

PRESERVING THE EXPERIENCE: A LOW IMPACT APPROACH TO LANDSCAPE  
MANAGEMENT AT LECONTE LODGE IN THE GREAT SMOKY MOUNTAINS  
NATIONAL PARK

by

WILLIAM SHEALY

(Under the Direction of R. Alfred Vick)

ABSTRACT

LeConte Lodge predates the Great Smoky Mountains National Park and has continually been a vital part of connecting park visitors with the wonders of the Park's backcountry. Since its inception, LeConte Lodge has impacted the natural systems of the mountaintop. In the mid 1970's the wilderness movement pushed for the closure of the Lodge and Environmental Impact Studies conducted on the National Park Service's behalf recommended closure. The Lodge was not closed, but had many restrictions placed on its operation. This thesis aims to provide recommendations for the management of LeConte Lodge in a manner that seeks to preserve not only the natural systems of the mountaintop but the experience that repeatedly brings visitors to the Lodge. Assessment of current management policies, evaluation of similar lodging operations, cataloging of the characteristics that define the LeConte Lodge Experience, and comparison of past and present research is used to guide recommendations.

INDEX WORDS: Appalachian Mountain Club, compost toilets, Great Smoky Mountains National Park, Herrick Brown, High Mountain Huts, Jack Huff, landscape management, landscape management plan, LeConte Lodge, Len Foote Lodge, Mount LeConte, Mt. LeConte, Myrtle Brown, Paul Adams, Pauline Huff, Smoky Mountains, Sperry Chalet, Xanterra

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BS, University of Tennessee, 1998

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment  
of the Requirements for the Degree

MASTER OF LANDSCAPE ARCHITECTURE

ATHENS, GEORGIA

2005

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## DEDICATION

This thesis is dedicated to Katie Gohn, my wife, trusted proof reader, personal librarian and best friend. I would not have finished graduate school or this project without you. Thank you.

## ACKNOWLEDGEMENTS

During the many months that it has taken me to complete this thesis, I have relied on many wonderful individuals who have been willing to provide information, research assistance, editing, technical support, and most importantly their time. I am indebted to these individuals and would not have been able to complete this project without their support. I would especially like to thank the following individuals: my Major Professor, Alfie Vick, for his patience, abiding enthusiasm and punctual editing suggestions; my reading chair, Mary Anne Akers, for her interest and willingness to participate in this project; Ian Firth, for encouraging me to change my topic a second time and offering your expert advice and Laurie Fowler, for your willingness to serve on my committee and your fondness for LeConte Lodge.

I have also had the wonderful opportunity to utilize the expertise and abilities of many individuals during this process. I extend my personal gratitude to each and every one of you for your assistance especially, Leah Gardner, Sandie Walker and Brad Wilson for your help in surveying; Cherie Cordell, for being available to discuss LeConte plants and landscape management; Katie, my wife, for your support throughout this project and the prior three years of projects; Annette Hardigan, GSMNP Librarian, for your willingness to provide research assistance; Joel Ossoff, GSMNP Concessions Manager; for providing me with vital information regarding the LeConte concession; Tim Line, LeConte Lodge General Manager and my favorite former employer, for your consistent willingness to answer questions, send maps and allow me to visit the Lodge; Chris and Allison, current on-site LeConte Lodge Managers, for making me at home on my visits and your insight into the current Lodge operations; Heather McKee, Len

Foote Lodge Education Manager, for taking the time to provide me with detailed information regarding lodge programs and operations; Rob Burbank of the Appalachian Mountain Club, for your time in educating me on the policies and technologies that lower the environmental impact at your progressive lodging operations; Al Bedinger, engineer and LeConte Lodge historian, thank you for your propane system maps, written histories of the Lodge and commitment to the conservation of LeConte Lodge.

Lastly, I want to thank my professors and fellow classmates at the University of Georgia. It has been a challenging, yet fun-filled, last three years. I will miss all of you. And to my family and friends, thank you for all of the support and encouragement you have provided throughout this project. They say it takes a village—this thesis is proof of that. To all the villagers I have failed to mention—Thank You.

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## CHAPTER ONE:

### Introduction

In the Southern Appalachian mountain range, several mountains rise over a mile in height. One of these, Mount LeConte, located in northeast Tennessee, rises to 6,593 feet above sea level. Kenneth Wise writes in his book *A Natural History of Mount LeConte*, “Mount LeConte is often depicted as an anomaly, an outpost of the Appalachian chain. It stands five miles northwest of the main spine of the Smokies, and its summit consists of a high short ridge extending from Myrtle Point to West Point and running parallel to the main divide. The mountain is linked to the main divide by the Boulevard, a steep-sided crooked ridge that joins Mount LeConte at Myrtle Point and the Smoky divide at Mount Kephart.”<sup>1</sup> Figure 1.1 describes the area in which Mount LeConte is located. Because of its offset location, Mount LeConte is visually prominent in the landscape of many East Tennessee towns located to the north of the mountain. Named after South Carolina physics professor John LeConte in 1858, Mount LeConte has become an icon for the Great Smoky Mountains not only for its highly visible profile but for the vistas one can see when standing atop the peak.<sup>2</sup>

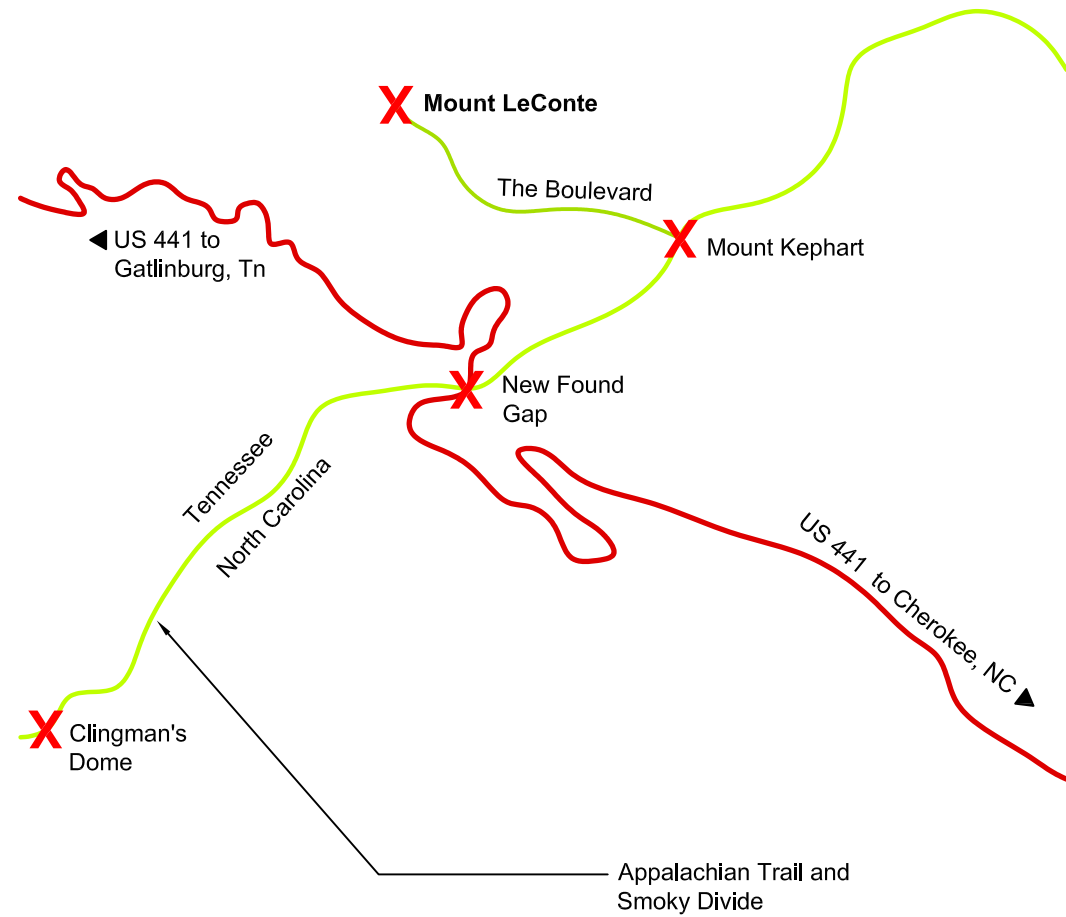
Nestled in a protected saddle atop this fourth highest peak in the eastern United States, LeConte Lodge offers a backcountry lodging experience for the adventurous Great Smoky Mountains National Park (GSMNP) visitor. LeConte Lodge began as a sparse tent camp in 1925 with the purpose being to serve influential GSMNP supporters who hiked to the mountaintop to get a view of the proposed national park lands from the many different overlooks. Having served

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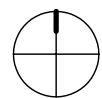
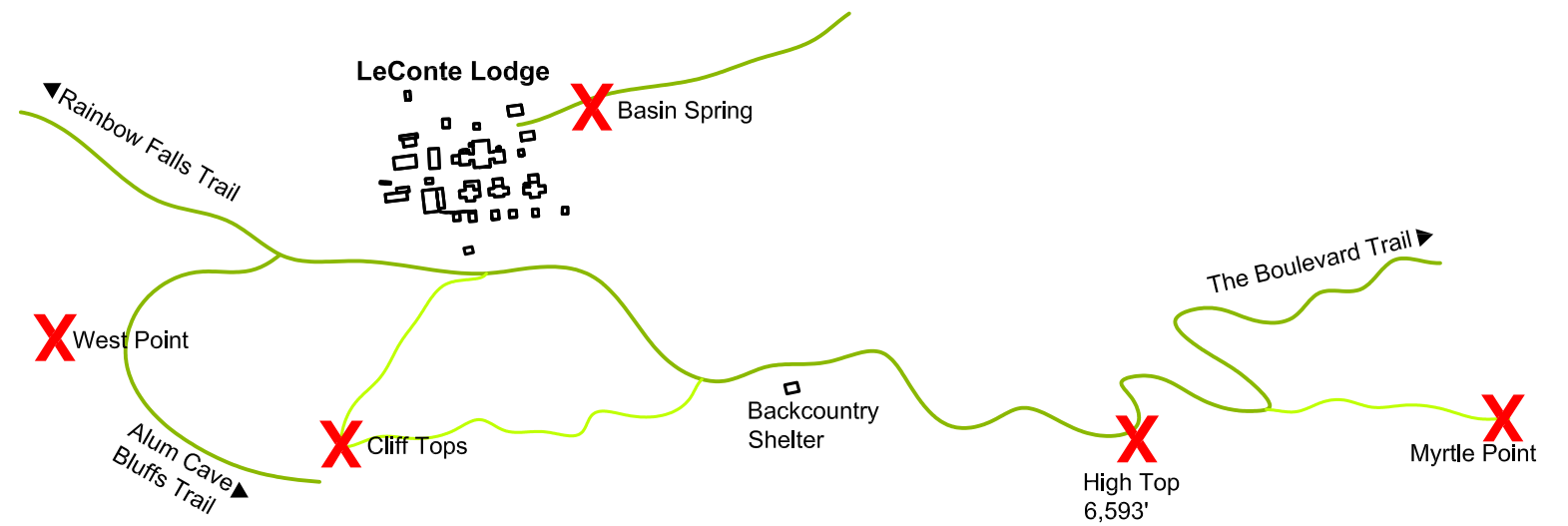
<sup>1</sup> Kenneth Wise and Ron Petersen, *A Natural History of Mount LeConte* (Knoxville: The University of Tennessee Press, 1998),xxi.

<sup>2</sup> Wise,xxv.

### Smoky Divide Great Smoky Mountains National Park



### LeConte Lodge Area Great Smoky Mountains National Park



North  
No Scale Specified

Figure 1.1 Location Map

**Location Map**  
**LeConte Lodge**  
Landscape Management Plan  
William Shealy  
May 2005

this initial purpose well, LeConte Lodge has remained in continuous operation since its opening in 1925.

Currently, LeConte Lodge is open to guests from the third week of March until the third week in November. To reach the Lodge, visitors must hike to the summit along one of five strenuous hiking trails; the longest being an eight mile trek along a high elevation ridgeline and the shortest a five and a half mile trail that climbs nearly 3,000 feet in elevation. During the Lodge's operating season, an average of 12,000 guests are served with an average of 50 guests per night. The rustic facility can sleep up to 67 guests in its 10 free standing lodging structures and serve up to 60 guests in the Lodge dining room. In addition to Lodge guests, a day hiking visitor population is estimated to outnumber Lodge guests by three or four times. These day hiking visitors come wishing to survey the long vistas available from the mountaintop. Joining these guests is a small, but constant stream of backpackers coming to stay in the nearby 12 person GSMNP trail shelter.

The success of this GSMNP concession is undeniable. Reservations at LeConte Lodge are not easy to come by with individuals having to make their reservations over a year in advance. Reservations are taken beginning October first for the next year's season. Day hikers routinely ask for a night's accommodation only to be turned away because the Lodge is full nearly every night of the operating season. The success of LeConte Lodge is in part due not only to the natural beauty of the mountain, but to a large number of avid guests who return annually and inform others of the wonderful mountaintop accommodations. Though LeConte Lodge is a successful business operation, the success has also taken its toll on the mountaintop's natural resources.

In 1977 the operation was nearly closed by the NPS to create a continuous wilderness area. This plan sought to erase all trace of human development in the GSMNP backcountry. Such a plan would remove both the Lodging facility and the back country shelter. With a satisfied constituency from 50 years of operation, this plan was highly unpopular with the general public. By 1983 the NPS decided that the Lodge and shelter would remain in operation, but with many restrictions that would help lessen the disruption to the mountaintop. Many of these restrictions have helped to improve the health of the mountaintop with minimal impact to the experience of the visitor. The current Lodge operation can continue on this path by adopting new initiatives and policies that will help to further reduce the operations impact on the natural resources.

In 1999 I worked as a staff member of LeConte Lodge. Working at the Lodge provided an inside understanding of the operation, its environmental impacts and many ideas about the alteration of the operation. Such a perspective has provided a strong relationship to the mountain and the traditions of the operation that have guided the forth coming recommendations. This thesis serves to create a plan that will help to inform future management decisions at LeConte Lodge. It is the goal of this thesis to make recommendations that will reduce the impact of the operation, while protecting the recreational experience that has been cultivated over the last 80 years. By referring to the written accounts of the Lodge throughout its operation, the fundamental characteristics that define the “LeConte Lodge Experience” are cataloged. Further, an inventory of the current site conditions has been conducted. This inventory catalogs the current status of the physical and cultural attributes of the mountaintop Lodge. With the information gathered from each of these inquires, case studies of similar lodging operations are presented. These case studies highlight low impact operating technologies and polices that will



be useful in the future management of LeConte Lodge. From these inquiries, a management philosophy was formulated to help guide future Lodge management decisions. Lastly, the management philosophy is applied to several pressing management issues to recommend possible solutions.

## **CHAPTER TWO:**

### **Land Use History**

From its inception as a tent camp in 1925, LeConte Lodge has been managed by several different concessionaires. These different entities have each left their mark on the mountaintop. This chapter seeks to chronicle, by management era, the history of land use from construction projects to natural resources consumption. Through this study of the history of land use at LeConte Lodge, a better understanding of the Lodge landscape can be gained. A clear understanding of how the Lodge property and adjacent natural areas have been used is crucial to making informed recommendations for the future management of the LeConte Lodge landscape.

#### **Paul Adams Era (1925)**

Beginning in 1924 Mount LeConte became a frequent destination for members of the Great Smoky Mountain Conservation Association (GSMCA). As stated on their 1925 stationary, the GSMCA charged itself with, “The preservation of the remaining primeval forest of Eastern America, and a National Park in the Great Smoky Mountains.”<sup>3</sup> In lobbying for their goal, the group began taking visitors to the summit of Mount LeConte. Many of these first visitors to the mountaintop were influential in establishing an eastern National Park. With its many magnificent overlooks, the GSMCA used LeConte to showcase the potential lands that could become the Great Smoky Mountains National Park (GSMNP). In 1925, Champion Fiber Company granted the GSMCA permission to establish a permanent camp on Mount LeConte. At the camp site, the association discovered a spring that reportedly is at a higher elevation than

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<sup>3</sup> Paul J. Adams, *Mt. LeConte* (Knoxville: Holston Printing Co., 1978), 31.

any other spring in the eastern United States. Known as Basin Spring it has provided water for Lodge operations since 1925.

The GSMCA chose the young Paul J. Adams from nearby Knoxville, Tennessee as the first custodian of the camp. In a July 11, 1925 letter David Chapman, Vice-Chairman of the GSMCA, defines Adam's new position: "Mr. Adams is to protect the plant and animal life; to look particularly after the sanitary conditions, and to do what he can to make the visitors more comfortable."<sup>4</sup>

Using spruce and balsam logs (*Picea rubens* and *Abies fraseri*) cut from above the camp, Adams constructed a fifteen-by-twenty foot cabin just west of the present lodge buildings for the coming 1926 season. The logs were notched together and chinked with a mixture of moss and clay that had been collected from the mountaintop. After a winter of extreme cold and hard labor on the construction of the cabin, Jack Huff took over as custodian of the camp.<sup>5</sup>

### **Jack and Pauline Huff Era (1926-1959)**

Jack Huff managed LeConte Lodge between 1926 and 1959. During his tenure as manager, most of the present day Lodge structures were built. Many of the building materials used for these structures were gathered from the mountaintop. Jack is still considered by many Lodge guests and the current managers as being the "Father of LeConte Lodge."

The first Lodge structure constructed by Jack Huff is still known as the "House that Jack Built." This structure was built in 1926 entirely of fir timber harvested from the adjacent forest. Huff used moss, which is abundant on LeConte, to fill the cracks between the fir timbers. From

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<sup>4</sup> Adams, 31.

<sup>5</sup> Adams, 59-63.

the moss chinking, it is written, “wood sorrel and fern grew from the ground to the eaves.”<sup>6</sup> Flooring for the building consisted of packed clay and a large central fireplace made of stone collected from the site provided heat. Boards weatherproofed with tarpaper and held together with a heavy layer of gravel made up the roof. When completed, Jack Huff’s lodge was larger than the primitive cabin constructed by Paul Adams. Though the House that Jack Built is no longer standing, another early structure built in 1934 is still standing and in use at LeConte Lodge. This building is known as “Old Lodge” or “Cabin Number 1.” (Figure 2.1)

Sited at the center of the contemporary complex of structures, Old Lodge features three guest rooms. Each guest room contains a set of handmade fir double bunk beds and sleeps four individuals. A large common area with a large central stone fireplace joins the three rooms together. (Figure 2.2) All materials for this building were gleaned from the mountaintop. Old Lodge is another of Huff’s fir log structures, much like his first lodge structure, only more refined.

Because of the popularity of LeConte Lodge, the construction of new sleeping quarters became necessary. During the Huffs’ operation of the Lodge, several large-scale construction projects occurred. The largest of these was the building and furnishing of “Main Lodge,” which consists of a kitchen, office and large guest dining room. Seven smaller cabins were also constructed. The construction of Main Lodge and the seven cabins greatly increased the number of overnight guests that the Lodge could accommodate. These structures were not constructed solely of fir log construction as Old Lodge was. Instead, Main Lodge was finished in fir shingles and the cabins were originally simply sided with asphalt paper. The cabins were also roofed with asphalt paper and the Main Lodge was roofed with fir shingles. (Figure 2.3 and 2.4)

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<sup>6</sup> Wise, 119.

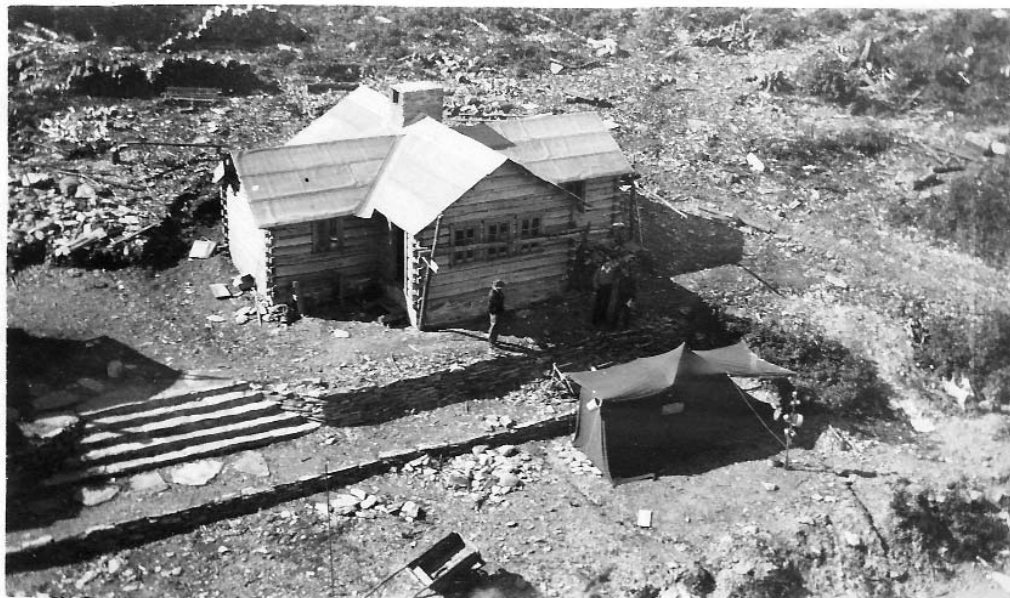


Figure 2.1 Old Lodge under construction.  
September 24, 1933 Photographer: Bagwell  
Photograph courtesy of the Great Smoky Mountains Library



Figure 2.2 Old Lodge interior.  
circa 1937 Photographer: Jack Huff  
Photograph courtesy of the Great Smoky Mountains Library



Figure 2.3 Main Lodge with shingled walls and roof.  
1947  
Photograph courtesy of the Great Smoky Mountains Library



Figure 2.4 Cabins with asphalt paper walls and roof.  
1947  
Photograph courtesy of the Great Smoky Mountains Library

Materials for the construction of these new buildings were gathered from the construction site and adjacent forest. Between the years 1926-1949, a sawmill was in operation on top of the mountain. The proximity of the sawmill provided Jack and his fellow workers easy access to milled lumber for construction. All of the furniture was created of hand hewn fir posts in a rustic tradition. Stone from the mountaintop was used to create extensive stacked walls, foundations, fireplaces and flagstone paths. The downed wood of the mountaintop was collected for space heating and cook stove fuel. Noted material exceptions are fasteners, wood flooring, asphalt paper, windows, stoves and hardware. These materials were brought on horse or mule-drawn sleds via a ridgeline trail that is now called the Boulevard trail.<sup>7</sup>

A terraced landscape was produced in the construction of the structures. The aforementioned stone walls were constructed to accomplish these terraces. Al Bedinger, former employee and Lodge historian, says that this terraced landscape was produced using “a scoop pulled by a mule”<sup>8</sup>. Appendix A contains Al Bedinger’s *A Brief History of LeConte Lodge*. Several of the areas were planted by Mrs. Huff using the mountaintop plants for her plant source. Some remnants of these gardens persist, especially in the main Lodge area. Photographic observation illustrates that by and large the landscape aesthetic was ever evolving.

In early Lodge photos, clearing is evident in the Lodge complex by the presence of many large stumps. The general aesthetic could be characterized as newly disturbed with no work to re-vegetate. (Figure 2.5) By the 1940’s a neat and tidy lawn style was evident, (Figure 2.6) but by the end of the 1950’s trees were beginning to grow tall within the Lodge complex and many areas were left to become naturalized shrub and perennial borders. (Figure 2.7)

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<sup>7</sup> Al Bedinger, “A Brief History of LeConte Lodge” (unpublished paper 2001), 2.

<sup>8</sup> Bedinger, 2.



Figure 2.5 Construction disturbance around lodges.  
January 1934 Photographer: Herbert Webster  
Photograph courtesy of the Great Smoky Mountains Library



Figure 2.6 Neat and tidy landscape with lawns.  
circa 1940  
Photograph courtesy of the Great Smoky Mountains Library





Figure 2.7 Tall trees, naturalized shrubs and perennial borders.  
circa 1950

Photograph courtesy of the Great Smoky Mountains Library

During the tenure of the Huff family, the Basin Spring was excavated. A hydraulic ram pump was installed and used when the spring was flowing sufficiently to pump water into a concrete tank near the top of the camp between cabins 8 and 9. In times of less water flow in the spring, a gasoline powered engine was used to operate a water pump. Water was gravity fed to the kitchen.<sup>9</sup>

### **Herrick and Myrtle Brown Era (1960-1975)**

Herrick and Myrtle Brown purchased the Lodge and business from the Huff family in 1960 and began their 15 year tenure on Mount LeConte. The Browns were prominent members of the influential Smoky Mountain Hiking Club, which would come to play an important role in the history of the Lodge. During this period of the Lodge history, many things were to change. The primary agent of change to the Lodge occurred when Congress passed the Wilderness Act of 1964.

In Section 2(a) and (c) the Wilderness Act is defined as:

(a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as 'wilderness areas', and these shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these a areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.

(c) A wilderness, in contrast with those areas where man and his own works dominates the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who

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<sup>9</sup> Bedinger, 3.

does not remain. An area of wilderness is further defined to mean in this Act as an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements of human habitation, which is protected and managed so as to preserve its natural condition.<sup>10</sup>

At one point roughly three fourths of the GSMNP was slated to be designated as wilderness area, including the area that LeConte Lodge occupied. As the Lodge was a clear human development, it was always seen as conflicting with the wilderness designation.

Although the Wilderness Act of 1964 would eventually play a major part in the future of LeConte Lodge, the fate of LeConte Lodge was not decided until 1982. Even though the future existence of the Lodge was up in the air, many improvements to the systems and to the land needed to be accomplished by the Browns. The major improvement during the Brown's management of the Lodge was the installation of flush toilets and the accompanying drain field.

Until 1968, LeConte Lodge had used a pit privy system for sewer management. In this year the National Park Service (NPS) revealed their plan for a new domestic water system with the intention that flush toilets would soon be made available to Lodge guests. To accomplish this, a 10,000 gallon redwood water tank was constructed south east of the Lodge. (Figure 2.8) Additionally, a new larger hydraulic ram water pump and buried water piping was installed.

