant historic resources, the primary form of protection and recognition is through listing on the National Register of Historic Places, which is administered by the National Park Service. Although cultural landscapes do not have their own individual category on the National Register, they are evaluated as either historic sites or districts under the same criteria. This requires a detailed nomination form that details the historic development of the place, evaluation of significance through thematic contexts, documentation of existing conditions, and an evaluation of integrity. This is a particularly intensive task given the complexity of cultural landscapes.

---


In order to conserve a cultural landscape, there is a great deal of documentation, research, and planning involved, through the use of the Cultural Landscape Inventory (CLI) and Cultural Landscape Reports (CLR). The CLI is a database that includes all cultural landscapes that the National Park Service has legal interests in. It provides information regarding history, integrity, management plans, and treatment recommendations of these landscapes. Much of this information comes from the CLRs, which are the primary documents that outline the historic context of a cultural landscape and the appropriated treatments, as well as management procedures, in order to successfully maintain the landscapes significance. These are multi-disciplinary documents requiring research in history, architecture, geology, archaeology, engineering, anthropology, geography, horticulture, and ecology.277 With all of these facets to consider, CLRs are documents that require highly professional consultation in order to appropriately identify, document, evaluate, and create a treatment/management plan for the cultural landscape in question. Once this information is established, the appropriate conservation technique can be chosen.278

As with other historic resources, there are four main conservation techniques that can be implemented: preservation, restoration, reconstruction, and rehabilitation. Each treatment has a specific set of standards and guidelines in order to successfully manage a cultural landscape without detracting from the historic significance. Where cultural landscapes differ from other resources is they often include treatments that also pertain specifically to the natural and ecological aspects of the environment, which are significant within the context of the landscape. This includes specimen plant management, vegetation systems management, pest management, and endangered species.279

CONSERVATION PRECEDENTS & CHALLENGES

Environmental Conservation

Skiers traditionally hold a high esteem for the natural setting in which they practice their sport. Ironically, skiers are also responsible for having a negative impact on the very environment they utilize.\(^{280}\) This dichotomous relationship that exists between skiers and the natural environment presents a difficult set of circumstances when trying to approach the issues surrounding conservation. The 2011 ski film, “All.I.can.” produced by Sherpa’s Cinema, helped to illustrate this point by taking the contemporary environmental issues and placing them within the context of skiing. Many of the professional skiers interviewed in the film expressed their realization that when they push the sport to new limits and go further into the backcountry, they are ultimately opening up that terrain to further use by humans. This love of the sport and love of the exploring the natural environment is somewhat self-destructive and is certainly self-perpetuating.\(^{281}\) Regulations have been established in order to reduce and manage the impact of skiing on the environment.

Ski hills that are located within National Forests are subject to a set of environmental regulations, set forth in “The National Forest Ski Area Permit Act of 1986” (NFSAPA).\(^{282}\) This legislation enables the U.S. Forest Service to deny special permits to those ski hill operators that are implementing practices that are not compatible with National Forest management plans, other U.S. Forest Service objectives, or are no longer suitable in terms of use for National Forest lands.\(^{283}\) Environmental issues surrounding ski hills in National Forests, and elsewhere, include increasing use of lands, air quality, water quality, increased development, and lasting effects on flora and fauna. Ski area operators are fully aware of their extensive environmental footprint, as well as their dependence on the success of that environment in order to continue operation. Environmental stewardship is becoming an increasingly primary component of ski hill

\(^{280}\) “Chapter 7: Management of Cultural Landscapes,” 75-77.
\(^{283}\) Ibid.
master plans all over the United States, but particularly within the National Forests.\textsuperscript{284} However, some environmental conservation issues are beyond the management and jurisdiction of the U.S. Forest Service and similar agencies.

In recent years, snowfall and season length have become erratic. Artificial snowmaking is a method that is being employed to combat the unpredictable tendencies of natural snowfall, but these counter efforts are only enough to avoid immediate bankruptcy, rather than provide a profitable season. The financial health of a ski hill is still directly correlated with consistent and substantial snowfall. Artificial snowmaking also has an impact on local hydrology and watersheds as these systems employed by ski hills rely on underground wells, reservoirs, and other storage systems to accumulate the water necessary for snowmaking. The reality is that artificial snowmaking could have a lasting negative effect on water supplies when climate change is increasing the severity of drought conditions in particular regions.\textsuperscript{285} The implications of this are not only distressing for ski hills, but also dire for the overall population.

Climate change is one of the most pressing issues that we face in our contemporary society. The effects of climate change have resonated in countless ways with a degree of severity that extends beyond recreation. That being said, the ski and snowboard community has come out as some of the most vocal advocates for mitigating climate change. Organizations, like Protect Our Winter (POW), Save Our Snow (SOS), and others, were established to spread awareness of how climate change is impacting snow sports and what can be done, both by an individual and at the international level.\textsuperscript{286} Other organizations, like the “Ski Area Citizens Coalition,” monitor and evaluate the policies and practices of individual ski hills for their efforts towards reducing their environmental impact and increasing sustainability.\textsuperscript{287} The discussion of environmental

\textsuperscript{284} Briggs, “Ski Resorts and National Forests.”
issues is constant in the dialogue of our contemporary society, but this it is absolutely paramount within the skiing and snowboarding community.

