

SUSTAINABLE SLOPES

NATIONAL
SKI AREAS
ASSOCIATION



ANNUAL REPORT

JUNE, 2003



THE ENVIRONMENTAL CHARTER
FOR SKI AREAS

Sustainable Slopes Annual Report 2003

Prepared by

NATIONAL
SKI AREAS
ASSOCIATION



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49 Degrees North Ski Area	Mohawk Mountain Ski Area
Alpine Meadows Ski Resort	Mount Snow Resort
Alta Ski Area	Mountain High Resort
Alyeska Resort	Mt. Bachelor, Inc.
Anthony Lakes Mountain Resort	Mt. Hood Meadows Ski Resort
Arapahoe Basin	Mt. Rose - Ski Tahoe
Arizona Bowl	Mt. Spokane Ski Area
Aspen Highlands	Northstar-at-Tahoe
Aspen Mountain	Pats Peak
Attitash Bear Peak	Pebble Creek Ski Area
Big Mountain Ski & Summer Resort	Powderhorn Resort
Blue Mountain Resorts	Sierra-at-Tahoe Ski Resort
Bogus Basin Ski Resort	Ski Cooper
Boston Mills/Brandywine Ski Resort	Ski Roundtop
Breckenridge Ski Resort	Ski Snowstar Winter Sports Park
Bretton Woods Mountain Resort	Smugglers' Notch Resort
Bridger Bowl Ski Area	Snow Summit Mountain Resort
Brundage Mountain Resort	Snowbird Ski & Summer Resort
Buttermilk Mountain	Snowmass Ski Area
Cannon Mountain	Snowshoe Mountain Inc.
The Canyons	Squaw Valley Ski Corporation
Cataloochee Ski Area	Steamboat Ski & Resort Corp.
Crested Butte Mountain Resort	Stevens Pass
Crystal Mountain, Inc.	Stowe Mountain Resort
Crystal Mountain Resort	Sugar Bowl Ski Resort
Deer Valley Resort Company	Sugarbush Resort
Durango Mountain Resort	Sugarloaf/USA
Gore Mountain	The Summit At Snoqualmie
Grand Targhee Ski & Summer Resort	Sunburst Ski Area
Greek Peak Ski Resort	Sunday River Ski Resort
Heavenly Ski Resort	Taos Ski Valley, Inc.
Holiday Valley Resort	Telluride Ski & Golf Company
Jackson Hole Mountain Resort	Tremblant Resort
Keystone Resort	Vail Mountain
Killington Resort	Wachusett Mountain Ski Area
Kirkwood Mountain Resort	Waterville Valley Resort
Loon Mountain Recreation Corp.	Whiteface
Mammoth Mountain Ski Area	Winter Park Resort
Massanutten Ski Resort	Wintergreen Resort
Mission Ridge	

THE YEAR IN REVIEW

The National Ski Areas Association (NSAA) is pleased to present this third *Annual Report* on the Sustainable Slopes Environmental Charter for Ski Areas. The Environmental Charter, commonly known as Sustainable Slopes, was adopted in June 2000 as a collection of environmental best practices for ski area owners and operators (visit www.nsaa.org for a copy of the Environmental Charter). The purposes of this *Annual Report* are to provide information on resorts' progress in implementing the Environmental Principles of the Charter, highlight the contributions of our partners, and set goals for the future.

Vision:

To be leaders among outdoor recreation providers through managing our businesses in a way that demonstrates our commitment to environmental protection and stewardship while meeting the expectations of the public.

Background

To date, 173 resorts have endorsed the Environmental Charter, representing over 72 percent of the ski resorts nationally by skier visits. Upon endorsing the Charter, these resorts have identified an environmental contact person, assessed their policies and operations against the Environmental Principles in the Charter, and have taken steps toward improved environmental performance. Given variances in size, technical expertise, financial resources, and geographic location, resorts are at different points with respect to their environmental programs and implementation of the Environmental Principles. The challenge of this *Annual Report* is to collectively report on resorts' progress to date despite these differences.

NSAA is fortunate to have a committed group of Partnering Organizations—those organizations that support the Environmental Principles and are committed to working with resorts in the future—on board with the Charter. This year, we added a new Partnering Organization, the New York State Department of Environmental Conservation. Our Partnering Organizations work with individual resorts and NSAA to help bring the Charter to life. The Partnering Organizations are also helpful in gathering environmental data on resorts, educating resorts on environmental practices and opportunities, and supporting our Sustainable Slopes outreach campaign. More detailed information on the contributions of the Partnering Organizations is presented in Chapter 3.

Consistent with the past two seasons, NSAA used an Assessment Tool based on the Principles of the Environmental Charter to collect data from resorts in April and May of 2003. For a sample copy of the Assessment Tool, visit www.nsaa.org and click on "Sustainable Slopes." The Assessment Tool results are the factual basis for this *Annual Report*. A total of 79 resorts completed the Assessment Tool this year. The Assessment Tool has helped us identify general industry trends and collective results regarding our progress under the Principles. Additionally, the tool is useful to resorts on an individual basis in helping them to identify successes and opportunities for improvement, set



priorities for the future, and benchmark their progress against other resorts.

We will institute a change next year in the qualitative portion of the Assessment Tool. After three years of self-assessment, resorts know where they stand in terms of progress in implementing the Principles of the Charter. In 2004, we will still make available to resorts the qualitative portion of the Assessment Tool for their own use, however results will not be compiled in our *Annual Report*. Instead, NSAA will encourage resorts to complete the tool and share results in a manner of their choosing, whether it be through their website or their own annual report. In addition, next year's Assessment Tool will place greater emphasis on quantitative data collection. More details on the changes slated for next year are found in Chapter 4.

2002/2003 Season Highlights

This has been an exciting year in the implementation of the Sustainable Slopes program. In September, 2002, NSAA adopted a climate change policy aimed at raising awareness of the potential impacts of climate change on our weather-dependent business and the winter recreation experience; reducing our own greenhouse gas emissions; and encouraging others to take action as well in addressing global warming (see Appendix C).

Ski areas participated in an extremely successful Sustainable Slopes Outreach Campaign on February 22, 2003. The outreach campaign is designed to highlight the Charter and educate guests and the public on their role in helping us make sustainable use of natural resources. (See Environmental Code of the Slopes in Appendix B). In furtherance of our new climate change policy, this year's theme was "Keep Winter Cool." Ski areas, together with the Natural Resources Defense Council (NRDC), launched the Keep Winter Cool campaign to raise awareness about the important issue of global warming. Green Mountain Energy Company (GMEC) also participated in the Keep Winter Cool campaign. *SKI Magazine* highlighted the campaign in its February 2003 issue, and 173 resorts received "Keep Winter Cool" materials to raise public awareness of the campaign on Sustainable Slopes Outreach Day. The Keep Winter Cool campaign was featured on two segments of CNN Headline News' *Down to Earth* in February and March 2003. (See Climate Change/Keep Winter Cool materials in Appendix C). NSAA already has scheduled next year's Sustainable Slopes Outreach Day for February 21, 2004 and expects to focus once again on the Keep Winter Cool message.

Also in furtherance of implementing our new climate change policy, NSAA sponsored a "Green Power Options" seminar series hosted by *Green Power Magazine*. The seminars are designed to help businesses use and purchase renewable energy and take place in California, Colorado Massachusetts and Florida this year.



To promote resort environmental training and education, NSAA continues to distribute copies of the *Greening Your Ski Area: A Pollution Prevention Handbook* published last year. This season, the Handbook was featured on EPA's Peaks to Prairies website to provide on-line assistance. The Handbook received recognition through a national Environmental Protection Agency (EPA) award this spring.

Also deserving mention this season is NSAA's development and support of the "SWAG" or Sharing Warmth Around the Globe program. Through the SWAG program, NSAA distributes retired ski resort uniforms and winter garments which would otherwise be discarded to those in need in cold weather countries throughout the world. Since the program's inception, over 25,000 uniforms and winter garments have been "reused" and shipped to communities in need in Nepal, Kosovo, Tajikistan, Mongolia, Afghanistan, Sweden, Tibet, Hungary and Tanzania.

Finally, the Sustainable Slopes program was featured in the World Tourism Organization's 2002 Worldwide Inventory and Comparative Analysis of Eco-labels, Awards & Self Commitments. We are proud to serve as a model for other businesses on an international basis.

NSAA is committed to raising awareness of environmental issues through this *Annual Report*, the Sustainable Slopes Outreach Campaign, and any other effective methods of informing the public about ski areas and the environment. We remain committed to the Green Room, our web-based environmental database for ski areas. (To enter the Green Room, visit www.nsaa.org and click on "Environmental Charter.") The Green Room is available to the media and public for information on innovative actions that resorts are taking under the 21 environmental Principles—from water quality to wildlife habitat to energy conservation. Resort contact information is provided for each project or program, as well as links to resort websites and environmental web pages. Resorts are using the database as a resource in environmental decision-making and to share ideas on tested programs or projects that will enhance environmental performance. The Green Room also identifies those resorts that have received national environmental excellence awards from Time4 Media's Mountain Sports Media, publishers of *SKI*, *SKIING*, and other publications. The Green Room is one of the most visited sections of NSAA's website.

"We are succeeding in taking the first collective steps toward proactive environmental stewardship."

We learn a great deal every season from our partners and the data collection efforts on resort implementation of the Environmental Charter. The Assessment Tool results continue to demonstrate that resorts are succeeding in taking collective steps toward proactive environmental stewardship. We have many environmental success stories from resorts across the country, and we also have challenges and opportunities for improvement in the future. The environment will always be a ski area's number one asset. As an industry, we will continue to make the Sustainable Slopes program one of our top priorities.



The Year in Review

On behalf of ski areas across the country, NSAA would like to thank all of the individuals, organizations, and agencies that have supported Sustainable Slopes with resources, expertise, and input. Together we can be proud of progress made under the Sustainable Slopes program. Your participation inspires us to apply the vision we will need to meet the challenges of the future.

Michael Berry

National Ski Areas Association President

June 2003



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1.0 THE SUSTAINABLE SLOPES ENVIRONMENTAL CHARTER

1.1 HISTORY AND PURPOSE OF THE CHARTER

Every year, millions of people visit ski areas across North America to enjoy snow sports and to experience the natural beauty of the mountain environment. These visitors place a high priority on environmental concerns. In order to continue to offer quality recreational experiences that complement the natural and aesthetic qualities that draw these visitors to the mountains, NSAA and its member resorts have committed to improving environmental performance in ski area operations and management. This commitment is detailed in the Sustainable Slopes Environmental Charter for Ski Areas adopted in June 2000.

1.2 OVERVIEW OF THE ENVIRONMENTAL PRINCIPLES

The Environmental Charter promotes sound environmental stewardship and, more importantly, offers a comprehensive set of 21 Environmental Principles that enable ski area operators to make sustainable use of natural resources. The Principles cover the following topics:

To see the Charter and its Principles in their entirety, visit the NSAA web site at www.nsaa.org.

1. Planning, Design, and Construction
2. Water Use for Snowmaking
3. Water Use in Facilities
4. Water Use for Landscaping and Summer Activities
5. Water Quality Management
6. Wastewater Management
7. Energy Use for Facilities
8. Energy Use for Snowmaking
9. Energy Use for Lifts
10. Energy Use for Vehicle Fleets
11. Waste Reduction
12. Product Re-use
13. Recycling
14. Potentially Hazardous Wastes
15. Fish and Wildlife Management
16. Forest and Vegetative Management
17. Wetlands and Riparian Areas
18. Air Quality
19. Visual Quality
20. Transportation
21. Education and Outreach

Understanding that ski areas have some unavoidable impacts, the Principles encourage ski areas to adopt the “avoid, minimize, mitigate” approach to natural resource management.



1.3 Partnering Organizations

For each of the 21 Environmental Principles, the Charter identifies a range of "Options for Getting There" that resorts can implement to achieve the Principles. These "Options for Getting There" serve as a menu of realistic actions ski areas can and are taking, all or in part as their resources allow, to continually improve their operations. A complete listing of the "Options for Getting There" for each of the 21 Principles is available at www.nsaa.org.

Because not all resorts have the same concerns and resources, the Charter is designed to allow resorts to use the Principles as a framework and then choose the "Options for Getting There" that make the most sense given their individual circumstances and capacities. We hope that each resort continues to take the challenge to achieve the greatest possible results individually for greater conservation collectively.

It is important to note that the Charter's Principles are voluntary, and in adopting them resorts have committed to going beyond regulatory compliance in those areas where improvements make environmental sense and are economically feasible. Ski areas already should be meeting all applicable federal, state, and local environmental requirements. The Principles are the means by which the industry can collectively *improve environmental performance*. There are many incentives for going beyond compliance. Good environmental practices are good business, and quite simply are expected by resort customers, the Partnering Organizations in the Charter, and other key stakeholders.

1.3 PARTNERING ORGANIZATIONS

The Environmental Charter was developed through a collaborative process where input and awareness, not necessarily consensus on every issue or by every group, were the goals. This process was facilitated by the Keystone Center, an independent non-profit public policy and education organization. Input came from a variety of interests, including federal, state, and local government agencies; environmental and conservation groups; other outdoor recreation groups; and academia. The 12 Partnering Organizations listed below supported the ski industry's development of the Environmental Principles and are committed to working with the industry to implement the Principles.

- Colorado Department of Public Health & Environment (CDPHE)
- Conservation Law Foundation (CLF)
- U.S. Department of Energy (DOE)
- U.S. Environmental Protection Agency (EPA)
- USDA Forest Service (USFS)
- Leave No Trace Inc. (LNT)
- The Mountain Institute (TMI)
- National Fish & Wildlife Foundation (NFWF)
- National Park Service Concession Program (NPS)
- New York State Department of Environmental Conservation (NYSDEC)



- Teton County, Wyoming (TC)
- Trust for Public Land (TPL)

1.4 ENDORSING RESORTS

On an individual basis, ski areas take their stewardship role seriously and continue to take innovative steps each year to address environmental challenges. The Charter represents a *collective* step toward meeting these challenges. To date, 173 ski areas have endorsed the Charter and are committed to implementing its Principles. (See Appendix A for a complete list of endorsing resorts.)

Of the endorsing ski areas, 79 participated in the data collection exercise that is the basis for this *Annual Report*. This is 10 resorts fewer than the 89 resorts that participated in last year's annual reporting. The data gathered demonstrate the collective progress that the industry continues to make under the Environmental Principles. The data also give insight into environmental priorities for the future for each individual ski area and the industry as a whole.

1.5 MEASURING PROGRESS TOWARD THE PRINCIPLES

NSAA updated and improved the Assessment Tool used last year to help resorts measure their progress under the Environmental Charter during this third year of implementation. The endorsing resorts received this Assessment Tool in April of 2003. Once again, each resort had the option of completing the Assessment Tool on-line at the NSAA web site or submitting a hard copy by fax or mail.

The Assessment Tool consists of 24 forms. Twenty-one of these forms correspond to the 21 Principles of the Environmental Charter (listed above in Section 1.2). Resorts could elect to skip forms that are not applicable to their operation (for example, topics related to snowmaking if their resort does not make snow). Again this year, the results were aggregated across all participating ski resorts and analyzed according to geographic regions and resort size.

The first 21 forms contain four sections for the resort to complete:

1. A Checklist of "Options for Getting There"
2. Overall Implementation Status (on a scale of 1-5)
3. Priorities for Improvement
4. "Principles in Action," or steps taken to implement the Principles

The "Options for Getting There" consist of 177 environmental best practices across all 21 Principles. In total, resorts answered over 200 questions in the Assessment Tool if all 21 Principles were applicable.

In its third year, the Assessment Tool continues to be a living tool. The 2003 tool was refined based upon the results from previous year's reports and feedback from resorts and Partnering Organizations. We will



1.6 "Keep Winter Cool" Campaign

continue to incorporate feedback into the tool so that it improves with each successive year (see Chapter 4).

Form 22 of the Assessment Tool again focused on quantitative measurements of energy use/savings, waste production/reduction, water use/savings, and transportation demand reduction. Additionally this year, we asked resorts to report quantitatively on climate change impacts (discussed in more detail in Section 1.6) related to their actions. Our overall goal continues to be tracking all of these issues as environmental indicators. These questions allow us to quantify some basic metrics associated with core Environmental Principles. We asked that resorts provide numbers that reflect the use of certain resources in their individual operations. The intent of these numbers remains the same—to allow better year-to-year comparisons. Similar to last year, many resorts reported that certain numbers on Form 22 are difficult to provide. As a result, many “o” figures again appear in this year’s data, and we are re-evaluating which figures to request in future years (see Chapter 4).

1.6 “KEEP WINTER COOL” CAMPAIGN

In 2003, together with the Natural Resources Defense Council (NRDC), NSAA introduced a new global warming campaign entitled “Keep Winter Cool.” This new campaign highlights the effects of global warming on winter recreation, as well as the opportunities both resort operators and their guests have to start solving the problem. Many of the measures implemented by resorts as part of the Environmental Charter have direct benefits toward reducing global warming, particularly in the areas of energy conservation, transportation demand reduction, and solid waste reduction and recycling.

In order to integrate the results of the Assessment Tool with this new campaign, resorts were asked to provide additional information to estimate for climate change impacts along with the other estimated industry-wide environmental indicators. This additional information focused on waste reduction/recycling and transportation demand reduction. For example, resorts were asked to indicate the breakdown of vehicles types (e.g., gas, diesel, hybrid electric, etc.) involved in their various transportation demand reduction strategies. The Assessment Tool then used this information to automatically convert the miles reduced into pounds of equivalent CO₂, a unit used to measure climate change impacts. As with the other environmental indicators previously discussed, some resorts reported that numbers related to climate change impacts on Form 22 are difficult to provide.



2.0 CHARTER PROGRESS AND CHALLENGES

A total of 79 resorts from 25 U.S states and 2 Canadian Provinces completed the Assessment Tool in 2003 and have reported on their progress toward achieving the goals of the Charter. Our goal is to increase participation from endorsing resorts so that we can develop more representative data for the industry as a whole, and so that we can learn from individual resort successes and move the entire industry forward.

...our goal is to have 100 percent participation from endorsing resorts.

Although the Assessment Tool is more qualitative than quantitative, we can infer trends and indications of what has been accomplished during this third year and what challenges lie ahead for the industry and its Partnering Organizations. One of our goals for the Assessment Tool over the next few years is to streamline and shift its focus to more quantitative data collection and reporting.