By 1969, the Lodge was hosting 5,200 guests per season.<sup>11</sup> By the spring of 1974 another structure was added to help facilitate the many guests. This structure served as an office and recreation building on the upper floor and housed storage and two flush toilets in the bottom floor. As with Jack Huff's log structures, the Office was constructed using hand hewn fir and stone from the mountaintop. Additionally, a septic tank was installed and a drain field was created in the northwestern corner of the Lodge campus to accommodate the new flush toilets.

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<sup>10</sup> US Congress, *Wilderness Act of 1964*, 88<sup>th</sup> Cong., 4<sup>th</sup> sess., 1964, Public Law 88-577, sec. 2(a&c).

<sup>11</sup> Barbara Ward, "Legislators for Lodge's Survival," *Gatlinburg Press*, sec.1, January 28, 1975.



Figure 2.8 Herrick Brown and redwood water tank.  
August 25, 1971 Photographer: R.R. Miller  
Photograph courtesy of the Great Smoky Mountains Library

By 1974, the Lodge's seasonal guest count had grown to 8,140.<sup>12</sup> The increase in guest load, the wear of nearly 50 years of operation and a pending wilderness designation were all becoming threats to the Lodge. At the beginning of 1975 a coalition of more than 20 environmental groups led by the Smoky Mountain Hiking Club formed the Great Smoky Mountain Park Wilderness Advocates to demand the closure of LeConte Lodge, among other things.<sup>13</sup> By the end of January 1975, a wilderness proposal from the GSMNP was before Congress that included the following provision:

The operation of Le Conte Lodge, where meals and lodging are provided for hikers and horseback riders, is to be discontinued at the end of the 1977 season. Shortly thereafter the Service plans to remove the 17 buildings, aboveground utilities, and the aerial telephone line.<sup>14</sup>

In this same proposal the question was first raised as to the historic value of the structures that make up LeConte Lodge. As none of the structures were 50 years of age the NPS declared the buildings as ineligible for nomination to the National Register of Historic Places. When asked by the NPS about what should be done with the Lodge in the face of environmental degradation and the pending Wilderness designation, the Browns thought that the Lodge should be phased out letting the land revert to wilderness.<sup>15</sup>

### **Jim Huff and Hugh Ogle Era (1976-1990)**

Before their 1977 contract was up and with the ensuing battle of LeConte Lodge's future still brewing, Herrick and Myrtle Brown sold the Lodge to Jack Huff's nephew, Jim, and his

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<sup>12</sup> Ward, sec. 1.

<sup>13</sup> Margaret Lynn Brown, *The Wild East: A Biography of the Great Smoky Mountains* (Gainesville: University Press of Florida, 2000), 284.

<sup>14</sup> Ward, sec.1.

<sup>15</sup> Rosemary Nichols, "Closing LeConte Lodge" (project for the Integrated Case Studies in Natural Resources Analysis Program, School of Forestry and Environmental Studies, Duke University, January, 1981) Exhibit 1.

partners Hugh Ogle and Bill Rinearson. This trio formed LeConte Lodge Incorporated and began operation of the Lodge in spring 1976.

With this change in concession operation and looming permanent closure, the Lodge began use of kerosene for space heating, propane for cooking, helicopters to supply the majority of the Lodge supplies and non-perishable foods for meals to decrease the impact of pack horses on the trails. Just before the shift in concession occurred, the newly NPS installed septic system failed due to over-use, causing environmental contamination. After this fiasco, a pit system was reinstated and used until the 1983 season when the NPS further updated the sewer and water systems. In this year many additional changes occurred.

In 1976, with the NPS pushing for the removal of the Lodge, Park Superintendent Boyd Evison commissioned several studies of the LeConte Lodge operation to assess its environmental impact. The first study was headed by Rosemary Nichols from the Forestry and Environmental Studies department at Duke University. In October 1977, Rosemary Nichols published *The Ecological Effects of LeConte Lodge in the Great Smoky Mountains National Park*. Nichols noted exotic plant materials, problem bears, massive areas of cleared forest, an area of impact 10 times the size of the Lodge campus, high impact from 8,000 annual over-night Lodge guests and approximately 30,000 annual summit day hikers, large amounts of trash and construction debris, the loss of native ground cover and soil organic matter, and high incidents of windthrow caused by timber removal. This report made a strong recommendation for the removal of the Lodge.

In that same year, a report produced from a study by Susan Bratton and Paul Whittaker of the Uplands Field Research Laboratory in the GSMNP was released. This report had similar, but less damning findings. Whittaker and Bratton studied the visitation patterns and vegetation disturbance, and then produced management scenarios with models of their probable outcomes.

While the Whittaker and Bratton report final recommendations made it clear that the best future for the mountaintop included closing the Lodge, modeling illustrated that substantial improvement could be accomplished with proper land management. Additionally, the report stated that without closing the trails to the summit of LeConte most of the intensive disturbance would be maintained by backpackers and day hikers.

Despite the NPS's wishes to declare the mountaintop a wilderness area and the clear scientific evidence firmly asserting that this was necessary to decrease impact to Mount LeConte's natural resources, the general public was outraged. A typical public view on the matter was well stated by Park visitor Sis Thomas of Akron, Ohio in the *Gatlinburg Press*:

It is to my understanding that LeConte Lodge in the Great Smoky Mountains National Park may be closed, razed and removed as part of the Wilderness Act...

What conceivable purpose would be achieved by preserving a place of beauty which could not be observed?

LeConte Lodge, to me, seems as perfect an example of man-nature coexistence as we can achieve. Accessible only by trail. Built from native materials. No electricity. Invisible from all but a few hundred yards away. Occupying a couple of square acres in 700 square miles of wilderness.

Rather than destroy LeConte Lodge, we would do well to use our ingenuity to devise more places like it where the beauty and simplicity of nature can be enjoyed at little or no cost to the ecology.<sup>16</sup>

The public outcry was such that members of Congress, realizing the unpopularity of this aspect of the implementation of the Wilderness Act, began to speak about the GSMNP's wilderness designation. Coverage of the latest developments in the Park's plans for wilderness designation was a regular occurrence in most regional newspapers. Until 1981, the battle over LeConte Lodge continued. Successive GSMNP superintendents realized that the likelihood of achieving a

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<sup>16</sup> Sis Thomas, *Gatlinburg Press*, "Co-existing With Ecology," December 25, 1975.

sizable wilderness area designation while closing the Lodge was going to be impossible. At a 1980 Wilderness Management Symposium, the current superintendent, David Beal said:

The point is this: If wilderness is to be preserved there must be a constituency which supports the program. That constituency must be quite broad based and inevitably will contain disparate views that must be accommodated in our planning and management efforts. We cannot afford to be too pure or too permissive, but must always strive to be good stewards of the resources we are charged with preserving.<sup>17</sup>

Despite these attempts to appease the general public and gain support within Congress, wilderness designation has never been established within the GSMNP. A large portion of the park is still proposed for designation, but the LeConte Lodge complex has been exempted from the proposed area. All proposed wilderness areas within the NPS are managed as such until the proposal is dropped or designation is granted.

With the publication of the General Management Plan for the Great Smoky Mountains in 1982, the debate of the existence of LeConte Lodge was over. The management plan clearly allowed for the continuance of the Lodge at LeConte; however, based on the findings of the environmental assessments, many restrictions were placed on the Lodge operations. With the Lodge's fate decided and a substantial lease in hand, Jim Huff and Hugh Ogle bought Bill Rinearson's share of the business and began to make plans to update the run-down Lodge.

Plans were made to help comply with the NPS's wishes to lessen LeConte Lodge's impact on the mountaintop ecology. In one busy season two new pit privies were added, rotting floors, windows, roofs and logs were replaced and the office building received a new porch with a view north toward Sevierville, Tennessee. In 1984, a new three bedroom lodge was constructed. All new structures and improvements were completed using commercially available materials flown to the Lodge using helicopters. A llama train was established as an alternative to

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<sup>17</sup> Brown, 285-86.



pack horses to further decrease the impact on the trail system. By 1986, the Lodge had received much needed improvements and as required in the 1983 contract, guest numbers were trimmed from 50 per night to 40.

### **Wilderness Lodging Era (1991-present)**

In a three year time span between 1989 and 1991, LeConte Lodge management changed hands several times. In 1989, William B. Stokely, III of Stokley Hospitality Enterprises bought into LeConte Lodge Incorporated, which at the time consisted of Hugh Ogle and Jim Huff. Shortly thereafter, Hugh Ogle sold his share of the business to William B. Stokely, III and Jim Huff. The partnership was called Stokley and Huff Enterprises.<sup>18</sup> In 1991, the company name changed to LeConte Lodge LTD. In this same year, William Stokley, III and Tim Line, a long-time on-site Lodge Manager, became co-owners of the Lodge. During this era of the Lodge's history, the previous systems of supply delivery and sewage and water utilities were retained, but many changes occurred otherwise.

In 2000, a new propane gas system was installed to heat water, heat spaces, operate the refrigeration system and fuel the kitchen range. To accomplish this, twenty-eight 500 gallon propane tanks were added to the complex with an intricate underground piping system used to supply the many cabins, lodges, and the kitchen facility with propane. Between 2001 and 2002 a new two bedroom cabin for housing Lodge employees, a dining room extension with an attached observation deck, a new storage facility and three covered porches were added to the lodges. The following year, original dry stacked retaining walls and flagstone paths were rebuilt. All supplies for new construction, renovations, and repairs are commercially produced and flown via

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<sup>18</sup> The Mountain Press, "Rustic Lodge Faces Changes...", April 5, 1991.

helicopter to the Lodge. By 2004, LeConte Lodge began a new era with the first use of solar energy.

Through the years, LeConte Lodge has evolved from a small tent camp into a large Lodge complex that can sleep and feed large groups each night. In the years since its inception as a tent camp, ideas about land management have also evolved. The above history of the Lodge illustrates the land management decisions that have influenced the contemporary landscape of the Lodge. Chapter three will investigate the current condition of physical and cultural features of LeConte Lodge.

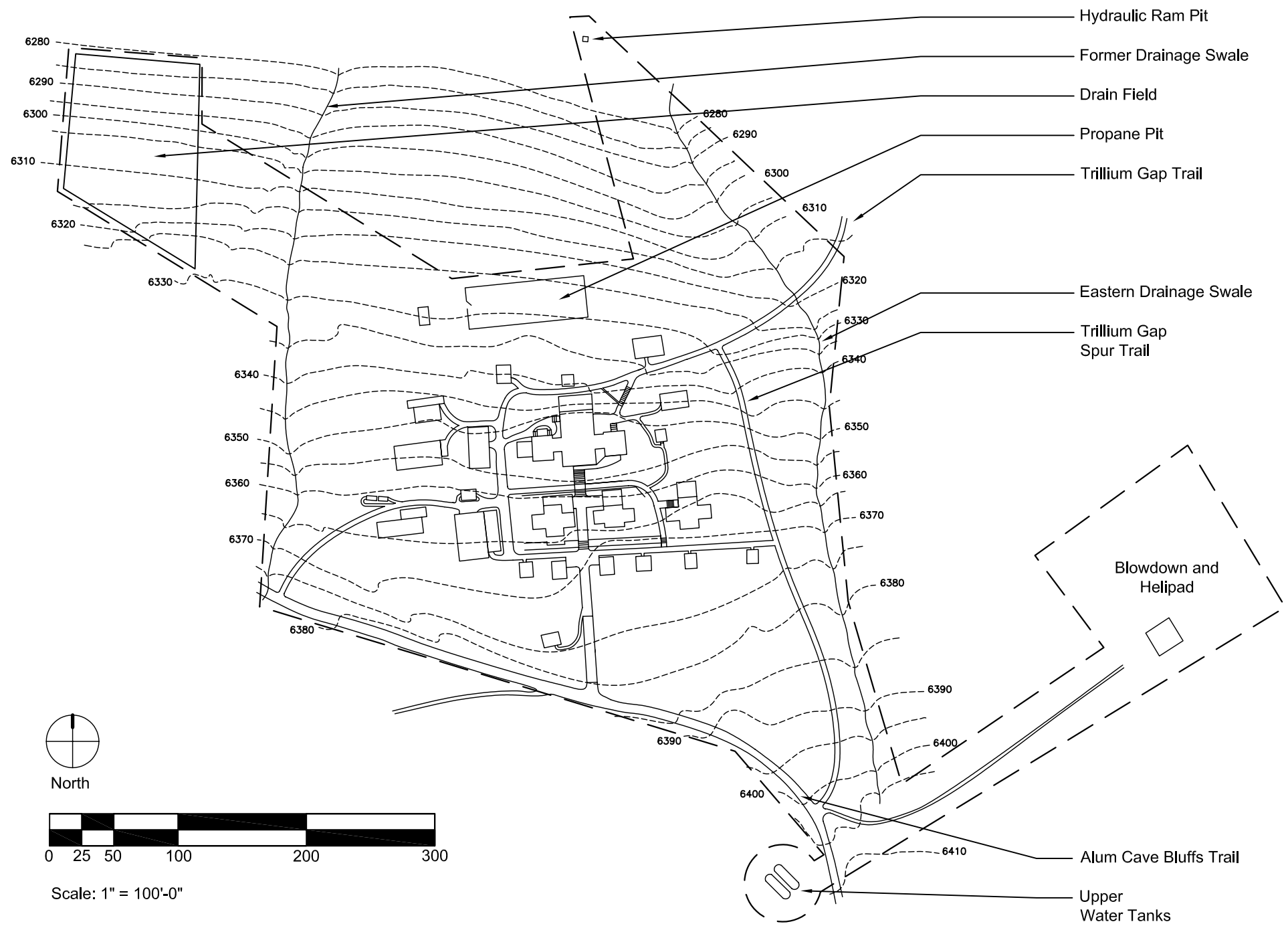
## **CHAPTER THREE:**

### **Site Inventory**

Without an accurate inventory of the physical and cultural attributes of LeConte Lodge, it would be difficult to make recommendations for future land management. Many resources such as United States Geographical Service maps, National Park Service G.I.S. information, and a U.S.D.A. Soil Survey were used to gather information about the physical attributes discussed in this chapter. Further, engineered plans for LeConte's utilities systems, Geographical Positioning System mapping and on-site inventory were used to account for the cultural attributes found on this property. This chapter combines the information gathered from these multiple sources to create a holistic view of the current state of LeConte Lodge.

### **Site Boundary**

An official boundary line defining the LeConte Lodge property has never been established by the National Park Service. However, a general agreement on these boundaries seems to be understood by the NPS and the current concessionaire. Figure 3.1 illustrates the boundary that this thesis defines based upon the descriptions of the property line by both parties. The northwestern edge of the drain field and the hydraulic ram pit on the east define the northern boundary of the property. A drainage swale running north to south defines the eastern border, and the "blow down" or helipad defines the south eastern corner. The southern property line follows a drainage swale that runs along the Alum Cave Bluffs trail beginning at the upper water containment tanks in the southeastern corner and continuing in a northwestern direction until it



North



Scale: 1" = 100'-0"

Figure 3.1 Site Boundary

**Site Boundary**  
**LeConte Lodge**  
Landscape Management Plan  
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intersects the western property line forming the southwestern corner. A former drainage swale running north south from Alum Cave Bluffs trail defines the western boundary until it intersects with the drain field which defines the northwestern corner. As defined, the total area of the Lodge property is 5.38 acres.

### **Physical Attributes:**

#### Slope

In general, the slope of the land within the Lodge is rather steep. Jack Huff's first structures on Mount LeConte were accomplished with a series of terraces running east to west across the slope. These terraces are still present in the landscape. In October 1970, Baker and Hollister conducted a plane table survey on behalf of the NPS in preparation for a new water and sewage system.<sup>19</sup> The Baker and Hollister survey includes the only topographic study of the LeConte Lodge complex. Analysis of the slope of the LeConte Lodge complex utilizes the five-foot contour interval map from the October 1970 survey. The slope analysis map (Figure 3.2) illustrates that the majority of the structures are built on five to ten or ten to twenty percent slopes. In order to accommodate the building of structures on slopes that exceed twenty percent, recent structures have been built on piers. The slope range for paths throughout the LeConte complex are also built within the five-to-ten or ten-to-twenty percent range. Exceptions to this rule can only be accomplished with the utilization of stairs. No slopes less than five percent were found from the analysis.

Due to the steep slope found throughout the LeConte Lodge complex, the site is prone to erosion. Erosion control is being managed by the employment of stair systems on paths and the

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<sup>19</sup> Baker and Hollister, LeConte Lodge Plane Table Survey, 1970, provided by LeConte Lodge Limited Partnership.

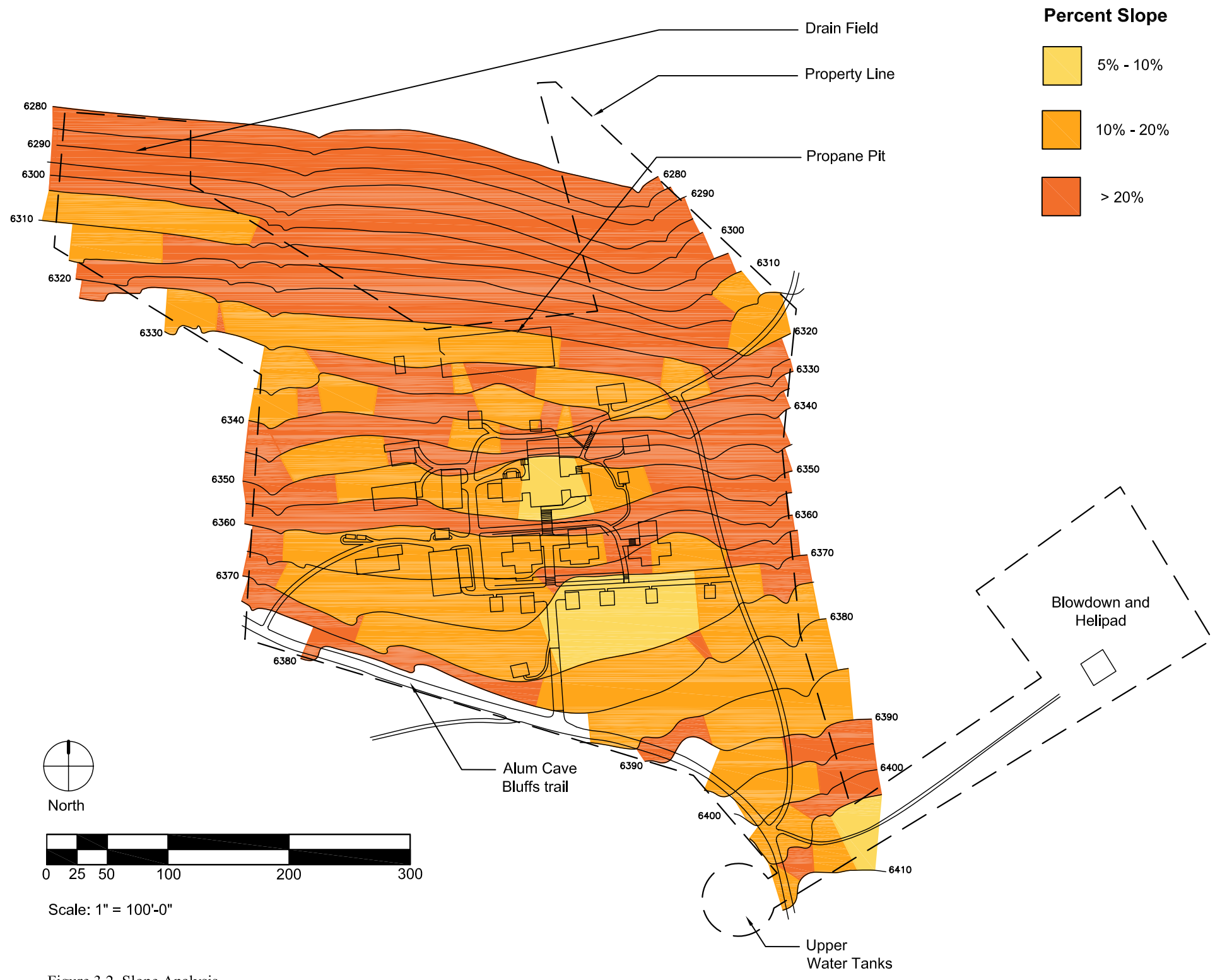


Figure 3.2 Slope Analysis

**Slope Analysis**  
**LeConte Lodge**  
Landscape Management Plan  
William Shealy  
May 2005

building of new structures on pier systems. These practices leave the site less disturbed than conventional path and structure building methods.

### Aspect

The entire Lodge complex is situated on a north facing slope. This northern orientation provides the least possible amount of direct solar radiation. Coupled with the steep slope of the Lodge complex, LeConte Lodge receives mostly diffused sunlight at an acute angle. These site attributes make solar energy capture possible, but less than optimal. All of these factors render passive solar heating impracticable, although active solar collection is feasible.<sup>20</sup>

### View Sheds

Four primary view sheds found within the Lodge are illustrated in Figure 3.3. The southern-most view point, view point A, is found at the top of the complex as one enters along the main set of stairs. Figure 3.4 is a panoramic photo from view point A. The view shed overlooks the northern land beyond the GSMNP. This view shed is defined on the east and west by forested areas to produce a 90 degree panorama. View point A provides a complete view of the LeConte Lodge complex, cabins and lodge structures, with a backdrop of scenery, which on high visibility days, stretches to the hills of southern Kentucky. The second view point, view point B, is located on the Office porch. This view shed is defined by the office wall on the west and the forested area found behind cabin four on the east. View point B provides the viewer a glimpse of most all of the Lodge structures, the vista to the north looking toward Kentucky, and a view of the forested wilderness area to the east of the Lodge complex. A near two hundred and

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<sup>20</sup> James A. LaGrow, Jr., *Site Analysis: Linking Program and Concept in Land Planning and Design* (New York: John Wiley and Sons, Inc., 2001), 72.



**View Sheds**  
**LeConte Lodge**  
Landscape Management Plan  
William Shealy  
May 2005

Figure 3.3 View Sheds





Figure 3.4 View shed A taken from view point A.  
February 19, 2005 Photographer: Leah Gardner  
Photograph courtesy of Leah Gardner



Figure 3.5 View shed B taken from view point B.  
February 19, 2005 Photographer: William Shealy (author)

seventy degree view shed produces the panoramic view found in Figure 3.5. The third Lodge view point, view point C, is located on the covered porch of the East Lodge. This view is bound on the east by a forested area north of the Ashberry and on the west by the western wall of the East Lodge. This view shed features the northern view described in the previous view sheds, a view of nearly the entire Lodge complex from the east, and a forested area on the western side of the Office. This view is only experienced by guest of this structure as it is accessible only from the interior of the East Lodge. The fourth and final view point, view point D, is located on the porch of the Dining Room of the Main Lodge. The Main Lodge structure binds this view shed on the east and western sides. This one hundred and eighty degree view shed overlooks the same northern view described before, the staff housing on the north side of the Main Lodge, and partial views of the forested areas on the eastern and western sides of the Lodge. This view shed is accessible to all Lodge visitors who venture through the Dining Room and onto the porch.

Obstructions to these aforementioned views occur from all of the view points listed except view point A. View point B allows a prime view of the twenty-seven propane tanks found on the northern border of the property and a radio antenna on the roof of the Main Lodge. View point C present the viewer with a clear view of the propane tanks, the antenna and the large oscillating solar panel located behind the kitchen of the Main Lodge. Figure 3.6 illustrates this portion of the view. View point D offers the viewer a front row seat for surveying the propane tanks. An attempt to camouflage the propane tanks has led to the painting of the white metal tanks with a beige colored pigment. Additionally, Red Spruce and other indigenous shrubs and perennials have been planted by the GSMNP Vegetation Management department to further screen the view of these tanks. The presence of the radio antenna found in view shed B and C is fairly inconspicuous. Lastly, the solar panel found in view shed C has a large presence in this



Figure 3.6 Excerpt of view shed C from view point C with solar panel, antenna, and tanks. October 24, 2004 Photographer: William Shealy (author)

view shed. Viewed by the concessionaire as an element of interest for Lodge guests; the solar panel is not currently treated as an obstruction.

### Hydrology

Since its beginnings, LeConte Lodge has been supported by a spring that is said to be located at a higher elevation than any other spring in the eastern United States. Christened the Basin Spring in the 1940's by the Huff family, this spring forms the headwater for Roaring Fork Creek. After water is captured and stored for Lodge use, the overflow from the spring empties at the north eastern corner of the Lodge property. A half-mile from this outlet point, the basin spring flows north feeding directly into what the United States Geological Society (USGS) defines as the headwater of Roaring Fork Creek. Figure 3.7 illustrates the Roaring Fork Creek Watershed as defined by the GSMNP. This illustration shows that the ridge line south of the Lodge complex defines the upper limits of this watershed boundary and the north central GSMNP boundary line defines the outlet point for the watershed. After leaving the GSMNP, Roaring Fork becomes known as the West Prong of the Little Pigeon River. The West Prong of the Little Pigeon flows through Gatlinburg, Tennessee and joins the East Prong of the Little Pigeon River in Sevierville, Tennessee to form the Little Pigeon River. A bit further downstream, the Little Pigeon River empties into the French Broad River below Douglas Dam. East of Knoxville, Tennessee, the French Broad combines with the Holston River to form the Tennessee River, which at this point is dammed to create Fort Loudon Lake.