**Base Lodges, Villages, and Facilities**

The ski lodge is one of the more identifiable features of the ski hill typology. As such, they have received the most attention in terms of conservation in comparison to other elements of the landscape. The conservation issues surrounding ski lodges are site specific and vary respectively, but they have often been pursued within the existing framework that is used for the conservation of buildings. As such, the conservation of ski lodges has had the same varying degrees of success as other building types in terms of eligibility. Some lodges have been designated, including the highest designation of National Historic Landmark, while others have been demolished or altered to a point where little integrity exists.\(^{288}\) (Figure 4.1)

![Figure 4.1: Front elevation, with ground floor entrance of National Historic Landmark Timberline Lodge, Mount Hood, Oregon. Photo courtesy of the Library of Congress/Historic American Building Survey; call number HABS ORE,3-GOCA.V,1—6 (http://www.loc.gov/pictures/item/or0356.photos.044737p/).](image)

\(^{288}\) Information for this section has been extracted from William Chad Blackwell, “Silver Slopes: Preserving North America’s Ski Lodges” (MHP Thesis, University of Georgia, 2005).
Given the dynamic nature of the ski industry and the changes that have occurred in the sport, the preservation of lodges has proven to be extremely difficult. In William Blackwell’s Masters of Historic Preservation thesis entitled “Silver Slopes: Preserving North American’s Ski Lodges,” Blackwell outlines this sentiment:

This unique building type, designed and built for a singular purpose, poses significant problems for preservationists. Ski lodges that continue to be used as base lodges for a ski area have constantly adapted to significant changes in ski technology over the course of the twentieth century. Interior and exterior alterations to the lodge are a requisite for the continued financial viability of any operational ski area. Ski lodges in abandoned ski areas often prove difficult to adapt to new uses not associated with the ski area given the unique and specific purpose for which they were constructed.289

This is true not only for ski lodges, but for many of the other base facilities as well.

The buildings and structures that make up the base facilities of a ski resort can vary greatly in appearance and functionality. It can range from highly architecturally stylized tourism amenities to utilitarian and simplistic maintenance facilities. Regardless of appearance, the buildings in a base village make up a functional landscape where each building has a role to play within the overall context of the ski hill. One strategy to conserve these utilitarian buildings, which are often overlooked in relation to the more aesthetically pleasing lodges, is to consider the base area, or village, as a district. There are currently no examples of a base village listed on the National Register. However, Sun Valley’s village, which is significant for its role as a prototype for North American ski resort development, was found to be eligible in 1989.290 (Figure 4.2) Sun Valley was not listed due to lack of consent from the owner and reasoning behind this was the perceived restrictions that listing would put on future development and alterations.291

290 Ibid., 32-33.
291 Ibid., 32-33.
Ski Lifts

As with many aspects of a ski hill, ski lifts are not often conserved. As of 2010, less than 1% of fixed grip chairlifts were installed prior to 1960, with 83% of fixed grip chairlifts installed after 1970. The single chairlift - one of the fixed grip type lifts mentioned - makes up an even smaller percentage with only one fully operational example at Mad River Glen in Vermont. (Figure 4.5) The competitive nature and growth of the ski industry since its inception has meant that developments in lift design and technology were essential to the financial success of many operations. The speed, capacity, distance, and orientation within the circulation network of the hill itself were all factors that determined whether a lift was successful. Generally, once a ski lift is seen as too inefficient, creating bottlenecks as skiers line up at the loading terminal, a hill

---

operator would investigate replacing it with a new lift that could move more patrons at a faster rate. Ski lifts are one of the most common elements within the ski hill typology to be replaced or altered.\textsuperscript{294}

Safety is another considerable factor in the longevity of a ski lift. Ski lifts are rigorously monitored for safety concerns by the ski hill operators and are required to do so by state and federal law. When the ski hill is located within a U.S. National Forest, the U.S. Forest Service specifically monitors and outlines the safety aspects of the operation and maintenance of the ski lift.\textsuperscript{295} Generally ski lifts are very safe with the majority of accidents equating to the error of a particular patron rather than the operation of the lift.\textsuperscript{296} Many of the early lifts were rudimentary in construction, often being the work of an individual, rather than the standardized and regulated lifts of today, so they are viewed as being particularly haphazard. However, contrary to public perception, all ski lifts can operate safely if the proper maintenance and inspections are conducted, regardless of their age and installation date.\textsuperscript{297}

Comfort of the skier is also a factor when lift systems are evaluated in terms of longevity, especially when oriented for beginners. Many of the early surface lift types – rope tows, T-bars, poma lifts – are infamous for not only being uncomfortable, but for being physically demanding on those using them. Many beginners found these lift types very difficult to use, so they have been removed from most beginner slopes in favor of the “magic carpet.” The magic carpet is essentially a moving walkway, or conveyor belt, that transport skiers up the slope.\textsuperscript{298} These factors of lift capacity, safety, and comfort have all contributed to the mass disappearance and removal of rope tows, most surface lifts, and single-rider chairlifts. There are only two ski lifts that have been listed as individually significant resources on the National Register of Historic Places: \textit{Sun Valley’s Proctor Mountain Ski Lift} and \textit{Aspen’s Boat Tow}.\textsuperscript{299}