2.1 IMPLEMENTATION STATUS OF ENVIRONMENTAL PRINCIPLES

The Assessment Tool results show that many resorts continue to make progress toward implementing the Environmental Principles. In fact, with the exception of "Energy Use for Lifts," all other remaining Principles scored above a 3 on a scale of 1 (lowest) to 5 (highest)¹ in terms of overall implementation status. The results also demonstrate that room for improvement remains in several of the areas covered by the Principles. Table 2-1 summarizes the most and least implemented Principles for this reporting year.

**Table 2-1
Overall Implementation Status – Most and Least Implemented Principles**

Overall Most Implemented Principles	Overall Least Implemented Principles
Wetlands and Riparian Areas	Energy Use for Lifts
Visual Quality	Product Re-use
Planning, Design, and Construction	Energy Use for Vehicle Fleets
Potentially Hazardous Wastes	Energy Use for Snowmaking

¹ 1. Not started yet on implementation
2. Investigating, but no action implemented
3. Some actions implemented
4. Significant progress made
5. Principle implemented



2.1 Implementation Status of Environmental Principles

Most Implemented Principles

As Table 2-1 suggests, resorts have excelled in four areas:

- Protecting precious wetlands and riparian areas
- Protecting scenic values or "Visual Quality"
- Planning, designing, and constructing facilities and lifts in an environmentally sensitive manner
- Properly handling potentially hazardous waste

On an implementation scale of 1 (lowest) to 5 (highest), resorts scored an average 3.78 for implementing sustainable practices into wetlands and riparian areas; 3.79 for visual quality; 3.91 into planning, design, and construction; and 4.12 for potentially hazardous wastes. The benefits of successfully implementing these four Principles include keeping the integrity of the natural landscape intact, protecting scenic vistas, protecting minimum stream flows, maintaining wetland and riparian areas in which animal habitat, and integrating operations into the natural landscape.

Decisions made in these four areas, such as siting lifts or buildings or measures taken to ensure the health of forests, vegetation and habitat, tend to be decisions with lasting implications. They also are the issues that stakeholders and surrounding communities tend to be the most concerned about. In sum, the Assessment Tool results show that resorts have made protecting the health of the landscape a priority in their operations, as well as protecting the scenic qualities that draw visitors to the slopes.

When comparing this year's responses to those from 2002, three of the most implemented Principles remained the same. The lone change was a habitat-related Principle (wetlands and riparian areas) that replaced water quality management and water use for snow making as two of the top Principles. Notably, all status scores for those Principles that did repeat from last year increased. In particular, the average score for protecting visual quality increased from 3.74 (in 2002) to 3.79 (in 2003), a rise of 0.06. The score also rose for implementing sustainable practices into planning, design, and construction by 0.17. Finally, the average score for practices related to potentially hazardous wastes increased by 0.11. Overall, resorts scored higher in overall status on 18 of the 21 Principles when compared to 2002 scores.

Least Implemented Principles

By contrast, the four least implemented Principles include three areas of energy use (lifts, vehicle fleets, and snowmaking) and product re-use as a means of reducing waste generation. In these areas, resorts scored as follows:

...resorts have made protecting the health of the landscape a priority in their operations, as well as protecting the scenic qualities that draw visitors to the slopes.



2.1 Implementation Status of Environmental Principles

- Energy use for lifts - 2.73
- Energy use for vehicle fleets - 3.25
- Product re-use - 3.06
- Energy use for snowmaking - 3.31

These four areas represent opportunities for improvement. The potential benefits of improvement in these areas include cleaner energy, reduced pollution, reduced energy consumption, less waste going to landfills, reduced emission of greenhouse gases that cause global warming, and water use that is more efficient and effective. NSAA is committed to working with Partnering Organizations with expertise in these areas to help educate resorts and improve performance in these areas over time.

... both energy use for vehicle fleets and product re-use achieved significant increases in overall status: 0.17 and 0.25, respectively.

Similar to the most implemented measures, we saw repeated topics in the least implemented measures between 2002 and 2003. In fact, all of the least implemented measures remained the same except for one Principle. Energy use for snowmaking replaced energy use for lifts in 2003. Overall status scores for these Principles did increase from last year, with the exception of energy use for snowmaking (a decrease of 0.05). The average scores for both energy use for vehicle fleets and product re-use achieved significant increases in overall status: 0.17 and 0.25, respectively. The score rose for the remaining least implemented Principle, energy use for lifts, by 0.04.

Specific Environmental Practices

Apart from providing overall results on Principle implementation status, the Assessment Tool data also highlight specific environmental practices that resorts currently are undertaking. These data show that reporting resorts are doing an exceptional job of implementing specific environmental practices across the board. For example:

- Eighty-nine percent (89%) are engaging stakeholders collaboratively on siting improvements, such as new facilities or lifts.
- Ninety percent (90%) are minimizing tree removal by carefully siting and designing ski trails.
- Ninety-eight percent (98%) are applying sound on-mountain construction practices, such as over-snow transport techniques, stormwater control, or phasing of activities to minimize disturbances to natural habitats.
- Ninety-six percent (96%) are using appropriate erosion and sediment control practices, such as water bars, revegetation, and replanting.
- Eighty-six percent (86%) are installing water efficient equipment in facilities, such as low-flow faucets and toilets.



2.1 Implementation Status of Environmental Principles

- Ninety percent (90%) are maintaining stream vegetative buffers to improve natural filtration processes and protect aquatic habitat.
- Eighty-nine percent (89%) are using high-efficiency snow guns and air compressors for snowmaking operations.
- Eighty-eight percent (88%) are conducting activities and construction with sensitivity to seasonal wildlife patterns and behavior.
- Ninety-seven percent (97%) are revegetating disturbed areas as quickly as possible following disturbances.
- Ninety-four percent (94%) are inventorying and monitoring wetland and riparian areas.
- Eight-nine percent (89%) are engaging in restoration, remediation, and protection projects for wetlands or riparian areas.
- Eighty-seven percent (87%) are planting trees or other vegetation to improve visual quality.
- Ninety percent (90%) are providing shuttles or transportation for guests and employees.
- Eighty-six percent (86%) are purchasing recycled products.
- Ninety-one percent (91%) are recycling office paper, cardboard, newspaper, aluminum, glass, plastic, and food service waste.

Despite the already high rate of implementation for these specific practices, resorts reported improvements in implementation rates for 12 of these 15 practices between 2002 and 2003.

Analysis by Region

In addition to looking for overall trends, NSAA analyzed the data collected by geographic region and resort size. The regions used for this analysis are defined below:

Northeast (NE)

Maine
Vermont
New Hampshire
Connecticut
Massachusetts
Rhode Island

Mid-Atlantic (MA)

Pennsylvania
New Jersey
New York

Despite the already high rate of implementation for these specific practices, resorts reported improvements in implementation rates for 12 of these 15 practices between 2002 and 2003.



2.1 Implementation Status of Environmental Principles

Southeast (SE)

Virginia
West Virginia
North Carolina
South Carolina
Tennessee
Georgia

Midwest (MW)

North Dakota
South Dakota
Nebraska
Minnesota
Iowa
Missouri
Wisconsin
Illinois
Indiana
Michigan
Ohio

Central Rockies (CR)

Colorado
New Mexico

Northern Rockies (NR)

Idaho
Montana
Wyoming
Utah

Pacific Northwest (PN)

Washington
Oregon
Alaska

Sierras (SI)

California
Nevada
Arizona

Canada (CN)

...most regions are leading the industry in implementing at least one of the Environmental Principles.

Table 2-2 highlights the average implementation status of each of the 21 Environmental Principles by these regions. The data represent the average response across all reporting resorts for each region on a scale of 1 to 5.

For each Principle in Table 2-2 (i.e., for each table row), the region that scored the highest is denoted in bold italic font. For each region (i.e., for each table column), a shaded box indicates the Principle with the highest implementation rate. The results show that Principle leadership is widely distributed across the industry. All of the regions are leading the industry in implementing at least one of the Environmental Principles.

When comparing the 2003 results of Table 2-2 to the scores of 2002, several regions showed improvement in many of the Principles.

When comparing the 2003 results of Table 2-2 to the scores of 2002, several regions showed improvement in many of the Principles. The following list presents the improvements (based on higher average scores of overall status) in Environmental Charter Principles by region:

- Northeast (NE) reported improvement in 19 Principles
- Mid-Atlantic (MA) reported improvement in 14 Principles
- Southeast (SE) reported improvement in 13 Principles
- Midwest (MW) reported improvement in 6 Principles
- Central Rockies (CR) reported improvement in 12 Principles
- Northern Rockies (NR) reported improvement in 13 Principles



2.1 Implementation Status of Environmental Principles

- Pacific Northwest (PN) reported improvement in 9 Principles
- Sierras (SI) reported improvement in 18 Principles
- Canada (CN) reported improvement in 4 Principles

**Table 2-2
Average Principle Implementation Status
by Region and Overall**

Principle	CR	CN	MA	MW	NE	NR	PN	SE	SI	All
Planning, Design, and Construction	3.87	4.00	3.40	3.33	4.38	4.00	3.83	3.00	4.18	3.91
Water Use For Snowmaking	3.43	4.00	4.00	3.33	3.83	3.80	3.67	3.75	3.55	3.67
Water Use for Facilities	3.44	3.00	3.80	2.67	3.71	3.36	3.10	3.25	3.17	3.36
Water Use for Landscaping and Summer Activities	3.75	3.50	3.50	3.00	4.11	4.00	3.67	3.67	3.45	3.72
Water Quality Management	3.88	3.50	4.00	2.67	3.93	4.00	3.20	3.75	3.67	3.73
Wastewater Management	3.56	2.50	3.60	2.67	3.93	3.55	3.30	4.25	2.67	3.43
Energy Use for Facilities	3.75	3.00	3.40	2.00	3.57	3.36	3.20	3.25	3.25	3.38
Energy Use for Snowmaking	3.27	3.50	3.20	2.00	3.64	3.50	4.00	3.25	3.09	3.31
Energy Use for Lifts	3.19	3.00	2.80	1.00	2.86	3.00	2.50	2.25	2.42	2.73
Energy Use for Vehicle Fleets	3.25	3.00	3.40	1.67	3.43	3.27	3.30	3.00	3.42	3.25
Waste Reduction	3.88	3.00	3.80	2.67	3.00	3.18	3.50	3.25	3.33	3.48
Product Re-use	3.50	3.50	3.20	2.00	3.00	2.91	2.80	3.25	3.00	3.06
Recycling	3.88	3.00	3.20	3.00	3.36	3.36	3.20	3.50	3.42	3.43
Potentially Hazardous Wastes	4.44	3.50	4.00	4.00	4.07	4.27	3.70	3.75	4.25	4.12
Fish and Wildlife	3.75	3.00	3.20	2.67	3.71	3.64	3.50	3.25	3.42	3.52
Forest and Vegetative Management	3.88	3.50	3.80	2.67	3.64	3.64	3.80	3.00	3.67	3.65
Wetlands and Riparian Areas	4.15	4.00	3.00	3.50	3.90	4.11	3.25	3.00	3.50	3.78
Air Quality	3.69	3.00	3.60	3.33	3.57	3.36	3.10	3.00	3.58	3.45
Visual Quality	3.81	4.00	3.60	4.00	3.71	4.00	3.60	3.75	3.83	3.79
Transportation	3.69	3.50	3.20	1.33	3.57	3.45	3.20	3.00	3.83	3.43
Education and Outreach	4.00	3.00	3.00	1.67	3.36	3.45	3.20	3.25	3.42	3.39

It should be noted that regions already reporting high scores overall have less room for improvement. For example, the Canadian region only reports improvements in four Principles for this past year. However, this low number of improvements is not indicative of the regions' progress



2.1 Implementation Status of Environmental Principles

since these resorts previously attained some of the highest overall scores of any region.

Table 2-3 presents the highest scoring Principles and lowest scoring Principles in terms of implementation status by region.

**Table 2-3
Regional Status – Most and Least Implemented Principles**

Region	Most Implemented Principles	Least Implemented Principles
Central Rockies (CR)	Potentially Hazardous Wastes Wetlands and Riparian Areas Education and Outreach	Water Use For Snowmaking Energy Use for Snowmaking Energy Use for Vehicle Fleets Energy Use for Lifts
Canada (CN)	Planning, Design, and Construction Water Use For Snowmaking Wetlands and Riparian Areas Visual Quality	Water Use for Facilities ¹ Energy Use for Facilities ¹ Energy Use for Lifts ¹ Energy Use for Vehicle Fleets ¹ Waste Reduction ¹ Recycling ¹ Fish and Wildlife ¹ Air Quality ¹ Education and Outreach ¹ Wastewater Management
Mid-Atlantic (MA)	Water Use For Snowmaking Water Quality Management Potentially Hazardous Wastes	Wetlands and Riparian Areas Education and Outreach Energy Use for Lifts
Midwest (MW)	Potentially Hazardous Wastes Visual Quality Wetlands and Riparian Areas	Energy Use for Vehicle Fleets Education and Outreach Transportation Energy Use for Lifts
Northeast (NE)	Planning, Design, and Construction Water Use for Landscaping and Summer Activities Potentially Hazardous Wastes Water Quality Management Wastewater Management	Recycling Education and Outreach Waste Reduction Product Re-use Energy Use for Lifts
Northern Rockies (NR)	Potentially Hazardous Wastes Wetlands and Riparian Areas	Energy Use for Vehicle Fleets Waste Reduction Energy Use for Lifts Product Re-use
Pacific Northwest (PN)	Energy Use for Snowmaking Planning, Design, and Construction Forest and Vegetative Management Potentially Hazardous Wastes	Water Use for Facilities Air Quality Product Re-use Energy Use for Lifts



2.1 Implementation Status of Environmental Principles

Table 2-3 (continued)
Regional Status – Most and Least Implemented Principles

Region	Most Implemented Principles	Least Implemented Principles
Southeast (SE)	Wastewater Management Water Use For Snowmaking ¹ Water Quality Management ¹ Potentially Hazardous Wastes ¹ Visual Quality ¹	Energy Use for Lifts Planning, Design, and Construction ¹ Energy Use for Vehicle Fleets ¹ Forest and Vegetative Management ¹ Wetlands and Riparian Areas ¹ Air Quality ¹ Transportation ¹
Sierras (SI)	Potentially Hazardous Wastes Planning, Design, and Construction Visual Quality Transportation	Energy Use for Snowmaking Product Re-use Wastewater Management Energy Use for Lifts

¹Indicates the Principle tied for least or most implementation status in the region (all had equal values).

Analysis By Resort Size

The results of the Assessment Tool also were analyzed by resort size. Ski industry data were used to organize reporting resorts into four size categories:

- Less than 100,000 skier visits per year
- One hundred thousand to 250,000 skier visits per year
- Two-hundred and fifty thousand to 500,000 skier visits per year
- Greater than 500,000 skier visits per year

Similar to 2003, smaller resorts with less than 100,000 skier visits per year consistently scored below average in terms of overall implementation status of the 21 Principles (see Table 2-4). The same is true for resorts with skier visits up to 250,000 per year. In contrast, larger resorts with greater than 250,000 skier visits per year consistently scored higher than average in terms of overall implementation status of the 21 Principles. These data again reinforce and reflect the reality that smaller resorts have fewer resources to address the practices listed in the Charter. At the same time, smaller resorts also are likely to have less of an impact on the environment.

For each Principle (i.e., for each row) in Table 2-4, the size category that scored the highest is denoted in bold italics. For each size category (i.e., for each column in the table), a shaded box indicates the Principle with the highest implementation level. In all size categories, Potentially Hazardous Waste was the most implemented Principle. As can be seen in Table 2-4, high scores for each respective Principle were evenly distributed between the two largest categories.

These data again reinforce and reflect the reality that smaller resorts have fewer resources to address the practices listed in the Charter.



2.1 Implementation Status of Environmental Principles

Table 2-4
Principle Implementation Status by Resort Size

Principle	0-100,000	100,000 - 250,000	250,000 - 500,000	> 500,000	Avg. All Resorts
Planning, Design, and Construction	3.33	3.63	4.21	4.18	3.91
Water Use For Snowmaking	3.63	3.48	3.87	3.64	3.67
Water Use for Facilities	2.71	3.36	3.63	3.54	3.36
Water Use for Landscaping and Summer Activities	3.43	3.53	4.06	3.70	3.72
Water Quality Management	3.07	3.95	3.93	3.77	3.73
Wastewater Management	2.64	3.50	3.63	3.69	3.43
Energy Use for Facilities	2.79	3.27	3.56	3.85	3.38
Energy Use for Snowmaking	2.71	3.19	3.45	3.55	3.31
Energy Use for Lifts	2.71	2.45	2.74	3.08	2.73
Energy Use for Vehicle Fleets	2.93	3.05	3.41	3.62	3.25
Waste Reduction	3.14	3.50	3.59	3.62	3.48
Product Re-use	2.86	2.91	3.26	3.15	3.06
Recycling	3.36	3.05	3.63	3.77	3.43
Potentially Hazardous Wastes	3.64	4.09	4.30	4.38	4.12
Fish and Wildlife	3.07	3.27	3.85	3.77	3.52
Forest and Vegetative Management	3.36	3.36	3.93	3.85	3.65
Wetlands and Riparian Areas	3.43	3.38	4.00	4.00	3.78
Air Quality	3.07	3.05	3.81	3.85	3.45
Visual Quality	3.50	3.68	4.00	3.85	3.79
Transportation	2.79	3.18	3.67	4.00	3.43
Education and Outreach	2.86	3.09	3.74	3.77	3.39

When comparing the 2003 results of Table 2-2 to the scores of 2002, all size categories reported improvement in many of the Principles.

When comparing the 2003 results of Table 2-2 to the scores of 2002, all size categories reported improvement in many of the Principles. The following list presents the improvements in Environmental Charter Principles according to resort size category:

- Resorts with 100,000 or fewer skier visits reported improvement in 9 Principles.
- Resorts with 100,000 – 250,000 skier visits reported improvement in 19 Principles.



2.2 Priorities for Improvement

- Resorts with 250,000 – 500,000 skier visits reported improvement in 18 Principles.
- Resorts with 500,000 or more skier visits reported improvement in 15 Principles.

Drawing on the scores presented in Table 2-4, Table 2-5 presents the most and least implemented Principles by resort size.