Figure 3.8 illustrates the hydrology of the Lodge complex and the land north of the complex. The headwaters of Roaring Fork Creek define the outlet point of this local hydrologic system. The 1964 United States Geological Survey (USGS) Mount LeConte, Tennessee

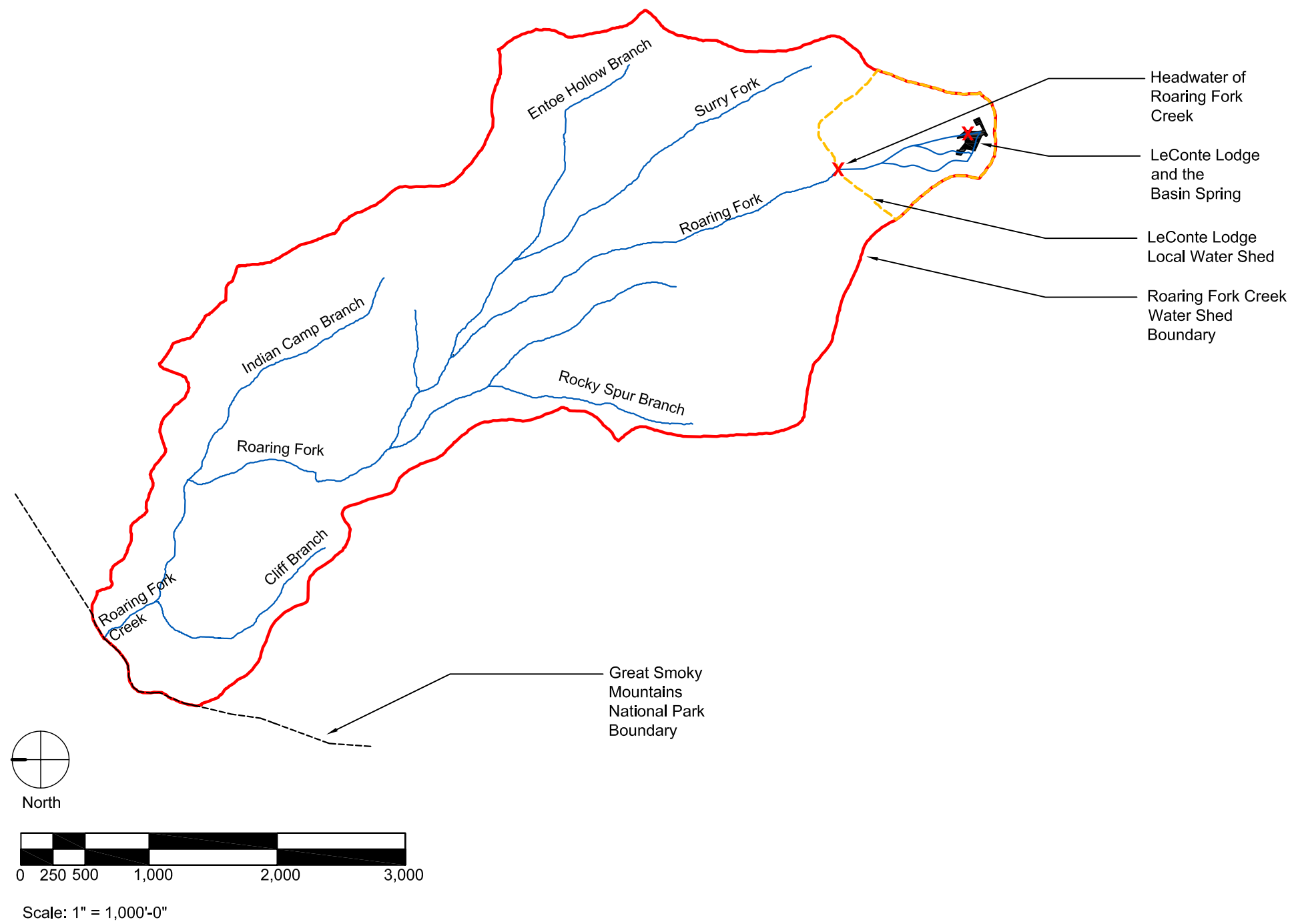
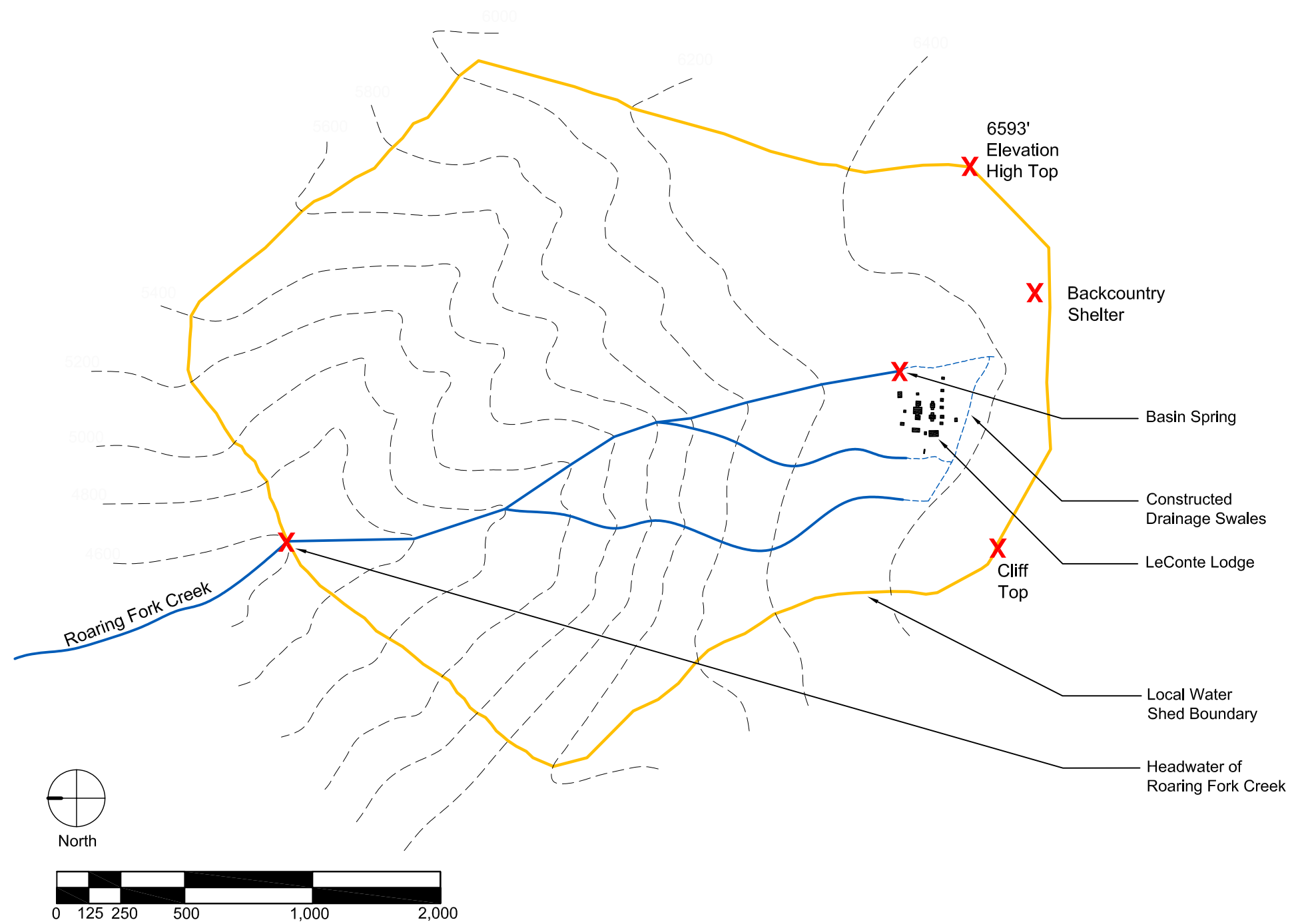


Figure 3.7 Roaring Fork Creek Water Shed

Roaring Fork Creek  
Water Shed  
LeConte Lodge  
Landscape Management Plan  
William Shealy  
May 2005



Scale: 1" = 500'-0"

Figure 3.8 LeConte Lodge Local Water Shed

Local Water Shed  
LeConte Lodge  
Landscape Management Plan  
William Shealy  
May 2005

topography survey and the 1970 LeConte Lodge survey by Baker and Hollister were used to illustrate this figure. Within the complex, one constructed drainage swale moves water from the southeastern corner along Alum Cave Bluffs trail. At the junction of the Alum Cave Bluffs trail and Rainbow Falls trail, the swale follows the trail northwest then turns north from the path to flow along the western boundary of the drain field. A second drainage swale flows from the southeastern corner of the property at Alum Cave Bluffs trail parallel to the Trillium Gap Trail spur. This swale joins the Basin Spring and continues north to the headwater of Roaring Fork Creek.

In 1977, The Uplands Field Research Laboratory completed a report entitled *Water Survey of LeConte Creek and Roaring Fork Drainage on Mount LeConte, Great Smoky Mountains National Park*. This report aims to provide information on the water quality of LeConte Creek and Roaring Fork Drainage in an effort to assess the environmental impact of LeConte Lodge and its drain field on these watersheds. The report findings conclude that the Lodge appears to have no obvious affect on the water quality of Roaring Fork Creek and drainage.<sup>21</sup> Given that this study is the last known study of water quality associated with Mount LeConte and the Lodge, that it was completed in 1977 over a two-day sampling schedule, that flush toilets were not in working operation, and that modifications to both the sewer system and drain field have occurred, the water quality of the Roaring Fork drainage on Mount LeConte is unknown at this time.

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<sup>21</sup>Gary L. Larson, David G. Silsbee and Debbie A. Hurley, *Water Survey of LeConte Creek and Roaring Fork Drainage on Mount LeConte, Great Smoky Mountains National Park*, Great Smoky Mountains National Park, 1977.

## Soils

The 1956 US Department of Agriculture Soil Conservation Service soil survey for Sevier County classified the soils of Mount LeConte very broadly. The primary aim of such mid-twentieth century surveys was to classify soils from the perspective of agricultural production. Soils in the LeConte Lodge area were classified as fifth-class soils, which are deemed poor for crops and pasture. Due to low nutrient availability, stony composition and an extreme tendency to erode, this survey suggests that the best land use for this class is a non-production forest. Further, the survey classifies all of the soils at the Lodge as Rough Mountain Land-Ramsey Association. This association describes the soils as occurring on steep slopes with stony fine sandy loam describing the soil characteristics.<sup>22</sup> As this survey was primarily concerned with highlighting productive lands, the highly unproductive lands found on Mount LeConte were of little interest and were therefore only described in these very general terms. This soil survey has never been updated.

Rosemary Nichols 1977 *The Ecological Effects of LeConte Lodge in the Great Smoky Mountains National Park*, states that the soils of the Lodge area were greatly disturbed in 1968 when the water system was expanded by the NPS.<sup>23</sup> Nichols writes that interviews with Lodge employees that were present during this construction project reveal a great deal of soil disturbance in the Lodge area from the use of a back hoe and bulldozer. Further, unusual amounts of rain occurred during this project causing great soil loss. Nichols also sites an unpublished University of Tennessee master's thesis entitled *Forest Soil Characteristics as Influenced by Vegetation and Bedrock in the Spruce-Fir Zone of the Great Smoky Mountains* by J.A. Wolfe as explaining that "high altitude soils are shallow, with poorly developed horizons

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<sup>22</sup> Sevier County, Tennessee USDA Soil Conservatoin Service Soil Survey, 1956, 158.

<sup>23</sup> Rosemary Nichols, *The Ecological Effects of LeConte Lodge in the Great Smoky Mountains National Park*, Great Smoky Mountains National Park, 1977, 37.



and a thin organic layer.”<sup>24</sup> In the 1991 *Statement for Management*, the GSMNP stated that, “critical pieces of information are needed about natural resources of the Park in order to make wise land management decisions.”<sup>25</sup> One of the missing pieces of information for the park is a soil survey. The United States Department of Agriculture has not revised its Sevier County soil survey since it was published in 1956.

While the soil information for the Lodge is highly incomplete, it is evident that the soils found at LeConte Lodge are unproductive, shallow and highly erodable. Based on these basic characteristics, it is possible to make conservative management decisions that will protect the remaining soils and support the regeneration of topsoil.

### Vegetation

The spruce-fir plant community is found on only the seven highest peaks within the Southern Appalachian Mountain Range. Being the fourth highest peak in the eastern United States, Mount LeConte is covered with spruce-fir forest. This community is characterized by and named for the abundance of Red Spruce (*Picea rubens*) and Fraser Fir (*Abies fraserii*). Being distinct from all other Appalachian forest types, the spruce-fir forest is dominated in the overstory by the two aforementioned evergreens. Several species of hardwoods comprise the understory with a rich variety of herbaceous plants serving as groundcover. In 1957, the balsam woolly Adelgid was first found in the Southern Appalachians. Since this exotic pest’s discovery, the spruce-fir forest type has been drastically altered; mature fir trees are attacked and killed by

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<sup>24</sup> J.A. Wolfe, “Forest Soil Characteristics as Influenced by Vegetation and Bedrock in the Spruce-Fir Zone of the Great Smoky Mountains.” (master’s thesis, University of Tennessee, 1967).

<sup>25</sup> Great Smoky Mountains National Park, *Statement for Management GSMNP* (Gatlinburg: Great Smoky Mountains National Park, 1991), 20.

the adelgid.<sup>26</sup> One can not visit the summit of LeConte without seeing the effects of this pest. Standing dead fir are eerily present on every slope of the mountain. The Red Spruce, historically less abundant than Fraser Fir, is still present in the mature forest canopy, but is found in reduced numbers. Without a full canopy of Fraser Fir, the Red Spruce is more susceptible to ice and wind damage. This net decrease in forest canopy has also caused changes in the understory composition. Former areas of woodland groundcover are now replaced with open meadow of sun-loving herbs and shrubs such as Bush Honeysuckle (*Diervilla sessifolia*), White Snakeroot (*Eupatorium rugosum*) and Green-headed Coneflower (*Rudbeckia laciniata*).

LeConte Lodge's vegetation can be grouped into three zones: forested, open meadow and managed landscape. Figure 3.9 illustrates these three vegetation zones. Nearly half of the Lodge complex can be described as forested. Predominately, the edges of the complex are forested, which blends the edges of the property with the surrounding forested areas. This zone is composed of an overstory of spruce and fir, with a woody understory composed mainly of Mountain Ash (*Sorbus Americana*) and Fire Cherry (*Prunus pensylvanica*), and a ground layer composed primarily of Wood Sorrel (*Oxalis acetosella*) and a variety of mosses. These forested areas of the complex are very similar to the spruce-fir forest found surrounding the Lodge in canopy, cover and species composition. Since 1983 when the Lodge terminated wood harvesting, the spruce-fir forest of Mount LeConte has not been managed allowing regeneration of forest to occur in both Lodge areas and the surrounding forest.

Due to a declining canopy and disturbance from the operation of the Lodge, much of the Lodge complex vegetation can be described as open meadow. This zone is dominated by two woody shrubs, Bush Honeysuckle (*Diervilla sessifolia*) and Blackberry (*Rubus canadensis*) and a

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<sup>26</sup> George F. Smith and N. S. Nicholas, "Patterns of Overstory Composition in the Fir and Fir-Spruce Forests of the Great Smoky Mountains After Balsam Woolly Adelgid Infestation." *The American Midland Naturalist*, 139, no. 2 (1998). ProQuest, via Galileo, <http://www.galileo.usg.edu>



Figure 3.9 Vegetation Zones

**Vegetation Zones**  
**LeConte Lodge**  
Landscape Management Plan  
William Shealy  
May 2005

variety of perennial herbs. The dominant perennial herbs in the meadow zone are White Snakeroot (*Eupatorium rugosum*) and Green-headed Coneflower (*Rudbeckia laciniata*). Leafy plants densely cover this zone and grow to a maximum height of five feet during the growing season. During other seasons, herbaceous plant debris and woody stems dominate the open meadow landscape. Red Spruce, young Frazier Fir, and other woody canopy and understory trees are re-colonizing this transitional area. The open meadows are not maintained by the concessionaire and are being allowed to revert to forested areas.

The third vegetation zone is the managed landscape of the Lodge. Lawn areas and gardens are present around the cabins and lodges. This landscape was created primarily during era of the Huff family and has been managed to some degree by the Lodge concessionaire since that time. The lawns continue to be maintained by the concessionaire using gas powered mowers during the growing season. Nichols 1977 study shows that these lawns are primarily composed of non-native grasses and herbs. This study also found that the lawn plants are only found within the Lodge complex. A current visual assessment coupled with Nichols findings supports the notion that these exotic grasses and herbs are not invading the surrounding plant communities.

Evidence of two gardens can be seen on the banks outside of the dining room/kitchen structure. The gardens are similar in character to the meadow areas but are distinguishable due to the flowering shrubs and perennials that only occur within these garden areas of the complex. Plants moved from other areas of the mountain such as: Dwarf Rhododendron (*Rhododendron minus*), Turk's Cap Lily (*Lilium superbum*), Monkshood (*Aconitum uncinatum*) and Closed Gentian (*Gentiana lineris*) are still found in these gardens. The concessionaire periodically removes invading woody shrubs, such as blackberry, from the gardens. Appendix B lists all species found to occur at the Lodge during Rosemary Nichols 1977 study.

## Wildlife

LeConte Lodge is surrounded by large areas of continuous land that is managed as Wilderness Area. Therefore, wildlife is abundant in and around the LeConte Lodge complex. The GSMNP has a healthy Black Bear population, and Mount LeConte is home to many bears. At times, Black Bears have become “problem” bears requiring removal from the area. This issue has been controlled with better trash storage and disposal methods.

Llamas are currently the only non-native animal species associated with the Lodge operation. These animals make tri-weekly deliveries and are not residents of the mountaintop, thus posing little threat to the mountaintop ecology. A wildlife species list for LeConte has never been produced and no plans for such a survey are anticipated. According to the Inventory and Monitoring Coordinator for the GSMNP, Keith Langdon, a study referred to as the *All Taxa Biodiversity Inventory* includes a two and a half year study of the wildlife found on similarly elevated neighboring Clingman’s Dome. This GSMNP study will be made available to the public in approximately one year and may be of use to land managers at LeConte Lodge when assessing Lodge activities as related to the local wildlife.

## **Cultural Attributes:**

### Water System

The current water system at LeConte Lodge is the product of an original installation in 1968 and a 1983 renovation. Figure 3.10 illustrates the current water system of the Lodge. Both projects were undertaken by the GSMNP. The system contains three spring boxes in the Basin Spring area of the Lodge. Water is taken from these three intakes downhill to a 3,000 gallon holding tank. From this tank, water is pumped using a hydraulic ram, located at the north eastern boundary of the property, and/or a gasoline powered water pump, housed in a pump shed located

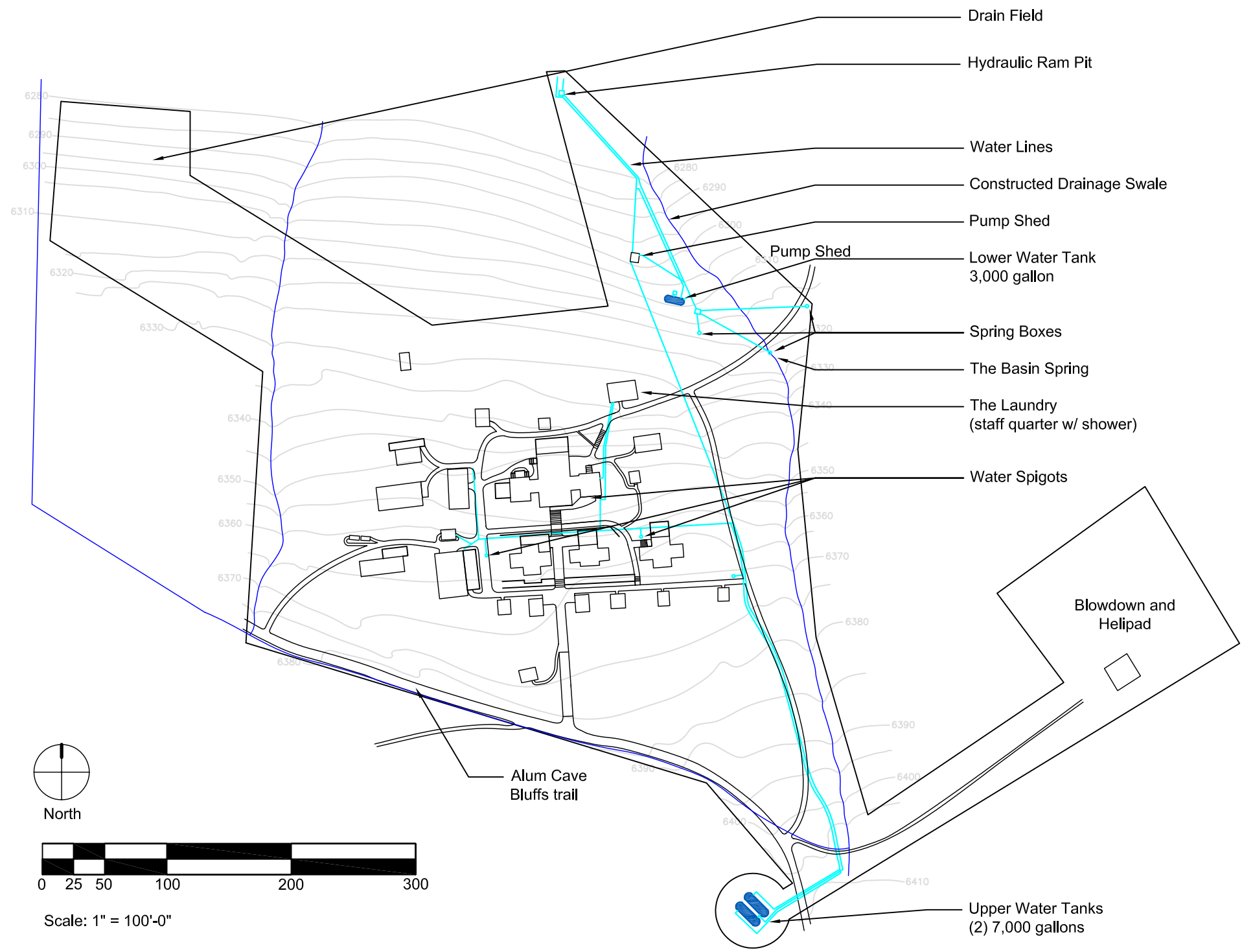


Figure 3.10 Water System

**Water System**  
**LeConte Lodge**  
 Landscape Management Plan  
 William Shealy  
 May 2005

beside the water tank, to two 7,000 gallon water tanks at the southeastern corner of the property. The hydraulic ram makes use of the spring's water pressure to operate the ram and pump water from the holding tank to the upper tanks. The flow of the spring is of adequate pressure to operate the ram from early spring until dry weather in midsummer. A gasoline powered water pump is used throughout the season to supplement the hydraulic ram system and is used exclusively in the summer and fall for water pumping. The spring water is chlorinated in the upper holding tanks then gravity fed to the flush toilets, kitchen, staff shower in the staff housing structure called the "Laundry", four emergency water hydrants, and three public water spigots. Gray water from the kitchen and showers is piped to the drain field. Water samples are tested bi-monthly by the State of Tennessee. The water system operates from the end of March each season until the last day of the season in late November. At the end of the season the system is drained. Day hikers, shelter guests and the winter care taker for the Lodge obtain water directly from the spring during winter months.

In the 2005 season, LeConte Lodge will install a submersible solar powered water pump in the lower 3,000 gallon water tank. This new pump will be used to supplement the hydraulic ram pump. It is the intention of the current concessionaire to use the gasoline powered water pump only on occasions when solar energy has been exhausted and additional water is needed for Lodge operation. The Basin Spring has provided an adequate water supply for LeConte Lodge for over eighty-five years. Fluctuations in water supply during the dry months of summer are not uncommon but have caused no reduced level of service at the Lodge thus far.

## Sewer

The current sewer system for the Lodge is illustrated in Figure 3.11. This system was first installed in 1968 by private contractors using plans prepared by the National Park Service.<sup>27</sup> Similar to the water system, the sewer system was revamped during the 1983 season. Currently, the system supports two “pit” privies in the southwestern corner of the complex, four 1.5 gallon flush toilets located in the comfort stations, and gray water from the Lodge kitchen and staff shower located in the “Laundry.” The lines travel down hill to a 5,000 gallon concrete septic tank, then into another 1,300 gallon fiberglass septic tank to separate solids from liquid waste. The liquid waste is then released into 1,374 linear feet of absorption lines in the drain field area. All flush toilet waste and gray water is handled as described above. “Pit” privies at the Lodge are not conventional pit privies. Waste from the LeConte pit privies is held in two four foot by four foot by five foot tanks until the end of the season each fall. These privies have outlets at the bottom of the collection tanks that are connected by sewer lines to the sewer system. The emergency water system is employed at the close of each season to flush the accumulated waste from the holding tanks of the privies into the septic tanks. Additionally, at the end of the season each fall, water is used to force solids from the septic tanks into a concrete block lined drying bed located to the east of the drain field. This bed is covered with a metal shed and its sides are lined with mortared concrete block walls. The bottom of the drying bed consists of a gravel absorption bed. The concessionaire and the GSMNP are currently considering the installation of additional flush toilets. This project is unaware of any studies to assess the environmental impact or the capacity of the existing sewer system regarding these proposed additional toilets.

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<sup>27</sup> Nichols, 37.