\textsuperscript{294} Hawks, “NSAA Ski Lift Safety Fact Sheet,” 10-11.
\textsuperscript{295} Ibid., 9-10.
\textsuperscript{296} Ibid., 8.
\textsuperscript{297} Ibid., 12.
\textsuperscript{299} Other ski lifts are included on the National Register as contributing resources to historic districts. These examples will be discussed in the following sections.
The Proctor Mountain Ski Lift was engineered and constructed by James Curran as one of the first two chairlifts for Sun Valley in 1936. As such, it is one of the first chairlifts to have existed not only in the United States, but also in the world. The Proctor Mountain Ski Lift served as the premier ski lift model for modern ski hill development on a global level. Although it is no longer operational, this crucial component of ski hill evolution still remains largely intact and is formally recognized as a significant structure on the National Register.\textsuperscript{300}

The Aspen Boat Tow was constructed in 1937, a decade before the formal ski area of Aspen was founded. The Boat Tow lift was a unique type of surface lift that implemented a series of twelve foot-long toboggans and old industrial equipment that was left over from the town’s mining era. (Figure 4.3) The toboggans, or “boats,” were dragged up the slope by cables alongside wooden towers, none of which are extant. All that remains are two of the boats, which are located next to Aspen’s first chairlift, which is also inoperable, but retains integrity. In spite of its incomplete nature, the remaining elements of the Boat Tow are listed on the National Register as objects.\textsuperscript{301}

**Ski Trails**

Ski trails are arguably the easiest part to conserve in the short term, although they present their own unique set of challenges. At ski areas that are still in operation, the trails are maintained and utilized consistently. Many trails have been altered over the years. The most common alteration is the widening of a trail by clearing the vegetation that borders and defines the trail. However, this usually has a minimal impact on the trail’s orientation and appearance. An operator might also reduce the gradient of a slope, or provide a traverse trail that would alter the verticality of the original run by imposing a horizontal trail, occasionally in a switchback pattern. These alterations are sometimes hard to visually observe, but have an effect on the skier’s experience on the trail by reducing the potential speed and interrupting the vertical continuity of a ski trail.


The biggest concern, not only with ski trail conservation, but ski trail management, is erosion. Granted, erosion and weathering are unavoidable challenges that can effect the conservation of any cultural landscape on an extensive timeline; however, the removal of vegetation from a particular trail without the proper remediation techniques would result in erosion at an increased rate.\textsuperscript{302} In order to address erosion of ski trails, the introduction of low-profile vegetation types to the exposed slope is necessary. This practice not only helps to reduce erosion of the slope and provide a more appealing aesthetic during other seasons, it also helps to maintain snow cover when the ski trails are in use.\textsuperscript{303}

There are abandoned ski hills throughout North America that are easily identifiable because of the ski trails that are still evident. The removal of vegetation and potential erosion of the slopes has left the remnants of these trails visible and clear as to their original function as character defining features of the ski hill typology. (Figure 4.4) Depending on the duration of functional obsolescence, the regrowth of vegetation along these abandoned ski trails have remained limited and the original form and appearance of the trail remains largely intact. Ski trails easily retain their integrity, even after years of functional obsolescence, which is beneficial when addressing issues of conservation.

There are currently no ski trails listed as individual resources on the National Register of Historic Places.


\textsuperscript{303} Ibid., 4.
Figure 4.3: Aspen Boat Tow. Photo courtesy of the National Park Service/National Register for Historic Places, image number 9000086 (http://pdfhost.focus.nps.gov/docs/NRHP/Photos/90000866.pdf).

Figure 4.4: Abandoned ski trail at Mountain High North with evident erosion patterns. Photo by author.
Other Typological Elements

Lodges, base villages, ski trails, and ski lifts are the most recognizable features of the ski typology. However, as was previously discussed, there are other components that can be attributed to a ski hills. Utilities systems, natural features, snowmaking systems, parking facilities, access types, and circulatory implements are all elements that are not recognized as being individually significant, but all are essential within the overall context of a ski hill.

The recent addition of the terrain park to the ski hill typology has some interesting implications as well. Outside of the very first manifestation of the terrain park at the Tahoe City Dump, and the professional level features that require earth moving, terrain parks are ephemeral creations. They are redesigned at least once a year and are often rearranged throughout one season to create different experiences and challenges for the skier or snowboarder. This means that the terrain park may not hold integrity in the sense outlined by the Secretary of the Interior’s Standards and Guidelines. In addition, the sport of snowboarding and slopestyle skiing are not fifty years old, let alone the invention of the terrain park, meaning that these elements do not meet other criteria of evaluation. However, this is not to say that a terrain park is not significant within the ski hill typology, as previous chapters have illustrated. The retention of a terrain park in form, albeit different in design from the original feature orientation, may be significant in and of itself.