**Table 2-5
Status by Resort Size – Most and Least Implemented Principles**

Resort Size	Most Implemented Principles	Least Implemented Principles
0-100,000	Water Use for Landscaping and Summer Activities Wetlands and Riparian Areas Visual Quality Water Use For Snowmaking Potentially Hazardous Wastes	Wastewater Management Water Use for Facilities Energy Use for Snowmaking Energy Use for Lifts
100,000-250,000	Water Use for Landscaping and Summer Activities Planning, Design, and Construction Visual Quality Water Quality Management Potentially Hazardous Wastes	Energy Use for Lifts Product Re-use Energy Use for Vehicle Fleets Recycling Air Quality
250,000-500,000	Wetlands and Riparian Areas Visual Quality Water Use for Landscaping and Summer Activities Planning, Design, and Construction Potentially Hazardous Wastes	Energy Use for Lifts Product Re-use Energy Use for Vehicle Fleets Energy Use for Snowmaking Energy Use for Facilities
> 500,000	Wetlands and Riparian Areas Transportation Planning, Design, and Construction Potentially Hazardous Wastes	Energy Use for Lifts Product Re-use Water Use for Facilities Energy Use for Snowmaking

2.2 PRIORITIES FOR IMPROVEMENT

For Principles where resorts self-scored a 3 or lower for implementation status, indicating limited progress toward implementing the Principle, the Assessment Tool asked these resorts to rate the potential benefits if they were to fully implement that Principle. Specifically, resorts were asked to



2.2 Priorities for Improvement

rate each of the following potential benefits as low (1), medium (2), or high (3):

- Increased monetary savings
- Reduced environmental impact
- Reduced regulatory liability
- Increased positive public image

Table 2-6 highlights the average score, on the scale of 1 to 3, of the potential benefits from implementing each of the Charter Principles.

**Table 2-6
Potential Benefits from Fully Implementing Charter Principles**

Principle	Increased Monetary Savings	Reduced Environmental Impacts	Reduced Regulatory Liability	Increased Positive Public Image
Planning, Design, and Construction	1.83	2.56	2.00	2.53
Water Use For Snowmaking	2.24	2.42	2.16	2.16
Water Use for Facilities	1.89	2.29	1.67	2.22
Water Use for Landscaping and Summer Activities	1.83	2.39	1.74	2.35
Water Quality Management	1.41	2.45	1.93	2.34
Wastewater Management	1.54	2.30	1.95	2.14
Energy Use for Facilities	2.51	2.38	1.65	2.37
Energy Use for Snowmaking	2.29	2.16	1.66	2.05
Energy Use for Lifts	2.13	2.13	1.75	2.17
Energy Use for Vehicle Fleets	2.02	2.31	1.55	2.22
Waste Reduction	1.78	2.37	1.54	2.34
Product Re-use	1.85	2.32	1.51	2.17
Recycling	1.78	2.33	1.65	2.35
Potentially Hazardous Wastes	1.71	2.43	2.29	1.93
Fish and Wildlife	1.42	2.29	1.71	2.34
Forest and Vegetative Management	1.43	2.37	1.90	2.30
Wetlands and Riparian Areas	1.50	2.36	2.05	2.36
Air Quality	1.45	2.40	1.83	2.19
Visual Quality	1.45	2.45	1.76	2.45
Transportation	1.54	2.20	1.59	2.27
Education and Outreach	1.44	2.14	1.67	2.51
Overall	1.79	2.31	1.74	2.28

As the scores in the above table demonstrate, the number one benefit for implementing the Principles continues to be Reduced Environmental Impacts. The highest scoring benefit for each principle is denoted in bold font. This benefit had the top score in 14 of the 21 Principle categories. Of the remaining categories, Public Image ranked highest in five categories (with one tie), and Increased Monetary Savings ranked highest in two categories, both associated with energy use. These results continue to



2.3 Principles in Action

show that the industry understands the benefits to raise the bar beyond environmental compliance and to reduce its environmental impacts through improved performance.

2.3 PRINCIPLES IN ACTION

For each of the 21 Environmental Principles in the Sustainable Slopes Assessment Tool, resorts were invited to share related, specific environmental success stories. These successes were reported as “Principles In Action” in the Assessment Tool.

Detailed information on Principles in Action is now featured in NSAA’s Green Room, an online environmental database that was launched in late 2001. NSAA plans to update this database annually. The Green Room can be accessed through the Environmental Charter Section of the NSAA’s web-site at www.nsaa.org. In addition to details on innovative actions that resorts are taking under the 21 Principles, the Green Room identifies resorts that have received national environmental excellence awards through Time4 Media’s Mountain Sports Media. The Green Room also provides contact information for each of the Principles in Action.

This online environmental database is intended to be a resource for environmental decision-making and a place to share ideas on tested programs or projects that will enhance the industry’s environmental performance. In addition to fostering networking among the resorts, the Green Room is a public resource for anyone interested in the highlighted areas of progress. The Green Room remains one of the most visited sections of NSAA’s website.

The remainder of this section lists several of the specific projects that resorts are undertaking to implement the Principles of the Charter. Note that the Principles In Action identified here are intended to be illustrative of environmental leadership in the industry and do not represent an exhaustive list of all environmental projects or programs at all resorts. Furthermore, this list only includes projects implemented in the timeframe of this *Annual Report, 2002-2003*.

Principle 1 - Planning, Design, and Construction Aspen Highlands, Colorado

Project Title: Aspen Highland Patrol Headquarters

Project Description: The resort is rebuilding the Highland Patrol Headquarters on the top of the mountain as a super-efficient building. The resort will be using R-Control structural insulated panels, salvaged lift towers for deck supports, grid-tied photovoltaic panels, passive solar design, salvaged kitchen equipment, and composting toilets.

Principle 2 - Water Use for Snowmaking Wachusett Mountain Ski Area, Massachusetts

Project Title: Snowmaking Water Conservation

Project Description: By repairing a snowmaking storage pond, the resort estimates saving approximately 25,000 to 30,000 gallons per day, or more than 2 million gallons over the course of the snowmaking season.

...the industry is motivated to raise the bar beyond environmental compliance and to reduce its environmental impacts through improved performance.



During a yearly inspection of the snowmaking system infrastructure, the resort observed that the main snowmaking storage pond was losing water at a significant rate. Closer inspection of the pond revealed that the main impoundment dam at the pond spillway was being undermined. The resort estimated that between 20 to 30 gallons per minute were escaping the pond underneath the dam. So, during the summer months the resort lowered the pond to investigate further. Because the dam foundation was exposed, the resort discovered that a stump that was never removed during the original installation was causing the water loss. The resort removed the stump and backfilled the dam with appropriate fill to prevent any future water loss.

***Principle 3 - Water Use for Facilities
Breckenridge Ski Resort, Colorado***

Project Title: Water Conservation in Facilities

Project Description: Recently at one of the mountain restaurants, the resort changed out six toilets and replaced them with pressure-assisted models, which use half the water of conventional toilets. At the same restaurant, the resort exchanged 22 hand-operated faucets with 22 battery-powered photo eye faucets. At the base area, the resort installed a waterless urinal that is monitored daily. Finally, the resort installed a new Clivus (composting) toilet at a remote patrol area.

***Principle 4 - Water Use for Landscaping and Summer Activities
Alpine Meadows Ski Resort, California***

Project Title: Revegetation Test Plots

Project Description: Alpine Meadows has begun testing various forms of composting in 10 separate plots to determine which product or combination of products works best as mulch to prevent soil erosion and to accelerate the revegetation process. The products being tested are straw, Curlex blankets, wood chips, pine needles, and native soil. The resort divided each of the 10 areas into 2 plots, one tilled and the other untilled. The resort is measuring plant growth, plant density, observed runoff, time to runoff, infiltration rate, and sediment in runoff.

***Principle 4 - Water Use for Landscaping and Summer Activities
Squaw Valley USA, California***

Project Title: Summer Revegetation and Pine Needle Collection

Project Description: Last summer, the resort planted over 1,500 shrubs and seedlings to augment natural vegetation, and applied over 2,000 pounds of seed and more than 100,000 pounds of wood fiber mulch to Squaw Valley's slopes to help curb erosion. The resort watered the plants and seeds using several miles of temporary irrigation lines, and treated the seeds and plants with organic fertilizer to ensure proper root development and plant health.

In addition, a pine needle recycling program also provided Squaw Valley with several tons of local pine needles that were re-used as eco-friendly mulch on the resort's slopes. The needles are a renewable resource that are used in revegetation efforts to increase water retention and soil nourishment, as well as to help protect plant roots and keep weeds under control.



2.3 Principles in Action

Principle 5 - Water Quality Management Alpine Meadows Ski Resort, California

Project Title: Stormwater Runoff Mitigation

Project Description: Alpine Meadows has partnered with the regional water quality agency, the Department of Fish and Game, and the USFS to devise and implement an extensive stormwater runoff mitigation program. The retrofits to resort parking lots will divert stormwater through drainage channels to storage areas for settling. This will eliminate the amount of debris that is carried into resort parking lots by guests' vehicles from impacting local creeks and rivers. The resort's costs to date have been over \$200,000, with expectations of spending close to \$500,000 for the 5-year project.

Principle 5 - Water Quality Management Gore Mountain, New York

Project Title: Straight Brook Crossing

Project Description: The resort constructed a ski trail bridge over an upland stream, leaving the natural streambed intact as an alternative to creating a culvert.

Principle 6 - Wastewater Management Vail Mountain, Colorado

Project Title: Sewer Line Replacement and Chair 11 Tie-in

Project Description: The resort replaced one of its major but aging sewer lines with larger, more structurally sound piping. While completing this project, the resort tied the Chair 11 Northwoods Express bathroom into this new system.

Principle 8 - Energy Use for Snowmaking Wintergreen Resort, Virginia

Project Title: York Snow Automated Snowmaking System

Project Description: The resort's new computerized snowmaking system reduced energy use 30 percent by automatically adjusting the water to air ratio in relation to humidity and temperature.

Principle 9 - Energy Use for Lifts Sugarbush Resort, Vermont

Project Title: Green Mountain Express AC Drive Motor

Project Description: In Summer of 2002, Sugarbush Resort installed the first large horsepower AC drive ski lift motor in the East for the Green Mountain Express lift installed at Mount Ellen. The AC drive motor system is a better alternative to the DC drive motor system because it reduces electrical consumption (estimated 26,000kWh per year) and costs (\$1,400 annual savings). The AC drive motor system also will save the Lift Maintenance Department time on labor, eliminating the need to change brushes, a general maintenance practice on ski lifts. Sugarbush Resort worked closely with Leitnar/Poma, Efficiency Vermont, and the Vermont Department of Public Service to make this project happen and to establish a guideline for other resorts to follow. The resort also helped to establish a rebate for such projects through Efficiency Vermont.



Principle 10 - Energy Use for Vehicle Fleets

Alpine Meadows Ski Resort, California

Project Title: Biodiesel Buses

Project Description: Alpine Meadows has begun using biodiesel, a non-toxic biodegradable replacement for petroleum diesel, in its fleet of seven diesel-powered buses. This conversion has reduced visible emissions tremendously at the resort, and has reduced non-visible emissions by 12 to 20 percent. The resort has experimented with this alternative fuel in its snow grooming fleet as well, and has experienced outstanding success.

Principle 11 - Waste Reduction

Grand Targhee Ski & Summer Resort, Wyoming

Project Title: Motel Room Soap Dispensers

Project Description: The resort replaced individually wrapped guest soaps with liquid soap in wall-mounted dispensers. This effort reduces the amount of soap used and reduces the number of unused soap bars going into the landfill by one half a ton.

Principle 12 - Product Re-use

Mt. Hood Meadows Ski Resort, Oregon

Project Title: Composting

Project Description: The resort initiated a county-wide organic waste composting collaborative with a local garbage hauler with the intent of feeding waste to a proposed organic waste composting business. In addition, the resort routed unusable office equipment to STRUT, a Portland-based electronic equipment recycler.

Principle 12 - Product Re-use

Stowe Mountain Resort, Vermont

Project Title: Recycling Structures Before New Construction

Project Description: The resort implemented a Solid Waste Management Plan that establishes a building materials recycling program for all new construction and demolition of existing structures.

Principle 13 - Recycling

Sugarbush Resort, Vermont

Project Title: Recycling and Trash Removal Program

Project Description: The Green Team at Sugarbush Resort restructured the recycling program for its employees and guests to include purchasing a compactor and an RV recycle station. Sugarbush's new recycling and trash removal program helped to improve the aesthetics of the resort and made recycling more convenient for guests and employees. In addition, all resort brochures from the Marketing Department are printed on recycled paper, along with the 2002/2003 trail maps. The resort also recycled all of its old computers and computer accessories (25 PCs, 11 Macs, 5 laptops, 2 servers, 22 small dot matrix printers, 3 wide dot matrix printers, 1 POS printer, 4 scanners, 1 typewriter, and various other small parts). Furthermore, the resort recycled 892 tires that had built up over the years. In addition, the Green Team selected six environmentally friendly office supply alternatives that the resort is now using.



2.3 Principles in Action

Sugarbush's Health and Racquet Club replaced the Rocky Gym floor with Perma Turf, which is made from 100 percent recycled tires. All of these projects contributed to an improved program for solid waste management through recycling.

Principle 14 - Potentially Hazardous Waste

Vail Mountain, Colorado

Project Title: Universal Waste Reductions

Project Description: By implementing a can-puncturing system, the resort reclaimed unused portions of cleaning products for re-use, and therefore could recycle the punctured cans. The resort also punctured aerosol spray paint cans, removing the hazardous paint, and then recycled the punctured cans. By purchasing a Fluorescent bulb eater, which crushes the bulbs and separates the mercury with filters and activated carbon, the resort cut costs and waste dramatically.

Principle 15 - Fish and Wildlife

Stowe Mountain Resort, Vermont

Project Title: Land Exchange and Wildlife Conservation Easement

Project Description: The resort established a wildlife conservation easement on 800 acres in conjunction with the State of Vermont. In addition, the resort exchanged more than 1,000 acres of high-altitude land and rare wildlife habitat with the State of Vermont.

Principle 16 - Forest and Vegetative Management

Telluride Ski & Golf Company, Colorado

Project Title: On-mountain Vegetation Cover Analysis/Wood Chip Management

Project Description: Telski believes that an undisturbed vegetative cover on a mountain slope is the key to minimizing sediment transport into creeks and streams. Ski areas often struggle with revegetating ski runs following development activities. The annual cycle of bare soil erosion limits the ability of plants to establish, and without establish plants, the erosion process continues. To better manage its mountain resource, Telski initiated an on-mountain assessment of vegetation cover on ski runs compared with development activity for these runs. Over the course of ski area development, the resort has employed many construction techniques, ranging from dozing ski runs in the 1970s to helicopter logging during the Prospect Basin expansion in 2001. By evaluating plant communities, their cover density, the similarities to understory growth in disturbed areas, and the plant spread from the forest edge, Telski hopes to develop approaches to revegetation that will increase vegetative cover on its ski runs.

Additionally, Telski is analyzing the effects of integrating wood chips and ground wood products into mineral soils on ski runs that do not support a viable vegetative cover. It is understood that the integration of "green" wood chips into the soil causes an imbalance in the carbon-nitrogen ratios of the soil. Typical treatments include applying supplemental nitrogen to offset the wood chips' nitrogen uptake. However, to avoid the mobilization of nitrogen to watercourses, Telski is applying woodchips and nitrogen in a study area and monitoring the effects during the



summer of 2003. The application rates have been varied across the study area, with a no-application zone serving as the study control site. By analyzing the study results, Telski hopes to understand how supplemental nitrogen applications can be used in a safe manner to facilitate revegetation on the ski area.

***Principle 17 – Wetlands and Riparian Areas
Vail Mountain, Colorado***

Project Title: Dozing and Housing

Project Description: When bulldozing snow off of trails at the end of the season, the resort pushed the snow toward the wetland to reduce erosion and sedimentation during the run-off. Also, the resort provided housing and supported research for groups conducting wetland studies in the area.

***Principle 18 – Air Quality
Killington Resort, Vermont***

Project Title: Air Quality Permit

Project Description: The resort replaced old diesel compressors with new clean burn diesel compressors, installed SCR injection on one large compressor, and hopes to reduced NO_x emissions from 200 tons per year to 100 tons per year by 2007.

***Principle 18 – Air Quality
Mr. Hood Meadows Ski Resort, Oregon***

Project Title: CO₂ Reduction

Project Description: The resort created promotional programs with Green Mountain Energy, Portland General Electric, and the Bonneville Environmental Foundation. In the first two cases, the resort offered discounted lift tickets for people who converted their home power to renewable energy programs. Together, the power companies switched 66 customers to renewable energy at an annual benefit of 3,400 pounds of carbon dioxide reduction each, or a total benefit of 112 tons of CO₂. With the Bonneville Environmental Foundation, the resort developed the Mini Green Tag (\$2 per tag) and created point of purchase signage to educate skiers about the benefits of a voluntary purchase. Each tag represented a reduction of 140 pounds of carbon dioxide, the amount produced by the average car trip between Portland and Mt. Hood Meadows. The money from the tags goes to fund renewable electric generating capacity, both wind and geothermal. Since its launch on Sustainable Slopes Day, the resort has sold 251 Mini Green Tags, for a benefit of 35,140 pounds of CO₂ avoided. All initiatives combined reduced or avoided production of 167 tons of CO₂.

***Principle 19 – Visual Quality
Vail Mountain, Colorado***

Project Title: Landscaping and Snow Guns

Project Description: The resort installed trees around its ABC lot so large equipment would be much less visible. In addition, the resort



2.4 Summaries of Resort Progress

changed problem grass areas to rock walls and formations at the Eagle's Nest Restaurant to help the area blend with the natural surroundings. The resort also painted its snow guns dark colors to eliminate glare and reduce their visibility.

Principle 20 – Transportation Buttermilk Mountain, Colorado

Project Title: Carpooling Incentives and Free Parking for Hybrid Cars

Project Description: Drivers of hybrid vehicles park for free at all resort parking facilities.

Principle 20 – Transportation Vail Mountain, Colorado

Project Title: Carpooling Incentives

Project Description: During the 2001-2002 ski season, volunteers handed out \$10 food vouchers to vehicles that contained 4 or more people to encourage carpooling and to take vehicles off of the road. The program was a large success.

Principle 21 – Education and Outreach Grand Targhee Ski & Summer Resort, Wyoming

Project Title: Environmental Foundation

Project Description: The resort matches contributions to an Environmental Foundation established by employees. The employees established the foundation to support environmental projects in Teton Valley. This winter/spring, the foundation has accumulated \$3,000 that is available for grants this summer.