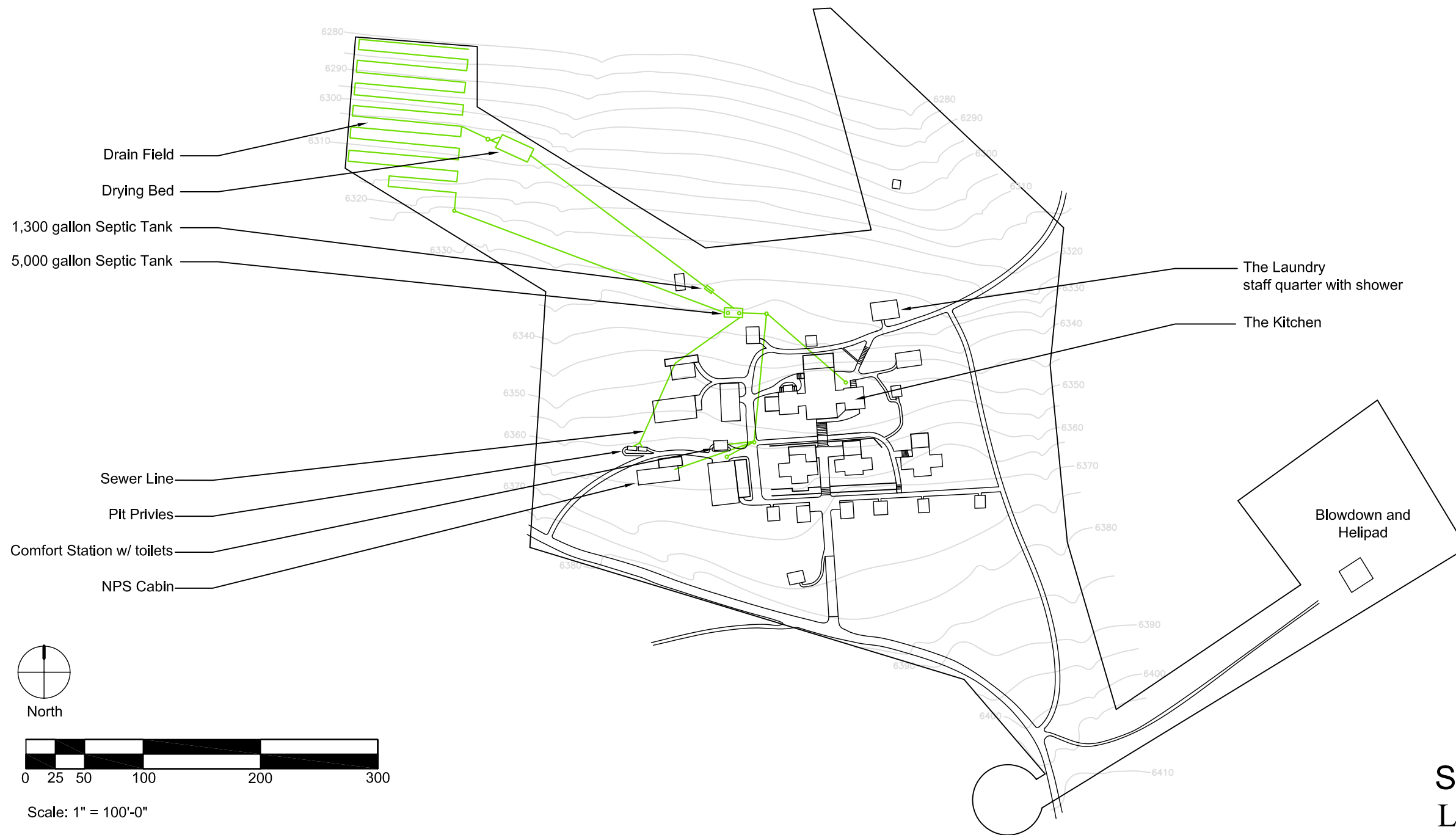


Figure 3.11 Sewer System

**Sewer System**  
**LeConte Lodge**  
Landscape Management Plan  
William Shealy  
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## Propane

During the 2000 season of operation, a system of propane tanks and lines was installed at the Lodge. Figure 3.12 illustrates the current configuration of the system. Twenty-seven 500 gallon propane tanks are situated on eight by eight foot concrete bases along the north central boundary of the Lodge property. The collection of tanks is enclosed by a chain link fence. Twenty-six of the tanks are used to support the Lodge operation for a full year with the twenty-seventh tank used to support the NPS cabin. Lines run from the propane tanks to each of the staff cabins, the incinerator beside the generator shack, the kitchen, dining room, office, guest cabins and lodges, the NPS cabin and the woodshed. Propane is used at the Lodge to heat each cabin, lodge and common areas, incinerate Lodge trash, cool three refrigerators, fuel the kitchen stove, fuel three experimental propane lights and two on-demand water heaters located in the kitchen and staff shower area. The propane lines are buried and generally follow the paths of the Lodge property. Each spring during the annual supply air lift at the Lodge, each 500 gallon tank is flown via helicopter from the Lodge to a staging area at the New Found Gap parking lot in GSMNP. A propane tanker at the staging area fills the tanks. The tanks are then transported by helicopter back to the Lodge. The full tanks are then set onto a concrete base in the propane tank farm. At present, the propane supply provided by these tanks is adequate for one year of the operation at the Lodge, but provides little excess propane for additional uses.

## Solar

Figure 3.12 illustrates the locations of solar panels within the Lodge complex. Five separate solar units provide a variety of functions at LeConte Lodge. Located to the north of the kitchen, a large panel has been installed to charge batteries for the Lodge's radio and telephone

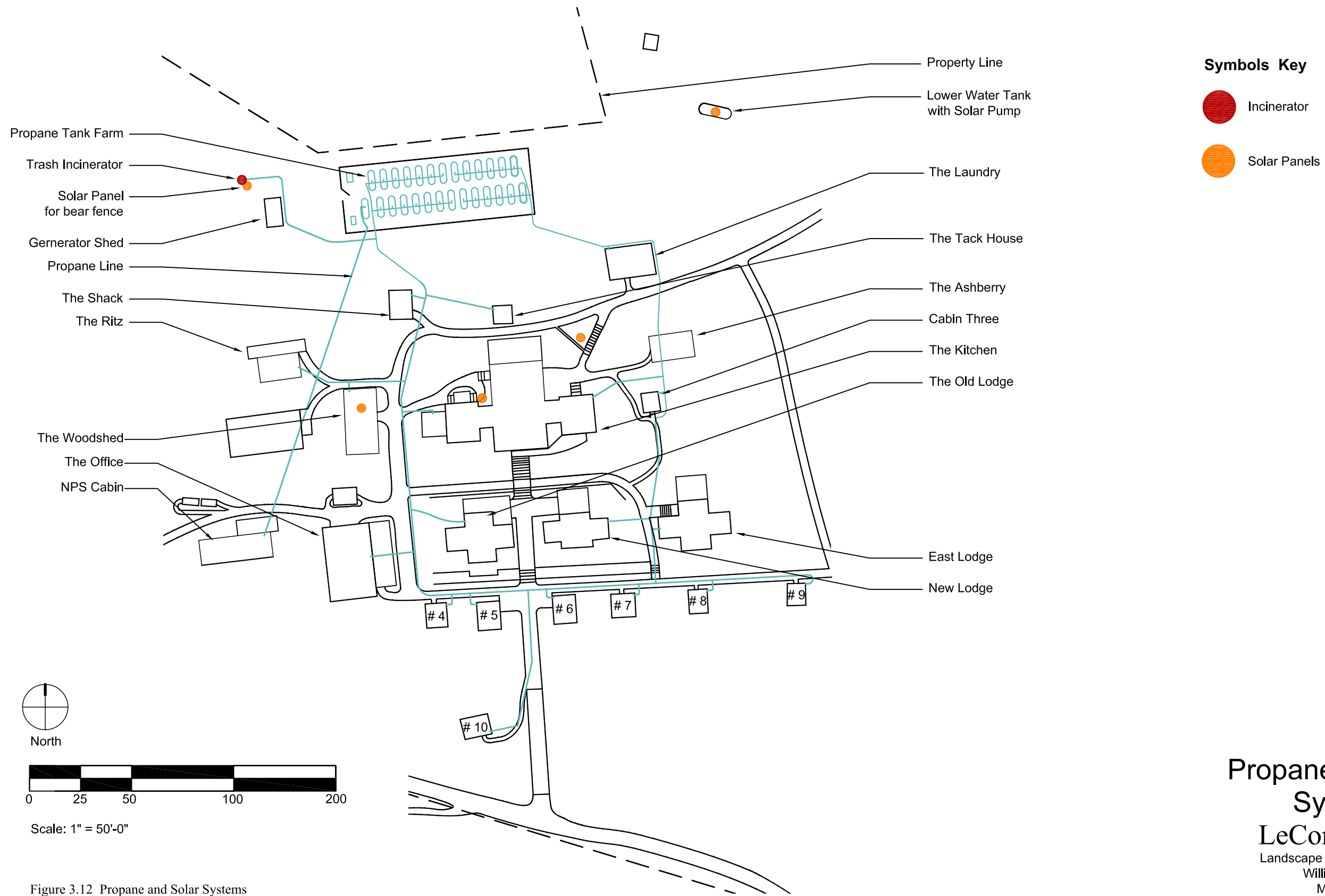


Figure 3.12 Propane and Solar Systems

**Propane and Solar Systems**  
**LeConte Lodge**  
 Landscape Management Plan  
 William Shealy  
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communication systems. This panel, pictured in Figure 3.13, oscillates tracking the sun's path to capture maximum solar radiation. The panel located on the north side of the manager's quarters is the personal system of the on-site Lodge managers. This panel is attached to an adjustable manually retractable arm which allows for maximum sun capture and decreased visibility when not in use. This system is used to charge batteries to power cell phones, a laptop computer, a television and DVD player among other things. A stationary panel has recently been added to the roof of the woodshed for the purpose of small appliance and tool usage. The panel located at the incinerator is used to power a bear-proof electric fence that surrounds the incinerator as well as the battery that supports the electric start function of the incinerator. The final panel is to be installed this season. This panel, located at water tank in the north eastern corner of the Lodge, will power the submerged water pump that will substantially decrease use of the gas powered water pump. Due to minimal canopy cover within the Lodge complex, solar energy has already proven to be a successful renewable energy source for the operation and also promises future usefulness.

### Gasoline-Powered Generators

Two gasoline-powered generators are currently used in the operation of LeConte Lodge. One is used, as described in the Water System section, to augment the water pumping of the hydraulic ram pumping system. This generator is located in the "pump shed" in the northeastern corner of the property. A new solar-powered water pump will greatly reduce the use of this generator. The second generator is found in the "generator shed" near the incinerator in the northwestern side of the property. This generator has primarily been used to charge batteries that supply power for the Lodge communication systems. With the addition of the solar panel north



Figure 3.13 Oscillating solar panel from kitchen porch.  
October 24, 2004 Photographer: William Shealy (author)

of the kitchen, much of this generator's purpose has been lost. None-the-less, the generator is used in times of limited solar energy supplies and for Lodge construction projects. While gasoline-powered generators continue to be useful at LeConte Lodge, the current trend of energy production is toward using renewable sources.

### Structures

The LeConte Lodge complex is currently composed of seven single-room guest cabins, three multi-roomed guest lodges, six free standing staff cabins, a unit that includes housing for the on-site managers, the dining room and kitchen, an office building, two storage buildings, a four-toilet comfort station, a two-unit pit privy, a generator shed, a water pump house and a NPS cabin. Figure 3.14 illustrates the location of these Lodge structures. The guest cabins and lodges are located on the southern side of the property and are also located at the highest elevation of the sloping property. Standing to the west of the cabins and lodges are the Office, comfort stations, privies and the NPS cabin. The center of the complex is dominated by a large multi-roomed structure called the Main Lodge, which houses the kitchen, dining room, and manager's quarters. To the west of the Main Lodge one finds the Woodshed and Dry Goods Storage structures. One structure, Cabin Three, is found east of the Main Lodge. Cabin Three and the five cabins located to north of the Main Lodge are reserved for housing the Lodge staff.

The oldest standing Lodge structure, the Old Lodge, was constructed in 1934 by Jack Huff. This structure along with the Main Lodge, and the eight cabins, number three through ten, were all built in the Huff family era of the Lodge. All of these structures are fifty years old or older and are part of the continuously operating Lodge, which played an important role in the establishment of the GSMNP. The United States Department of the Interior (USDI) requires

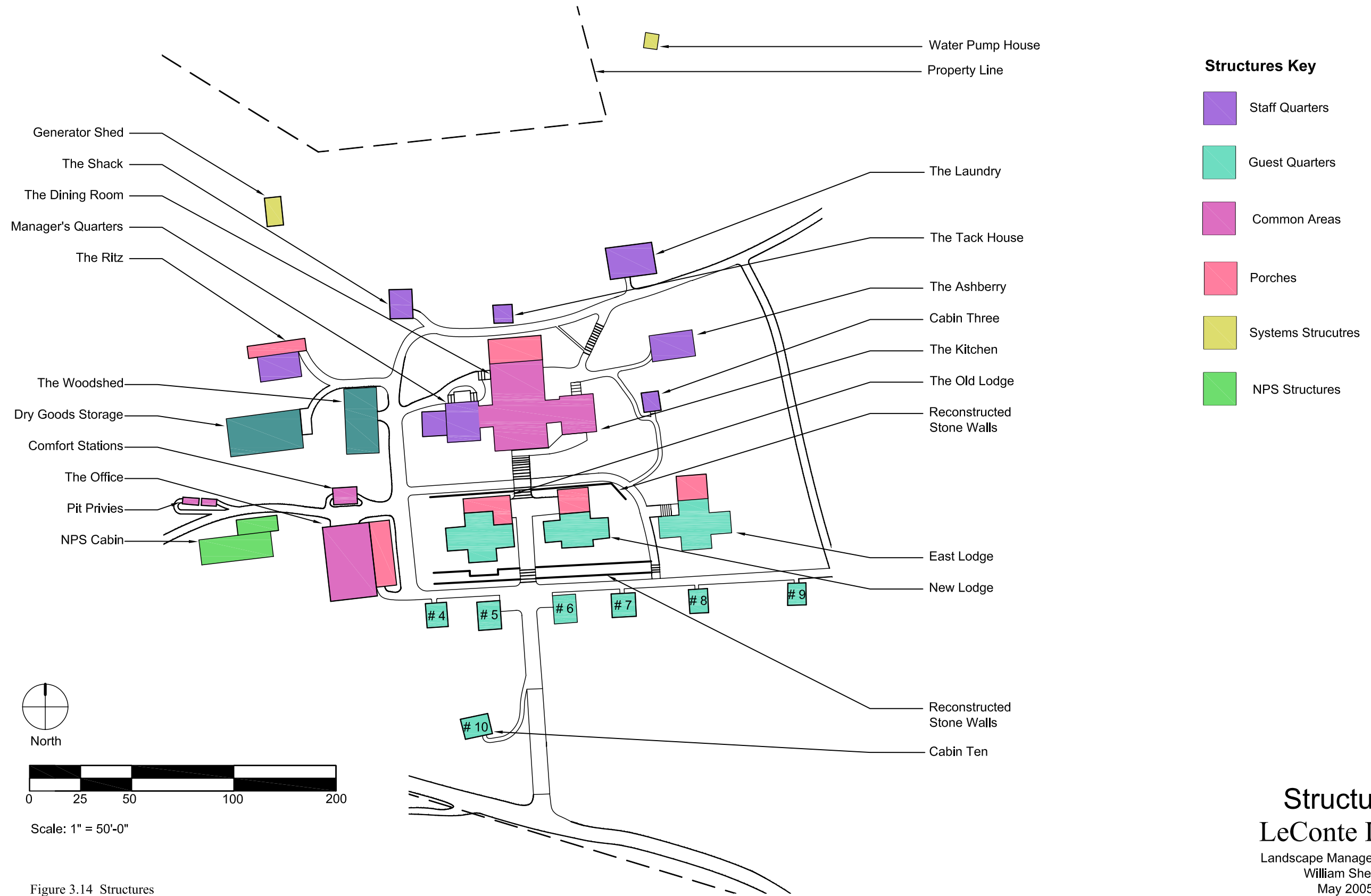


Figure 3.14 Structures

**Structures**  
**LeConte Lodge**  
 Landscape Management Plan  
 William Shealy  
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these attributes for a structure to be eligible for listing in the National Register of Historic Places (NRHP). These characteristics of the structures alone are not enough to list them as NRHP properties. In addition to fifty or more years of age and the association with an important historical person or event, the NRHP requires that a structure also retain its integrity. The USDI considers location, design, setting, materials, workmanship, feeling, and association when assessing the integrity of the potential NRHP properties.<sup>28</sup> An on going inquiry into the eligibility of these Lodge structures is being conducted by GSMNP Cultural Resource Manger, David Chapman. A February, 3, 2005 phone conversation between the author and Mr. Chapman revealed that it is the current opinion of the GSMNP Cultural Resource Manager that these NRHP eligible structures do not possess enough of their original integrity to be listed. This opinion is possibly due to additions to structures, modifications of the materials of the structures, considerable environmental changes to the setting of the Lodge and/or a questionable role of importance of LeConte Lodge in the establishment of the GSMNP.

Table 3.1 lists the specific materials and features of each structure of the Lodge. All of the NRHP eligible structures are currently roofed with cedar shakes. All structures except the Main Lodge were originally roofed with asphalt paper. Most of the structures feature wooden casement windows that are original or replicas of the original windows of the Old Lodge. These windows have been adopted as the standard replacement window for these original Lodge structures, whether or not they were originally the window type found on the structure. Of the NRHP eligible structures, the Old Lodge is the only made from hand hewn LeConte Fraser Fir. The Main Lodge is covered in shakes as it was when first constructed in 1941. The original shakes on this lodge were hand hewn from the local Fraser Fir. Commercially available cedar

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<sup>28</sup> National Park Sevice, "What Are the Criteria for Listing?" Listing a Property: National Register of Historic Places, <http://www.cr.nps.gov/nr/listing.htm> (accessed April 13, 2005).



Table 3.1  
Structure Materials List

Structure	NRHP Eligible	Siding				Roofing		Doors				
		Board and Batten	Fir Log	Commercially Produced Log	Cedar Shingle	Asphalt Shingle	Cedar Shingle	Wooden Double Multi-paned	Wooden Single Multi-paned	Solid wood	Half wood Half multi-paned	Metal
Cabins #4-#10	x	x					x			x		
Old Lodge	x		x				x			x		
New Lodge				x			x			x		
East Lodge				x			x			x		
Office			x				x			x		
Comfort Stations				x			x			x		
Pit Privies				x			x			x		
Dry Goods Storage		x					x			x		
Wood Shed		x					x			x		
Manager's Quarters	x				x		x				x	
Dinning Room	x				x		x	x	x			
Kitchen	x				x		x				x	
Cabin #3	x	x					x			x		
Ashberry		x					x		x			
Laundry			x				x				x	
Tack house		x					x			x		
Shack		x					x			x		
Ritz		x					x		x			
Generator Shed		x					x			x		
Water Pump House		x					x			x		
NPS Cabin		x				x				x		x

Table 3.1 (cont.)  
Structure Materials List

Structures	Porch		Windows								
	Covered Porch	Uncovered Porch	Wooden Fixed	Wooden Double hung sash	Vinyl Double hung sash	Wooden Double casement	Wooden Single casement	Metal Louvered	Metal Multi-paned fixed	Single Vinyl casement	Skylight
Cabins #4-#10						x					
Old Lodge	x					x					
New Lodge	x			x							
East Lodge	x					x					
Office		x		x	x						x
Comfort Stations			x								x
Pit Privies			x								x
Dry Goods Storage											x
Wood Shed											x
Manager's Quarters	x					x					x
Dinning Room		x				x					x
Kitchen				x							x
Cabin #3				x			x				
Ashberry	x						x			x	x
Laundry		x		x			x		x		x
Tack house	x		x			x					
Shack			x			x					
Ritz		x		x							
Generator Shed						x					
Water Pump House											
NPS Cabin		x						x			

shakes have become the standard replacement for the roof and walls of this structure. The original cabins are now sided with commercially produced wood board and batten siding. These cabins were roofed and sided with asphalt paper when first constructed as shown in Figure 2.4. All of these NRHP eligible structures retain their intended functions as guest rooms, a dining facility and a kitchen. The manager's quarters, which was first intended as an office, and Cabin Three, originally a guest cabin now used as a staff cabin are the only exceptions. In 2002, porches were added to the three lodge structures and the dining room. The three guest lodge porches are partially enclosed with roofs while the dining room porch is uncovered. Conventional building materials, including treated lumber, were used in the construction of the enclosed porches. Because the porch associated with the dining room is exposed to the harsh mountain elements, a wood and plastic composite lumber was used in its construction to reduce the amount of maintenance and upkeep required of a more-traditional wooden structure.

Non NHRHP eligible structures have been constructed from the late 1960's until the recent addition of the new woodshed during the 2004 season. Currently all structures are roofed with cedar shakes. A variety of functions of these non NHRP eligible structures is also expressed in their variety of wooden siding. The office and "Laundry" were built with hand hewn Fraser Fir logs, the New Lodge, East Lodge, pit privies, and comfort stations were constructed of commercially produced logs, and all other new structures were sided in the same fashion as the NHRP eligible cabins with commercially available wood board and batten. Since the construction of the last log structure in 1983, the East Lodge, the standard for new structures has become commercially produced board and batten. Windows and doors within the new structures are greatly varied as well.

In addition to the LeConte Lodge structures found within the property boundary, the complex also includes another cabin that is the property of the GSMNP. The NPS cabin is non NHRP eligible due to age and association. This cabin is roofed with asphalt shingles and sided with commercially produced board and batten. Metal framed louvered windows and solid metal doors are used on the openings of the cabin. In general, this structure makes little attempt at blending with the architectural materials of the other structures of the Lodge.

### Other Structural Elements

Dry stack walls were first built during the Huff family era to help terrace the slope for the purposes of building structures. Six stone walls located to the north and south of the Old Lodge and New Lodge still remain. Figure 3.14 illustrates the location of these walls. During the 2003 season, these six walls were uncovered and reconstructed by a stone mason for the concessionaire. Figure 3.15 shows the reconstructed walls located behind the New Lodge. The original stone was excavated from accumulated soil and vegetation and then reconstructed in the original location using the original construction methods. Historic photographs were consulted to insure that the walls were rebuilt as they had been constructed.

At the same time the original terraces were created, flagstone pathways were also constructed. These paths were reconstructed in 2003. Original paths were constructed with stone harvested from the mountaintop. During the reconstruction, the original stone was used as available and mixed with additional flagstone that was purchased commercially and flown to the Lodge. Paths were reconstructed in the original areas and additional flagstone paths were created in areas that needed path stabilization. Paths not constructed of flagstones are of local gravel, soil and grasses.



Figure 3.15 Reconstructed walls behind the New Lodge.  
October 24, 2004 Photographer: William Shealy (author)

Several sets of stairs are found within the Lodge complex. The most striking are the series that lead the guests from the main entrance on the Alum Cave Bluffs trail located on the south central Lodge boundary. This series of stairs was reconstructed during the 2000 season. The southern most flight of stairs at the top of the complex was constructed by the GSMNPS with treated lumber hand rails, gravel covered treads and gravel and tar coated timbers to form four inch high risers. The stairs effectively control erosion on this slope, but materials employed are not visually consistent with other stairs in the Lodge complex and the short risers with long treads are awkward for the average guest stride. In addition to this set of stairs, three reconstructed original flights of stairs help to make up this entrance series. Figure 3.16 features these other sets of stairs. These sets of stairs were reconstructed in the 2000 season by a stone masonry contractor for the concessionaire. The masons employed the original stones, configuration and methods of the originals to produce a functional set of stairs that is harmonious with the other stone work found at the Lodge.

The findings of the Inventory Chapter are used to inform the final recommendations of this project. Physical limitations of the site, combined with an assessment of the current conditions of LeConte Lodge are important pieces of information when developing a plan for land management. The next chapter catalogs the elements which compose the LeConte Lodge experience. These elements are the essence of the experience that bring guests to this successful remote Lodge year after year. A catalog of such elements will be combined with the findings of the Inventory Chapter to make land management recommendations which respect the site and the experience.



Figure 3.16 Stairs from Dining Room to Alum Cave Bluffs trail.  
October 24, 2004 Photographer: William Shealy (author)

## **CHAPTER FOUR:**

### **The LeConte Lodge Experience**

If you ask guests of LeConte Lodge why they return year after year, most will first say that they come to enjoy the scenic beauty of the mountaintop and to experience hiking in the Great Smoky Mountains. While it is true that the natural beauty of Mount LeConte is awe inspiring, there is something else that brings them back to this familiar place. They return because LeConte Lodge and its traditions hold a special place in their hearts, and though their trip may vary from year to year, their experience of staying overnight at the Lodge changes little. Each year, a guest can expect to be served the same meal, sleep under the same wool blankets, and interact with other guests at meals, sunset gazing, and in their sleeping quarters.

The traditions and rituals that make up the LeConte Lodge Experience began in the early days of the Lodge. Some have evolved over time as the Lodge has aged, but some deep seeded traditions have persisted throughout the Lodge's history. This chapter focuses on the LeConte Lodge Experience and chronicles its formation along with the physical formation of the Lodge itself. Much of the information for this chapter is gathered from non-academic books, newspaper accounts, personal interviews, and articles. These are the sources that best capture the personal accounts of guests, staff members, managers, and historians before they are edited by others. By examining their words, common events and daily activities can be cataloged and commonalities and recurring themes can be identified.



### **Paul Adams Era (1925)**

The early managers of LeConte Lodge, first Paul Adams and then Jack and Pauline Huff, began many of the traditions that make up the LeConte Lodge Experience presently. While Paul Adams only managed LeConte Lodge for a little over a year, he provided a level of service that is still expected by guests of the Lodge today. In 1925, when Adams first began managing LeConte Lodge, no other backcountry lodges were operating in the Great Smoky Mountains. Twelve years before LeConte Lodge's inception, Horace Kephart described the hinterlands of the Southern Appalachians saying,

The back country is rough. No boat nor canoe can stem its brawling waters. No bicycle nor automobile can enter it. No coach can endure its roads. Here is a land of lumber wagons, and saddle-bags, and shackly little sleds that are dragged over the bare ground by harnessed steers. This is the country that ordinary tourist shun."<sup>29</sup>

Though ordinary tourists often shied away from backcountry camping, they did not shy away from LeConte Lodge.

From reading Adam's own account of life atop Mt. LeConte, it can be inferred that guest's experiences of staying at LeConte Lodge were much different than typical backcountry camping trips of the time.<sup>30</sup> By comparing historical photographs of traditional backcountry camping in the Great Smoky Mountains with images of guests staying at LeConte Lodge in the early years, it can be surmised that guests of LeConte Lodge enjoyed many luxuries that other backpackers did not. Namely, guest of the Lodge did not have to haul all of their gear to the top of the mountain. Tents, food preparation items, sleeping bags, and other camping gear could be left at home. Guests only had to provide items to make themselves more comfortable while they were at the Lodge. They could simply show up to the Lodge, be provided a place to sleep, and

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<sup>29</sup> Horace Kephart, *Our Southern Highlanders* (New York: Outing Publishing Company, 1913, 29.

<sup>30</sup> Adams, 34.

be fed a hearty meal. Guests, though tired from their hike, were free to explore the mountaintop without having to worry about setting up the night's camp or preparing a meal. This is an important part of the LeConte Lodge Experience that has persisted over the many decades of the Lodge's history—the idea that guests can experience the backcountry without any worry. LeConte Lodge, you could say, made the backcountry accessible to all who could get there.