Ski Hills as Cultural Landscapes and Historic Districts

Approaching ski hills as cultural landscapes is one of the most recent, and certainly the most comprehensive approach. The complex and interconnected nature of ski hill typological elements lends itself to this level of evaluation and designation. Historic districts can be composed of elements that might not be significant individually, but within their context and adjacent to other elements, would contribute to the significance of a space. It is with this recognition of cultural landscapes – under Historic Districts as stipulated by the National Park Service – that ski hills are currently listed on the National Register of Historic Places.
The first ski hill listed on the National Register is *Mad River Glen*, which was formally included in 2012.\textsuperscript{304} This Vermont ski hill was established in 1947 and has undergone very few alterations since then, retaining the original 1947 single chairlift, which is the only operational single chairlift remaining in the United States. The cultural landscape evaluated a number of typological elements as buildings, sites, and structures. Buildings include lodges, other shelters, ski patrol offices, the ski repair shop, utility sheds, and other maintenance related facilities. Sites included natural features of the landscape (waterfalls, rock outcroppings, caves, tree groves, streams), and ski trails, which were inventoried extensively and identified either as contributing or non-contributing, based upon their construction date and the relation to the identified period of significance. Structures identified consisted of the ski lifts, as well as the operating buildings and landscape elements that are associated with the lift system. (Figure 4.5) Miscellaneous features, such as the parking lot and components of the snowmaking system, were also evaluated for significance within the context of the ski hill. Of the resources identified, forty-five were found to be contributors and thirty-seven were considered non-contributors, although eighteen resources will be eligible for contributor status once they are fifty years old.

The second ski hill on the National Register, which was included July 2013, is the *Leavenworth Ski Hill* in Chelan County, Washington.\textsuperscript{305} *Leavenworth* is evaluated in a very similar way as the previous example, although on a much more simplistic scale. Buildings, structures, and sites are all evaluated within the context of the overall location and period of significance. Buildings evaluated include a base lodge, restroom facilities, a ticket booth, and maintenance facilities. Structures consist of the remaining CCC era ski jump and the rope tow operator shack. Where this resource differs from the *Mad River Glen* example is how the sites are evaluated. Instead of approaching each ski trail and


\textsuperscript{305} All information for the following section, unless cited otherwise, was acquired from: Susan Johnson, “Leavenworth Ski Hill Historic District- National Register of Historic Places Nomination Form,” United States Department of the Interior – National Park Service, October, 2012, accessed March 7, 2014,
landscape element as individual contributing resources, the landscape in its entirety is treated as one single contributor.

Figure 4.5: Tower 4 Mad River Glen single chairlift, Vermont, circa 2006. Photo courtesy of the Library of Congress/Historic American Engineering Record; call number HAER VT-38-23 (http://www.loc.gov/pictures/item/vt0134.photos.222658p/).
Mad River Glen was identified as a significant cultural landscape and was nominated as a historic district, according to the process outlined by the National Park Service. Leavenworth, on the other hand, was identified as a historic district and evaluated as such, with most of the evidence placed upon the buildings. Both methods achieved the same goal in becoming listed on the National Register; however, approaching the ski hill as a cultural landscape is clearly the more comprehensive and stronger evaluation/nomination process.

By examining the landscape holistically, the number of contributors can be raised significantly, which is very important to a successful nomination. The number of contributing elements must outnumber the non-contributors. With the historic district approach, the landscape is considered one single contributing resource. By comparison, the cultural landscape approach identifies all of the elements imbedded within the landscape as resources and greatly increases the number of contributors. With the importance of the contributor to non-contributor ratio, having the entire landscape as one resource, rather than vast collection of resources, means that the framework of the resources protection is skewed. For example: if some ski trails lost integrity in the event of a forest fire, the cultural landscape approach would still retain other contributors to keep the ratio intact and the protection viable. If the same scenario occurred within the framework of the historic district approach, the entire landscape could be considered non-contributing, ultimately skewing the ratio and leading to the removal of the resource from the National Register. This situation is entirely hypothetical, but illustrates the comprehensive approach of how evaluating these sites as cultural landscapes provide a different level of protection through the cohesion of all the contributing landscape elements.

Part of the confusion between these two approaches is that although they are very different, they are evaluated as the same resource: historic districts. This presents the need for a specific cultural landscape methodology in the evaluation/nomination process. Alternatively, with the possibility of increasing our understanding and protection of historic districts, perhaps historic districts should always be approached as cultural landscapes. The aforementioned examples of ski hills on the National Register present
some interesting nuances about the conservation of ski hills in the current framework. However, neither of these precedents are the most comprehensive examples in existence.

In August 2009, a “Determination of Eligibility” report was produced for the Badger Pass Ski Area in Yosemite National Park.306 The document evaluates the cultural landscape of Badger Pass Ski Area by examining the following major categories: vegetation, topography, spatial organization, land use, circulation patterns, buildings, structures, small-scale features, views, and vistas. Individual elements and resources within these categories are listed and analyzed within the context of the cultural landscape and its determined significance. This all-inclusive approach to the ski hill as a cultural landscape accounts for all major elements within the ski hill typology. Although the site is not yet registered on the National Register of Historic Places, the “Determination of Eligibility” report for Badger Pass provides an important precedent for how to address the conservation of ski hills as cultural landscapes.