Principle 21 – Education and Outreach Mt. Hood Meadows Ski Resort, Oregon

Project Title: Sustainability Presentations

Project Description: Cooperating with the Oregon Natural Step Network, Mt. Hood Meadows sponsored a community presentation about the Natural Step and initiated discussions with the Chamber of Commerce to share information about sustainability with its young business leaders group. The resort also sponsored an environmental fair during Sustainable Slopes Day that involved Green Mountain Energy, Bonneville Environmental Foundation, and The Climate Trust. Green Mountain Energy hosted a kiosk all year inside the south lodge that informs people about the benefits of renewable energy use. The resort also included sustainability messaging in daily employee briefings and conducted four training sessions for directors and employees about sustainability and its benefits.

2.4 SUMMARIES OF RESORT PROGRESS

Each resort that responded to the Assessment Tool was asked to provide a summary of steps taken to implement the Environmental Charter over the past year. Resort summaries are listed below in alphabetical order.



49 Degrees North Ski Area Washington

The resort's best achievement to date is initiating a \$5 million dollar Environmental Learning Center to enhance environmental education for the region's school children. A near-term environmental goal is to begin restoring a riparian zone adjacent to the base area. The restoration project is pending final USFS approval.

Alpine Meadows Ski Resort California

Alpine Meadows continues to increase its attention and efforts toward environmental sustainability. The resort has made guests and employees aware of its commitment in a number of ways:

- Attractive magnetic signs created in-house and placed on lift towers that skiers and boarders can read while riding that show the decomposition rates of various trash products.
- Expanded Sustainable Slopes Day promotion. There were presentations from the National Weather Service showing the causes and effects of climate change/global warming, Eco-Tours of the mountain, a Tahoe Rim Trail display, a USFS local ecology presentation, a Truckee River Habitat Group interactive presentation, biodiesel technology information, a solar power display, and Alpine Meadows Natural History information coupled with free wildflower seed packets.

Currently, the resort is working with consultants to formulate proposals and pursue funding to install a photovoltaic array at the base facilities. A photovoltaic array would reduce the resort's dependence on conventionally generated electricity, as well its operational costs.

Alta Ski Area Utah

Alta Ski Area continues to promote and practice environmental improvements while at providing a quality ski experience. Some of the resort's accomplishments include the first season of snowmaking operations using gravity-generated water pressure from Alta's only snowmaking reservoir, Cecret Lake. Because of environmental concerns for this lake basin, the resort avoided constructing conventional pipe laying methods. Instead, the resort drilled a horizontal shaft into the lake from a location outside of the lake basin with the exit end of the shaft at a higher elevation than the high water line of the lake. A unique and advantageous component of this siphon system is the gravity-generated water pressure. This water pressure allows the resort to minimize energy costs for pumping and nearly eliminates labor needs to pump water from the lake. The siphoning of water and pumping are accomplished with no additional energy, and trenching into the lake basin was avoided. Alta received a Silver Eagle Award for Environmental Excellence in Visual Impact in May of 2003 for this project.



2.4 Summaries of Resort Progress

In addition, the resort had good luck with its 4-cycle snowmobiles, and will continue purchasing these green machines. The resort again planted 1,000 Engleman Spruce seedlings and 125 native shrubs this year. And as part of ongoing revegetation efforts, the resort collected native seeds, dried them, and used them to supplement a native 10 seed mix.

Future goals include improving the existing recycling program, installing waterless urinals, and working with the community on environmental education.

Alyeska Resort

Alaska

Alyeska Resort sits in a unique environment and strives to be environmentally active. However, the resort intends to investigate lift energy needs more thoroughly. The resort does monitor electrical and demand rates to conserve as much as possible without affecting customers.

Arapahoe Basin

Colorado

The resort continues to look for new ways to reduce, re-use, and recycle daily. As an example, the draft beer bar was a great success in diverting waste that would have been sent to the landfill.

Arizona Snowbowl

Arizona

Arizona Snowbowl had a less than stellar season, finishing below budget. However, this is a great increase over last year (the worst season ever, only open for 4 days). The resort's efforts continue to improve as more information is distributed to the staff. The single largest accomplishment this year is the employee carpooling program. This program resulted in over 12,000 miles of reduced travel to work, and only cost the resort 670 free lunches. The resort continues to work on its snowmaking proposal with the USFS. The proposal involves using 100 percent reclaimed water. The resort hopes to begin construction on this project in the spring of 2004.

Aspen Skiing Company (Aspen Highlands, Aspen Mountain, Buttermilk Mountain, and Snowmass)

Colorado

Five new projects represent an exciting new step for Aspen Skiing Company (ASC), and possibly a new direction for the ski industry. Moreover, they address an issue that the NSAA, world governments, and scientists consider to be the most pressing environmental issue of our time: climate change. These programs are described below:

- A Hydroelectric Turbine. ASC installed this turbine into the existing infrastructure of the Snowmass snowmaking system. It generates 250,000 kilowatt hours of clean energy annually, and creates a working model that is transferable to any ski resort.



- A cutting edge green development and an ongoing green building policy.
- A tenfold increase in wind power purchases. This increase for the 2002-03 ski season brought ASC total renewable supply to an industry-leading 6 percent, as well as keeping 5.5 million pounds of pollutants out of the air.
- Pioneering research and testing of biodiesel in snow cats.
- A second US Green Building Council LEED-certified building. The Snowmass Golf Clubhouse is heated and cooled with ground source heat pumps and exceeds code by 58 percent.

ASC's programs have been described in past NSAA *Annual Reports*, on our website, and in our third Annual Sustainability Report at www.aspensnowmass.com/enviroment/programs, which is the heart and soul of our environmental efforts. Aspen received the 2003 Silver Eagle Award for Environmental Excellence in Stakeholder Relations.

Attitash Bear Peak New Hampshire

Attitash Bear Peak has continued to approach its business, growth, and development with the intent to be as environmentally friendly as possible. This year, the resort has focused on the community by joining the Adopt a Highway program and purchasing a section of route 302 to maintain and clean twice a year.

In addition, the resort is updating its snowmaking infrastructure by adding 35 tower guns to reduce energy consumption and replacing thousands of feet of piping.

Furthermore, the resort continues its efforts in watershed, revegetation, and trail management.

Big Mountain Ski & Summer Resort Montana

Big Mountain Ski & Summer Resort uses interpretive signage in the village and on the 3- to 6-mile Danny On Trail. The resort has a corporate policy designating a percentage of land sales to open space preservation. In addition, the resort fosters wetland habitat with its water ponds and provides water quality field trips for Whitefish High School (the Free Flow Program) to review water quality issues of Haskil Basin Creek. Also, the resort provides free environmental education at the Summit House, free summer trail guides, and elementary school programs that teach avalanche survival and a snowshoe winter ecology program.

The resort funds environmental programs, such as the Wind River Karelian Bear Dogs and the Whitebark Pine Ecosystem Foundation. The Big Mountain Commercial Association funds the SNOW bus to provide free mass transportation to the mountain for employees and guests



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(18,000 trips annually) to promote fuel conservation, to reduce vehicle emissions, and to relieve congestion in the village area. The resort also coordinated a 4-mile state highway pick-up of the Big Mountain Road in conjunction with the "Clean the Fish" community effort. The resort practices Minimum Impact Education on the Danny On Trail, as well as enforcing the dog leash policy in the village and on mountain trails. The resort cleans and stores employee clothing to re-use each year. Also, Glacier Village Property Management promotes linen re-use programs in its rental pool and encourages guests to turn off lights when they leave their units. The resort uses Cormatic toilet/towel paper dispensers, System One Solvent recycler, reusable/refillable sprayers rather than aerosol cans, and an industrial-sized trash compactor.

Blue Mountain Resort Ontario, Canada

Blue Mountain Resort currently is working to establish its own environmental charter using the framework of the Sustainable Slopes Charter. The resort also is inventorying all of its projects, plans, activities, actions, and initiatives that support the principles of the environmental charter. This will enable the resort to better understand its accomplishments and identify areas for improvement.

This winter, the resort started an initiative called "Get on the Bus...Guss." The intent was to get staff members to use the staff bus, carpool, or walk to get to work. The program was an opportunity to educate staff members through email voicemail and the Blue Bulletin (staff newsletter) about the benefits of reducing greenhouse gases. Any staff member that used these methods to get to work was entered into a drawing for great prizes, including ski jackets, dinners, and accommodation packages.

The resort's goals for the coming year include the following:

- Complete the Blue Mountain Environmental Charter.
- Establish baseline numbers and a system to collect appropriate data.
- Continue to encourage staff members to carpool. This summer the resort will have a "hike, bike, or hitchhike to work" program.
- Eliminate paper cups in the staff cafeterias. As of June 1, 2003, paper cups are no longer available in the staff cafeterias. Staff members either can bring their own cups/mugs from home or they can purchase a steel travel mug from the green committee for \$7.
- Create functions to educate staff members on the benefits of protecting the environment at work and at home.



Bogus Basin Mountain Resort Idaho

Bogus Basin Mountain Resort had a less than optimum year, with poor snow and warm temperatures. Nonetheless, the resort's main achievements came from establishing and conducting outreach education programs with the City of Boise and several nearby universities. The program this year also will include educational talks by wildlife and horticultural experts from the USFS. The resort contributes approximately \$500,000 dollars a year in programs and transportation to the local schools for educational programs.

Bretton Woods Mountain Resort New Hampshire

Bretton Woods Mountain Resort's continued commitment to the proper stewardship of the environment has stimulated environmentally conscious practices as part of the resort's operations, including educating and involving guests and employees.

The resort's recycling program continues to grow at a steady rate of 10 percent per year, while the percentage of waste entering landfills has dropped by almost 3 percent. Overall, more than 40 tons of material have been diverted from the local landfill over the last year.

By completing two of the three phases of the Base Lodge expansion project, the resort has achieved great strides in improving the overall efficiency of the building. Natural lighting through low-E windows, completely updated mechanical systems, and retrofitted light fixtures with high-efficiency fluorescent bulbs are just some of the steps taken. Throughout this project, the resort re-used many items, including several heavy timbers, interior doors, kitchen equipment, and plumbing and electrical fixtures.

On the mountain, the resort added 60 new HKD ultra-quiet snowmaking tower guns. These tower guns are highly efficient, resulting in an energy savings of approximately 350,000 Kilowatts of electricity per year. In addition, preliminary permits are in place to develop Lake Caroline, a new 5-acre spring-fed lake that will be a wildlife habitat and summer recreation site. The lake also will serve as an additional source of water for snowmaking. Conscientious forestry and vegetative practices are paramount at Bretton Woods, and this year's development of Mount Rosebrook will exemplify these practices through selective cutting and trail design.

Bridger Bowl Ski Area Montana

The resort continues to work toward implementing its environmental goals, as it has done in the past.

Cannon Mountain New Hampshire

This is Cannon Mountain's first year with the Sustainable Slopes Principles. The resort installed a new septic system mid-year and should



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have better numbers for waste next year. The resort's food service is contracted out, and the contractor takes care of garbage removal, so the resort has no information readily available for solid waste. The resort's biggest goal for next year is education.

The Canyons Resort

Utah

The Canyons Resort is dedicated to the NSAA Environmental Charter through continuous efforts to preserve, protect, and promote its mountain environment. To this end, the resort implemented the following programs and initiatives during 2002:

- Eagle Ranch Shelter. The Canyons Resort and its employees donated over 600 old uniforms to the homeless of Salt Lake City.
- Solvent-Free Parts Washer. The resort purchased the washer for the vehicle maintenance shop, thereby eliminating 100 gallons of solvent per year from the shop.
- Regional Transportation System. The resort contributed to developing two shuttle services that were used by approximately 175,000 passengers for the year ending April 2003.
- Office Recycling. The resort implemented a comprehensive program providing signage in English and Spanish, which greatly reduced wastes typically generated from offices and hotels.
- First Environmental Report. The report, completed October 2002, created a baseline from which to measure future improvements.
- Fuel Handling. The resort redesigned and relocated the fuel management program.

The Canyons Resort plans on continued commitment to the environment by implementing the following actions:

- Purchasing environmentally sensitive products.
- Purchasing an Ozone Injection System to conserve water.
- Purchasing a trash compactor to minimize use of landfill space.
- Initiating environmental education and training programs.

Cataloochee Ski Area

North Carolina

Cataloochee Ski Area continues to incorporate the environmental principles into its on-going projects. The resort has made good progress in revegetating and stabilizing disturbed areas. Also, the resort has reduced power use by using more fan guns for snowmaking and installing



more energy efficient lighting for night skiing. Adding low-flow fixtures to bathrooms has reduced water use. The resort's biggest challenges ahead are finding ways to recapture more runoff for snowmaking and establishing a strong recycling program for both building materials and trash. Continuing to educate employees and guests is critical to the success of this program.

Crested Butte Mountain Resort Colorado

Crested Butte Mountain Resort is committed to the preservation of Gunnison County and its beautiful surroundings. To support that commitment, the resort has pledged 4 percent of all land sales from the Prospect at Mt. Crested Butte Land Development to open space preservation. Recipients include The Crested Butte Land Trust, Gunnison Ranchland Conservation Legacy, and the Rocky Mountain Biological Laboratory. In addition, because water use and conservation are so important to the success of the ski industry, the resort is planning water storage facilities and is continuing to upgrade and purchase efficient snowmaking equipment.

Crystal Mountain Resort Michigan

The resort's most recent achievement is in the area of publicity regarding climate change. Crystal Mountain's Vice President of Mountain Operations is part of the EPA's Upper Great Lakes Climate Change Assessment team as a representative of the winter sports industry - a vital component of Michigan's year-round fiscal well being. Last November, the Vice President made a presentation to the fall workshop. This winter he served on a panel at the Michigan Tourism Conference and is contributing an article to Michigan Tourism Business magazine. Also, as a year-round resort, we are working on getting the word on climate change out to summer guests, including an article on climate change in our most recent issue of Mountain Life magazine (170,000 Circ.)

Crystal Mountain, Inc. Washington

Through 2002, Crystal Mountain, Inc. has eliminated the normal winter road sand activities that contributed an average of 233 tons of sedimentation each year to Silver Creek. This was accomplished using a chemical de-icing agent (magnesium chloride) on 6 miles of resort access road. This effort greatly improved vehicle traction and dramatically reduced vehicle accidents. Also, rather than demolishing a 12,000-square-foot building, the resort traded it to a contractor who was able to recycle the building for the cost of removing it. And the resort installed a new parts washer in the vehicle shop that does not use solvents (reduces potentially hazardous wastes) to clean parts and is hands free.

Deer Valley Resort Company Utah

One of Deer Valley's biggest strengths is its snowmaking storage. The resort implemented a new snowmaking reservoir pond 2 years ago, which



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holds 15 million gallons of water. Gravity allows the water to be filtered down to the Snow Park base area, which acts as a reservoir. The new pond also has established a wetland habitat for fish and wildlife.

Deer Valley also has spent extensive time and research in developing a recycling program. The resort works closely with Recycle Utah to ensure that it takes the proper steps to recycle as much as possible.

Durango Mountain Resort Colorado

In the past year, Durango Mountain Resort formed a resort-wide Environmental Practices Committee, improved recycling, continued to grow its partnership with the San Juan Mountains Association, and installed and implemented a state-of-the-art air quality monitoring system.

The Environmental Practices Committee consists of employees from different departments throughout the resort, and focuses on educating staff and guests about the resort's environmental programs and practices. The committee also addresses and responds to concerns from both sectors. As a result of the committee's efforts, the resort reduced solid waste by streamlining its cardboard, glass, and paper recycling systems. In fact, the resort provides six 300-gallon containers for all north La Plata County to use.

The resort's continuing partnership with the San Juan Mountains Association featured Ski Naturalist Tours on the resort Nature Trail every Sunday, and the installation of an unprecedented system of educational signs on lift towers and around the resort. Both of these efforts focus on ecosystem awareness and 'Leave No Trace' ethics.

The resort installed the \$225,000 state-of-the-art air quality monitoring system as part of a development agreement with La Plata and San Juan Counties. The system consists of two monitoring stations. The first measures particulate matter, visibility, and meteorology at the base area. The second station lies approximately one third of the way up the mountain and records photographic images of the resort area and the Weminuche Wilderness Area every 2 hours. The system will set a baseline and then monitor air quality to prevent ambient air quality and visibility from degrading on public and private lands in the vicinity of the resort.

Gore Mountain New York

Gore Mountain historically has operated with a strong, positive environmental commitment, building a foundation for operation within principles under the Environmental Charter. The resort's management is diligent in re-examining and improving upon existing practices through attention to detail and advances in technology.

Goals for the future include incorporating "green" construction practices, systems, and materials in anticipated building projects. In addition, the



resort will conserve natural resources and realize future energy savings and efficiencies by incorporating energy saving infrastructure replacements and additions.

Grand Targhee Ski & Summer Resort Wyoming

Grand Targhee has taken many small steps toward being more environmentally responsible, an environmental leader, and a partner within local communities. Little steps that make a big difference include changing the snowmobile work fleet to all four-stroke machines and educating customers on the difference, installing soap dispensers in motel rooms that keeps 1,400 bars of soap a week from going into the garbage, switching to recyclable cardboard take-out food containers from plastic non-recyclable containers, and honoring employees who contribute to the environmental charter through their actions. The resort has empowered employees to support environmental organizations and projects by forming an Environmental Foundation. Educational programs have included winter ecology snowshoe hikes, public school outreach programs, evening naturalist programs, summer interpretive hikes, the Interpretive Center, and Targhee Institute Elderhostel and Science Camp programs. The resort is looking forward to a newer, more efficient bus that will increase employee participation, as well as bus service from town for the community and incentives for carpooling guests. A goal is to bring awareness of the Sustainable Slopes Environmental Charter to the public and employees through the resort website, resort business placards, newspaper adds, and a Keep Winter Cool celebration.

Greek Peak Mountain Resort New York

In 2002, Greek Peak targeted snowmaking operations to increase efficiency, reduce water loss, and reduce environmental impact. The resort repaired several significant water leaks and relocated some lines to improve efficiency. The resort also acquired new equipment to make snow over a shorter time using less energy. In addition, the resort installed oil/water separators in the snowmaking pump houses, which eliminated the need to ship oily water off the site for disposal. The resort has made progress with the local community on an aquifer and wellhead protection plan, and the resort has implemented stormwater management and erosion control policies. This year's goals include continued improvements to snowmaking efficiency, de-icing materials storage, and improvements to the Education and Outreach program.