Paul Adams also played a large part in the creation of many other LeConte Lodge traditions. For one, the idea that meals and sleeping arrangements are communal began under Paul Adams. When Adams arrived on Mt. LeConte, no permanent Lodge shelters had been erected. Remnants of hunting camps and a hunting shack were present, but these could not house the guests that would be venturing to LeConte. At first, guests to LeConte Lodge were housed communally in several large canvas tents. Both males and females shared the tents. The tents contained hand hewn fir bunks that were covered with braches and twigs from the Fraser Fir of the mountaintop.<sup>31</sup> Guests could also expect to eat dinner family style at open air tables set up outside the tents. Adams and his staff prepared all meals for the guests over an open fire. During this first year, there is no indication of a set menu, though Adams writes about the preparation of a jello dessert consisting of “oranges, apples, walnut meats, and bananas.”<sup>32</sup> Another lasting tradition that began during the first year of operation is the serving of coffee and “other drinks” upon a guest's arrival to the Lodge. Today, hot coffee and homemade hot chocolate are always available, expected, and enjoyed by guests throughout the day. Ev Sherrick writes of his 1984 trip to LeConte Lodge, “On arrival at the lodge, we were welcomed by the staff with mugs of hot coffee and chocolate, truly refreshing after a long hike.”<sup>33</sup>

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<sup>31</sup> Adams, 45.

<sup>32</sup> Adams, 45.

<sup>33</sup> Ev Sherrick, “Trek Made to Mt. LeConte,” *The Mountain Press*, October 8, 1984.

During the slow winter months of 1925-26, Adams began constructing the first permanent cabin on the mountaintop. This primitive cabin replaced the canvas tents and featured one window, one seven-foot door, hand-hewn flooring and a hand-split fir shingle roof. Four levels of bunk beds filled the rear eight feet of the cabin; the lowest bed being divided into two sections with a three-foot walkway between them. Placed in the center of the room, a wood fired drum heater provided heat throughout the cabin.<sup>34</sup> Though the cabin provided guests with a more permanent lodging facility, all guests still shared the cabin and ate meals together outside.

Because guests to the Lodge did not have to fuss with setting up camp, they had plenty of free time to explore the mountain and its outstanding overlooks. During the early years of the Lodge, it can be surmised that the tradition of hiking to Cliff Tops after dinner for sunset and Myrtle Point before breakfast began. Though Adams never mentions these events directly, he does write in his book of leading guests on a hike to Myrtle Point during the evening to view the lights of the towns in the valley below. It is said that Adams had a keen eye and was able to identify the various outlying towns by day or night.<sup>35</sup> In later years, Adams himself would become a guest at LeConte Lodge. In his writings about his experience with LeConte Lodge he mentions, that he enjoyed the hospitality of the concessionaires but that, “most of all, I have enjoyed visiting again the dark forest of spruce and balsams, hearing the call of the veery and the winter wren, seeing again the delicate beauty of sand myrtle blossoms, and the red splendor of sunrises and sunsets from Myrtle Point and Cliff Top.”<sup>36</sup> Ritual hikes to Cliff Tops for sunset and Myrtle Point for sunrise persist to this day; offering guests a time to share in the natural beauty of the surrounding mountains.

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<sup>34</sup> Adams, 59.

<sup>35</sup> Adams, 59.

<sup>36</sup> Adams, 63.

### **Jack and Pauline Huff Era (1926-1959)**

When Jack Huff took over as manager of LeConte Lodge in 1926, he continued many of the traditions that Paul Adams began. In the early years of Jack Huff's management, guests still slept in a communal primitive cabin and ate meals together outside. However, with the construction of new lodge structures, individual cabins, and an inside dining area, the idea of communal sleeping and eating changed a bit.

The first structure built by Jack Huff was merely a larger more refined version of Adams' first cabin. The "House that Jack Built," as it was referred to, was a large bunk house with many lofts for communal sleeping. Kenneth Wise relays the experience of being a guest in this structure:

Bunk beds, sixteen upper and sixteen lower, were arranged on the door end of the lodge. They were made of floorboarding covered with thick layers of balsam branches and finished with blankets placed over the branches. Guests slept full clothed, four abreast with no separate accommodations for men and women. The fire was kept going all night with the door and windows all open, regardless of weather.<sup>37</sup>

Figure 4.1 depicts the interior of this structure. An outdoor kitchen and dining area remained the mode for food preparation and consumption until the early thirties. As time passed, Jack's structures increasingly provided more guest privacy and amenities.

The "Old Lodge" is the oldest standing structure within the current Lodge complex. This structure was built in 1934 and included separate guest rooms connected to a main common area. With the completion of Old Lodge, guest privacy was introduced. Upon arrival to the Lodge, guests were assigned to a particular room within Old Lodge. The Lodge rooms slept four in a double bunk bed that utilized traditional mattresses instead of fir branches. The only communal space for guests to gather was the main common area of the structure. This area contained

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<sup>37</sup> Wise, 118.



Figure 4.1 Interior of the “House that Jack Built.”

1928 Photographer: James Thompson

Photograph courtesy of the The University of Tennessee Libraries, Great Smoky Mountains Regional Project

benches and chairs so that guests could gather comfortably, but guests no longer had to share a bed with complete strangers.

Jack Huff went one step further towards making sleeping quarters more private when he built seven free-standing single-room cabins in the 1940's. These cabins afforded guests the highest level of privacy. The cabins slept four individuals and had no common space. All Lodge structures, including the cabins, featured wood burning fireplaces or heaters. The wood for the fires was gathered from the mountaintop.

The dining experience changed dramatically with the building of Main Lodge. Main Lodge is composed of a kitchen, manager's quarters, and dining room facility. When the Main Lodge facility was completed in 1941, guests no longer had to eat outside at rustic tables. The dining experience became much more refined with dinners being served to guests in a large dining room with proper tables, chairs, tablecloths, silverware, dishes, and most importantly heat. Meals were still served family style with all guests eating dinner at the same time. At dinner, guests could expect to be served a meat, vegetables and a half of a canned peach. Though the meal is not the same today as it was during Jack Huff's time, one element is still present; the half peach is still served to LeConte Lodge Guests.

In April of 1934, the first female joined the LeConte Lodge management team when Jack Huff married Pauline Whaling in a sunrise ceremony on Myrtle Point.<sup>38</sup> Lodge construction continued until Jack's departure from the Lodge in 1949. Jack Huff left LeConte Lodge for Gatlinburg, Tennessee when his father passed away and he was given the position of manager of the Mountain View Hotel. With Jack's departure, major construction efforts and Lodge expansion ceased. Pauline, the Huff children, and the staff of locals, managed the Lodge in a more routine fashion during Jack's absence. Pauline managed the Lodge without Jack for ten

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<sup>38</sup> *Knoxville News-Sentinel*, "Three Couples Live Happily Ever After," June 8, 1976.

years until it was sold to Herrick and Myrtle Brown in 1959. It can be surmised that during this ten-year time period, many of the LeConte Lodge traditions really took root. Guests returned year after year to see that the only thing that was different at the Lodge was that the Huff children had grown. Coffee and hot drinks were still served to guest when they arrived, smoke from wood-burning fires still filled the air, wool blankets adorned the beds, and meals were still served family style.

There are many written accounts of trips to LeConte Lodge during the management of Jack and Pauline Huff. Some of the writers, like Grace McNicol, were LeConte Lodge enthusiasts; having hiked and stayed at the Lodge literally hundreds of times. Other writers simply recount their adventures and impressions of the Lodge in journal articles. From these writings, the true LeConte Lodge experience is captured.

The *Chicago Naturalist* published an article in 1940 titled “A Day on LeConte.” In this article, the author W.J. Beecher describes his experience as a guest at LeConte Lodge. After relating his arduous hike to the summit, Beecher arrives at the Lodge and escapes the rain in a “clean cabin” where he finds a “log fire sputtering in the fireplace.”<sup>39</sup> He goes further to describe an evening of delightful comradary between the guests who told stories about their travels in other wild regions. Later “all retired to excellently accommodated rustic bed-steads arranged, berth style”<sup>40</sup> The next morning several of the guests arose to a chorus of juncos before trekking to “the top to view the sunrise before breakfast.”<sup>41</sup> After dining together the guests said their goodbyes and hiked off of the mountain.

In *Gracie and the Mountain* author Emilie Ervin Powell, tells the story of Grace McNicol’s 244 hikes to LeConte Lodge between 1954 and 1983. The book is based on

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<sup>39</sup> W.J. Beecher, “A Day on Mt. LeConte,” *Chicago Naturalist* 3, no. 2 (1940): 55.

<sup>40</sup> Beecher, 55.

<sup>41</sup> Beecher, 55.

interviews with McNicol and her personal diary entries. When Grace first began hiking and staying overnight at LeConte Lodge, Pauline Huff, her children, and a staff of local Gatlinburg residents were running the Lodge. Grace recounts the experience of first staying overnight at the Lodge and being assigned to share a room with other guests. She says that she,

spent the night sleeping in the bottom bunk of a large handmade double bunk bed. It was made of balsam wood. The women took the top bunk. I really like the Hudson Bay blankets. Their bright green, yellow and red colors shone against the mellowed balsam walls, and I needed the warmth of a wool cover before morning.<sup>42</sup>

Today, the Lodge rooms have changed little; the same Hudson Bay wool blankets adorn the balsam wood bunk beds and guests share accommodations with members of other parties. Figure 4.2 and 4.3 illustrate the similarity in the 1934 guest room and the contemporary guestroom.

Through Grace McNicol's accounts of trips to LeConte Lodge, the evolution of the experience can be seen. It appears that the guest experience remained very static during the last years of the Huff's management. It also becomes apparent that there have been relatively few changes at LeConte Lodge that have altered the guest's experience or expectations during the subsequent management periods—Herrick and Myrtle Brown, Jim Huff and John Ogle, and the current Wilderness Lodging. Most of the changes to the experience after the Huffs left are related to NPS mandated regulations, physical additions of structures, and the addition of certain comfort amenities.

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<sup>42</sup> Emilie Ervin Powell, *Gracie and the Mountain: Growing Young Climbing Mt. LeConte* (Johnson City: The Overmountain Press, 1981), 23.





Figure 4.2 Old Lodge guest room with double bunk bed and Hudson Bay blankets.  
circa 1934  
Photograph courtesy of the Great Smoky Mountains Library



Figure 4.3 Contemporary view of Old Lodge guest room.  
circa 2000  
Photograph courtesy of LeConte Lodge Limited LTD., Partnership

### **Herrick and Myrtle Brown Era (1960-1975)**

During Herrick and Myrtle Brown's watch, a push for the closure of LeConte Lodge was moving forward. Wilderness advocates hoped to close the Lodge and designate thousands of continuous back country acres in the GSMNP as wilderness area. Activists cited the environmental impacts the Lodge had on the mountaintop as reason to close it. Though the wilderness designation was moving forward, Herrick and Myrtle Brown still had to keep up the Lodge facilities and serve guests. During their stint as managers two major improvements to LeConte Lodge were introduced: the building of the Office and the installation of flush toilets. Both of these improvements affected the guest's experience at the Lodge.

Completed in 1974, the Office served as both an office for registering guests and a recreation facility for both guests and day hikers. The lower floor of the Office housed storage space and two flush toilets. With the completion of this building, guests of the Lodge had an additional communal space in which to congregate. They also no longer had to use pit privies that often smelled foul from over use. The opening of the Office facilities changed the experience of LeConte Lodge guests. In a way, the move towards more privacy was reversed a bit. Now, guests who were assigned to private cabins had a place to congregate after dark. Plenty of rocking chairs, cards, books, musical instruments, and board games are available in the office complex. Also, it is not uncommon to see both Lodge guests, day hikers, and Mount LeConte shelter guests congregating on the office porch during the day. Further, the addition of the flush toilets, reserved for paying guest only, brought a bit more refinement to the LeConte Lodge Experience. Flush toilets are now an expected amenity at the Lodge and are mentioned in many travel accounts.

### **Jim Huff and Hugh Ogle Era (1976-1990)**

Herrick and Myrtle Brown sold LeConte Lodge to Jim Huff, Hugh Ogle, and Bill Rinearson in 1977, and this trio managed the Lodge until 1990. During the early years of their management, the battle over the closing of the Lodge was still raging. In order to begin lessening the impact of the Lodge on the ecosystem, a decision was made to end the use of wood heating at the Lodge. All wood stoves and fireplaces were converted so that kerosene could be used for heating. This change in heating styles allowed the Lodge to stop the use of downed wood for stove fuel. However, to the guests of LeConte Lodge, the ambiance associated with sitting around a wood burning stove or fireplace and smelling the delightful wood smoke ended. Grace McNicol writes that a “touch of frontier hominess was lost” when the burning of wood was outlawed at Mt. LeConte.<sup>43</sup>

In 1982, the NPS’s master plan included the continuation of LeConte Lodge operations within the backcountry. However, many stipulations were placed on Lodge operations. One of these stipulations ended up having a positive impact on the LeConte Lodge Experience. Before 1984, most of the Lodge supplies were packed to the mountaintop on the backs of horses. The horse hooves proved destructive to the trail system and the vegetation. In 1984, the use of pack horses ended at LeConte Lodge with the introduction of a llama train.

Llamas have soft padded feet, are adept hikers, and are an unexpected and delightful sight for hikers and LeConte Lodge guests. The llama train is used to hike out dirty linens, garbage, and other waste from the Lodge and to hike in clean linens, fresh produce and food stuffs, supplies, and staff mail. The llama train visits the Lodge three times weekly using the Trillium Gap trail. Guests of LeConte Lodge look forward to seeing, petting, and feeding breakfast

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<sup>43</sup> Powell, 23.

leftovers to the llamas when they arrive at the Lodge around lunchtime. It is definitely a treat for guests to experience the llamas. The llamas serve as an example of the Lodge's efforts to reduce their impact on the natural environment. Figure 4.4 shows LeConte Lodge crew member, Sandie Walker, feeding "Taz" leftover pancakes.

The NPS also mandated that the Lodge begin using more canned foods and freeze dried foods that could be flown in by helicopter at the beginning of the season. The idea being that more items being flown in and stored for use throughout the season would cut back on the number of supply trips that the llamas would have to make, thus helping to ease trail erosion. Beginning in the early eighties and because of the mandate to use more canned products, the LeConte Lodge menu as it is known to this day began. As Alex Jones reports in the *New York Times* article "Inns with a Mountain Tang,"

Dinner is always the same: Knorr Swiss Minestrone Soup, Argentine beef and gravy, . . . canned green beans, canned baked apples, and instant mashed potatoes. Beside each plate is a dish which, in the dim kerosene light, seems to contain a giant egg yolk. It is dessert: half a canned peach. Cornbread, cookies and the hot chocolate are made from scratch. Coffee is percolated. Breakfast also never varies: pancakes, real scrambled eggs, Canadian bacon, and scratch biscuits.<sup>44</sup>

Alternative meals are served to guests who stay more than one night or who have a special dietary need. Though it would seem that guests would tire of the same meal being served year after year, it is not the case at LeConte Lodge. Guests, tired from their hikes are happy to indulge in the hearty meals and share in the company of other guests. The 75<sup>th</sup> anniversary staff t-shirt paid homage to the traditional menu by claiming on the back "75 years of beef and gravy, mashed potatoes, green beans, baked apples, cornbread, chocolate chip cookies, and a peach half."

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<sup>44</sup> Alex S. Jones, "Inns with a Mountain Tang," *New York Times*, sec. XX p.15, July 31, 1983.



Figure 4.4 LeConte Lodge staff member feeding llama.  
Summer 2003 Photographer: William Shealy (author)

**Wilderness Lodging Era (1991-present)**

From 1991 to the present day, LeConte Lodge has been managed by a group called LeConte Lodge LTD., Partnership. This partnership is made up of LeConte Lodge general managers Tim and Lisa Line and William Stokley of Stokley Hospitality Enterprises. In the last five years, the current management has been working very hard to make physical as well as environmental improvements at LeConte Lodge. Many of these improvements have impacted the guest experience.

One of the biggest changes in the last five years has been the installation of a propane gas system in 2000. The propane system supplies fuel to heat water, heat guest and staff quarters and common areas, operate refrigerators in the kitchen, and provide fuel for the gas cooking range. With the addition of propane heating, the smell of kerosene heaters no longer permeates cabins, lodges, and other communal spaces. This was a welcome change for many guests as the kerosene heat was not only smelly, but was also very dry heat. The use of kerosene lamps for lighting is still in use at the Lodge and does not appear to be changing.

Along with the new propane system a few major constructions projects have also been completed. Between 2001 and 2002 new staff quarters, a dining room extension with an observation deck, a storage facility, and three covered porches on the lodge buildings were added. During the 2004 season, the office complex received a much needed interior face lift with new flooring, skylights, and mending of the walls. The addition of the porches to the Lodge facilities and the dining room and the revamping of the office complex have had a major affect on the LeConte Lodge Experience. The porches on the fronts of the three lodge structures, Old Lodge, New Lodge, and East Lodge, are very enjoyable for the guests who are staying in the lodge rooms. They provide additional communal space and shelter on rainy days. However,

these structures have also impacted the communal nature of the Lodge as a whole in that the use of the lodge porches is restricted to individuals who are staying in the particular structure. The addition of the observation porch on the front of the dining room is a welcome feature for all visitors. Guests enjoy sitting out on this porch after dinner and watching the lights in the valley below. The porch has added a new area for guests to congregate and adds to the communal nature of the Lodge. The makeover of the office complex has created a more inviting environment for guests to relax in. Before the remodeling, the office recreation room was a rather dark room. The addition of skylights and the new wall coverings of light-colored wood brighten the room and make it more inviting for guests.

Since its inception in the 1920's LeConte Lodge has provided guests with a wilderness experience unlike any other. The rustic accommodations, shared meals and rooms, Hudson Bay wool blankets, sunset and sunrise hikes, kerosene lamps, never-changing menus, abundant hot chocolate and coffee, gathering in communal spaces, and the grandeur of the mountains brings guests back year after year. The LeConte Lodge Experience is not something that is easily explained to someone who has never been to the Lodge, but after only one visit, many guests feel as though it is a part of them. Ron Burkett of Birmingham Alabama writes in his online report of LeConte Lodge and his first overnight stay at the Lodge,

Dinner was served daily at 6:00 pm and about 10 or 15 minutes before we got a reminder knock at our door. The first night's dinner started off with a bowl of cabbage beef soup and cornbread, then the main course consisted of roast beef, mashed potatoes, green beans and baked apples. We drank water, hot chocolate or coffee and there was a basket of chocolate-chip cookies on the table for dessert. After dinner, we went back to the cabin and readied ourselves for the short trip up to Cliff Tops where everyone goes to watch the sunset... There were several people there but the crowd quickly dispersed after the sun went down. The wind continued to blow furiously. We made our way back to the cabin and put our equipment away. Then we each grabbed our mug from the room and went to the dining hall and had them filled with hot chocolate. We then wandered over to the

building that serves as the office and "community center" and sat around talking and enjoying the chocolate. ..Back in the cabin, we began to shut down around 10:00 pm. I climbed up in my bunk and made a last field note entry by flashlight. It ends with "*I have had a good day!*", and I had.<sup>45</sup>

It is through personal accounts such as Ron Burkett's that the importance of tradition at LeConte Lodge comes to light. Ron had never stayed at the Lodge before yet he mentions the trip to Cliff Tops to watch sunset, the dinner menu, hot chocolate, and hanging out in the Office. Any changes that may occur in the future at the Lodge must take into account how the change may affect the guest's expected experience. These shared experiences, this LeConte Lodge Experience, has brought guests back to the Lodge for return stays for eighty years.

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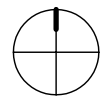
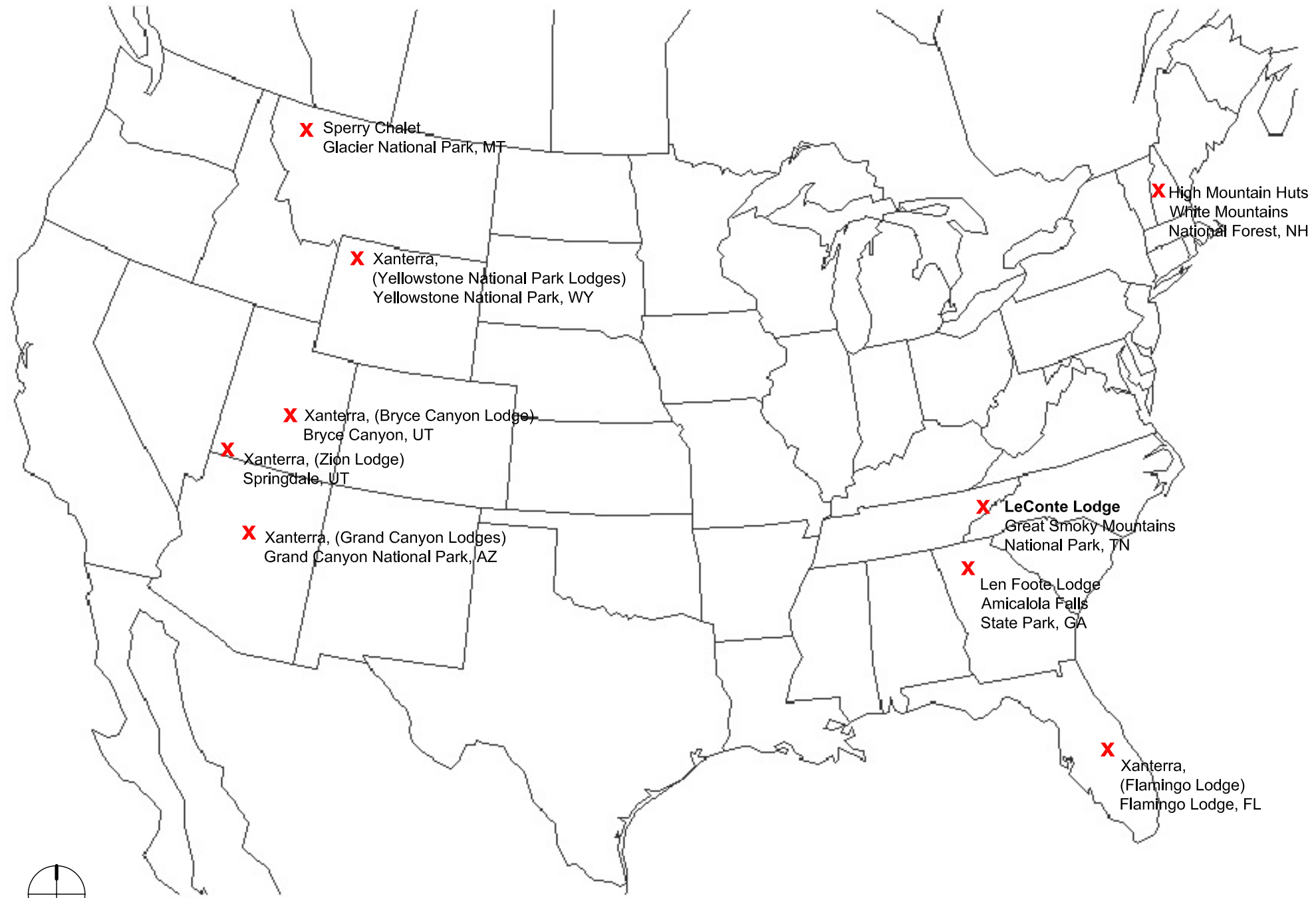
<sup>45</sup> Burkett, Ron. Mt. "LeConte Lodge, GSMNP-April 13-15, 1998," <http://www.Basecamp.com/ronsworld/smokys/mtleconterpt.html>.



## **CHAPTER FIVE:**

### **Case Studies**

Before making recommendations for the alteration of current landscape management policies at LeConte Lodge, a survey of other wilderness lodge operations is necessary. Other lodge concession operations within National Parks, National Forests, and State Parks can be referenced to make a case for new landscape systems and policies at LeConte Lodge. Many lodge operations have embraced new construction methods, cutting edge technologies and waste management strategies. These strategies help to decrease the dependence of the lodge operation on outside resources, maintain the integrity of the local natural environment, and retain the wilderness experience that is expected by the visitor. This chapter will examine 3 sites and one operation that are currently operating lodges and other hotels within State and National Parks. These case studies were chosen after surveying many back country lodges that are currently in operation. An array of operation styles were discovered during this survey. The chosen case studies are all located on public lands and several have a long history of operation. In particular, one site, Sperry Lodge, is a National Historic Landmark, and one lodge, Len Foote Lodge, is a new facility that employs many low impact technologies. Furthermore, Xanterra Corporation has been chosen because they are leaders in impact reduction programs. Each of the operations featured in this chapter are located in backcountry settings, making them similar to LeConte Lodge. Each provide important lessons on how lodging operations in the back country can provide guests with excellent and expected services while still striving to have as little impact as possible on the natural environment. Figure 5.1 locates each case study operation .



North

Scale: No Scale Specified

\* This is a small sample of the many Xanterra operations.

Figure 5.1 Case Studies Location Map

Case Studies  
Location Map  
LeConte Lodge  
Landscape Management Plan  
William Shealy  
May 2005

### **Len Foote Lodge—Amicalola Falls State Park, Georgia**

Located at 3,100 feet in elevation and four and a half miles from the southern terminus of the Appalachian Trail in the Amicalola Falls State Park, Len Foote Lodge accommodates an average of 6,000 overnight guests yearly.<sup>46</sup> The lodge was constructed in 1997 with a mission to “protect Georgia’s natural resources through education and recreation.”<sup>47</sup> The Georgia Department of Natural Resources teamed up with Appalachian Education and Recreation Services, a not-for-profit affiliate of the Georgia Appalachian Trail Club, to create a “hike inn” that brings up to 47 visitors per night on a five mile hike into the Georgia backcountry to learn about protection of the region’s natural resources. Since its inception, low impact operations and environmental education have been the primary goals of Len Foote Lodge. While at the lodge, guests participate in activities and programs highlighting the role of environmental technologies and programs within lodge operations.

Designed by Reynolds Architects in Gainesville, Georgia, the lodge structures sit lightly on the site taking full advantage of the local renewable resources. The entire lodge complex is raised on piers, which allowed the site to be developed without grading. Further, the facility employs technologies such as: solar collectors, compost toilets, roof water harvesting, vermicomposting of kitchen scraps and a solar water preheat system to decrease dependency on offsite resources. Due to the lack of disturbance caused by this development, the forest engulfs the complex making solar collection a limited option. For this reason, the lodge is hooked into the regional electric grid with solar energy being used to augment the energy supply and as an educational tool.