CASE STUDY: MOUNTAIN HIGH

Natural Systems & Features

Mountain High is located within the Swarthout Valley, approximately four miles west of Wrightwood, California.307 (Figure 4.6) The ski resort is comprised of three areas – North, East, West – that were established and primarily developed independent of each other. The East and West components are situated on the slopes of the Blue Ridge geographic feature, which is characterized by steep slopes and a rounded precipice. The two areas are on different slopes of Blue Ridge and are separated by a broad spine that stems from the valley floor to the summit of the ridge. The East resort base is located on the valley floor at 6,600 feet and extends vertically up to 8,200 feet. (Figure 4.6) The West area base is at 7,000 feet and is located on a small plateau above the Swarthout Valley floor. The West resort extends vertically up to 8,000 feet above sea level. The

307 Information included in this section, unless otherwise stated, is largely a reiteration of information included in Chapter 3.
North area is situated on the adjacent Table Mountain, which is across the Swarthout Valley from the other resorts. This geographic feature has a vertical summit of 7,800 feet.

The relatively dry climate is an important feature of the Mountain High area. During the summer months, the threat of wildfires is a constant concern. For winter operation, the dry climate can result in poor snowfall or have lasting effects on the water table the ski hills depend on for their artificial snowmaking systems. Reservoirs have been installed at the summits of the East and West resorts to help supplement the snowmaking system and reduce the reliance on groundwater wells and impact on the local watersheds.

Figure 4.6: Swarthout Valley with Mountain High East in the distance. Photo by author.

Spatial Organization

Mountain High’s spatial organization is largely dictated by its developmental history as three separate ski areas. Although it is now operated as a single ski area, it lacks cohesion and is still reflective of the independent ski hills. In this way, the current spatial organization still conveys the historic development of the landscape. The original spatial organization was heavily influenced by the creation and development of the Big
Pines Recreation Park, which was instrumental in the development of downhill skiing within Southern California. The three original ski hills developed from the context of the original Big Pines site in the 1940s and 1950s and are located adjacent to the main access route of the Big Pines Highway. The proximity between these three resorts spurred a great deal of competition, which in turn created the demand for increased facilities and amenities. This pattern of independent development continued until the late twentieth and early twenty-first centuries, when the resort was consolidated into a single resort.

Each ski hill is organized upon the premise of several key elements. The first involved developing ski trails on different slopes to create a variety of skiable terrain that would cater to beginners, intermediates, and those with advanced skills. Slope gradient, topographical transitions, circulation, vegetation patterns, and lift access were fundamental considerations. The second involved convenience. All three areas reflect this. *Mountain High East*, which is viewed as having challenging terrain, developed areas referred to as “beginner canyon” and “Christmas trail” to cater to beginner skiers. (Figure 4.20) *Mountain High North* developed an area east of the main ski trails in the 1960s intended to provide a more advanced alternative to their beginner oriented slopes. (Figure 4.22) *Mountain High West* developed all levels of terrain in their expansion efforts following its transition of ownership in 1975. (Figure 4.19)

The second important component to spatial organization is convenience for the skiers. Having easy access to base facilities and ski lifts from adjacent parking lots was important in the spatial organization of these places. *Mountain High West* developed a parking lot and base facility system that eliminated the need for taking a shuttle from the valley floor. *Mountain High East* was fortunately situated in a convenient manner since its inception. The base facilities and loading terminals for the ski lifts are situated within a large flat meadow, which allowed for having a large parking lot in the immediate vicinity. *Mountain High North*, as noted earlier, has a particularly unique spatial organization for a ski hill. Its “upside down” orientation meant that the parking lot was situated near the summit of Table Mountain; meaning skiers accessed the top of ski trails immediately from their cars.
Land Use

The land use of Mountain High is primarily for winter recreation. Winter recreation, specifically downhill skiing, was the driver for development and the formation of the landscape. Ski trails, ski lifts, parking lots, access, base facilities, snowmaking infrastructure, utilities, and terrain parks were all fundamental components that stemmed from winter recreational uses. However, in recent years there has been the introduction of summer activities - specifically “Frisbee golf” at Mountain High North - in the hopes of diversifying the operation outside of skiing. (Figure 4.7) Since the Big Pines area was originally developed as a year-round recreational facility, the recent addition of summer activities does not detract from the historic significance. In fact, the introduction of summer oriented recreational activities is an appropriate adaptive reuse for the ski hills.

Figure 4.7: Hole 6 on “Frisbee-Golf” course at Mountain High North. Photo by author.
Circulation

The separate development of the East, West, and North areas as competing ski hills means that they each have their own circulation patterns. The common circulation element that the three areas share is the primary access route of the Big Pines Highway. (Figure 4.8) Beyond that, they are all independent from each other.

Mountain High West has an access road leading from the main highway to the plateau that features the parking lot that was expanded in the 1980s. (Figure 4.9) From there, one buys their lift tickets from the base lodge offices and proceeds to the ski lift loading terminals. There are also series of maintenance roads that provide access to the summit of the ski hill.

Mountain High East’s circulation pattern remains unaltered from its original state. The parking lot is located in the meadow space at the base of the ski hill with the base lodge and ski lift loading terminals in the immediate vicinity. (Figure 4.15) Maintenance roads extend from those of Mountain High West and continue to the summit of the East section.