Heavenly Ski Resort Nevada

During the past year, Heavenly has focused its efforts on implementing the following programs and projects on the basis of principles contained in the Environmental Charter:

- Implemented water and energy conservation relative to snowmaking operations.



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- Designed and installed water quality Best Management Practices (BMPs) at the Boulder Lodge parking lot.
- Restored burned areas resulting from the July 2002 Gondola Fire in partnership with the USFS in areas in and adjacent to the resort.
- Completed a comprehensive pine marten monitoring and tracking study in cooperation with the USFS and the University of Nevada's Desert Research Institute.
- Continued to monitor sensitive wildlife and plant species, including Northern Goshawk, California Spotted Owl, Pine Marten, and Tahoe Draba, a high-alpine cushion plant.
- Implemented the Cumulative Watershed Effects Soil Erosion Reduction Program, which included water quality monitoring, retrofitting summer maintenance roads with water quality BMPs, and revegetating and improving drainage on ski runs.
- Participated as a founding member in the newly formed California Alpine Resort Environmental Cooperative (CAREC). CAREC is made up of revegetation specialists from Tahoe-area ski resorts, the USFS, and the California Regional Water Quality Control Board. CAREC's efforts are focused on identifying common problems and sharing solutions among the resorts associated with restoring high-altitude watersheds.

Holiday Valley Resort New York

Holiday Valley is making slow but steady progress toward the goals of Sustainable Slopes. This year, the resort partnered with Green Mountain Energy to promote using green power (wind) to our guests. The resort also used electricity generated from wind power to run the main lift on Sustainable Slopes day.

New building construction and re-use of old buildings is probably the resort's strongest commitment. The resort constructs and finishes buildings with natural materials and finishes that blend in with the environment, such as stone and naturally finished wood. New construction is built with energy efficiency in mind. Last year, the resort recycled an entire building. This building was the children's program headquarters located at the base of the beginner's area. The resort moved this old building to a new site to use as a golf school headquarters. Years ago this building was the base terminal for one of the T-bars, so it has definitely (and literally) been around the block.

Goals for the 2003-04 season are in the area of guest education and letting people know what they can do to help keep winter cool. The resort wants to help its guests learn about the local environment and natural history. Also, the resort plans to implement a "nature's tracks"



program for the children's program. And finally, the resort offered a ride board last year on the web site to encourage carpooling, and we plan to expand on that for next season.

Jackson Hole Mountain Resort Wyoming

This year, Jackson Hole Mountain Resort worked with an Environmental Consultant to organize resort projects and to investigate future programs. The following is a list of accomplishments for this year:

- Purchased enough wind power from the local power company to power two small ski lifts.
- Conducted a lighting audit.
- Participated in Trees for Travel, a program to offset carbon dioxide emissions that we create in travel each year.
- Developed Ske-cology handbooks, re-wrote the sign and display, and added an interpretive display in a children's eating area.
- Printed environmental tips in the employee newsletter.
- Recycled used computers and fluorescent bulbs.
- Started using unbleached, recycled janitorial paper products.
- Purchased a community recycling trailer for Teton Village.
- Developed a new paper policy for printed materials.
- Supported and funded bus passes for employees and season pass holders.

As a result of these efforts, Jackson Hole received the 2003 Silver Eagle Award for Environmental Excellence in Energy Conservation.

Some projects the resort hopes to implement in the future are listed below:

- Field-testing alternative fuels.
- Field-testing alternative mountain transportation vehicles.
- Working with the USFS on the White Pine trees and plant blister rust resistant saplings.
- Using insects to help control Canadian Thistle, musk thistle, and knapweed in addition to Transline.



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- Changing cleaning products for mechanical parts and solvents.
- Completing an overall Environmental Management System.

Keystone Resort Colorado

Efforts at Keystone began nearly a decade ago in the form of a small recycling program. This program expanded into the Keystone Environmental Department as it exists today. As the program expanded, so did its scope. The resort realized that in order to make a difference environmentally in its operations, it would need to look at all areas and analyze current operations. By doing this, the resort could see its strengths and weaknesses and move accordingly. By consistently striving to expand and enhance environmental programs, and through a resort-wide commitment from line-level to upper executive staff members, the resort finally has been able to make strides in its quest toward positive environmental operations.

The NSAA Environmental Charter, Sustainable Slopes, serves to categorize and prioritize ski area environmental efforts, and is an invaluable tool in the long, arduous journey toward sustainable operations. Keystone Resort is a leader in ski area environmental programming not only because it looks at all operational areas, but because its efforts produce viable results and are well-communicated in order to preserve their effects.

Killington Resort Vermont

The resort reports no changes to existing conditions. Master Planning is complete, but the resort did not initiate any new projects, and all development was delayed. However, the resort continues to implement all of its commitments made under Master Planning approvals, such as snowmaking conservation flows, demand-side management energy measures, water quality remediation efforts accomplished under general maintenance, and regulatory processes for water quality improvement.

Kirkwood Mountain Resort California

As a result of the resort's Employee Shuttle Program, it was able to reduce the number of cars transporting employees from South Lake Tahoe to resort property. In addition, the Kirkwood Kash Program contributed to an increase in carpooling. This program gives drivers a \$10.00 coupon if they have one passenger and a \$15.00 coupon if they have three passengers. Kirkwood Kash coupons can be used throughout the resort. So far, drivers have redeemed coupons totaling \$88,467.17, with some coupons still outstanding.

Mammoth Mountain Ski Area California

Mammoth Mountain Ski Area's main areas of environmental effort and progress included the following:



- Finalized and approved comprehensive, company-wide environmental framework wherein environmental responsibilities are included in company-wide job descriptions.
- Experienced an increase in employee and guest environmental awareness scores on the basis of numerous educational efforts and events (employee, guest, and community).
- Developed alternative ski area transportation (new gondola).
- Developed alternative energy (solar).
- Developed alternative fuels (biodiesel).
- Participated in erosion and water quality research.
- Included environmental review in planning process checklist.
- Initiated green building considerations in new-build and remodel projects.

Mammoth is a proud recipient of the 2003 Silver Eagle Award for Environmental Excellence in Waste Reduction & Recycling.

In addition to designating next year as the year for focused employee education efforts, goals for the year include the following:

- Implementing a new recycling program for the newly constructed Village facilities.
- Converting all diesel fleet vehicles to biodiesel.
- Experiencing 30 percent waste reduction overall.
- Completing solar panel testing.
- Accepting new purchasing and procurement policy.
- Implementing new green building practices for all projects.

Mission Ridge Washington

The resort would like to accomplish more than is currently possible; however, the ski area is for sale. Using a very limited budget and limited staff hours, the resort feels it is doing its best to be involved in the environmental charter.

Mountain High Resort California

Mountain High Resort has seen positive impacts while operating under the Environmental Charter in the areas of hazardous waste reduction, wastewater quality, and the reduction of energy consumption during the



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snowmaking process. The resort continues to move forward in reducing the types of hazardous materials used at the resort. In addition, the resort has upgraded operation of the wastewater treatment facility so that it is continually monitored and operating at its highest efficiency level to produce cleaner water during the resort's operating season. The resort has upgraded its snowmaking system by adding fan guns that produce snow using significantly less energy than traditional air/water snowmaking technology. The continuation of these programs will benefit both the environment and the guest who visit the resort.

Mt. Bachelor, Inc.

Oregon

This season, Mt. Bachelor teamed up with Green Mountain Energy Company in promoting renewable energy for the Sustainable Slopes Outreach Day. Adding renewable, wind-generated power to the Northwest power grid offset the electricity used to operate the Pine Martin Express chairlift during the day. The resort plans to experiment with fuel cells this spring and next season, using this alternative energy source to provide supplemental power to many of its on-mountain events. Resort goals for next season include continuing efforts to reduce waste, increasing recycling, purchasing more recycled products, and continuing to investigate green power options.

Mt. Hood Meadows Ski Resort

Oregon

During 2002-2003, Mt. Hood Meadows hired sustainable business managers who conducted employee trainings, began company-wide energy and resource audits, expanded waste collection and recycling efforts, and created several partnerships with local energy conservation and renewable energy organizations. The resort's Sales and Marketing office switched all collateral to 100 percent recycled content paper. In addition, the resort conducted extensive community outreach to hear public concerns and to share information about what the resort is doing in the area of sustainable management.

In addition, the resort developed a Sustainable Management System that it introduced in the spring of 2003 to directors to use in formalizing ad hoc initiatives for the 2003-04 ski season. As part of that effort, the resort began planning for a local food shed food purchasing fair in the fall of 2003. The resort will invite regional ski areas and major food vendors and retailers to promote purchasing foods produced in the surrounding agricultural areas.

And finally, the resort's Mountain Operations department is exploring new electric motor technology and doing a pilot test of biodiesel on its shuttle buses.

Mt. Rose – Ski Tahoe

Nevada

With yet another record season at Mt. Rose - Ski Tahoe, the resort experienced further accomplishments regarding environmental awareness. Existing programs like recycling, and water and waste management



continued. However, with the master development plans entering the permitting process, a heightened awareness concerning environmental issues were brought to the forefront as the final plans were heavily scrutinized in terms of their potential impacts.

Summer plans include the first phase of a vastly improved wastewater management system. Connecting the resort to the municipal sewer system is the final goal as the resort begins the first phase of the sewer line extension up the mountain. The remainder of the line is scheduled to be complete the following year, thus ending the need for a septic system at the main lodge facility. Additional work this off-season includes a couple of key visual improvement projects. The resort will put overhead power lines at the East Bowl lodge area underground to prepare for future site improvements, and will erect rockery walls at the main lodge parking areas to repair damaged slope walls.

Northstar-at-Tahoe California

Northstar-at-Tahoe continues to work on improvements for all of its environmental programs. An area of particular emphasis is erosion control and water quality. Northstar has partnered with other Sierra Nevada resorts (Alpine Meadows, Heavenly Valley and Mammoth Mountain), The Lahontan Regional Water Quality Control Board, Tahoe Regional Planning Agency, the Tahoe Basin Management Unit of the US Forest Service, Integrated Environmental Restoration and the Sierra Business Council to form CARE-C (the California Alpine Resorts Environmental Cooperative). This unique partnership is aimed at reducing soil erosion and improving water quality at ski resorts in the Sierra Nevada in a cost effective way that fits the environment. The first two years of this three-year program will be devoted to on-site evaluation of various erosion control techniques, in cooperation with research scientists from institutions such as the University of California at Davis. The hope is to develop data driven research that can be used to develop state of the art guiding principles that can be used not only in the Sierra Nevada but also other ski areas in the West. The idea that this cooperative model is the most productive, efficient and cost effective way to do business will hopefully provide a new way of conducting business between ski areas and regulatory agencies while solving these critical environmental issues.

Pebble Creek Ski Area Idaho

Pebble Creek Ski Area held its first annual National Sustainable Slopes Day on Saturday, February 22. The event was very well attended and received by the local community. The resort asked skiers and boarders to "Share a Ride" to help reduce greenhouses gases. Persons riding three or more to a vehicle on February 22 received \$5 off on lift tickets. Also, a Forest Ranger from the Caribou National Forest was on the site to talk with children about forest ecology and to distribute the publication, "Forests for All." Children were invited to participate in the "Keep Winter Cool" poster contest by drawing a poster of how their family recycles or



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conserves energy at home. Also, the resort installed a nature trail with stations designed to answer the question "Who else is here?" along ski trails. Animals sharing our slopes and their habitats were featured, and the stations remained up after Sustainable Slopes Day because of their overwhelming popularity. "Sustainable Slopes, Sustainable Forest" was the theme of a display in the lodge.

Over the last 2 years, the resort replaced the Minor Denver Skyline Lift. Photos and a narrative told an interesting story of how all of the lift components were re-used or recycled. The story also featured ongoing resort recycling and slope stabilization. The resort received local television coverage and held a four-part segment on how to "Keep Winter Cool."

Because of the success of Sustainable Slopes Day 2003, it is sure to become one of the resort's annual events with even more activities planned for the future.

Sierra-at-Tahoe Ski Resort California

During our 2002-03 season, the resort diverted 21.6 tons of waste from landfills to various recycling facilities. The resort also avoided almost 70,000 vehicle miles by offering mass transit, employee shuttles, and ride sharing incentives. In addition, the resort used 160,000 less kilowatt hours during the season.

Sierra-at-Tahoe is committed to responsible resort operations, and incorporates environmental goals into each department's yearly planning. The resort is always searching for better, more efficient ways to recycle, re-use, and reduce.

Ski Roundtop Pennsylvania

The resort will be building a new half pipe on an existing trail this summer, and once again will be excavating the pipe. The new pipe will be 660 feet long, and the resort will excavate down 8 feet. This practice saves both water and electricity in snowmaking, and allows the resort to open the pipe earlier in the season because there is no need to dig out the pipe from the snow base.

Once again, the resort will be attempting its recycling project in the base area.

Ski Snowstar Winter Sports Park Illinois

Anything the resort can do to save water or energy makes business sense. Through planning and landscaping, the resort blends into its environment, which makes it a good neighbor. Being neat and clean in appearance makes good customer service sense. The basic principles behind Sustainable Slopes just make good sense.



Smugglers' Notch Resort Vermont

Smugglers' Notch Resort continues to be a leader in environmental initiatives. Smuggs received the 2003 Silver Eagle Award for Environmental Excellence in Water Conservation. The resort recently was awarded the Governor's Award for energy and water conservation. In addition, the resort also is about to become the State of Vermont's first business to achieve "Environmental Leader" status. These awards confirm the resort's commitment to being responsible stewards of the surrounding environment.

Squaw Valley USA California

Over the 2002 summer months, the resort invested over \$500K and hundreds of labor hours in extensive revegetation efforts, water quality monitoring, and a comprehensive summer-long assessment of the mountain. This assessment is designed to characterize the erosion potential of areas on the mountain and to identify any places that need to be further improved. Assessment teams covered the mountain and completed detailed ground surveys of thousands acres of terrain, identifying various mountain features, including roads, drainage crossings, eroded areas, ski runs, structures, and trails. Work included collecting soil samples and gathering information about the pitch, aspect, and elevation of the landscape; the height and size of mountain features; and the amount of vegetation in specific areas. The data collected last summer was analyzed and the resort will use it to develop an extensive water quality improvement plan. In addition, the resort has submitted plans for a completely new parking lot stormwater drainage treatment system.

Steamboat Ski & Resort Corporation Colorado

The resort continues to be a proud member and supporter of the Sustainable Slopes program and NSAA Environmental Charter and related initiatives. This past year, Steamboat was fortunate to win a Silver Eagle Award for Environmental Excellence in Education. The resort's educational outreach efforts continue to be a priority as it enters the summer season and has the opportunity to educate additional visitors to the mountain.

Special focus this summer is on water conservation, fire awareness, and recycling. The resort recently learned that it is a finalist for another Silver Eagle award, this time in Environmental Partnerships. A critical effort at the ski area is the ongoing attempt to suppress the Pine and Spruce Bark Beetles, which have become epidemic in proportion. Another noteworthy project initiated this winter is the transition of the snowmobile fleet to four-stroke engines.

One of the resort's goals last year was to take a closer look at energy saving opportunities, as well as greener sources of power and fuel. The resort has made some strides in these areas, but has further work to



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accomplish. Overall, Steamboat's commitment to the environment is longstanding, company-wide, and touches every aspect of operations.

Stevens Pass Washington

Stevens Pass will be continuing its successful guest shuttle from the gateway community of Sultan (43 miles one way), thereby reducing single vehicle use of the upper Stevens Pass highway and reducing parking demand at the resort. Complementing the guest shuttle program is a massive employee transit system (free to staff members and their families) now operating for over a decade but in a much expanded form for the last three seasons. Both programs have significant environmental benefits, and the latter has become a valuable employee benefit.

In addition, the resort has begun a review of new fuel products on the market (specifically biodiesel), and has added solar and wind generated power to the mix of energy sources from its utility provider. Also, the resort will support the USFS in expanding its "ski with a ranger" environmental education program.

The resort will continue, and it hopes to expand, its successful recycling program. At present, the program includes cardboard, glass, paper, plastic bottles, kitchen grease, metals, etc. The philosophy of recycling will be emphasized in employee training and job expectations.

Stowe Mountain Resort Vermont

Stowe Mountain Resort continues to actively manage its environmental programs by implementing the Stowe Mountain Resort 2000 Master Plan. Significant improvements to stormwater management, water quality protection, energy conservation, and wildlife protection will be put in place, and the resort will remain a leader in its commitment to protect Vermont's environment while remaining economically healthy.

Sugar Bowl Ski Resort California

Over the last season, Sugar Bowl Ski Resort has continued to take advantage of programs such as Sustainable Slopes and the EPA's Wastewise program as tools for continual progress.

The resort's most recent progress includes expanding its recycling operations to include a full-time seasonal recycling coordinator who manages collecting, sorting, and transporting recyclables, as well as coordinating outreach and education for employees and guests of the resort. With this addition, the resort was able to more than triple its recycling rates from last season.

Other efforts over the past year include the following:

- Upgrading the snowmaking system to increase efficiency



- Replacing inefficient lighting with more efficient fluorescent lighting in the main lodge
- Providing transportation and carpooling incentives (approximately 350,000 people took advantage of Sugar Bowl's free shuttle service this season)
- Implementing an extensive summer erosion control/revegetation program
- Putting a greater emphasis on increasing employee and public awareness in all areas of environmental stewardship.

In addition, the resort participated in Sustainable Slopes day this season with a display highlighting environmental progress in the resort's unique mountain environment and offering discounted lift tickets and prizes for guests who carpoled, took the shuttle, and recycled at the resort. Sugar Bowl values its partnership with the NSAA and is eager to learn of other resorts' progress while continuing to set goals for its own environmental programs.

Sugarbush Resort Vermont

In 2001, Summit Ventures purchased Sugarbush Resort. The new owners rejuvenated the "Green Team" and challenged it to educate the resort employees in environmental awareness and environmental stewardship. The Green Team at Sugarbush this season worked on four different objectives. These objectives include water conservation programs, energy management and efficiency planning, an improved program for solid waste management and recycling, and community outreach and environmental education. The Green Team has met the challenge of completing projects in all four of the objectives. The completed projects include participating in towel and linen re-use programs, installing an AC drive motor on the new GMX lift, completing lighting retrofits, improving the solid waste and recycling program by installing a compactor and an RV recycling station, participating in community cleanup efforts, promoting Sustainable Slopes Day, and more. Over the long term, these projects will reduce consumption of resources while saving costs for the company.