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<sup>46</sup> Heather McKee, e-mail message to author, March 30, 2005.

<sup>47</sup> Len Foote Lodge, “About the Inn,” Len Foote Lodge, <http://www.hike-inn.com/> (accessed April 16, 2005).

Len Foote Lodge excels in its effort to process the majority of the operation's organic wastes on site. Two primary systems for managing organic waste are employed at the lodge: vermicomposting for food waste and a compost toilet system to handle human waste. The vermicompost system relies on a type of worm commonly referred to as the Red Wiggler (*Eisenia foetida*) to consume most types of food and paper waste. Heather McKee, Education Manager at Len Foote Lodge, explains that "below the Lodge's kitchen, bins containing an estimated 60,000 red wigglers have consumed approximately 2,195 pounds of organic scraps in two years."<sup>48</sup> A system of compost toilets, manufactured by Biological Mediation Systems, processes human waste into useable organic matter and helps to minimize water waste associated with traditional flush toilets. Five composting units accommodate eight staff members, an annual guest load of 6,000, and an estimated 1,100 yearly day hikers.<sup>49</sup> With daily maintenance and constant ventilation, these five odor-free units compost the waste of lodge guests and produce rich organic compost. The system uses less than 3,000 gallons of water per year, compared to a traditional flush toilet system that uses between 70,000 and 117,000 additional gallons per year based on the same number of uses.<sup>50</sup> Compost harvested from both the vermicomposting and the compost toilets is used to amend the lodge vegetable and landscape gardens.

Any land that was disturbed in the construction of the Lodge has been stabilized and replanted to help merge the surrounding woodland with the new complex. Furthermore, gardens of native plants adorn the lodge site serving not only as an example of landscaping with native plants, but also as an opportunity to educate Lodge guests on the use of rainwater collection for garden irrigation. During dry periods, rainwater collected from roof runoff is used to irrigate

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<sup>48</sup> McKee, 3, 30, 2005 email.

<sup>49</sup> McKee, 3, 30, 2005 email.

<sup>50</sup> Len Foote Lodge compost toilet educational pamphlet, 2005.

both the native plant gardens and staff vegetable gardens. Not only do the gardens help to connect guests to the native Georgia landscape, they serve as the backdrop for solar observation. “Star Base,” a celestial calendar, serves as a focal point within the landscape. Located in the northeastern corner of the property, this functional sculpture, commissioned by the Lodge architects, celebrates the path of the sun. On the spring and fall equinox, the rising sun is centered in the oculus of the granite slabs producing a glowing orb on the rear wall of the cave, which is located directly behind the piece. This piece of landscape art connects the guest with the movement of the sun throughout the seasons.

The staff at Len Foote Lodge strives to educate their guests in many ways and these educational opportunities present themselves to guests in both direct and indirect ways. As mentioned above, the simple use of native plants in the landscape illustrates the importance of blending with the natural environment. A more direct educational opportunity is presented to guests as they enter the dining room. Upon the dining room wall, guests encounter a dry erase board where the pounds of food waste generated each day in the lodge dining room are recorded. Posted beside this board, “The Clean Plate Policy” reflects the Lodge’s goal of zero food waste. This goal is presented to guests as a challenge—a challenge to not leave excessive food waste on their plates. Guests are asked to take only what they can consume at the family style meals. Any food scraps that are left on the guest’s plates are weighed and recorded, in ounces, on the dry erase board. Food waste amounts produced by lodge guests from previous days offers a visual indication of waste created by other guests. This visual indication produces a bit of healthy competition with guests trying to beat out other guests by having as little food waste as possible—with the ultimate goal being zero ounces of food waste.

Another simple waste reduction method used by the Lodge also relies on guest participation for success. All guests are informed repeatedly of the Lodge's policy of packing out all trash that is packed in. Internet information, mailed reservation confirmation material and signs at the lodge clearly state: "Please help us keep our mountain settings beautiful by leaving only foot prints when you visit. If you pack it in, please pack it out." To support this waste reduction goal of pack it in pack it out, no trashcans are available in lodge rooms, common areas, or bathroom facilities. This reinforces the idea that waste created by the guest should be taken out with the guest. This program has proven itself to be very successful.

Certainly, the education program of the Lodge is central to the success of the aforementioned programs. Proof of the commitment to environmental education can be seen in the employment of a full-time on-site education manager. The education manager produces literature about the environmental initiatives of the lodge and informational programs for guests. The lodge staff effectively makes use of an initial conservation-minded facilities tour to highlight and introduce the alternative systems used at the Lodge. Additionally, evening programs led by the education manager are dedicated to teaching guests about local natural resources and the Lodge's systems and initiatives that protect them. Such programs are instrumental in engaging the guest in the Lodge's mission of resource protection. This education program and many of the waste management initiatives of Len Foote Lodge will be used to guide LeConte Lodge's future waste management plan.

### **Sperry Chalet—Glacier National Park, Montana**

Just before the creation of Glacier National Park (GNP) in May 1911, a system of two grand hotels and seven smaller chalets connected by hiking and horseback trails was planned.

High in the mountains of Glacier, the Great Northern Railway began building these structures in 1910. It was the vision of Louis Hill, president of Great Northern Railway, to create a network of lodging options with great views of the sublime Montana wilderness. Of course, these lodges and hotels would be accessible by his company's train line. Hill was a great advocate for the creation of GNP and liked to refer to this area of the country as the "American Alps."<sup>51</sup> It was only fitting that the style of architecture chosen for the Great Northern structures would be reminiscent of Swiss Chalets. One of these chalets, Sperry Chalet, opened for business in 1914.

Located in an open alpine meadow at 6,500 feet in elevation, Sperry Chalet is a six and seven tenths mile hike from Lake McDonald Lodge. Sperry Chalet was operated continuously from 1914 until 1993 with the Great Northern Railway under management and ownership until 1954 when it was purchased by the National Park Service.<sup>52</sup> Since 1954, Belton Chalets Incorporated has held the concessions permit to operate the facility for GNP. In August 1977, the chalet was listed on the National Register of Historic Places.<sup>53</sup> In May 1987, Sperry Chalet was declared a National Historic Landmark for its importance in the story of the Great Northern Railway.<sup>54</sup> Such historic designation has offered a great amount of incentive to keep the chalet operational and protected.

From 1954 until 1992 Belton Chalets Incorporated held the permit to operate the facility for GNP. During the Belton Chalets tenure as concessionaires, only a few major improvements were completed. One of these "improvements" was the replacement of the pit toilet system with

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<sup>51</sup> Harrison, Laura Soulliere, "Great Northern Railway Buildings, Glacier," *Architecture in the Parks*, Department of the Interior National Park Service, 1986. [http://www.cr.nps.gov/history/online\\_books/harrison/harrison8.htm/](http://www.cr.nps.gov/history/online_books/harrison/harrison8.htm/) (accessed April, 12, 2005).

<sup>52</sup> Anderson, Kristin. Case Studies In protected Area Management: Concessions Management in Glacier National Park's Backcountry Chalets. Missoula: The University of Montana, 2001. Also available at <http://www.forestry.umt.edu/research/MFCES/programs/wi/chalet%20concessions.PDF/>, np.

<sup>53</sup> Glacier Counties List, p.57, [http://www.his.state.mt.us/shpo/register/NR\\_booklet.doc](http://www.his.state.mt.us/shpo/register/NR_booklet.doc) (accessed April 12, 2005).

<sup>54</sup> National Park Service, "National Historic Landmarks Survey," Listing of National Historic Landmarks by State: Montana, p, 1, <http://www.cr.nps.gov/nhl/designations/Lists/MT01.pdf> (accessed April 12, 2005).

new water and sewer systems. This change occurred in 1965. The NPS replaced the pit toilet system in 1965 with a water and sewer system. Business continued as usual until November of 1991 when the Wilderness Society, represented by the Sierra Club Legal Defense Fund, threatened the Department of the Interior with a legal suit if the Chalet's sewer and water systems were not replaced.<sup>55</sup> The group alleged that sewage was collected in tanks throughout the operating season and then released into a drain field in the fall after the Chalet's season ended. After the release each fall, snow soon covered the drain field and then carried the sewage off of the mountain with the spring melt.<sup>56</sup> Further complicating matters; the federally endangered Grizzly Bear is attracted to the human sewage. After the annual sewage release, mass gatherings of Grizzlies convened on the site posing a significant threat to human safety at the Chalet. In light of these findings Sperry Chalet was allowed to continue to operate in the 1992 season provided the waste would be held in the tanks. At the end of that season, the State of Montana ordered the NPS to remove the stored sewage and replace the inadequate sewer system. The NPS responded by closing the Chalet until an array of alternatives could be considered.<sup>57</sup>

The resource staff at GNP was in agreement that the historic landmark chalet should continue to operate with simplified water and sewer systems. After alternatives were considered, it was decided that a system of compost toilets would be installed. The 2004 Commercial Services Plan for GNP makes reference to the fact that the water and sewer system for Sperry had required far more environmental impact and money than expected. Further the plan admits

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<sup>55</sup> Anderson, Kristin, np.

<sup>56</sup> Anderson, Kristin, np.

<sup>57</sup> Anderson, Kristin, np.



that the system had to be redesigned and still has “unresolved issues” associated with it.<sup>58</sup> Never-the-less, in 1999 the National Landmark Sperry Chalet was reopened with Belton Chalet Incorporated retaining the lease. Belton continues to retain this contract.

No official information has been released by GNP regarding the functionality of the compost toilets at Sperry Lodge. It is presumable that they are functioning properly after the redesign as they continue to be the human waste management system maintained by the NPS at this lodging facility. What is known is that GNP made a deliberate effort to integrate this new system into the fabric of the historic lodge. A stone structure akin to that of the original chalet structures was erected to house the new units.

Sperry Chalet has gone beyond the mandated compost toilets in an effort to lower the impact of the facility on the park land and the environment as a whole. An April 12, 2005 phone conversation between the author and current concessionaire, Kevin Warrington, revealed that the lodge is actively employing photovoltaic panels for the purposes of charging batteries to support chalet operations. Additionally, guests are expected to decrease the waste load of the chalet by packing out the waste that they pack in. At Sperry, as with all other wilderness lodges studied, their pack-it in, pack-it out policy is boldly stated on their websites, pamphlets, confirmation materials and on the chalet property. A similar waste reduction method is needed at the LeConte Lodge to help reduce the amount of waste that is processed on the mountaintop. This system and the Sperry Chalets compost toilet system will be used as positive waste reduction examples in the recommendations chapter of this project.

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<sup>58</sup> National Park Service, *Final Commercial Services Plan and Final Environmental Impact Statement*: Montana: Glacier National Park, 2004. Also available at [http://www.nps.gov/glac/pdf/csp/Rod\\_CSP\\_EIS.pdf](http://www.nps.gov/glac/pdf/csp/Rod_CSP_EIS.pdf) (accessed April 15, 2005).

### **High Mountain Huts—White Mountains National Forest, New Hampshire**

The White Mountains National Forest of New Hampshire is home to a system of backcountry lodging known as the High Mountain Huts. These huts range in elevation with from 2700' above sea level to 5,050' above sea level. Like the aforementioned backcountry accommodations, all of these huts require that guests hike in for a nights' stay. The earliest hut, Madison Spring Hut, was constructed on top of Mount Washington in 1888. "In order to provide both a base for exploration and the ever expanding ranks of trampers and refuge to any person caught on the mountain in a storm or overtaken by the night" the first hut was constructed in stone by the Appalachian Hiking Club (AMC). This primitive structure contained a table and chairs, a stove, an ax, cooking utensils, candlesticks and bunks for twelve.<sup>59</sup> The hut was a success and soon after construction, overcrowding, and vandalism became problems. By 1906 the club enlarged the hut and employed a summer caretaker to manage the hut. In order to meet growing demand for the hut and in order to better manage the system, two additional backcountry huts and a larger hut headquarters at the base of Mount Washington were added. Over the years of management by the AMC, four new huts have been constructed to keep up with growing demand.

In a telephone conversation with the author on April 12, 2005, AMC Public Affairs Director, Rob Burbank, revealed that on average the hut system accommodates 40,000 overnight guests and 160,000 day hikers annually. Located a day's hike apart along the Appalachian Trail, most huts offer seasonal full-service accommodations. The average staff size for each hut is six and the lodging season runs from early June to mid October. During this four and a half month season, the huts are staffed with workers that prepare breakfasts and dinners, keep the facilities

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<sup>59</sup> Eno, Madeline and Katharine Wroth, "Huts and Glory: AMC's Archives Offer A Wry Peek At Life On the High Peaks," *AMC Outdoors*, July/ August 2000.

clean, and provide naturalist service to interpret the natural history of the mountains. In the remaining seven months of the year, the off season, the huts operate as self-service facilities providing kitchen facilities, restroom facilities and heating. Today the Appalachian Mountain Club has grown to provide outdoor facilities across the Northeast with an emphasis on education, conservation and research. A staff naturalist is employed at each of the eight huts and volunteers with specific naturalist knowledge are given room and board in exchange for leading several programs each season. Additionally, all staff members are trained to lead educational evening programs for hut guests. The content of the evening programs range from cultural history of the White Mountains to the local alpine flora and fauna.

All of the original huts have been retrofitted or rebuilt to include many advanced green technologies. These green technologies help aid in the mediation of the negative impacts the huts have on the adjacent natural resources. All huts feature solar collecting systems that provide electricity that run lighting, fans, radios, fire alarms, water pumps, compost toilet fans and refrigeration. Additionally, most huts are located in windy mountainous conditions where they harvest wind to help run the previously mentioned electrical systems. All but two of the huts employ compost toilets to mitigate human waste. The two other huts use a dewatering system for waste that separates solids from liquid allowing the liquid to evaporate and the solids to be packed out from the hut.<sup>60</sup> Generally, the AMC seeks to integrate these technologies into the landscape and structures so as to not spoil the wilderness aesthetic; however, it is not the intent of the AMC to mask the presence of these technologies. When solar panels and wind collectors are placed in conspicuous areas, they are used as an opportunity to educate guests to the benefits of using green technologies within the hut system. These innovative technologies are features of the facilities tour given by the staff for interested hut guests.

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<sup>60</sup>Rob Burbank, phone conversation with author, April 12, 2005.

Historically, supplies were packed into the huts using mule trains and the backs of the staff. To decrease the impact of mule trains, the AMC discontinued the use of pack animals for supplies. Today only several sixty to eighty pound loads are brought to the huts each week by staff members, with most of the supplies being delivered to the site using helicopters twice yearly. Just as the staff is employed to carry supplies to the huts, they are also responsible for helping to remove the waste produced by the hut operation. Everything possible is recycled, kitchen scraps are composted on site and since 1970 guests have been responsible for carrying out anything that they carry in.

In addition to implementing programs aimed at limiting the impact of the huts on the natural environment, the AMC also has implemented an environmental monitoring program. Each year both hut staff and visitors help monitor the impact of the huts on the natural environment and the general condition of the White Mountains. They do this by observing and collecting information about the water, air, and plant communities surrounding the huts. Visitors are taught to monitor the air quality by assessing visibility. This visibility information is collected and combined with weather information to produce data that is used to assess daily local air quality. Furthermore, the staff at each hut monitors the quality and use of water, in order to get a better understanding of how the huts impact the local watersheds. Particular attention is paid to the impact of waste water on water quality and ecosystems. Lastly, the AMC is engaged in a various scientific monitoring projects throughout the White Mountains. Demonstrating the commitment of the organization to the natural resources of the area, the AMC is a valuable ally in the protection of this New Hampshire State Park. This operations environmental monitoring programs, embrace of green technologies, education program and

waste management initiatives will be referenced to make recommendations for future land management of LeConte Lodge.

### **Xanterra Parks and Resorts: A National and State Park Concessionaire.**

Xanterra is a national corporation particularly notable for their leadership in decreasing the impact of their facilities' operation on local and global resources. Xanterra's presence in the lodging concessions of the US National Park and State Parks systems is undeniable. This company currently holds the most NPS and State Park concession contracts. A long history of managing some of the great lodges of the western national parks and a commitment to improving the industry, has led this company to become the forerunner in NPS accommodations. Xanterra states one of their goals as seeking to, "raise the bar of environmental performance for Xanterra and the tourism industry and set standards that encourage other hospitality companies to improve their environmental performance."<sup>61</sup> One method for assessing impact of an operation on resources is to track the inputs that are used in that operation and the outputs that are created by the operation. This is an area where Xanterra excels.

Each year Xanterra publishes an annual sustainability report. One focus of the report is an audit of their facilities that tracks the consumption and waste of their total lodging operations. To tabulate these statistics, Xanterra created a method which "may be the tourism industry's first environmental performance metrics (EPMs)."<sup>62</sup> The company accomplishes this with two methodologies. First, they collect the annual total amounts of resources consumed and waste generated in their operations. This includes energy and fossil fuels used on and off site in

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<sup>61</sup> Xanterra, "Why Publish A Sustainability Report?", Xanterra Website, [http://www.xanterra-corporate.com/environment/dynamic/mz\\_viewer.htm?articleid=ENV1010/](http://www.xanterra-corporate.com/environment/dynamic/mz_viewer.htm?articleid=ENV1010/) (accessed April 20, 2005).

<sup>62</sup> Xanterra, "2003 Sustainability Report", Xanterra Website, [http://www.xanterra-corporate.com/environment/pdf/2003\\_sustainability\\_report.pdf/](http://www.xanterra-corporate.com/environment/pdf/2003_sustainability_report.pdf/) (accessed April 20, 2005), 17.

operations. It also includes the amount of waste generated and recycled. Xanterra then calculates the resulting emissions. Total resources consumed, associated emissions, waste generated and waste recycled combine to represent the company's total environmental footprint. Next, Xanterra divides this data by the number of lodge rooms rented each year to come up with a metric that defines overall environmental impact per unit of product (rooms).<sup>63</sup> This is a simple method for tracking the overall impact of their operations which highlights areas of resource conservation as well as areas of consumption and waste production that need to be improved. This method will be used to create a model for tabulating the same information at LeConte Lodge.

These case studies provide excellent examples of technologies, policies and initiatives that can be adopted at LeConte Lodge to reduce the environmental impact of its operation. These successful backcountry operations will be used to make recommendations for future land management at LeConte Lodge.

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<sup>63</sup> Xanterra, "2003 Sustainability Report", Xanterra Website, 17.

## **CHAPTER SIX:**

### **Recommendations**

#### **Management Philosophy**

Before laying out specific management strategies, it is desirable to define the philosophy that will guide the forthcoming strategies and may be used to guide future landscape management decisions at LeConte Lodge. To ensure that the Lodge continues to be maintained in a manner that is sensitive to the established traditions that have come to define the LeConte Lodge Experience and so that the operation leaves as little impact as possible on the surrounding natural environment, a sound management philosophy should be in place to guide decision making. Several goals for management can define such a philosophy.

LeConte Lodge depends on a large continuous wilderness setting to fulfill its lodging program. Guests leave their homes in highly developed regions to visit the protected wild lands of the GSMNP. LeConte Lodge entices the adventurous park visitors to leave their car in the parking lot, venture into the backcountry of the park and stay over night in the midst of the wilderness. The success of this recreational opportunity relies heavily on the thousands of acres of natural resources surrounding the Lodge. For this reason alone it is crucial that the Lodge operation is committed to retaining a high level of environmental quality now and into the future. Both the NPS and the concessionaire must be diligent in ensuring that the operation is monitored for negative impacts to the local natural systems. Further, low impact operation must be a priority of both parties to achieve this goal.

The second major goal of this operation should be to foster the continuation of the recreational experience that has come to be the LeConte Lodge Experience. While this may imply that change should not occur, this is not the purpose of this goal. In Chapter Four, the essence of the LeConte Experience has been described. A rich and extensive collection of photographs and written pieces about the Lodge provide insight into the characteristics of visiting the Lodge. These key characteristics of the experience must be considered when management decisions are being made. Management decisions that will impact these key characteristics must be closely considered and altered to preserve this rich experience.

The remainder of this chapter will describe methods of lowering the environmental impact of the LeConte Lodge operation which will not infringe upon the LeConte Experience. Measures to monitor operations impact such as emissions and downstream water quality will be addressed. Further, resource consumption will be analyzed to determine where resource waste is occurring. Finally, strategies for decreasing environmental impact will be given and summarized in a table at the end of this chapter.

## **Impact Monitoring**

As the *Mount LeConte Visitors Survey and Trail Use Study Final Report* states, “visitor management in parks and protected areas should never be approached without also thoroughly examining the ecological implications of possible management decisions.”<sup>64</sup> In accordance with the goal to leave minimal impact on Mount LeConte, monitoring of operational impacts on the local ecology must be performed. The Appalachian Mountain Club’s management of New

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<sup>64</sup> Amy Mathis, J. Mark Fly, Becky Stevens and April Griffin. “Mount LeConte Visitors Survey and Trail Use Study Final Report.” The University of Tennessee Department of Forestry, Wildlife and Fisheries Human Dimensions Research Lab, 2004, 9.



Hampshire's White Mountain Hut system is a superb example of how monitoring is key to assuring that the operation is in fact low impact. At each of the eight huts, water quality is assessed to insure that the Lodge is not polluting the local water system. Due to LeConte Lodge's flush toilet and gray water system, monitoring the water quality down stream of the drain field on a regular basis should be a priority. Additionally, the huts monitor the Alpine vegetation found at several of their high altitude huts for trampling. The vegetation found at LeConte Lodge is not as fragile as that of the alpine community in New Hampshire, but the introduction of non-native vegetation poses a significant threat to native vegetation within and surrounding the Lodge complex. The non-natives are predominately grass species found in the lawns and the drain field of the complex. Rosemary Nichol's 1977 study of the area concluded that these plants had not become naturalized in the areas surrounding the Lodge property, but a study to assess the current state of these non-natives is necessary.

Another area of concern is the influence of the operation on local wildlife. Black Bears have traditionally been attracted to the garbage of the Lodge and were even lured to the Lodge with food scraps in the past. The practice of luring bears to the Lodge has ended and garbage disposal has been improved; however, a study of the LeConte bear population could affirm success of Lodge initiatives or reveal additional wildlife impacts that need to be addressed. Lastly, air quality is already a hot topic in the GSMNP. Between 1997 and 2004 the Great Smoky Mountains National Park recorded 191 unhealthy air days due to high ozone levels and a net decrease of 60% of visibility.<sup>65</sup> While the air quality issue is best known for the impacts of large eastern industries and automobiles, burning trash on the Lodge property certainly has some negative effect on air quality. The 2000 season saw the addition of a propane fueled incinerator

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<sup>65</sup> Great Smoky Mountains National Park, "National Park Service Great Smoky Mountains National Park Briefing Statement, February 2004." NPS website, <http://data2.itc.nps.gov/parks/grsm/ppdocuments/Air%20Quaity%202-04.pdf>.

to burn food, plastic and paper waste generated by the Lodge operation and all visitors to the mountaintop. This small scale poultry incinerator burns up to 17 cubic feet of trash for one to one and a half hours each day during the operating season.<sup>66</sup> The 11 feet tall steel incinerator employs a two chambered burning system. One chamber burns trash while the other chamber burns the emissions before they are released. While this system certainly produces cleaner emissions than its predecessor, an open burn barrel, it has given no incentive to curb the amount of trash that is incinerated each season. A study of the emissions produced from this practice would be an expensive endeavor, but would help to provide an accurate estimate of the Lodge's environmental impact.

Monitoring in the White Mountains of New Hampshire is conducted by the Appalachian Mountain Club (AMC). This organization is a large non-profit organization that seeks to "promote the protection, enjoyment, and wise use of the mountains, rivers, and trails of the Appalachian region," through conservation, recreation and education.<sup>67</sup> The AMC is involved in research throughout the White Mountains and is responsible for the ongoing monitoring programs at their various huts. As LeConte Lodge is managed by a concessionaire of the service industry who is not involved in scientific study, monitoring would best be accomplished by the research branch of the GSMNP. Baseline information gathered by monitoring the aforementioned resources can help to inform the operation of the systems and practices of the Lodge operation that are of little or great consequence to the area.

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<sup>66</sup> Tim Line, personal communication with author, July, 1, 2005.

<sup>67</sup> Appalachian Mountain Club, "About the AMC." AMC website, <http://www.outdoors.org/about/index.cfm>.

## **Consumption and Waste Monitoring**

Another type of monitoring that is crucial to environmental impact assessment at the Lodge operation is an audit of waste and consumption. This method of monitoring tracks inputs and outputs of the operation. From such information, it is possible to locate areas where resources are being conserved and areas of the operation that are wasteful. Xanterra Corporation is actively involved in assessing the overall impact of its lodging facilities in U.S. State Parks and National Parks. Their environmental performance metrics (EPMs) method, described in chapter five, can be simplified and easily adapted to create a method to assess the impact of LeConte Lodge on its surroundings.

For LeConte Lodge an audit which accounts for all propane, gasoline, kerosene, water, and food would be necessary to tabulate inputs. Due to the remote location of this Lodge, delivery of supplies to the Lodge is a well planned and calculated process. Much of the information about consumption of supplies that are brought to the Lodge via helicopter is known. Due to transportation methods, these supplies are financially taxing to obtain and great effort is given to their conservation. As the water supply is located on the mountaintop and is fairly abundant, this is the resource that may need the most monitoring. The onsite manager estimates that on average approximately 2,000 gallons of water are used daily at the Lodge. Further, the on-site managers estimate that less than 200 gallons of this water are used in the Lodge kitchen and staff showers.<sup>68</sup> All other water is being used to flush toilets and by visitors using water from the three public water spigots. With a clear understanding of the use of all of these supplies and resources, it will be easier to assess where the supplies and resources may be wasted.