Mountain High North retains its circulation patterns as well, which are particularly significant. The road from the Big Pines Highway to the summit of Table Mountain was opened in 1951, eliminating the need for shuttles to transport skiers up to the ski hill. (Figure 4.10) This allowed for patrons to drive straight to the surface parking lot. This was immediately adjacent to the ticket office and top of the ski trails. The “upside-down” circulation is a unique pattern that was specific to the topography, but was executed in a way that established a circulation pattern that was very convenient for skiers. (Figure 4.11) This is one of the central character defining features for the North resort.
Figure 4.8: Intersection on Big Pines Highway with Big Pines Lodge and remnants of the Big Pines Arch. Right turn-off leads to *Mountain High West*, far left to *Mountain High North*. Photo by author.

Figure 4.9: *Mountain High West* parking lot with lodge on right. Photo by author.
Figure 4.10: Road from Big Pines Highway to *Mountain High North*. Photo by author.

Figure 4.11: *Mountain High North* “upside-down” orientation with parking lot at top of “North Pole Tubing Park.” Photo by author.
Vegetation

The selective clearing and retention, primarily as a way of defining ski trails or allowing for the development of other necessary typological components, shaped the vegetation patterns of all three ski areas. Vegetation provides the necessary boundaries and framing of many trails, as well as providing features and obstacles that can increase the difficulty of the trail or contribute to the experience of the skier. The slopes that have been cleared previously now feature low-profile vegetation types as a way of combatting erosion of the ski trail, as well as mechanisms for maintaining snow coverage during the operational season. One of the biggest threats to vegetation in this landscape is from forest fires. Fire is a common threat in this particularly dry region and is closely monitored by the U.S. Forest Service.

Buildings & Structures

*Mountain High West*, the primary ski area of the resort, is where most of the buildings and structures are situated. Since it is the focal point of ski activities, it is also where recent development has occurred. Most of the facilities are from the periods of development that followed the change of ownership of the resort in the 1970s through the 1990s. (Figure 4.12) There are a series of cabins located along the beginner oriented ski trail of “Easy Street,” which date to the Big Pines Recreation Camp era. (Figure 4.13) Of the lifts that are in place, only the “Exhibition Chair” remains from the *Blue Ridge* era, the rest have been installed in the decades following. (Figure 4.14) The parking lot was expanded and paved in 1980. Utilities and snowmaking continue to receive upgrades in recent seasons, attracting the majority of development.

*Mountain High East* retains some of its original buildings. The 1953 base lodge remains, although in an altered state. (Figure 4.15) The original summit lodge burned down in 1968, but was promptly replaced with a new restaurant and lounge that still remains. It too has been altered, but relatively minimally. There has also been the addition of maintenance facilities adjacent to the base lodge. The parking lot remains, although it has since been paved and expanded in the decades following its original grading for *Holiday Hill*. (Figure 4.15) The lift systems are not original and have been replaced since the 1980s.
Figure 4.12: Base lodge at *Mountain High West*. Photo by author.

Figure 4.13: Cabins adjacent to “Easy Street,” *Mountain High West*. Photo by author.
Figure 4.14: “Roadrunner” and “Coyote” double chairlift loading terminals, Mountain High West. Photo by author.

Figure 4.15: Mountain High East “Olympic Bowl and original base lodge.” Photo by author
Mountain High North retains many of its original structures, including the 1952 Table Mountain Lodge, as well as many of the original buildings associated with lifts. (Figure 4.16) The area is now used primarily for the “North Pole Tubing Park,” which has lead to the addition of two “magic carpet” type surface lifts. The main quad chairlift is also a recent addition, dating to 1979. The other lifts – poma lifts and rope tows - are inoperable and in a state of disrepair, but remain largely intact. (Figure 4.17, 4.18) Many of the towers and machinery that were essential to the operation of these lifts remain to this day.

Figure 4.16: Original Table Mountain Lodge at Mountain High North. Photo by author.
Figure 4.17: Table Mountain rope tow drive terminal at Mountain High North. Photo by author.

Figure 4.18: Table Mountain 1960 poma lift drive terminal at Mountain High North. Photo by author.
Landscape Features

The primary landscape features are the ski trails. At Mountain High West, the original five ski trails remain, although they have been widened considerably since their first development. The ski trail network was expanded again in the 1980s, so little remains of the original network. The current ski trails include a variety of terrain that caters to skiers and snowboarders of varying proficiency. (Figure 4.19)

Mountain High East has undergone similar alterations to its network by the widening and grading of trails, particularly in the beginner oriented areas along the “Easy Rider” and “Discovery” chairlifts. (Figure 4.20) The majority of the ski trails, although having been altered in ways as well, retain their original appearance and orientation, still conveying their significance as character defining features. The ski trails, for the most part, still catered to those seeking a traditional and challenging alpine skiing experience, but beginner trails do exist.