Next season, the goal is to expand on existing projects and to initiate some new projects that will help Sugarbush Resort achieve environmental stewardship in the industry and the community.

Sugarloaf/USA Maine

Sugarloaf/USA continues to use the NSAA's Environmental Charter to help strengthen its environmental programs. This past year, the resort has experienced a strong commitment to maintaining its existing environmental programs. The recycling efforts and food-composting program continue to grow. And the resort currently is working with the



2.4 Summaries of Resort Progress

Town of Carrabassett Valley to streamline recycling efforts throughout the community and increase the amount of materials that can be recycled. The resort is looking forward to a new mercury recycling program that will include computer recycling. Also, the resort is working with the Town of Carrabassett Valley to increase the capacity of the composting program to accept more food waste from area businesses.

Completing the NSAA assessment tool for this year has been a great tool for planning future projects and encouraging better tracking of resort environmental efforts. We look forward to the challenges of implementing more of the goals of the Environmental Charter. Increasing environmental successes will help Sugarloaf/USA to work in harmony with the environment.

The Summit at Snoqualmie Washington

The resort's biggest environmental success this season was its cleanliness initiative. Stressing the initiative at all levels of the company and rewarding those who went out of their way to make a difference added to its success. From the General Manager to Department Heads to Front Line employees, all were seen picking up trash rather than walking past it. This initiative also helped strengthen the resort's recycling program. The largest factor contributing to the success of the recycling program was hiring a Recycling Coordinator who made sure recycled goods were transported from base area buildings to the Recycling Center.

The resort also made great strides in its environmental education program by scripting the teaching criteria. This gave our guides more confidence and provided the students with a better learning experience.

Finally, the resort continues to develop relationships with local environmental groups. This year the resort formed new relationships with Sound Tourism, NW Energy Coalition, and Climate Solutions.

Sunday River Ski Resort Maine

Areas of progress for the resort over the last year include the following:

- **Snowmaking Electricity.** The resort developed and implemented a program to test the effectiveness of low-energy snowmaking nozzles in its system. The results were so positive that the resort will purchase the equipment.
- **Forestry Management.** Working with a registered forester, the resort developed a forest management plan for its land holdings that will assure the health of its forests.
- **Watershed Management.** Working with the Sunday River watershed commission, the resort identified areas of non-point source pollution affecting Sunday River and began integration activities for the identified areas.



- Waste Water Treatment. The resort worked with State of Maine Department of Environmental Protection (DEP) officials to reduce the sludge in its treatment ponds and to set the stage for composting this material when it needs to be removed again.
- Snowmaking Water. The resort replaced its snowmaking water line, which leaked during operation. The resort also improved water flow through the main pump house so that excess water is recirculated within the system versus being dumped into a pond.
- Finally, work on recycling at the resort has continued to improve through training and signage. Also, the resort changed its largest food service operation to silverware and china from paper and plastic.

Telluride Ski & Golf Company Colorado

Last year the resort continued to focus on water quality and waste reduction programs, while investigating and moving forward with initiatives in all other areas of sustainable resource management. Through time, all departments have become aware of the need for responsible use of natural resources, a quality that is gratefully instinctive to those that choose to live and work in this mountain environment. The resort is constantly refining its work force to allow the company to evolve into a streamlined, effective group of hardworking leaders and open-minded, proactive thinkers. Next year promises to bring improvement in all areas of environmental performance to the resort.

Tremblant Resort Quebec, Canada

The 2002-2003 season has been marked by two very important environmental instances:

- The process of government approval for the Versant Soleil village project. This process facilitated numerous meetings with municipal committees and the citizens, as well as many discussions with federal, provincial, and municipal government officials.
- Ten resort representatives helping to prepare an environmental case study and a plan of action.

Also, the resort has undertaken numerous concrete actions during the year, including the following:

- Rationalizing surveillance activities for drinking water
- Preparing necessary agreements to extend recycling projects
- Adopting new maintenance practices for green areas that favor using organic substances and green alternatives to pesticides



2.4 Summaries of Resort Progress

- Adopting new maintenance practices for roads that limit using salt
- Creating a bicycle fleet to be used for maintaining the site
- Participating in a regional grouping of golf courses in order to assure environmental protection of the Diable River water basin.

Priorities for 2003-2004 include the recycling project and reducing water consumption.

Vail Mountain Colorado

Progress during this last year was fruitful. The recycling program received a large boost when mountain dining stopped purchasing a non-recyclable sports drink bottle. Also, the floors in the bathrooms of MidVail are made from recycled tires, helping to close the loop for recycled materials. The resort's wind project is growing weekly. Currently, the resort is monitoring wind speed and direction on Ptarmigan Ridge to determine its appropriateness for wind turbines. This first of its kind project has been met with great support, and the USFS is currently reviewing it for approval. This wind project would not only be the first at a ski area, but also would be the first on USFS lands anywhere across the nation.

The resort also worked on visual impacts by planting trees around lots, replacing grass with stone, and painting snow guns a dark color so are less visible. The largest environmental push has been to identify weaknesses, listen to suggestions for areas of improvement, and taking action. The resort's goals for this upcoming year are simple: to improve on all aspects environmentally, and to get that word out to resort guests.

Wachusett Mountain Ski Area Massachusetts

Wachusett Mountain Ski Area has continued its enthusiastic support of the Environmental Charter. This support is reflected in Wachusett's nationally recognized education, energy, and water conservation programs. These programs continue to maintain an important position in Wachusett's overall environmental agenda.

Over the past year, the resort has completed several additional environmental projects, including purchasing several solvent-free parts washers to reduce the amount of hazardous waste at the ski area, installing sediment chambers to reduce pollution within stormwater runoff, remediating an unnamed stream to rehabilitate fisheries habitat, and repairing a leaking snowmaking pond to save well over 2 million gallons of water on an annual basis.

Future environmental goals for Wachusett include possibly purchasing green power (wind energy) to reduce resort dependence on fossil fuels, installing additional stormwater controls to reduce potential stormwater



pollution, and instituting a more aggressive recycling program to reduce the amount of waste produced at the facility.

Wachusett received the 2003 Silver Eagle Award for Environmental Excellence in Fish & Wildlife Habitat Protection.

Whiteface Mountain Ski Center New York

The resort is in the process of updating the Whiteface Mountain Five Year Unit Management Plan (UMP). This plan must be approved by the New York State Department of Environmental Conservation (DEC). A portion of the plan includes information pertaining to Sustainable Slopes that is contained within the Final Generic Environmental Impact Statement (FGEIS). The plan also contains a new section on a Construction Stormwater Pollution Prevention Plan. BMPs also are included within this plan, which will be used during trail construction and other projects that cause earth disturbance. In addition, the resort is working closely with the DEC and other environmental agencies to protect the Bicknell's Thrush, an endangered bird species.

The resort will continue to improve all other areas within the Sustainable Slopes Document, including operating an improved transportation system from neighboring Lake Placid, continuing a recycling program, and continuing a snowmaking water monitoring program.

Winter Park Resort Colorado

The resort's most significant accomplishment over the past year has been the continued incorporation of its AreaNet program. AreaNet is an integrated computer program that manages and monitors electrical power consumption throughout the resort's facilities. This program, developed by an in-house electrician, automatically controls electric heat in lift cabins, motor rooms, and selected buildings throughout the resort. The objective of AreaNet is to more efficiently and effectively heat resort facilities by creating, thereby reducing the amount of electrical energy consumed by the resort. Power savings are achieved by shutting off heat in certain facilities when it is not required for operations. This year Winter Park Resort saved approximately 4.8 million kilowatt hours using the AreaNet program. The resort will continue to implement the AreaNet program in existing and future facilities to further reduce electrical power consumption.

2.5 ENVIRONMENTAL INDICATORS

As in previous years, environmental indicators again were used to estimate the environmental impacts, or footprint, of the ski industry from just a few data points. These indicators are used to determine an order of magnitude estimate of industry impacts by aggregating information on industry-wide energy use, water use, and waste generation. In addition, this year's tool considers climate change impacts based on resort actions. Climate change results are discussed in detail in the Section 2.6.



2.5 Environmental Indicators

The Environmental Charter encourages resorts to establish systems for routinely quantifying both their environmental impacts (in terms such as resource use and waste generation) and their avoided impacts (such as transportation demand reduction) through their collective projects. At the same time, the Charter continues to recognize that detailed measurement of resource consumption takes expertise and resources that may not be available for all resorts. NSAA continues to pursue work with Partnering Organizations to provide training to resorts on establishing tracking systems and more robust metrics for evaluating their environmental programs.

Overall, the Assessment Tool used for this third year of implementation continues to move toward a more expanded and quantitative assessment. NSAA selected four environmental indicators to characterize the environmental state of the industry for the third *Annual Report*: 1) water conservation and use, 2) electric energy conservation and use, 3) waste disposal and diversion, and 4) transportation demand reduction.

Similar to last year, the Assessment Tool breaks out water conservation and use into two categories: snowmaking operations (non-consumptive) and all other operations (consumptive). By definition, non-consumptive water use indicates the resource is *returned to the watershed* following its use.

To continue movement toward more quantitative results and to foster data comparisons from year to year, NSAA asked responding resorts for quantities in each topic area. Using quantities, resorts provided their total use of the particular resource, or in the case of waste, their total generation. Resorts then indicated what they are conserving through their collective best environmental practices. In the case of transportation demand reduction, the resorts were asked only to indicate the number of vehicle miles traveled (VMT) avoided through conservation efforts related to transportation. Table 2-7 summarizes the overall results of resort responses and indicates the low, high, and average response for each environmental indicator. (It should be noted that a “o” response may indicate a lack of data for this measurement rather than a lack of any use of the resource in question.)

Extrapolating to an Industry-wide Footprint

Table 2-8 totals each of the quantitative questions in the Assessment Tool based on information from reporting resorts. This information tells us that reporting resorts collectively are conserving or diverting the following volumes:

- Approximately 279 million gallons of water for snowmaking per year
- Approximately 70 million gallons of water for consumptive uses per year

NSAA continues to pursue work with Partnering Organizations to provide training to resorts on establishing tracking systems and more robust metrics for evaluating their environmental programs.



2.5 Environmental Indicators

- Approximately 52 million kWh per year of electric energy
- Approximately 55 million VMT per year
- Averaging a solid waste diversion rate of 17.9 percent (or approximately 4,479 tons per year based on overall total)

**Table 2-7
Environmental Indicators Response Summary**

Environmental Indicator	Volume
<i>Snowmaking Operations Water Use</i>	
Low (Gallons)	0
High (Gallons)	569,000,000
Average (Gallons)	68,624,694
<i>Snowmaking Operations Water Savings</i>	
Low (Gallons)	0
High (Gallons)	29,448,000
Average (Gallons)	4,096,125
<i>Consumptive Water Use</i>	
Low (Gallons)	0
High (Gallons)	200,000,000
Average (Gallons)	13,357,612
<i>Consumptive Water Savings</i>	
Low (Gallons)	0
High (Gallons)	20,000,000
Average (Gallons)	1,056,125
<i>Electric Energy Use</i>	
Low (kWh)	0
High (kWh)	77,408,256
Average (kWh)	7,774,765
<i>Electric Energy Savings</i>	
Low (kWh)	0
High (kWh)	14,802,146
Average (kWh)	792,494
<i>Waste Disposed</i>	
Low (tons)	0
High (tons)	2,000
Average (tons)	374
<i>Amount Diverted</i>	
Low (Percentage)	0
High (Percentage)	77
Average (Percentage)	17.9
<i>Avoided VMT</i>	
Low	0
High	16,513,261
Average	892,020



2.5 Environmental Indicators

**Table 2-8
Usage Totals and Indices by Region**

Environmental Indicator	CR	CN	MA	MW	NE	NR	PN	SE	SI	All Resorts ¹
Snowmaking Operations Water Use										
Total Use (M Gallons) ²	536.7	185	1,079.2	128.6	1,387.4	420.1	31.2	399.0	331.5	4,803.7
Normalized Indicator (Gallons/Skier Visit)	60.4	1602.1	839.6	220.6	304.7	156.5	15.3	435.9	59.0	180.1
Snowmaking Operations Water Savings										
Total Use (M Gallons) ²	38.6	18.5	65.6	19.0	50.3	36.2	5.2	11.1	33.1	278.5
Normalized Indicator (Gallons/Skier Visit)	4.3	160.21	51.0	32.6	11.0	13.5	2.5	12.1	5.9	10.4
Consumptive Water Use										
Total Use (M Gallons) ²	122.2	N/A	13.9	47.0	87.5	84.2	43.7	1,331.5	80.4	8950
Normalized Indicator (Gallons/Skier Visit)	13.7	N/A	10.8	80.6	19.2	31.3	21.5	1,454.5	14.3	75.9
Consumptive Water Savings										
Total Use (M Gallons) ²	20.1	N/A	8.2	0.0	6.0	6.0	6.0	20.1	2.3	69.7
Normalized Indicator (Gallons/Skier Visit)	2.3	N/A	6.4	0.0	1.3	2.2	3.0	22.0	0.4	2.6
Electric Energy Use (kWh/Skier Visit)										
Total Use (MWh)	71.3	N/A	23.2	6.9	177.7	58.3	36.6	35.1	63.2	513.1
Normalized Indicator (kWh/Skier Visit)	8.0	N/A	18.0	11.8	39.0	21.7	18.0	38.4	11.2	19.2
Electric Energy Savings (kWh/Skier Visit)										
Total Use (MWh)	7.4	N/A	17.2	0.2	6.8	1.4	3.7	1.5	3.3	51.5
Normalized Indicator (kWh/Skier Visit)	0.8	N/A	13.4	0.4	1.5	0.5	1.8	1.6	0.6	1.9
Waste Disposed (Tons/Skier Visit)										
Total Use (Tons)	7,403	N/A	695	760	2,684	3,256	1,224	1,592	5,043	25,025
Normalized Indicator (Tons/Skier Visit)	0.0008	N/A	0.0005	0.001	0.0006	0.001	0.0006	0.0017	0.0009	0.0009
Avoided VMT										
Total Use (M VMT) ³	16.0	N/A	0.2	0.003	0.4	5.4	6.3	1.09	24.3	55.3
Normalized Indicator (VMT/Skier Visit)	1.8	N/A	0.2	0.004	0.1	2.0	3.1	1.2	4.3	2.1

¹ Overall results include some data from resorts whose locations are unknown.

² M gallons = 1 million gallons.

³ M VMT = 1 million VMT.

In addition, the reporting resorts collectively use or generate the following:

- Approximately 4,804 million gallons of water for snowmaking per year
- Approximately 895 million gallons of water for consumptive use per year
- Approximately 513 million kWh per year of electric energy



- Approximately 25,025 tons per year of solid waste

When comparing this year's industry-wide footprint to 2002, we noted several significant differences in reporting. Consumptive water savings and electric energy savings increased by 69 percent and 73 percent, respectively. However, snowmaking operations water savings decreased by 54 percent. In terms of total consumptive water usage, the resorts reported an overall increase of 59 percent. Finally, while the overall waste diversion increased by approximately 5 percent, the amount of overall waste disposed was reported to be significantly lower.

Interpreting the Data

Although the quantitative aspects of the Assessment Tool are approximate, the results do offer some useful information. Table 2-8 quantifies usage indices based on skier visits for each of the Assessment Tool questions. Endorsing resorts can use these indices to compare their own performance against other industry-wide and regional norms.

For example, the normalized indicator of water use in snowmaking operations for the Northern Rockies (NR) region is 156.5 gallons per skier visit. A resort in that region, then, with approximately 200,000 skier visits is projected to use approximately 3.12 million gallons of water each year for snowmaking operations. Actual usage quantities can then be applied to determine if the resort's use is greater than or less than this benchmark.

2.6 CLIMATE CHANGE IMPACTS

As previously discussed in Section 1.6, NSAA made order of magnitude estimates to measure climate change impacts related to the following:

- Electrical energy conservation
- Waste reduction/recycling
- Transportation demand reduction

To determine climate change impacts related to electrical energy conservation, The Brendle Group applied statewide CO₂ emission factors from the Department of Energy's Energy Information Administration to the resorts' estimated energy (kWh) savings through conservation. For waste reduction and recycling, resorts were asked to estimate the percentages of materials (office paper, cardboard, etc.) that either were reduced or recycled to account for the total amount of diverted waste. We then applied the relevant equivalent CO₂ emission factors related to the recycling or reduction of the various materials (based on data from the EPA). Finally, for transportation demand reduction, resorts were asked to indicate the breakdown of vehicles type (gas trucks, diesel buses, hybrid electric cars, etc.) involved in their various transportation demand reduction strategies. We then applied fuel efficiency factors (MPG) and equivalent CO₂ emission factors related to the fuel type to determine reduced pounds of CO₂ resulting from transportation measures.



2.6 Climate Change Impacts

Table 2-9 summarizes the overall results of resort responses related to climate change impacts. This table indicates the low, high, and average response for each associated environmental indicator. Again, note that a “o” response may indicate a lack of data for this measurement rather than a lack of any impact from the action in question.)

**Table 2-9
Climate Change Impacts Summary**

<i>Electric Energy Savings</i>	
Low (lbs CO ₂ reduction)	0
High (lbs CO ₂ reduction)	12,700,241
Average (lbs CO ₂ reduction)	694,414
<i>Waste Reduced/Recycled</i>	
Low (equivalent lbs CO ₂ reduction)	0
High (equivalent lbs CO ₂ reduction)	4,216,392
Average (equivalent lbs CO ₂ reduction)	497,304
<i>Avoided VMT</i>	
Low (equivalent lbs CO ₂ reduction)	0
High (equivalent lbs CO ₂ reduction)	74,231,941
Average (equivalent lbs CO ₂ reduction)	2,369,980

The data for Table 2-9 also can be totaled to extrapolate an industry-wide climate change reduction (an order of magnitude estimate). Collectively, resorts are reducing their impacts on the climate by reducing the following:

- 45,831,344 pounds CO₂ emissions from electrical energy conservation
- 29,838,237 equivalent pounds of CO₂ emissions from waste reduction and recycling
- 146,938,788 equivalent pounds of CO₂ emissions from transportation demand reduction
- 222,608,369 total pounds of CO₂ emissions from all energy, waste, and transportation reduction measures.

To add perspective to the CO₂ reductions quantified above, consider the following:

- Eliminating 25 pounds of CO₂ emissions each year is equal to planting one tree.
- Eliminating 2,400 pounds of CO₂ emissions is equal to planting half an acre of trees or not driving a car from New York to Los Angeles.