To audit the Lodge waste, it will be necessary to record information about the trash collected from bins at the various waste receptacles in the complex. Kitchen waste and all waste

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<sup>68</sup> Chris Virden, personal communication with author, October, 23, 2004.

associated with the operation of the Lodge will be tabulated separately from the waste left by the guests. Food waste should be calculated separately from other kitchen waste. At present, trash collection bins are provided in all guest cabins and lodges, comfort stations, pit privies, and the office. Trash collected in these areas is generated by guests, day hikers and some backpackers. Currently, metal and glass are separated from the combustible trash. Glass is smashed and collected in two fifty-five gallon metal drum and flown via helicopter in the spring air lift to be disposed of.<sup>69</sup> Metal is manually compacted, boxed and transferred from the mountain by llama train. Plastic has historically been burned, with the exception of several seasons when Lodge employees separated plastic from the trash and packed bags of compacted plastic down the mountains to be recycled.

A waste reduction plan is a necessary component to lowering the impact of LeConte Lodge. After waste monitoring is conducted, it will likely be seen that a vast percentage of waste is produced by Lodge visitors. LeConte Lodge is the only back country lodge in this study that does not employ a “pack it in, pack it out” waste policy with their visitors. Len Foote Lodge, Speery Chalet and the High Mountain Huts all clearly inform future visitors of this policy on their websites, in mailings containing brochures and reservation information and at the facilities themselves. It is standard protocol for such hospitality services to refrain from offering waste bins and none of them report higher incidents of litter on the property or the trails. This is a very simple and necessary plan for LeConte Lodge to adopt.

If, after monitoring incinerator emissions, it is found that burning food, plastic and paper waste at the Lodge is harmful to the local environment, it will be necessary to consider other means of disposal for these products. It may be desirable to consider a vermicomposting program for dealing with food and paper waste. At Len Foote Lodge, vermicomposting has been

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<sup>69</sup> Chris Virden, October, 23, 2004.

a very successful part of reducing onsite waste and an effective learning tool as well. With little effort, much of the kitchen waste is converted to organic nutrient rich compost with the help of worms. The worms are separated from the castings every month and the rich compost is added to the soil of the Lodge. As at Len Foote Lodge, it would be necessary to house such an operation in an enclosed area to protect the worms from extreme temperatures. One possible location at LeConte Lodge would be the basement under the office. Further, adoption of a “Clean Plate” policy, like the one found at Len Foote Lodge, would help to reduce the initial amount of food waste produced at LeConte Lodge. The only option for disposal of plastics would be to compact these items and either pack them off the mountain with llamas and staff members or to compact and store the plastic to be removed by helicopter each spring.

### **Education Program**

The Appalachian Mountain Club Public Affairs Director, Rob Burbank, and the education manager of Len Foote Lodge, Heather McKee, stressed the great importance of guest education in the process of successfully lowering the impact of their wilderness lodging facilities. By educating the guests and visitors about Lodge initiatives and programs that help to protect the surrounding natural environment, the guest realizes the vulnerability of the resources at their favorite back country site. Further, the guest can make an educated decision to participate in these initiatives at the facility. At Len Foote Lodge and the High Mountain Huts a facilities tour teaches guests about the low impact measures, such as vermicomposting and solar energy capture that are employed by the operation and how they can participate in these programs. After-dinner programs teach guests about local cultural history, area wildlife and plants, geology and Lodge history. These programs are led by the staff and expert volunteers.

Len Foote has an education manager on staff that leads programs and creates displays and brochures. At the High Mountain Huts a full time seasonal naturalist leads similar educational programs, as well as trains the staff for similar duties. Additionally, the Huts have a revolving expert volunteer program, which gives room and board to an expert in natural sciences or history in exchange for leading several educational programs each season. A successful guest education program will be a key component to successfully reducing the impact of the LeConte Lodge operation.

The aforementioned 2004 University of Tennessee Human Dimensions Research Lab study of LeConte visitors found a desire from many guests for educational programs at the Lodge. LeConte Lodge has never had an ongoing guest education program. The addition of a staff member who is qualified to lead presentations and walks, train the staff about the local history and ecology of the area, and produce displays and educational materials for visitors would be one solution. Another would be to partner with the GSMNP and its large pool of volunteers to create pertinent educational programs, presentations, displays and educational materials. The University of Tennessee study also found that sixty-seven percent of LeConte Lodge's guests have college or post-graduate degrees. This is forty percent higher than the national average for education among adults as reported in the most recent U. S. census.<sup>70</sup> This statistic combined with the obvious facts that many of these guests have an interest in the natural world and have difficulty securing reservations at LeConte Lodge, offers much promise to the viability of a volunteer naturalist program much like the one found at the High Mountain Huts.

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<sup>70</sup> Mathis, 26.

## Vegetation Management

Managing the vegetation of the Lodge property is another area that will be informed by the monitoring program that has been described earlier in this chapter. After a study of the non-native species found in the lawns and drain field of the Lodge, management of these species can be considered. Three zones of vegetation have already been described in Chapter Three. The managed landscape zone contains the lawns and drain field areas of the Lodge. If it is found that non-native species are escaping these managed areas and impacting the health of the native species of plants in the meadow and forest zones of the Lodge, an eradication plan for these species will be needed. First non-native species will be removed from the meadow and forest areas. Next, a program to remove and replace these species with non-invasive grass species in the lawn areas will be implemented. The presence of lawns within the Lodge complex is necessary to retain the historic landscape of the operation and to provide open areas for recreation and outdoor dining. For these reasons, a plan to replace the lawns with native meadow species is not an option. If vegetation monitoring proves that non-native species are not invading the meadow and forest zones, then managing these areas with the existing mowing methods will be appropriate.

The other landscape type that is found within the managed zone of LeConte Lodge is the remnant historic garden. These gardens are important artifacts of the history of the Lodge that should be retained. As these are constructed gardens composed of native species moved from other areas of the mountaintop, these plants do not necessarily hold their own with the more aggressive colonizing species found in the meadow zone. It is therefore necessary to periodically remove woody shoots, such as Bush Honeysuckle (*Diervilla sessifolia*) and Blackberry (*Rubus Canadensis*) from the gardens. Additionally, some of the aggressive native

species such as Angelica (*Angelica triquinata*) and Green-headed Coneflower (*Rudbeckia laciniata*) may be periodically thinned from the gardens to prevent the decline of the less aggressive species, like Monkshood (*Aconitum uncinatan*) and Closed Gentian (*Gentiana lineris*). This management would best be preformed annually during the spring season by the GSMNP vegetation crew or Lodge staff who are well trained in plant identification.

The last managed zone within the LeConte Lodge complex is that of vegetated screens. A screen on the south side of the propane tanks has recently been planted to help obstruct the view of the tanks. This project was implemented by the GSMNP vegetation crew over the past few seasons using a mixture of plants grown in the GSMNP greenhouse and plants rescued from the managed area of the Lodge helipad. Red Spruce (*Picea rubens*), Bush Honeysuckle (*Diervilla sessifolia*), and mixture of native perennials were planted along the propane tank fencerow to create a vegetated screen. This area will need to be monitored for plant health and possibly manually weeded to prevent choking of the plants by grasses and aggressive perennials. The creation of two similar screens is suggested in Figure 6.1.

Many guests surveyed in the 2004 University of Tennessee's visitor survey commented on the unsightly nature of two elements in the Lodge landscape. The presence of bright yellow fuel storage closets at the NPS cabin and an array of piles of construction materials are found around the Lodge. Figures 6.2- 6.4 illustrate the unsightly features. Screens such as the one created to block the view of the propane tanks can be used to create vegetated buffers for construction material storage and unsightly metal fuel closets. As illustrated in Figure 6.1, the fuel closets can be moved to the opposite side of the NPS cabin and screened slightly to remove this unsightly feature from the guest experience. As currently located, the closets are in full view from the office windows and from the restrooms. Most visitors spend time in the office and visit





Figure 6.1 Vegetative Screens

**Vegetative Screens**  
**LeConte Lodge**  
 Landscape Management Plan  
 William Shealy  
 May 2005



Figure 6.2 NPS fuel storage closets.  
February 19, 2005 Photographer: William Shealy (author)



Figure 6.3 Pile of construction material beside woodshed.  
October 24, 2004 Photographer: William Shealy (author)



Figure 6.4 Pile of construction material between the woodshed and dry foods storage building. October 24, 2004 Photographer: William Shealy (author)

the restroom facilities and are inevitably confronted with these closets. By moving the closets to the opposite side of the cabin, most visitors will never see the yellow closets. The addition of vegetation will further conceal these necessary elements. Stored construction materials can be consolidated into one storage area and screened with vegetation. Figure 6.1 shows the construction materials storage area between the rear of the staff housing called “the Ritz” and the dry food storage building. Vegetation is added on the eastern edge to block views into the area, but allow access to the area. Screening on the north and south is accomplished with the two structures and there is no view into the area from the west. These screens will further help to remove unnecessary obstructions for Lodge landscape.

The meadow areas are currently unmanaged. This allows these areas to remain successional lands that are currently being invaded by hardwoods, such as Fire Cherry (*Prunus pensylvanica*), Hawthorn (*Crataegus flabellate*), Fraser Fir (*Abies fraseri*) and Red Spruce (*Picea rubens*). This is an appropriate management scenario as the forested areas are an integral part of the historic Lodge landscape. These areas can be seen as recovering forest zones that were historically opened by windthrow from tree harvesting and construction projects of the Lodge and more recently by decline of the Fraser Fir canopy due to the damage of the Balsam Woolly Adelgid. An appropriate exception to this zero management scenario would be the removal of standing deadwood that poses threats to nearby paths and Lodge structures. If this exception is exercised, it is necessary to leave the felled deadwood to allow for soil amendment through the decay of the wood.

The forest zones of the property are also not managed. This too is an appropriate management scenario. A mature canopy of Red Spruce and Fraser Fir is the climax state of this forest community. It was the state of the forest in 1926 when the Lodge development began and

is the appropriate state of the forest for the Lodge in the future. Damage from the Balsam Woolly Adelgid is evidenced in the contemporary forest zone of the Lodge property in the form of standing dead Fraser Fir. Treatment of this pest is very labor intensive and costly. Problems associated with controlling such pests in remote locations make it necessary to leave the infected trees found at the Lodge unmanaged. This condition provides ample material for guest education on the problem of such non-native pest species in the National Parks. Similar to the management prescribed for the meadow zone, management of standing deadwood that poses a threat to human health or Lodge structures are the only appropriate trees for removal. As with the meadow zone, failed deadwood should be left in place to decay.

### **Circulation Improvements**

The current circulation system of the Lodge is in relatively good shape. Paths to get visitors and staff to necessary destinations within the complex are well established. In the recent past, the flagstone paths and stairs located along the axis from the Alum Cave Bluffs trail at the south end of the property to the dining room have been rebuilt and improved. Additionally, the paths running east and west in front of and behind the Lodges have been rebuilt or are in good repair. The problems with the circulation system are addressed in Figure 6.5. This plan establishes a terraced and stone paved circulation route leading from Cabin Four to the Woodshed, blocks off an unnecessary foot path between Cabin Seven and Cabin Eight and the Alum Cave Bluffs trail and reworks the southern most flight of stairs near Cabin Ten to make them functional for walking and fit in with the established palette of building materials for the Lodge.

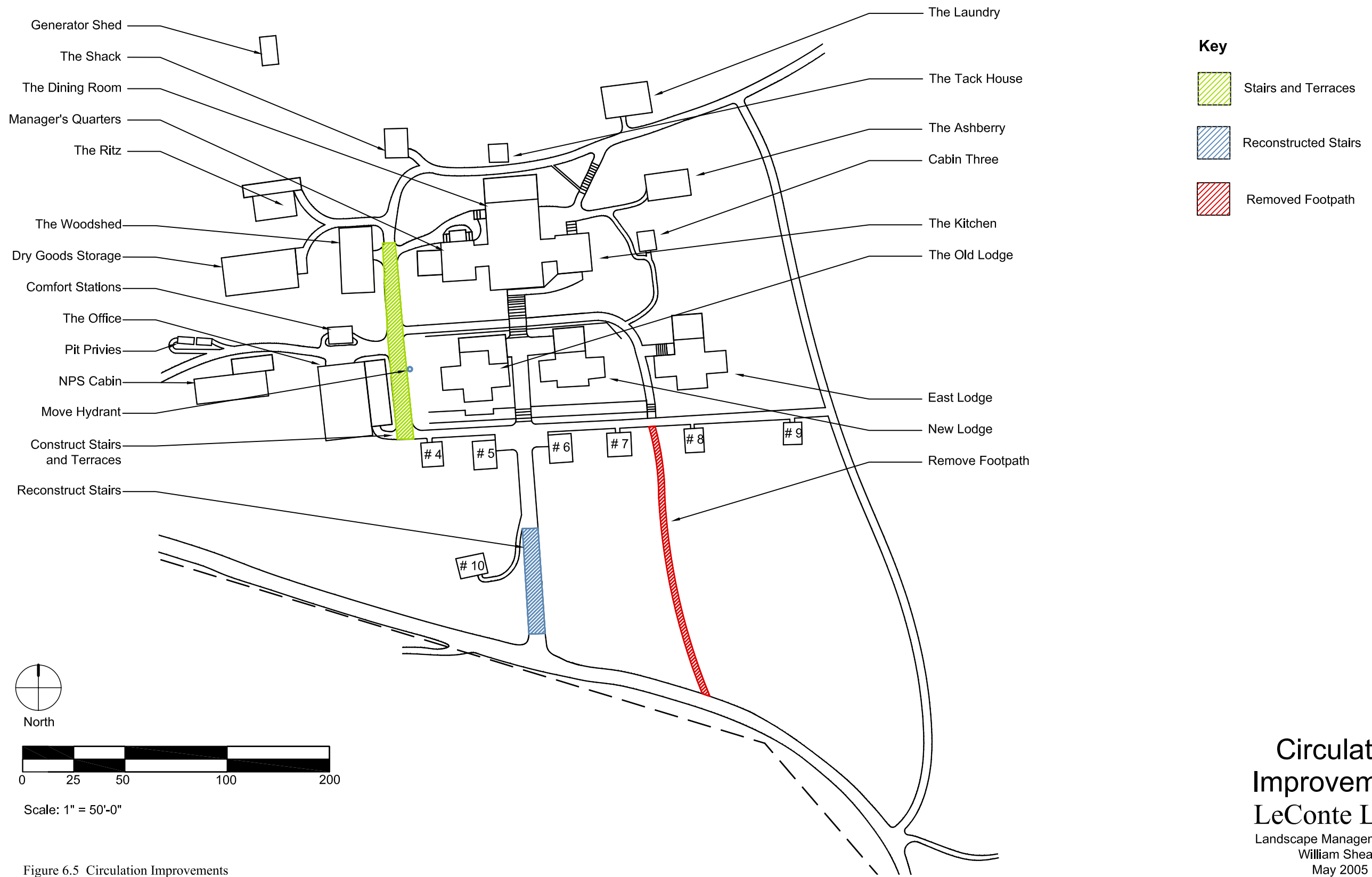




Figure6.6 Erosion along path between Cabin Four and woodshed.  
October 24, 2004 Photographer: William Shealy (author)

The area featured in Figure 6.6 illustrates the need for a more established path between Cabin 4 and the Woodshed. This is a highly used path that connects the restroom to the office and the Lodges. Further, most visitors using the Trillium Gap trail to access the Lodge walk into the Lodge complex on this path. Due to high use, lack of stabilization and the presence of the public water source, this path is highly eroded and up to fifteen feet wide. Figure 6.5 illustrates the path in a terraced manner patterned after the stairs and terraces found between the Old Lodge and the New Lodge. As with these stairs and terraces, stone is used to create the terraces and flagstones and gravel are used to surface the terraces. The water spigot is moved to the eastern edge of the trail to allow for better circulation with flagstone added under the spigot to control erosion. Along areas with stairs, rustic wooden hand rails such as the ones used throughout the complex may be needed.

The footpath located between Cabin 7 and 8 is unnecessary. It becomes obvious in Figure 6.5 that the path is located between two paths that terminate at Alum Cave Bluffs trail on the south end of the property. This trail causes unnecessary vegetation disturbance in this meadow area and further adds confusion to the circulation system. To remove this unnecessary footpath, barricades of natural materials should be placed on either end of the footpath. These barricades should be constructed of a natural material such as fallen deadwood from fir trees. The materials should be stacked to a height of three to four feet to prevent foot traffic along the path. Natural regeneration can be allowed to occur along the former path knitting the path back into the meadow.

Lastly, the flight of stairs at the southern end of the main circulation axis at the Lodge needs to be reconstructed. This flight of stairs was constructed with short four-inch risers and short twelve-inch treads. This configuration makes for an awkward walking experience.



Secondly, the stairs are constructed of treated wooden posts and rails with asphalt and gravel impregnated timbers forming the risers. These materials have no precedence in the stairs and paths of the Lodge and look out of place. Materials recommendations will be addressed later in the chapter. From a functional point of view, these stairs could be fixed by removing every other riser and doubling the height of the remaining risers. This would leave a comfortable two-foot tread and eight-inch riser, which would be perfect for a weary hiker in clunky boots. From a materials point of view the current materials employed are insensitive and would best be used elsewhere. In accordance with the terracing and hand rails specified for the path between Cabin Four and the Woodshed, rustic wooden posts and handrails with stone risers and flagstone and gravel treads would be appropriate for this section of path. This recommendation will make the stairs a pleasure to traverse and a continuance of the established paths of the Lodge.

### **Systems Recommendations**

Water quality associated with the runoff from the drain field will be studied as a part of impact assessment monitoring. If it is discovered that the drain field is not functioning as assumed, it may be necessary to consider an alternative sewer disposal system. The LeConte Lodge sewer system failed once in the 1970's and was used as part of the argument for closing the Lodge. A failing sewer system was the cause of Glacier National Park's Sperry Chalet being closed for six years while a new system was installed. In all three case studies found in Chapter Five, a system of compost toilets was the lowest impact solution to sewer waste. These systems are chosen primarily because they are contained systems that require little water, and no drain field.

If in fact, water quality monitoring proves that the existing drain field system is not adequate, a compost system may be the solution. Figure 6.7 shows the proposed location for such a system. Based on an average visitation at the Lodge of nearly 40,000 annual guests and the system of toilets used at Len Foote Lodge for their average of 7,100 annual visitors, as many as 30 compost units will be needed. This number of units would require a large new structure with a basement facility below the toilets for maintenance. An appropriate location would be the area between the existing privies and flush toilets. Given the fact that guests already expect to find toilets in this area, the area is already developed and the area has an appropriate slope necessary for the construction of a basement, this site is the best location for a new compost toilet structure. If such a system is installed, the flush toilet and pit privy buildings should be removed, as they will no longer be needed. Consultations with an environmental engineer and a compost toilet manufacturer would be needed to adequately design a system that can meet the needs of this operation.

Another green technology that is currently in use at LeConte Lodge and all of the case studies is solar energy capture. As noted in Chapter Three, the Site Inventory, five solar collection systems will be in use at LeConte Lodge by the end of the 2005 season. This is an encouraging trend that shows a commitment by the concessionaire to invest in renewable technologies that produce zero emissions and noise pollution, while providing abundant energy for the operation. A trend of adding more advanced solar systems has been seen at LeConte Lodge in the last five years. Thus far the only negative effects these systems have had on the LeConte experience is their physical presence in the landscape. Solar systems are most efficient when the photovoltaic panel is located near the storage batteries. In all examples of solar systems at the Lodge, the panels have been located at the site of the storage batteries. These

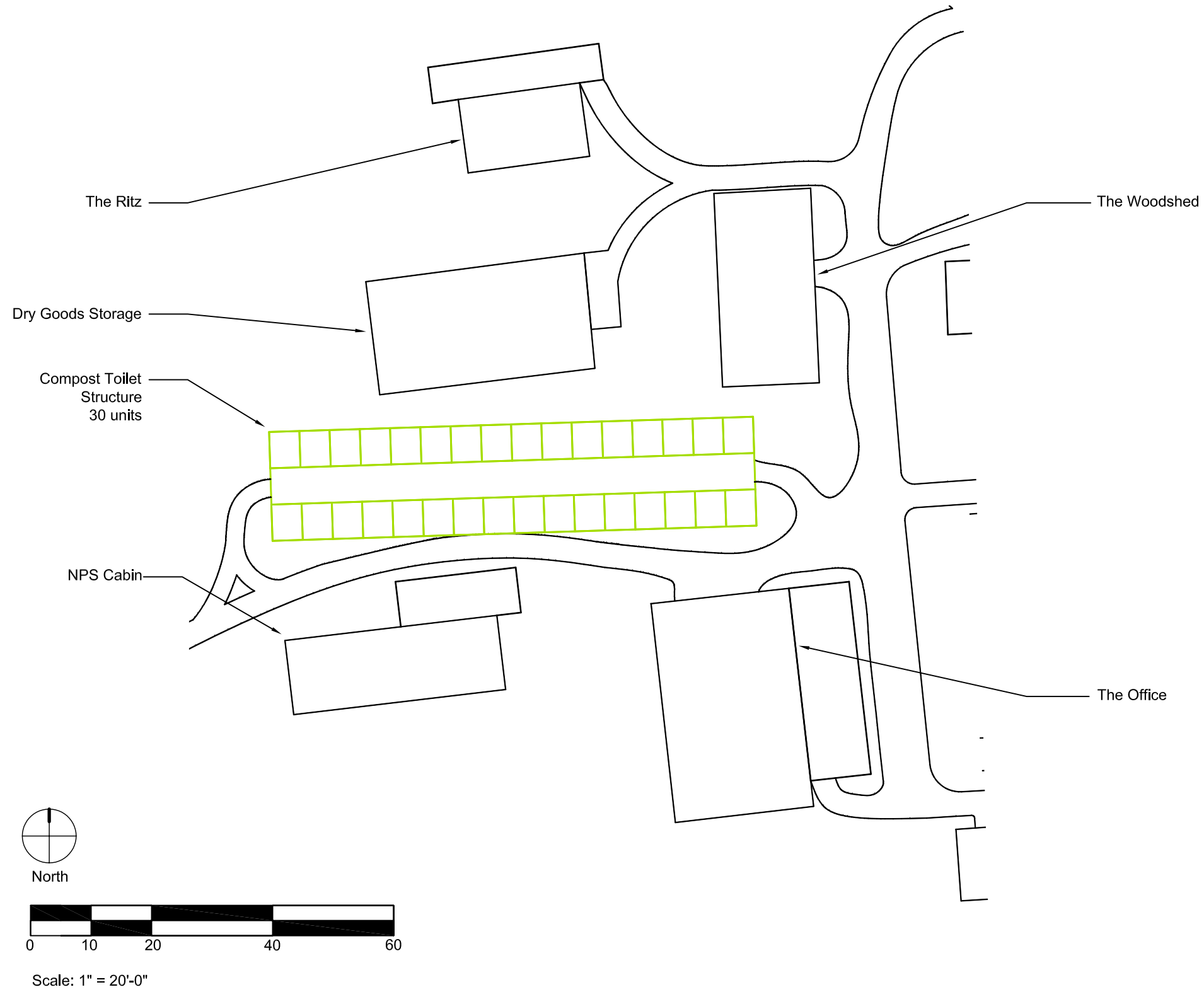


Figure 6.7 Proposed Compost Toilets Location

efficient systems unfortunately compromise the visual quality of the Lodge landscape. Given the growing trend of solar energy at the Lodge, it is possible to assume that as the price of fossil fuels continue to increase; the allure of renewable energy will lead to the addition of more solar systems at the Lodge and a reduction of petroleum fuels.

Where will these new systems be located and what effect will their presence have on the Lodge landscape? Will the presence of more solar affect the Lodge experience by compromising views and cluttering the landscape? Given that the presence of the current panels being all too visible, it is inevitable that more panels will equal more landscape clutter and vista obstruction unless planning for a larger solar system begins. One solution to this possible problem would be the creation of a solar panel farm. LeConte Lodge has a propane tank farm, a drain field and a helipad that are all mandated by the NPS to be cleared of vegetation. These areas must be kept open and are in areas that are screened from the complex. The propane tank farm is located closest to the operation and would provide the most efficient location for the addition of future panels. The helipad and drain field are located further from the Lodge, but offer large open areas for collecting sun. Figure 6.8 shows these possible locations for future solar collection.