Mountain High North has been altered with the addition of the recent “North Pole Tubing Park,” although most of the ski trail systems remain unaltered. This includes the original beginner areas that are adjacent to the parking lot, as well as the 1950s-1960s advanced expansion on the eastern part of the mountain. (Figure 4.21, 4.22)

All three areas were oriented in a way that was to provide views and vistas from an outwards perspective of the surrounding terrain, as well as from an inward perspective that focuses within the ski hill areas and frames of the ski trails. The outward perspective focuses on the Swarthout Valley, the San Gabriel Mountains, and the Mojave Desert. One of the more interesting views that can be experienced is from Mountain High North. The “upside down” orientation of the ski hill allows for an inward and outward perspective, simultaneously. The ski trail serves as an axis that opens up to a view of the Mojave Desert below, presenting the interesting dichotomy between desert and snow. This unique view lends further to the theme of Southern California being a region of sun and snow. (Figure 4.23)
Figure 4.19: Michigan High West on Blue Ridge. Photo by author.

Figure 4.20: Surface parking lot and “Easy Rider” chair and beginner area at Mountain High East. Photo by author.
Figure 4.21: Original *Table Mountain* ski trail at *Mountain High North*. Photo by author.

Figure 4.22: 1960s advanced terrain *Table Mountain* expansion. Photo by author.
Figure 4.23: Ski trail at Mountain High North looking out over the Mojave Desert. Photo by author.

Analysis

Although Mountain High is considered one ski hill by name, the physicality of the place truly reflects upon its history as three separate ski resorts, each with a unique narrative that reflect upon the development of the sport, the specific area, and the overall ski industry.

Mountain High West, the central component to the Mountain High operation, is by far the most altered. As the former location of the ski jumps, slalom course, and a few of the original ski touring trails of Big Pines Recreation camp, this area was central to the development of downhill skiing. However, with most of the development occurring after 1975, much of the integrity and original fabric has been altered and incorporated into the current fabric of the ski hill. The five original trails do remain, as well as some of the original Big Pines resources, but much of the context has been lost. This is not necessarily negative. The story that the landscape of Mountain High West tells is one that resonates throughout many ski hills, reflecting upon the increasingly corporate development of contemporary ski hills. In addition, this site is by the far the most significant of the three in relations to the development of snowboarding. The narrative
that *Mountain High West* provides for skiing and snowboarding will likely continue, as development efforts are most likely to stay concentrated on this area of the overall resort. It is within this evolutionary context that skiing and snowboarding will be encouraged to develop, lending to potential conservation through rehabilitation and reuse in the future.

*Mountain High East* is an area that retains many of its character defining features. The main issue surrounding the conservation of this hill is its functionality. In the 2013-2014 season this section was not open to the public due to poor snowfall. The continued use of this space as a ski hill is certainly a question that needs to be addressed. The rehabilitation and reuse of *Mountain High East* through the diversification of recreational activities is certainly a possibility, however the difficult and advanced nature of the ski trails might not be characteristically suitable for other activities, particularly that of mountain biking. In its current state, other recreational options should be explored, although activities that would require invasive infrastructural adjustments would be detrimental to the remaining integrity of this particular ski hill. The most immediate and ideal use would be its continuation as a ski hill. This could warrant investigating into innovative snowmaking systems that have an increasing emphasis on sustainability. At *Mt. Buller*, one of Australia’s only ski hills, they have an arid climate very similar to *Mountain High* and are also experiencing decreasing snowfall. They have initiated a water-recycling program that uses recycled gray water and purified waste-water in their snowmaking systems, which helps to alleviate some of the pressures on the stressed aquifers and tributaries of the region.308 These practices could prove beneficial in the longevity of *Mountain High* as an operational ski hill.

*Mountain High North* is the area that retains the most character defining features and is most accessible in terms of conservation efforts. Although the ski hill is largely inoperable, aside from the “North Pole Tubing Park,” many of the original features that were developed as *Table Mountain* – lift towers, buildings, ski trails, views/vistas, vegetation, utilities, access, parking facilities, etc. – remain to this day. (Figure 4.24, 4.25) This includes several examples from each of the aforementioned categories that were used in evaluating the space as a cultural landscape: landscape features,

buildings/structures, circulation, vegetation, natural systems/features, and spatial organization. The one category of analysis that does not retain integrity is that of land use. *Mountain High North* is largely abandoned and functionally obsolescent as a ski hill. It is, however, still used for recreational purposes through the “Frisbee-golf” course that operates during the course of the off-season. This recreational activity employs many of the trails for the circulation of the course. It does so in a way that is not original with the intended design, but ultimately provides a non-invasive way to reuse and experience the cultural landscape of *Mountain High North*. With the existing quad chair, well cleared trails, relatively gentle slopes, beautiful views of the Mojave desert, and “upside-down” orientation, this particular area would be well suited to accommodate mountain biking as a recreational form. Albeit more invasive than the “Frisbee golf” use that exists currently, it would provide a recreational use that would be consistent with the original use, circulatory patterns, and function. This combination of obsolescence as a ski hill and high retention of character defining features would make *Mountain High North* an ideal candidate for rehabilitation and reuse as an experimental precedent that could be exported and employed to other abandoned, yet significant, ski hills in North America.
Figure 4.24: Table Mountain era poma lift unloading terminal. Photo courtesy of the California Ski Library.
Figure 4.25: *Table Mountain* era poma lift unloading terminal at *Mountain High North*. Photo by author.
CONCLUSION

As illustrated in the previous text, ski hills are complex cultural landscapes and can vary in a number of ways. The major typological elements and necessary components have been established, outlined, and analyzed to provide a holistic framework in order to address the conservation of these spaces. The typology built in chapter one should be applicable to any ski hill, from the most humble, family operated area, to the major destination resorts in North America. The previous conservation efforts of ski hills were discussed and analyzed to provide a holistic evaluation methodology for the evaluation of these landscapes. In addition, the evaluation of the current efforts within the context of skiing in Southern California illustrates many of the issues that ski areas will soon be facing, particularly the challenges related to climate change. All of the above ultimately provides the necessary tools to evaluate ski hills as cultural landscapes with a forward-looking perspective, yet within the contemporary conservation structure. However, the discussion of conserving ski hills is far from over.