3.1 Why Partnering Organizations Are Participating

3.0 CONTRIBUTIONS OF PARTNERING ORGANIZATIONS

NSAA and the endorsing resorts are fortunate to have outside organizations playing a key role in Sustainable Slopes. Our Partnering Organizations were instrumental in the initial development of the Environmental Principles, and continue to provide their expertise and perspectives as the Charter evolves.

- Colorado Department of Public Health & Environment (CDPHE)
- Conservation Law Foundation (CLF)
- U.S. Department of Energy (DOE)
- U.S. Environmental Protection Agency (EPA)
- USDA Forest Service (USFS)
- Leave No Trace Inc. (LNT)
- The Mountain Institute (TMI)
- National Fish & Wildlife Foundation (NFWF)
- National Park Service Concession Program (NPS)
- New York State Department of Environmental Conservation (NYSDEC)
- Teton County, Wyoming (TC)
- Trust for Public Land (TPL)

We are pleased to add a new Partnering Organization this year, the New York State Department of Environmental Conservation (NYSDEC). NYSDEC is the New York State's environmental and natural resource management agency. The NYSDEC strives to preserve, protect and manage the environment across the State to foster its superior environmental quality, unique natural resources and rich environmental heritage. Towards this goal the agency develops and implements initiatives to accelerate the protection of air, land and water quality. Just as we added a Partnering Organization, we lost one as well. With the completion of the 2002 Winter Olympic Games, the Salt Lake Organizing Committee (SLOC) has ceased to exist. We would like to take this opportunity to recognize and thank SLOC for its outstanding support of the Sustainable Slopes Program.

3.1 WHY PARTNERING ORGANIZATIONS ARE PARTICIPATING IN SUSTAINABLE SLOPES

There are several common reasons why the Partnering Organizations are involved in Sustainable Slopes:

- The Charter fits in well with the mission and goals of the Partnering Organizations.



3.1 Why Partnering Organizations Are Participating

- The Charter provides a vehicle for Partnering Organizations to get their environmental information and technical assistance out to those who may benefit.
- Partnerships and collaboration are a large part of how many of the Partnering Organizations do business.

However, the number one reason for supporting Sustainable Slopes, expressed either directly or indirectly by all Partnering Organizations, is that it leads to improved environmental performance. As Mark Sinclair of CLF noted from the start, “Regulations can prevent the worst in the ski industry, but they can’t bring out the best.”

Testimonials on motivations for partnering are provided below.

Getting Their Message Out

Without the Sustainable Slopes program, most resorts would not be able to learn about and take advantage of EPA’s voluntary programs and other available assistance.–(EPA).

The Charter offers a vehicle for us to get our Responsible Use message out to visitors who enjoy these destination spots.– (LNT).

Fitting in with Their Missions and Goals

The concepts fit in well with our own missions and goals (TC).

Sustainable Slopes as a concept is on point and on mission with what we are trying to promote where we work in mountain communities (TMI).

We are very interested in seeing the process because we are building our program ground up now too. The Charter also is very consistent with the NPS mission of protecting the environment and developing evaluation tools that can be applied to our winter sport programs (NPS).

Energy is a thread that touches almost all aspects of ski areas' operations. This certainly fits within our strategic plan of leading the nation in the research, development, and deployment of affordable, advanced, clean energy (DOE).

The NYSDEC supports the NSAA and the application of the Environmental Charter's principles at ski areas in New York because it fits in with our mission of building partnerships that foster an understanding of how to use and protect the environment and working to become better stewards of our land, infrastructure and natural resources.

***...the number
one reason for
supporting
Sustainable
Slopes...is that
it leads to
improved
environmental
performance.***



3.2 How Partnering Organizations are Getting Involved

Improving Environmental Performance

Improved environmental performance by ski areas translates into improved environmental and health benefits to citizens and the state (CDPHE).

"The Charter raises the bar for environmental performance beyond compliance toward true sustainability" (CLF).

The Charter allows us to move away from our historical regulatory battles with the industry to a more cooperative dialogue. Regulations can prevent the worst in the ski industry, but they cannot bring out the best. The Charter raises the bar for environmental performance beyond compliance toward true sustainability (CLF).

Whatever we can contribute to help the ski industry improve its environmental performance directly benefits us because it maintains high environmental quality on national forest service lands that are permitted to ski areas (USFS).

EPA's mission is to protect human health and the environment. Actions a ski area takes through Sustainable Slopes helps to achieve this goal. With greater participation and effort, the ski industry is capable of reducing its impacts in a measurable and significant way. The ski industry could play an exemplary role for improved, quantified environmental performance both nationally and worldwide for the tourism and recreation industry. The Sustainable Slopes partnership and this *Annual Report* are a step toward that end (EPA).

Collaboration is the Key

Our whole charter is to embrace and underwrite public/private partnerships on both public and private lands (NFWF).

In our partnering with other industries, we have seen excellent results when this type of proactive visioning occurs. (DOE)

"In partnering with other industries, we've seen excellent results when this type of proactive visioning occurs" (DOE).

3.2 HOW PARTNERING ORGANIZATIONS ARE GETTING INVOLVED

Not only do Partnering Organizations have valuable expertise to share, they are providing other key services as well:

- Resources
- Direct technical assistance to resorts
- Training
- Communication/education/outreach
- Referrals to relevant programs and resources
- Integration of Charter Principles into development reviews
- Initiation of regional and resort-level projects

A brief summary of the contributions of the Partnering Organizations to Sustainable Slopes is provided below.



3.2 How Partnering Organizations are Getting Involved

Resources

USFS provided a grant to NSAA to support the 2003 Assessment Tool data collection and self-assessment effort that forms the basis for this *Annual Report*. USFS also helped fund the initial stakeholder process that NSAA instituted to develop the Environmental Charter in 1999 and 2000.

NFWF provided grants to NSAA for the 2000/2001 and 2001/2002 seasons to develop and implement the data collection and self-assessment process that serves as the basis for this *Annual Report*. NFWF also participated in the Sustainable Slopes Outreach Campaign in Colorado in 2002.

DOE partnered with Aspen Skiing Company, Jiminy Peak Ski Area, and NSAA to sponsor the educational PBS show “Spotlight On: The Environment,” which featured Sustainable Slopes and aired on 300 PBS stations for 3 months during the 2001 ski season. The show aired 991 times and was seen by 5 million viewers.

Direct Technical Assistance to Resorts

CDPHE, with joint funding from the **EPA**, has provided direct technical assistance to two Colorado ski resorts, Arapahoe Basin and Aspen Skiing Company, through a multi-year pilot program. The pilot program included a top to bottom audit of resort practices and analysis of improving environmental performance and efficiencies. The results of the project were compiled in the *Greening Your Ski Area--A Pollution Prevention Handbook* and disseminated to the industry nationally through NSAA last year. (A link to a copy of the *Handbook* is available on NSAA’s website at www.nsaa.org. Click on “Environmental Charter” to find it. Hard copies are available through NSAA by emailing katep@nsaa.org.) With assistance from CDPHE, Tetra Tech EM Inc., and The Brendle Group, NSAA provided training to resorts on the *Handbook* during our Eastern and Western Winter Conferences in January 2002, and also through a special training workshop hosted by Keystone Resort in April 2002. The training sessions were well received and have sparked further progress toward improving environmental performance in the industry.

The *Handbook* includes chapters on most of the on-mountain aspects of the Charter, including Lift Operations, Snowmaking, Vehicle Maintenance, Buildings, and Construction. It also offers guidance on program elements, such as setting performance goals and metrics, marketing successes, and conducting public relations. Finally, the *Handbook* details demonstrated cost savings by the participating resorts in an unprecedented manner. At this time, NSAA is exploring options for making the *Handbook* training program available on-line as an interactive training program so that more resorts can benefit from it.

DOE's Office of Industrial Technologies has provided energy audits at Aspen Skiing Company and Stratton Mountain Ski Resort in



3.2 How Partnering Organizations are Getting Involved

conjunction with the **CDPHE** Pilot Program so it could provide the industry with two case-specific audits. Contacts for the ski industry have been provided to DOE's regional offices for alternative fuel vehicle programs (Clean Cities). DOE's regional offices will continue to provide front-end support to ski resorts interested in deploying alternatively fueled vehicles and wind power purchases.

Although it has not worked directly with ski resorts yet, **TMI** has technical expertise available for hire on a contract basis. **TMI**'s mission and expertise is three-fold: 1) protecting habitat, 2) protecting culture, and 3) advancing the economics of the regions. **TMI** is poised to help resorts with an objective outside environmental audit or to help design a constructive program around the three principles listed above. **TMI**'s services include auditing, planning, and fine-tuning environmental programs.

Training

DOE conducted training seminars for ski areas during NSAA's 2000 Fall Education Seminars. The training sessions were held in eight regions across the country, and helped resorts identify opportunities for becoming more energy efficient and for applying clean energy technology.

EPA conducted training workshops on waste reduction, energy and water efficiency for resorts, and environmental management systems (EMS) in conjunction with NSAA's Eastern and Western Winter Conferences in January of 2001.

CDPHE, as part of its joint project with **EPA** (see description under technical assistance above), shared the results of its project with the rest of the industry in resort training workshops held in conjunction with NSAA's Eastern and Western Winter Conferences in January of 2002.

Communication/Education/Outreach

LNT provides materials on outdoor ethics to resorts for Sustainable Slopes Day each February. In March 2003, **LNT** participated in Ski For Nature Day with several Utah resorts to benefit the Utah Chapter of the Nature Conservancy. In the future, **LNT** would like to create some educational pieces (booklets, hang tags, signage, etc.) that more actively present the sustainability message to the end user. This could be done in partnership with NSAA or even with particular resorts in a more customized fashion.

EPA sponsored environmental outreach materials for the Sustainable Slopes Outreach Campaign in February 2001.

LNT, CDPHE, USFS and TPL were judges for the 2003 Golden Eagle Awards for Environmental Excellence. The award program recognizes resorts that have excelled in particular areas of environmental concern



3.2 How Partnering Organizations are Getting Involved

and is managed by Time4 Media's Mountain Sports Media, publishers of *SKI*, *SKIING*, and other magazines.

DOE partnered with Aspen Skiing Company, Jiminy Peak Ski Area, and NSAA to sponsor the educational PBS show "Spotlight On: The Environment," which featured Sustainable Slopes and aired on 300 PBS stations for 3 months during the 2001 ski season. The show aired 991 times and was seen by 5 million viewers.

NYSDEC supports the efforts of its Pollution Prevention Unit which is advocating the Principles within the agency through its outreach programs to ski areas and with its partnership with the statewide ski area association, Ski Areas of New York (SANY).

Referrals to Programs and Resources

During training at NSAA's 2001 conferences, EPA highlighted four programs that can provide direct technical assistance to ski resorts: 1) WAVE (water alliance for voluntary efficiency - www.epa.gov); 2) Energy Star program, which has a broad array of energy efficiency information, software tools, product lists, and a certification program; 3) Waste Wise, which is a waste reduction and recycling technical assistance program; and 4) Environmental Management Systems (EMSs), a tool for identifying, prioritizing, and addressing environmental impacts. EMS is the holistic tool that can provide a systematic structure for resorts to completely implement the Environmental Charter. These are just four of EPA's voluntary programs; there are many other resources and programs available to resorts through the EPA.

Integration of Environmental Principles into Development Reviews

Teton County uses the Environmental Charter as guidance in interacting with ski resorts on its Master Development Plans.

The **USFS** continually works with public land resorts on planning new developments, and provides its specialized expertise to enhance the environmental performance of these specific projects. In September, 2002 NSAA and the **USFS** renewed a national Memorandum of Understanding (MOU) on their partnership, highlighting the agency's support of the Sustainable Slopes program. USFS anticipates that a case-by-case learning tool on resort environmental practices can be used and distributed by NSAA to the member organizations.

Initiation of Regional-level Projects

CLF and the **NFWF** hope to get more involved in partnering with eastern resorts on climate change-related projects.

...four EPA programs that can provide direct assistance to ski resorts:

- **WAVE**
- **Energy Star**
- **Waste Wise**
- **EMS**



3.3 Future Work with Partnering Organizations

TMI is trying to establish a presence in the San Juan Mountains in Colorado. It is proposing to create the Center for Mountain Studies in the San Juans either in Durango or Silverton. The aim is to create a cumulative body of literature and research on mountain living and ecology, including recreation and tourism, which could be useful to resorts.

USFS is represented on the steering committee of a unique ski area environmental partnership among the Sierra Business Council, Lahontan Regional Water Quality Control Board, Alpine Meadows, Heavenly, Mammoth Mountain and Northstar-at-Tahoe resorts in California. The goal of the partnership is to reduce soil erosion and improve water quality at ski areas in the Sierra Nevada.

3.3 FUTURE WORK WITH PARTNERING ORGANIZATIONS

While the contributions outlined in Section 3.2 are in themselves impressive, another major benefit from Partnering Organizations' involvement in Sustainable Slopes comes from putting their expertise to work in the continued improvement of the Charter and the Assessment Tool. Many of the Partnering Organizations have more to offer, such as:

- Direct experience with developing voluntary environmental programs for other industries
- A long history of working with ski resorts and/or mountain communities on environmental issues
- Technical expertise in specific subject areas covered by the Environmental Principles

In combination, this experience is invaluable toward improving the Sustainable Slopes program. NSAA also wants to encourage new Partnering Organizations for the Sustainable Slopes program.



4.0 GOALS FOR THE FUTURE

An important part of any voluntary program is to periodically take stock on overall program performance. The purpose is to evaluate how to provide the highest possible outcomes for the resources invested. Thus, as Sustainable Slopes matures, the program's services and logistics will evolve as well.

The fundamental goal of the Charter remains the same, to improve the environmental performance of the ski industry. Implicit in that goal is the ability to measure the improved performance. Reflecting on the past three years of environmental data and reporting, we now have a better understanding of the quality of the data we are collecting and what it can and cannot tell us about the industry's environmental performance. Ultimately, measurement and reporting should be meaningful and should support, but not dominate, the goal of driving change within the industry.

The main goal for the coming year is to streamline the annual reporting process.

With this perspective in mind, the main goal for the coming year is to streamline the annual reporting process. We believe this step will increase the industry's environmental performance (and our ability to measure it) on a number of interrelated fronts:

- More balanced perspective between implementation and reporting
- Less, but more reliable data
- Increased quantity and quality of industry participation
- Diversion of NSAA resources toward assisting resorts, forging stronger partnerships, and raising funds

Although thorough reporting in the earliest years of the program was important, we believe that a streamlined approach in future years is warranted given the level of performance observed among endorsing resorts.

Although thorough reporting in the earliest years of the program was important, we believe that a streamlined approach in future years is warranted given the level of performance observed among endorsing resorts. Based on feedback from reporting resorts in 2003, as well as feedback from members of the NSAA Environmental Committee, the reporting protocol and associated support services will be modified as follows:

- We will eliminate qualitative reporting of the 177 best management practices across the 21 Principles of the Charter (formerly located on Forms 1-21 of the Assessment Tool) from annual reporting. However, many resorts have told us the qualitative checklist portion of the assessment tool provides a valuable method for internal benchmarking of progress. We encourage endorsing resorts to continue using the Assessment Tool in this capacity. Furthermore, we urge resorts to consider sharing their progress by posting self-assessment results on resort websites or through other outreach mechanisms. NSAA will still make the on-line Assessment Tool



4.0 Goals for the Future

available to resorts each year, but will not compile and analyze industry-wide results on the level of detail provided within this *Annual Report*.

- We will streamline quantitative reporting (formerly Form 22 of the assessment tool) to sum the energy, water, solid waste, and transportation reductions from individual projects, but will not collect data on total utility usage or waste generation.
- Because of strong resort interest, and in support of the “Keep Winter Cool” campaign, we will continue to request information that allows us to convert energy, solid waste, and transportation savings into greenhouse gas reductions.
- We will enhance the instructions, including sample calculations and completed forms, for quantitative reporting.
- We will notify resorts in the fall of 2003 regarding what needs to be tracked so that it is easier for resorts to complete the quantitative reporting form in spring 2004.
- We will still ask resorts to provide a summary of resort progress for the *Annual Report* (formerly Form 23 of the Assessment Tool) and will encourage them to submit their best examples of implementation or “Principles in Action” for the Green Room database.
- We will use the resources freed up from less intensive data collection, analysis, and reporting toward the following:
 - Recruiting more resorts to endorse the Charter
 - Promoting/supporting increased annual reporting by endorsing resorts
 - Providing more assistance to resorts and better quality control/verification of reported data
 - Working with Partnering Organizations to provide more training, direct technical assistance, and resources to endorsing resorts
 - Improving outreach and awareness programs on Sustainable Slopes

In conclusion, NSAA remains extremely pleased with the progress made to date under the Sustainable Slopes program. Resorts have been successful in implementing the Environmental Principles and can set goals for future improvement using the results of this and last year's assessments. We welcome further input and participation as we continue to enhance the Sustainable Slopes program in the coming year.