### **Building Materials**

Table 3.1 in Chapter 3 illustrates the plethora of building materials that have been used to construct the buildings of LeConte Lodge. Over the past eighty years of operation the concessionaires have established a varied palette of materials that define the rustic style of the Lodge structures. Generally, the buildings of the Lodge can be described as being roofed with cedar shakes, containing doors and windows of wood and glass with walls of log, cedar shakes or board and batten construction. Landscape walls and paths are constructed of stone and continue

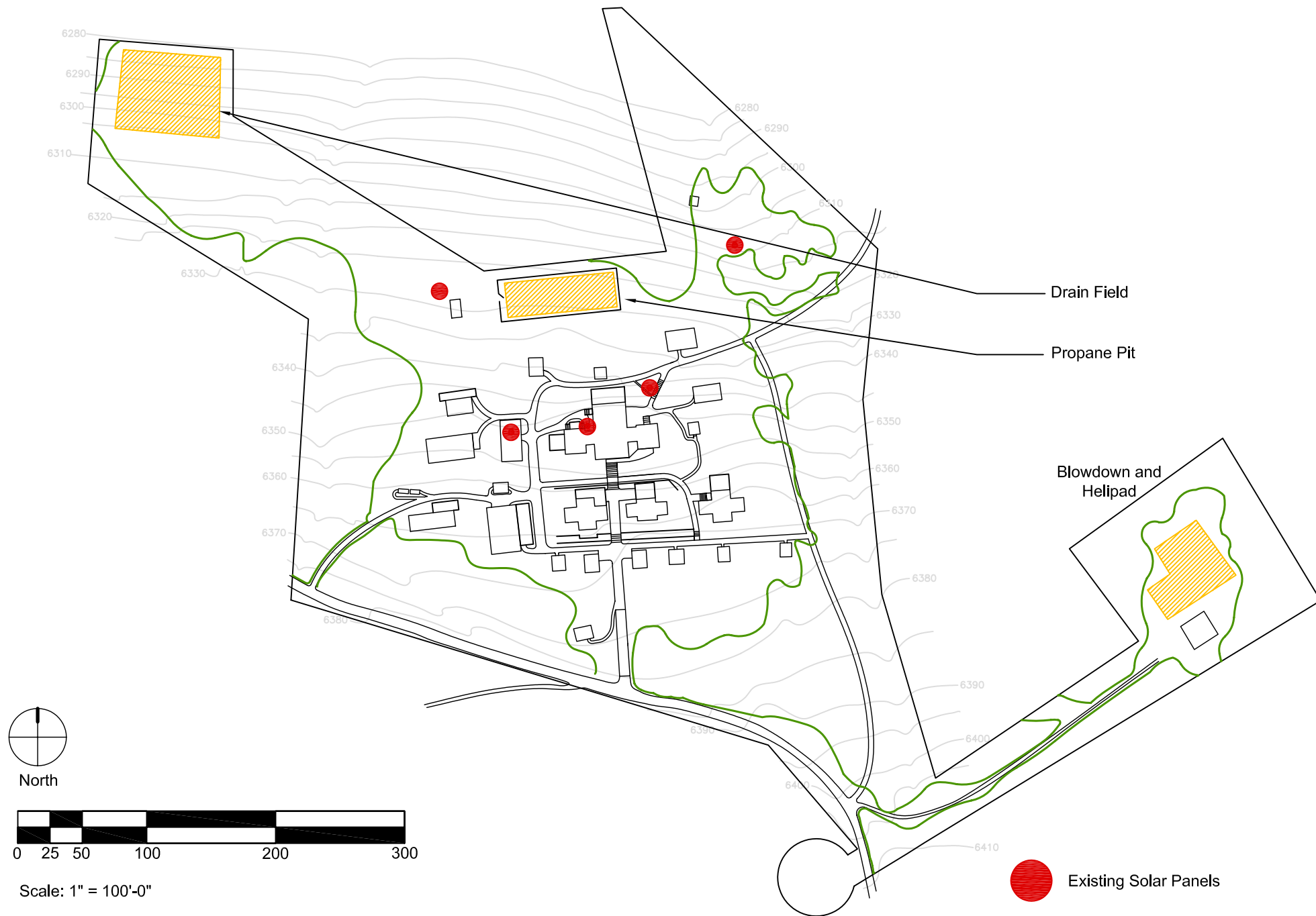


Figure 6.8 Proposed Solar Locations

**Proposed Solar Locations**  
**LeConte Lodge**  
Landscape Management Plan  
William Shealy  
May 2005

the rustic style of the buildings. Few exceptions to this general description are found at the Lodge and these are the few elements that should be addressed to create a cohesive rustic aesthetic. Based on a goal of the Lodge to create a rustic mountain Lodge and this inquiry finding an abundance of natural materials in use at the Lodge in old and new structures, it is safe to say that the appropriate materials palette for this rustic Lodge are those made of natural materials. Thus it is recommended that structures within the Lodge be roofed with cedar shakes, sided with log, cedar shake or board and batten and have windows and doors of wood and glass. Repairs of existing structures should strive to employ the most accurate replacement of materials as possible. (Obvious exceptions are Mount LeConte Fraser Fir timbers and boards and battens). The style of new doors and windows added to existing or new structures should have some precedent in the existing structures of the complex. The few existing materials which are not congruent with the natural materials palette listed above should be replaced with appropriate materials.

Repairs to existing structures have been fairly sensitive to the original construction. Building walls and roofs have been replaced with appropriate materials in a timely fashion to maintain a well kept appearance. New structures employ appropriate materials and blend with existing structures gaining a weathered patina in little more than one season. Several exceptions to this palette of materials are found. The Ashberry and the Office employ a mixture of vinyl and wooden windows. The windows of the Ashberry are of a similar style to those found on the Old Lodge and the Dining Room, but despite the brown color, the vinyl material is obviously a new addition that does not subscribe to the wooden window precedent found at the Lodge. The vinyl windows found in the Office structure are simple double hung sash windows in the style of the windows found in the New Lodge, and the Kitchen. However, the white vinyl frames of

these Office windows are found in a prominent location, the Office porch, and are the only examples of white vinyl frames in the complex. Similarly, the Laundry contains one metal framed window. The windows in the Ashberry, the Office and the Laundry should be replaced with wooden framed windows like the one of many examples found in the other structures of the complex.

The NPS cabin, while not a part of the Lodge operation or a responsibility of the concessionaire, is a visually prominent feature in the Lodge complex as it is located beside the Lodge restrooms. This cabin features several non-conforming materials. Metal framed windows, metal doors and an asphalt shingled roof are only found on this structure within the complex. Additionally, a deck is attached to the NPS cabin. The bottom of this structure is enclosed with commercially available lattice sheets. While made of wood, this too is a non-conforming material within the complex as it is less than rustic in appearance. The lattice should be removed to provide an open framed deck, like the others found within the complex. While the NPS cabin is not a part of the Lodge operation, its visual impact is great and should be altered to be sensitive to the other structures within the complex.

Table 6.1 summarizes the aforementioned recommendations. These recommendations are intended to influence future land management decisions at LeConte Lodge. The recommendations are made with the expressed goal of decreasing impact of the operation and helping to preserve the fundamental characteristics that define LeConte Lodge. Several of these recommendations are easily implemented and will make a big difference in the environmental impact of the Lodge operation. Many of these recommendations will take time, planning and capital to be realized.

Table 6.1  
Recommendations Summary

TOPIC	ACTION ITEM	ACTION	SCHEDULE
<b>Impact Monitoring</b>	Water Quality	Monitor downstream waterways for contaminants, particularly below the drain field and water pump areas.	Begin immediately. Monitor seasonally as long as LeConte Lodge continues to operate.
	Emissions	Monitor emissions associated with the incinerator and gas-powered generators to assess their effect on Lodge air quality.	Begin immediately. Monitor seasonally as long as practices associated with these emissions continue.
	Wildlife	Monitor the population and behavior of black bears for indications of Lodge impact.	Begin immediately. Monitor seasonally as long as LeConte Lodge continues to operate.
	Vegetation	Monitor non-native vegetation associated with the Lodge complex to insure that it is not spreading outside of the complex displacing native vegetation.	Begin immediately. Monitor seasonally until threat of vegetation is determined.
<b>Consumption Monitoring</b>	Propane	Total propane use is known. Determine use by particular location: kitchen, guest rooms, staff rooms, common areas, shower, and incinerator. Evaluate data for waste. Implement waste reduction plan. Look for opportunities to augment with renewable energy.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
	Kerosene	Total kerosene use is known. Determine use by particular location: guest rooms, staff rooms and common areas. Evaluate data for waste. Implement waste reduction plan.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
	Gasoline	Total gasoline use is known. Determine use by type of equipment: water pump, generator and mowing equipment. Evaluate data for waste. Implement waste reduction plan. Look for opportunities to augment with renewable energy.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
	Food Supplies	Determine amount of food consumed by lodge guests and staff and evaluate data to determine waste. Implement waste reduction plan.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
	Water	Monitor water use. Determine use by particular location: kitchen, staff shower, toilets and public spigots. Evaluate data for waste. Implement waste reduction plan. Consider a compost toilet system.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
<b>Waste Monitoring</b>	Guest room waste	Weigh waste collected. Implement waste reduction plan.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
	Common area waste	Weigh waste collected. Implement waste reduction plan.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
	Kitchen waste	Separate waste into metal, glass, paper, plastic and food waste. Weigh each category. Implement waste reduction and recycling plan.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
	Staff waste	Separate waste into metal, glass, paper, plastic and food waste. Weigh each category. Implement waste reduction and recycling plan.	Begin monitoring at the beginning of the next operating season. Monitor weekly through out the entire season. Look for seasonal trends and annual averages.
<b>Waste Reduction Plan</b>	Visitor Waste (Guest room and common area waste)	Implement "Pack-it in, Pack-it out" policy with day hikers, guests and back packers.	Begin after season of waste monitoring.
	Lodge Waste (Kitchen and staff waste)	Implement recycling plan for glass, plastic, and metal. Implement a non-recyclable plastic waste management plan. Implement a "Clean Plate Policy" with guests and staff. Consider a vermicomposting program for paper and food waste.	Begin after season of waste monitoring.



Table 6.1 (cont.)  
Recommendations Summary

TOPIC	ACTION ITEM	ACTION	SCHEDULE
<b>Education Program</b>	Facilities tour	Offer tour of LeConte Lodge facilities which highlights green technologies such as solar collection system, compost toilets and vermicomposting and waste reduction initiatives such as “Pack-it in, Pack-it out” and “Clean Plate Policy”	Begin after tour has been developed. Add to tour as new policies and technologies are added. Contact Len Foote Lodge or the High Mountain Huts for advice.
	After Dinner Educational Program	Offer after dinner educational opportunities. Use staff and volunteers to create presentations highlighting cultural and natural history of the mountaintop.	Begin immediately. Contact Len Foote Lodge or the High Mountain Huts for advice.
	Addition of Staff Naturalist Position	Add new position to lead facility tours, educate guests and staff about local ecology, develop presentations and educational materials and develop after dinner educational programs.	Begin immediately. Contact Len Foote Lodge or the High Mountain Huts for advice.
	Volunteer Naturalist Program	Implement a program that offers a free night stay in exchange for leading a guest program at the Lodge. Experts in the Natural Sciences can lead after dinner programs.	Begin immediately. Contact the High Mountain Huts for advice.
<b>Vegetation Management</b>	Non-native plant removal	Remove non-native plants from the meadow, forest, maintained lawn and garden areas. Re-establish lawns with non-invasive grasses. Visitor education will be needed if this procedure is undertaken.	Take this action if vegetation monitoring finds non-native plant species are escaping the maintained areas and impacting native vegetation. Contact the GSMNP vegetation management crew for assistance.
	Maintenance of gardens	Remove invading woody plants and aggressive perennials annually	Annually in the spring. Contact the GSMNP vegetation management crew for assistance.
	Create Vegetated Screens	Add screen to west side of NPS cabin and move fuel closets to that side of the cabin. Add screen between eastern edge of the Ritz and Dry Goods Storage and consolidate all construction materials between those structures. See Figure 6.1.	Begin immediately. Continue to use construction material area for the storage of all construction materials.
	Maintain Vegetated Screens	Monitor plant health and manually weeding around newly established plants in these screens. Replace dead plants with appropriate plant materials.	Begin immediately. Contact the GSMNP vegetation management crew for assistance.
	Meadow and Forest areas Management	Remove standing deadwood if it poses a threat to pathways or Lodge structures, otherwise, leave felled tree in area to decay.	Begin immediately.
<b>Circulation Improvements</b>	Added Stairs and Terraces	Add stairs and terraces to path between Cabin Four and the Woodshed. Move water spigot out of path. Use existing stairs between Old Lodge and New Lodge as an appropriate example of style and materials. See Figure 6.5.	Begin after NPS approval and contract is awarded for work.
	Remove Footpath	Block foot path between Alum Cave Bluff trail and Cabin Seven and Eight. Use natural materials such as dead Fraser Fir to create barriers at top and bottom of path. See Figure 6.5.	Begin immediately.
	Rebuild Stairs and Hand Rails	Remove the southern most flight of stairs. Rebuild using the stairs from Old Lodge to the Dining Room as an example for style and materials. Appropriate examples of hand rails are located outside of Cabin Five and Six. See Figure 6.5.	Begin after NPS approval and contract is awarded for work.
<b>Systems Recommendations</b>	Sewer System Replacement	Install a system of compost toilets for use by visitors. Leave existing sewer infrastructure in place to decrease environmental disturbance. Remove pit privy structure and comfort station structure. See Figure 6.7.	If water quality monitoring proves that the existing sewage system causes negative environmental impacts downstream or if the Lodge operation wishes to decrease its use of water, a compost toilet system should be considered. Contact Speery Chalet, Len Foote Lodge and the High Mountain Huts for advice.
	Solar System Additions	Locate solar panels in areas that do not obstruct views. Appropriate areas for large scale solar collection are illustrated in Figure 6.8.	When a move to large scale solar capture is realized at LeConte Lodge. Begin planning now.

Table 6.1 (cont.)  
Recommendations Summary

TOPIC	ACTION ITEM	ACTION	SCHEDULE
<b>Building Materials Recommendations</b>	Building Materials Repairs and Replacements	Repair and replace materials using the same or closest approximate material. Exceptions follow.	As needed.
	Replace Non-Wooden Framed Windows	Replace metal or vinyl framed windows found on the Ashberry, Office and Laundry with wooden framed replacements.	Begin after next helicopter airlift delivers the new windows.
	Make NPS Cabin Congruent with LeConte Rustic Aesthetic	Replace asphalt shingle roof with cedar shakes. Replace metal doors and windows with wooden framed doors and windows. Remove lattice from deck bottom.	When the NPS can get supplies delivered and manpower scheduled to complete the work.

## **CHAPTER SEVEN:**

### **Conclusion**

Management of LeConte Lodge is no easy task. Due to its heavy guest load and remote location, many unique obstacles are encountered. Despite these factors, the Lodge concessionaires and the National Park Service (NPS) have created a successful recreational experience and business operation within the backcountry. Measures have been taken to uphold the integrity of this experience and the land on which the concession operates. The LeConte Lodge Experience and the management philosophy for the property have been developed over many years. The management recommendations established in this thesis help to retain the established experience and insure the protection of the natural environment, and thus the Lodge for future generations of visitors.

In 1982, with the decision to allow LeConte Lodge to remain in operation, the NPS accepted that some negative impact to natural resources was inevitable. The 1983 Great Smoky Mountain National Park (GSMNP) Management Plan placed many restrictions on LeConte Lodge that have helped to lessen these impacts. It has been twenty years since this plan was first implemented, and it is time once again to assess the impact of the Lodge operation on the natural environment in order to make management decisions that further curtail environmental impacts. The management philosophy espoused within this thesis allows for the continuance of the Lodge and its established recreational traditions through a framework that insures the integrity of Mount LeConte's natural resources. It is the goal of this project to raise awareness of potential threats

to this recreational experience and challenge the concessionaire and NPS to address these threats by adopting a proactive management regime.

This project has effectively traced the land use history of the Lodge, cataloged the guest experiences and Lodge traditions, inventoried the current state of the mountaintop's resources, and suggested means for protecting the experience and natural resources of LeConte Lodge. Establishing baseline information about the ecological health of the mountaintop is crucial to making informed management decisions. The concessionaire and the GSMNP must work together to monitor the mountaintop to insure the health of the ecosystem and the business. Further, education of Lodge visitors is needed to gain a constituency of informed patrons who understand the need for resource conservation and the threats to their beloved backcountry. Both the concessionaire and the NPS will benefit from such a constituency and can work together to create educational opportunities that draw on well-established NPS interpretive education and volunteer programs.

This project has revealed a dynamic recreational experience, facility and ecosystem that have evolved together. Management of this facility must also be conducted as a dynamic process. By making decisions respectful of the traditions of the Lodge while adapting to on-going monitoring of environmental health and resource consumption, a dynamic management system will be realized. Protecting the natural resources surrounding the Lodge is the best means of keeping the LeConte Lodge Experience alive.

Additionally, this project has discovered a real possibility for arguing the eligibility of at least two of the LeConte Lodge structures for National Register of Historic Places nomination. While this designation is an honor that attracts visitors and offers some national protection for the structures, it does little to protect the recreational experience of visiting LeConte Lodge and

little to protect the local natural resources. In fact this project has highlighted the importance of the LeConte Lodge Experience and the Lodge's backcountry wilderness setting. Preservation of this Lodge will best be accomplished by creating a sustainable Lodge operation, not simply preserving the historic LeConte Lodge structures. Such an operation will conserve the natural resources of the mountaintop making it possible to preserve the LeConte Lodge Experience.

This project poses a challenge to the NPS to preserve the function of the Lodge rather than only the structures that make up the Lodge. Additionally, the concessionaire is challenged to insure the quality of the natural resources that support the financial viability of the Lodge operation while balancing the demands of a cultural landscape in the midst of wilderness. In the end, a management plan that preserves both the LeConte Lodge Experience and the natural environment benefits both the concessionaire and the NPS because the Lodge, the natural environment, and the ideals that make it a memorable place to visit will be preserved for future generations of GSMNP visitors.

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## APPENDIX A

### A Brief History of LeConte Lodge

by

Al Bedinger, 2001

Walasiyi is the name the Cherokee Indians gave to the mountain now known as Mt. LeConte. The Cherokees believed that the great, green mythical frog lived on Walasiyi. Bullhead is the name given to the entire mountain mass by European settlers. Bullhead is the name today of the mountain's western most point. Most believe that the mountain is named for Joseph LeConte, a famed geologist. During surveys of the area to determine the elevation of the many peaks, Joseph LeConte manned the known fixed barometer at Waynesville, NC.

The Great Smoky Mountains Conservation Association was established in 1923 to create a national park in the Smokies. Linville Falls, Grandfather Mountain, Table Rock Mountain, Mt. Mitchell and Black Mountain were also under consideration for the first national park in the East. In 1924, members of the Great Smoky Mountains Conservation Association arranged for members of the Park Commission to visit the area known as the Smoky Mountains.

Wiley Oakley chose the site for a shelter on Mt. LeConte to be used by the Park Commission on their first visit to the area. This is the first shelter constructed on the mountain. It was built immediately under Clifftop on the North side of the mountain. On the night of August 7, 1924, members of the first park commission trip to the Smokies stayed at this lean-to shelter.

Water for use at the first camp was obtained from the drips off of the rocks.

Many questioned Wiley Oakley's judgment in placing this camp below Clifftop. There was considerable debate as to whether or not there was a better supply of water near the top of the mountain. In July 1925, the basin spring was re-discovered thus making the establishment of the present facility possible. In 1940, the basin spring was dug out so it could be enlarged. It was at this time that the Walker Stone was found which provided evidence that the locals who believed that there was, indeed, a spring near the top of the mountain were correct.

On July 11, 1925, the Great Smoky Mountains Conservation Association authorized Paul Adams to establish a more permanent camp on Mt. LeConte. The following is the exact text of this letter of authorization from David C. Chapman, Vice-Chairman of the Great Smoky Mountains Conservation Association. The original letter is in the Tennessee State Library and Archives.

To Whom It May Concern:

By arrangement with the Champion Fibre Company and owners of Mt. LeConte, this organization has been authorized to appoint a custodian to take charge of the top and upper part of Mt. LeConte.

Mr. Paul J. Adams of Knoxville, has been appointed custodian by this organization. He is working in conjunction with Mr. Lewis McCarter, one of the two patrolmen regularly employed by the Champion Fibre Company.

Mr. Adams is to protect the plant and animal life; to look particularly after the sanitary conditions, and to do what he can to make the visitors more comfortable.

In order to make this service self-sustaining, Mr. Adams is authorized to charge a reasonable fee to those who visit Mt. LeConte. Any assistance or courtesy shown him in carrying out his duties will be appreciated by this organization.

Very truly yours,

David C. Chapman  
Vice-Chairman

GREAT SMOKY MTN. CONSERVATION ASSO'N.

On the night of July 16, 1925, a party of 12 headed by O. M. Shantz of Chicago were the first paying guests of the camp on Mt. LeConte. The cost for this trip for the Shantz party was \$36.00.

The term “doing camp” which consists of cleaning and restocking the cabins, making beds, cleaning the privies, etc. is probably a hold over from the days when the facility was indeed known as the “camp”.

The terraced landscape of the Lodge was formed using a scoop pulled by a mule. Most of the building materials used for the Lodge came from the mountain. A sawmill was used to mill the logs into the lumber used. The interior paneling of the cabins and most of the main lodge was hand planned from fir or spruce milled on the mountaintop sawmill. Sand that was mixed with mortar for chinking the logs of the two log buildings came from Rock Spur. This sand was screened from the sandy soil on the trail over Rock Spur.

Large items that could not be packed on a mule or human such as the two wood stoves were hauled to the mountaintop via the Boulevard Trail on a sled. The sled runners were constructed of sassafras and mules or horses pulled the entire load. The hardwood flooring was also hauled up on a sled via Boulevard Trail.

Construction of the Lodge began in the early 1930's. At present, the Old Lodge is the oldest building. The Old Lodge was constructed in 1934. The “main lodge” or the dining room and kitchen was constructed in 1941.

After the main lodge was constructed, all cooking was done on two wood stoves located on the south wall of the current kitchen. These stoves were Hardwick Speedi Bakers manufactured in Cleveland, Tennessee. Water was heated via a water jacket

located in the firebox of one of the stoves. A storage tank was located slightly above the water jacket, which held the heated water. Water circulated by thermosyphon action from the water jacket to the tank. Water was pumped to an underground, concrete storage tank located between cabins 8 and 9. During times of sufficient water a hydraulic ram was used to pump the spring water. At other times a gasoline engine was used to power a pump. Water then flowed by gravity down to the kitchen. Dishes were washed in the white, single bowl sink. The Lodge office was located in what is now the pantry off of the kitchen.

The cabins were heated with small Franklin wood stoves. The two log lodges were heated with an open fireplace. Kerosene lamps were used for lighting.

There were two outhouses that served the needs of the guests and lodge crew. Both outhouses were “two holers” and were paneled with the same hand planned lumber found today in the cabins and dining room. The women’s outhouse was located approximately on the site of the current crew cabin known as the Ritz. The men’s outhouse was located a little to the south of the women’s approximately on the site of the current food storage building.

In 1968 the Park Service felt the need to install a new domestic water system complete with flush toilets, septic tank and drain field. A 10,000 gallon water storage tank constructed of redwood was located near the present fiberglass tanks. A new, larger hydraulic ram was also installed which was connected to the new underground piping. Installation of this new water system was the inspiration for construction of the “new building” as a place to house the restrooms containing flush type toilets. Two restrooms were located on grade below the main level of the new building. The “new building” is

now known as the office. Construction of the new building lingered for several years only to be completed during the winter of 1973/74.

By 1976, wood was no longer used for space heating, water heating and cooking. Kerosene heaters were used for space heating. A large, propane stove replaced the sole surviving, wood burning stove in the kitchen. The Park Service had required this change in fuels. In spite of the fact that only dead or blown down timber was used and no live trees were harvested, the Park Service no longer allowed the use of wood as a fuel. Spring water is still pumped with a hydraulic ram to storage tanks located above the Lodge. The water is now chlorinated. As in the early days of the Lodge, dishes are still washed by hand but in a large, 3-compartment sink.

During the 2000 season, the kerosene space heaters were removed and replaced with much cleaner burning propane space heaters. At present, there are 28, five-hundred gallon tanks of propane located to the north of camp. These tanks are connected to a system of underground plastic piping that distributes fuel to the space heaters, incinerator, kitchen stove, kitchen refrigerators and 2 instantaneous water heaters. In the spring of each year, replenished propane tanks are flown to the mountaintop along with non-perishable food items, etc. Laundry and perishable food items are carried to the mountain on the backs of Llamas using the Trillium Gap Trail.

Suggested further reading:

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**APPENDIX B****LeConte Lodge Vegetation List**

The LeConte Lodge Vegetation List has been compiled using Rosemary Nichols' *The Ecological Effects of LeConte Lodge in the Great Smoky Mountains National Park*, 1977.

**Lodge Complex and Periphery Herbaceous Cover**

*Achillea millefolium* (\*) (c)

*Aconitum uncinatum* (c) Monkshood

*Agrostis perennans* (\*) (c) Bent Grass

*Angelica triquinata* Angelica

*Anthoxanthum odoratum* (\*) (c) Sweet Vernal Grass

*Aster accuminatus*

*Aster divaricatus* var. *chlorolepsis* (p) Heart-leaved Aster

*Bromus inermis* (\*) Brome Grass

*Bryophytes*

*Calamagrostis cainii* (c) Reed Grass

*Carex brunnescens*

*Carex crinita* (c)

*Carex debilis* (c)

*Carex intumescens* (c)

*Ceastium holosteoides* var. *vulgare* (c) Mouseear Chickweed

*Cinna latifolia* Wood Reed

*Circaea alpine* (c) Enchanter's Nightshade



*Chelone lyoni* (c) Turtlehead  
*Chrysanthemum leucanthemum* (\*) (c) Ox-eye Daisy  
*Clintonia borealis* Bluebead-Lily  
*Cystopteris protrusa* Spreading Bladder Fern  
*Dactylis glomerata* (c) Orchard Grass  
*Danthonia spicata* (c) Mountain Oat Grass  
*Dryopteris campyloptera* Mountain Woodfern  
*Eupatorium rugosum* White Snakeroot  
*Gentiana lineris* Closed Gentian  
*Houstonia serpyllifolia* (c) Prostrate Bluets  
*Impatiens pallida* Touch-me-not  
*Juncus tenuis* (c) Path Rush  
*Laportea canadensis* Wood Nettle  
*Lilium superbum* (c) Turk's Cap Lily  
*Monarda didyma* (c) Bee Balm  
*Oxalis acetosella* Wood Sorrel  
*Plantago major* (c) Plantain  
*Poa* species  
*Poa alsodes* Blue Grass  
*Poa annua* (\*) (c) Blue Grass  
*Poa compressa* (\*) (c) Blue Grass  
*Poa pratensis* (\*) Blue Grass  
*Potentilla norvegica* (c)

*Rudbeckia laciniata* (c) Green-headed Coneflower

*Rumex acetosella* (\*) (c) Sheep Sorrel

*Saxifraga michauxii* Michaux's Saxifrage

*Senecio rugelii* (c) Rugel's Ragwort

*Solidago glomerata* Goldenrod

*Stachys clingmanii* (c)

*Stellaria graminea* (c) Chickweed

*Taraxacum officinale* (\*) (c) Dandelion

*Trifolium pretense* (\*) (c) Red Clover

*Trifolium repens* (\*) (c) White Clover

*Trilium erectum* (p) Wake Robin

*Viola* species (c) Violet

### **Lodge Complex and Periphery Woody Cover**

*Abies fraseri* Fraser's Fir

*Betula lutea* (p) Yellow Birch

*Crataegus flabellata* (p) Hawthorn

*Diervilla sessifolia* Bush Honeysuckle

*Menziesia pilosa* Minnie Bush

*Picea rubens* Red Spruce

*Prunus pensylvanica* Fire Cherry

*Rhododendron minus* (c) Dwarf Rhododendron

*Rubus canadensis* Blackberry

*Sambucus pubens* Red Elderberry

*Sorbus Americana* Mountain Ash

*Vaccinium erythrocarpum* (p) Bearberry

*Viburnum alnifolium* (p) Hobblebush

(p) = found in periphery only

(c) = found in lodge complex only

(\*) = non-native species