Skiing is a sport that is practiced throughout the world, so the ski hill will be a cultural landscape type that appears on a relatively global scale. The typology and subsequent conservation efforts presented in this paper are specific to the sport as it exists in North America. Further study could involve a comparison of how other countries and regions are addressing significant ski hills and their unique typological, as well as cultural, conditions. Exploring international cultural landscape conservation could be taken further. It would be interesting to examine how cultural landscapes are being evaluated and conserved on a greater scale and how those methods could be applied to the North America and, perhaps, significant ski hills.

Another issue is something that one could call ski hill gentrification. In the fourth chapter, a news publication that discussed the displacement of local skier populations in Whistler, British Columbia outlined the desire of many locals to have a hill that was more reflective of an idealized skiing past.309 Although not conservation in a physical sense, the desire to conserve intangible cultural aspects through establishing a new tangible environment has some merit. Effectively, what has occurred in these major ski

---

destinations is a form of gentrification where the alterations to a recreational landscape have displaced previous populations through the gentrification aspects of increased costs, higher rent, and the loss of cultural spaces of significance. Given the corporate nature of ski hills and the increasing global competitiveness of the ski industry, these are largely unavoidable. The study of how, or if, populations subject to this ski hill operation are coping and adapting within the framework of these evolving cultural landscapes.

With the increased globalization of the ski industry and the tourism industry, it has been an increasing trend of young adults travelling to other regions, or countries, for working holidays at ski hills. For example: in Western Canada, a small minority of employees are Western Canadian, whereas the overwhelming majority come from the eastern provinces or overseas; particularly Australia, the United Kingdom, New Zealand, Germany, Sweden, South Africa, Ireland, and the Czech Republic.\textsuperscript{310} These populations are there temporarily to work with very few turning seasonal contract employment into a year-round permanent position. Although this is not a socio-cultural trend that has been exhibited at Mountain High, it is a phenomenon that has affected other ski hills in North America. It would be interesting to see how these internationally diverse transient populations are affecting the cultural landscapes and heritage makeups of the ski hill typology.

Although snowboarding has been touched upon and identified as a significant component to the development of the contemporary ski hill, snowboarding history is still somewhat unknown. This is because the development of the sport is still seen as a recent development and not seen as particularly “historic” when compared to the development of skiing. However, the impact that snowboarding has had on the ski hill typology, as well as the sport of skiing itself, is plainly evident. As such, significant snowboarding landscapes merit further study, particularly the proliferation of terrain parks and the conservation of these largely ephemeral elements.

The effects of seasonal diversification in relation to the conservation and ongoing use of ski hills are another topic that should be examined in the future. If the grim climate change trends and predictions are true, skiing is an endangered cultural activity. The

further study of the rehabilitation and reuse of these spaces through other recreational forms could be essential to the continued conservation and appreciation of ski hills as cultural landscapes.

One aspect of ski hills that is beyond the scope of this thesis is their orientation in terms of design. It was acknowledged that ski hills are often developed in particular ways that are meant to be efficient, yet provide the skier with an ideal experience through slope grade, sinuous spaces, open prospects, and compressed areas. Design perspectives on how the outlined typological elements interact could contribute further to the perception and understanding of the ski hill as a cultural landscape.

Lastly, the analysis of the ski hill conservation precedents raised some interesting questions about the evaluation/nomination process for both historic districts, as well as cultural landscapes. The holistic and all encompassing evaluation of a collection of resources as a cultural landscape appears to establish a greater understanding of the intricacies of a resource by taking into account elements that are not traditionally viewed when strictly approaching a resource as a historic district. A comparative study of historic districts and cultural landscapes within the framework of the National Register of Historic Places could have profound implications for the field of heritage conservation. It would also be beneficial to explore the theoretical background and variance of definition within the conceptualization of cultural landscapes and how that may affect further conservation efforts.
BIBLIOGRAPHY


Big Pines Winter Sports Carnival Brochure, courtesy of the California Ski Library, Wicken collection.


“County Starts Improvements.” Los Angeles Times, March 8, 1925.


“Ski Trails at Big Pines.” Trails Magazine. V.2 N.4, Autumn 1935.


“The New Big Pines – Playground for All.” Western Skiing, April 1947, V.2 N.6: 11


“Western... Ski Slopes.” Western Skiing, October 1945, V.1 N.1: 3.


“World Ski Champions in Contests on Program – All Roads to County Playground Clear of Snow to Permit Trip Without Skid Chains.” Los Angeles Times, January 18, 1931.