APPENDIX A
LIST OF ENDORSING RESORTS
AND CONTACT INFORMATION

Endorsing Resort	State	Charter Contact Person	Contact Phone	Contact Email
49 Degrees North Ski Area	WA	John Eminger	(509) 935-6649	ski49n@ski49n.com
Alpine Meadows Ski Resort	CA	Fern Elufson	(530) 583-4232	fern@skialpine.com
Alpine Meadows Ski Resort	CA	Dave Paulson	(530) 583-4232	dave@skiapline.com
Alta Ski Area	UT	Onno Wieringa	(801) 359-1078	onnow@alta.com
Alta Ski Area	UT	Mark Polish	(801) 359-1078	markp@alta.com
Alyeska Resort	AK	David Wilson	(907) 754-1111	dwilson@alyeskaresort.com
Angel Fire Resort	NM	Jon Mahanna	(505) 377-4206	jmahanna@angelfireresort.com
Anthony Lakes Mtn. Resort, Inc.	OR	Amy Barnes	(541) 856-3277 x16	abarnes@anthonylakes.com
Arapahoe Basin	CO	Rusty Pawlikowski	(970) 496-7004	rustyp@a-basin.net
Arapahoe Basin	CO	Alan Henceroth	(970) 496-7022	alanh@a-basin.net
Arizona Snowbowl	AZ	Eric Borowsky	(928) 779-1951 x119	
Arizona Snowbowl	AZ	Kim Clark	(928) 779-1951 x113	kclark@arizonasnowbowl.com
Ascutney Mountain Resort	VT	John Plausteiner	(802) 484-7711	
Aspen Highlands	CO	Auden Schendler	(970) 925-1220	aschendler@aspensnowmass.com
Aspen Mountain - Ajax	CO	Auden Schendler	(970) 925-1220	aschendler@aspensnowmass.com
Attitash Bear Peak	NH	Tom Chasse	(603) 374-2603	tchasse@attitash.com
Attitash Bear Peak	NH	Katherine Gadman	(603) 374-2616	kgadman@attitash.com
Balsams Wilderness	NH	Richard Harris	(603) 255-3951	psiadix_03576@yahoo.com
Bear Creek Ski & Recreation Area	PA	Mark Schroetel	(610) 682-7100 x332	marks@skibearcreek.com
Beaver Creek Resort	CO	Mark Tirone	(970) 949-5750	mtirone@vailresorts.com
Beaver Mountain Ski Area	UT	Travis Seeholzer	(435) 753-0921	beaver@cache.net
Belleayre Mountain	NY	Patricia McVitty	845) 254-5600 x447	pgmcvitt@gw.dec.state.ny.us
Big Bear Mountain Resort	CA	Brent Tregaskis	(909) 585-2519	btregaskis.bm@boothcreek.com
Big Mountain Ski & Summer Resort	MT	Michael Collins	(406) 862-1930	wsixec@bigmtn.com
Big Mountain Ski & Summer Resort	MT	Judith Ross	(406) 862-1900	wsixec@bigmtn.com
Big Sky Resort	MT	Madeleine Bessire	(406) 995-5000	
Black Mountain Ski Area	NH	John Fichera	(603) 383-4490	johnf@blackmt.com
Blacktail Mountain Ski Area	MT	Steve Spencer	(406) 844-0999	skiing@blacktail.com
Blue Mountain Resorts	ON	Krystin Rennie	(705) 445-0231	krennie@bluemountain.ca
Bogus Basin Ski Resort	ID	Steve Shake	(208) 332-5100	steve@bogusbasin.com
Bolton Valley Resort	VT	Mike Gallas	(802) 434-3444	mgallas@boltonvalley.com
Boreal Mountain Resort	CA	John Booth	(530) 426-3666	castle@thegrid.net
Boston Mills/Brandywine Ski Resort	OH	Kent Graham	(330) 467-2242	kgraham@bmbw.com
Boston Mills/Brandywine Ski Resort	OH	Sue Kananen	(330) 467-2242	skananen@bmbw.com
Breckenridge Ski Resort	CO	Cat Blackman	(970) 453-5000	
Breckenridge Ski Resort	CO	Cathlin Tully	(970) 453-5000	ctully@vailresorts.com

Endorsing Resort	State	Charter Contact Person	Contact Phone	Contact Email
Bretton Woods Mountain Resort	NH	Jason Doyle	(603) 278-3302	jdoyle@brettonwoods.com
Bridger Bowl Ski Area	MT	Terry Abelin	(406) 587-2111	bridgerbowl@imt.net
Brighton Ski Resort	UT	Zane R. Doyle	(801) 532-4731	rdoyle@skibrighton.com
Bristol Mountain Winter Resort	NY	Daniel Fuller	(585) 374-6000	dfuller@bristolmt.com
Brodie Mountain Resort	MA	Jim Van Dyke	(413) 443-4752	jvandyke@jiminy.com
Bromley Mountain Resort	VT	John Cueman	(802) 824-5522	jcuman@bromley.com
Brundage Mountain Resort	ID	Larry Shake	(208) 634-4151	larrys@brundage.com
Buttermilk Mountain	CO	Auden Schendler	(970) 925-1220	aschendler@aspensnowmass.com
Camelback Ski Area	PA	Richard Wiseman	(570) 629-1661	wiseman@skicamelback.com
Cannon Mountain	NH	Lorri Souza	(603) 823-8800 x721	fns@ncia.net
Cascade Mountain Ski & Snowboard Area	WI	Rob Walz	(608) 742-5588	robwalz@cascademountain.com
Cataloochee Ski Area	NC	Chris Bates	(828) 926-0285	cbates@cataloochee.com
Copper Mountain Resort	CO	Mark Burnell	(970) 968-3006	mburnell@intrawestcolorado.com
Cranmore Mountain Resort	NH	Hamish Teasdale	(603) 356-8500	hteasdale.mc@boothcreek.com
Crested Butte Mountain Resort	CO	Mary Jo Somrak	(970) 349-4000	msomrak@cbmr.com
Crystal Mountain Resort	MI	Michael Call	(231) 378-2000	michaelcall@crystalmountain.com
Crystal Mountain, Inc.	WA	Lorna Fluegel	(360) 663-2265	mainoffice@skicrystal.com
Crystal Mountain, Inc.	WA	Bill Steel	(360) 663-2265	comments@skicrystal.com
Dartmouth Skiway	NH	Bill Ulinski	(603) 795-2143	
Deer Valley Resort Company	UT	Bob Wheaton	(435) 649-1000	bwheaton@deervalley.com
Devil's Head Resort & Convention Center	WI	Joe Vittengl	(608) 493-2251	joe@devilsheadresort.com
Discovery Ski Area	MT	Peter Pitcher	(406) 563-2184	peter@skidiscovery.com
Dodge Ridge Ski Area	CA	Frank M. Helm, Jr.	(209) 965-4444 x306	frankhelm@dodgeridge.com
Durango Mountain Resort	CO	Mike McCormack	(970) 385-2148	mmccormack@durangomountain.com
Eaglecrest Ski Area	AK	Gary Mendivil	(907) 586-5284	gary_mendivil@ci.juneau.ak.us
Eldora Mountain Resort	CO	Rob Linde	(303) 440-8700 x243	marketing@eldora.com
Gore Mountain Ski Area	NY	Darin Homer	(518) 251-2411	darin@goremountain.com
Gore Mountain Ski Area	NY	Michael Pratt	(518) 251-2411	mike@goremountain.com
Gore Mountain Ski Area	NY	Kurt Wisell	(518) 251-2411	kurt@goremountain.com
Grand Targhee Ski & Summer Resort	WY	Larry Williamson	(307) 353-2300 x1300	lwilliamson@grandtarghee.com
Grand Targhee Ski & Summer Resort	WY	Andy Steele	(307) 353-2300 x1348	asteel@grandtarghee.com
Greek Peak Mountain Resort	NY	W. Scott King	(607) 835-6111 x134	greekpeak@lightlink.com
Gunstock Area	NH	J. Douglas Irving	(603) 293-4341 x106	doug@gunstock.com
Heavenly Ski Resort	NV	Andrew Strain	(775) 586-2313	astrain@vailresorts.com

Endorsing Resort	State	Charter Contact Person	Contact Phone	Contact Email
Hidden Valley Ski Area	MO	Kent Graham	(636) 938-5373	kgraham@bmbw.com
Holiday Valley Resort	NY	Jane Eshbaugh	(716) 699-2345	jeshbaugh@holidayvalley.com
Holiday Valley Resort	NY	Dennis Eshbaugh	(716) 699-2345	deshbaugh@holidayvalley.com
Hoodoo Ski Area	OR	Chuck Shepard	(541) 484-6595	umbrella96@aol.com
Hunter Mountain	NY	Russell Coloton	(518) 263-4223	rcoloton@huntermtn.com
Hyland Ski and Snowboard Area	MN	Fred Seymour	(952) 835-4250 x205	fseymour@threeriversparkdistrict.org
Jackson Hole Mountain Resort	WY	Tom Spangler	(307) 733-2292	toms@jacksonhole.com
Jackson Hole Mountain Resort	WY	Jerry Blann	(307) 733-2292	jerryb@jacksonhole.com
Jiminy Peak - The Mtn. Resort	MA	Jim Van Dyke	(413) 738-5500 x370	jvandyke@jiminy.com
Keystone Resort	CO	Dylan Hoffman	(970) 496-3645	dhoffman@vailresorts.com
Killington Resort	VT	John Cole	(802) 422-3333	johncole@killington.com
Kirkwood Mountain Resort	CA	Jan Reed	(209) 258-6000	jreed@kirkwood.com
Liberty Mountain Resort	PA	Lonny Whitcomb	(717) 642-8282 x3388	lwhitcomb@skiliberty.com
Lookout Pass Ski Area	ID	Phil Edholm	(208) 744-1301 x10	phil@skilookout.com
Loon Mountain Recreation Corp.	NH	Rick Kelley	(603) 745-8111 x5511	rkelley.lm@boothcreek.com
Lost Trail Ski Area, Inc.	MT	Bill Grasser	(406) 821-3742	ski@losttrail.com
Loveland Ski Area	CO	Ken Abrahamson	(303) 569-3203	kena@skiloveland.com
Mammoth Mountain Ski Area	CA	Rusty Gregory	(760) 934-2571	rusty@mammoth-mtn.com
Mammoth Mountain Ski Area	CA	Lisa Isaacs	(760) 934-2571 x3443	lisaacs@mammoth-mtn.com
Massanutten Ski Resort	VA	Steven Showalter	(540) 289-4950	sshowalter@massresort.com
Mission Ridge	WA	Michael Bourton	(509) 663-6543	mbourton@nwi.net
Mohawk Mountain Ski Area	CT	Carol Lugar	(860) 672-6100	mmtn1@mohawkmtn.com
Monarch Ski and Snowboard Area	CO	Rich Moorhead	(719) 539-0519	moorrich@amigo.net
Mont Ste-Marie Resort	PQ	Pascale-Isabelle Godin	(819) 467-5200	
Montana Snowbowl	MT	Bradley Morris	(406) 549-9777	brad@montanasnowbowl.com
Mount Bohemia	MI	Jim Rempel	(906) 487-9757	bear@up.net
Mount Snow Resort	VT	Scott Reeves	(802) 464-1100 x4494	sreeves@mountsnow.com
Mount Snow Resort	VT	Gina Sarlo	(802) 464-1100	gsarlo@mountsnow.com
Mount Snow Resort	VT	Ken Thane	(802) 464-1100 x4331	kthane@mountsnow.com
Mount Sunapee	NH	Jay Gamble	(603) 763-2356	jgamble@mtsunapee.com
Mount Tone Ski Area	PA	Ray Handley	(570) 842-2544	
Mountain Creek	NJ	Michael Renfrew	(973) 827-3900	mrenfrew@mountaincreek.com
Mountain High Resort	CA	Paul Bauer	(760) 316-7806	pbauer@mthigh.com

Endorsing Resort	State	Charter Contact Person	Contact Phone	Contact Email
Mt. Ashland Ski Area	OR	Jeff Hanson	(541) 482-2897	jhanson@mtashland.com
Mt. Bachelor, Inc.	OR	Chip Hill	(541) 382-2442	chill@mtbachelor.com
Mt. Bachelor, Inc.	OR	Don Rutherford	(541) 382-2442	drutherford@mtbachelor.com
Mt. Hood Meadows Ski Resort	OR	David Riley	(503) 337-2222 x259	driley@skihood.com
Mt. Hood Meadows Ski Resort	OR	Jodie Mears	(503) 337-2222	jmeears@skihood.com
Mt. Hood Ski Bowl	OR	H. Todd Wheeler	(503) 936-6080	htodd@aol.com
Mt. Hood Ski Bowl	OR	Kirk Hanna	(503) 272-3206	khanna@skibowl.com
Mt. La Crosse	WI	Todd Schini	(608) 788-0044	info@mtlacrosse.com
Mt. Rose - Ski Tahoe	NV	Paul Senft	(775) 849-0704	ps@skirose.com
Mt. Shasta Board & Ski Park	CA	Gary Nordell	(530) 926-8600	skipark@snowcrest.net
Mt. Spokane Ski & Snowboard Park	WA	Brad McQuarrie	(509) 238-2220 x203	bradmcquarrie@mtspokane.net
Northstar-at-Tahoe	CA	Terri Viehmann	(530) 562-2235	tviehmann.ns@boothcreek.com
Northstar-at-Tahoe	CA	John Loomis	(530) 562-2213	jloomis.ns@boothcreek.com
Nub's Nob Ski Area	MI	James Bartlett	(231) 526-2131 x10	bart@nubsnob.com
Okemo Mountain Resort	VT	Pam Cruickshank	(802) 228-4041	pamc@okemo.com
Otis Ridge	MA	Al Hewett	(413) 269-4444	oridge@vgernet.net
Panorama Resort	BC	Gordon Ahrens	(604) 343-6941	gahrens@intrawest.com
Paoli Peaks, Inc.	IN	Felix Kagi	(812) 723-4696 x224	frkagi@kiva.net
Park City Mountain Resort	UT	Vern Greco	(435) 649-8111	verng@pcski.com
Pats Peak	NH	Kris Blomback	(603) 428-3245	kris@patspeak.com
Pebble Creek Ski Area	ID	Mary Reichman	(208) 775-4452	info@pebblecreekskiarea.com
Pebble Creek Ski Area	ID	Dana Lucid	(208) 775-4452	info@pebblecreekskiarea.com
Peek 'n Peak Resort & Conference Center	NY	Brad Gravink	(716) 355-4141	skiinfo@pknpk.com
Pomerelle Mountain Resort	ID	A.W. Anderson	(208) 673-5599	andrwood@atcnet.net
Powder Ridge Ski Area	CT	Kenneth Leavitt	(860) 349-3454	leavittkr@aol.com
Powder Ridge Ski Area	MN	Jerry Wahlin	(320) 398-5295	prfun@cloudnet.com
Powderhorn Resort	CO	W. Steven Bailey	(970) 268-5700 x2028	sbailey@powderhorn.com
Powderhorn Resort	CO	Jim O'Loughlin	(970) 268-5700 x2081	jimo@powderhorn.com
Red Lodge Mountain	MT	Rob Ringer	(406) 446-2610	rringer@redlodgemountain.com
Red River Ski Area, Inc.	NM	Mike VanOrmer	(505) 754-2223	redriver@newmex.com
Saddleback Ski Area, Inc.	ME	Tom McAllister	(207) 864-5671	saddleback@saddlebackskiarea.com
Seven Springs Mountain Resort	PA	Scott Bender	(814) 352-7735	sbender@7springs.com
Shawnee Peak Ski Area	ME	Chet Homer	(207) 985-0284	chet@shawneepark.com
Sierra Summit Mountain Resort	CA	Richard Kun	(559) 233-2500	rck@snowsummit.com
Sierra-at-Tahoe Ski Resort	CA	Marie Sweeney	(530) 543-3115	msweeney.st@boothcreek.com
Ski Bluewood	WA	Bruce Goodell	(509) 382-4725	bruceg@innw.net
Ski Cooper	CO	Clint Yant	(719) 486-3013	anned@skicooper.com

Endorsing Resort	State	Charter Contact Person	Contact Phone	Contact Email
Ski Denton	PA	Joyce Knefley	(814) 435-2115	skidentn@penn.com
Ski Plattekill Mountain Resort	NY	Laszlo Vajtay	(607) 326-3500	plattkil@catskill.net
Ski Roundtop	PA	Gayle Kosyk	(717) 432-9631	gkosyk@skiroundtop.com
Ski Roundtop	PA	Lonny Whitcomb	(717) 432-9631	lwhitcomb@skiliberty.com
Ski Snowstar Winter Sports Park	IL	Ed Meyer	(309) 798-2666	snowstar@qconline.com
Ski Wenworth	NS	Leslie Wilson	(902) 895-9281	ljwilson@kerrcontrols.ca
Sleepy Hollow Sports Park, Inc.	IA	Rick Flatt	(515) 262-4100	
Smugglers' Notch Resort	VT	Mark Delaney	(802) 644-8851	mdelaney@smuggs.com
Smugglers' Notch Resort	VT	Tom McGrail	(802) 644-8851	tmcgrail@smuggs.com
Snow Creek Ski Area	MO	David Grenier	(816) 640-2200	dgrenier@skisnowcreek.com
Snow Summit Mountain Resort	CA	Richard Kun	(909) 866-5766 x120	rck@snowsummit.com
Snowbasin, A Sun Valley Resort	UT	Michael Jenkins	(801) 620-1000	mjenkins@snowbasin.com
Snowbasin, A Sun Valley Resort	UT	Lorin Hansen	(801) 620-1000	
Snowbird Ski & Summer Resort	UT	Jim Baker	(801) 933-2222	jbaker@snowbird.com
Snowmass Ski Area	CO	Auden Schendler	(970) 923-1220	aschendler@aspensnowmass.com
Snowshoe Mountain Inc.	WV	Bruce Pittet	(304) 572-5611	bpittet@snowshoemtn.com
Snowshoe Mountain Inc.	WV	Ruth Bachman	(304) 572-5601	rbachman@snowshoemtn.com
Soda Springs Ski Area	CA	John Booth	(530) 426-3901	castle@thegrid.net
Solitude Mountain Resort	UT	David L. DeSeelhorst	(801) 536-5706	dld2xs@aol.com
SolVista Golf and Ski Ranch	CO	Marise Cipriani	(970) 887-3384	mcipriani@solvista.com
Spirit Mtn. Recreational Area	MN	Rick Certano	(218) 628-2891	rcertano@spiritmt.com
Squaw Valley Ski Corporation	CA	Katja Dahl	(530) 583-6985	kdahl@squaw.com
Steamboat Ski & Resort Corp.	CO	Lyn Halliday	(970) 871-5454	lhalliday@steamboat.com
Stevens Pass	WA	Chester Marler	(206) 812-4510 x244	cmarler@stevenspass.com
Stowe Mountain Resort	VT	Robert Apple	(802) 253-3000	rapple@stowe.com
Stratton Mountain	VT	Graham Wood	(802) 297-2200	gwood@intrawest.com
Sugar Bowl Ski Resort	CA	Chris Parker	(530) 426-6705	cparker@sugarbowl.com
Sugarbush Resort	VT	Margo Mears	(802) 583-6300	mmears@sugarbush.com
Sugarbush Resort	VT	Bob Ackland	(802) 583-6301	backland@sugarbush.com
Sugarloaf USA	ME	Kimberly Truskowski	(207) 237-2000	ktruskowski@sugarloaf.com
Sunburst Ski Area	WI	James Engel	(262) 626-8404	jengel@skisunburst.com
Sundance	UT	Mary Morrison	(801) 225-4107	mmorrison@sundance-utah.com
Sunday River Ski Resort	ME	Mari Grover	(207) 824-3000	mgrover@sundayriver.com
Sunday River Ski Resort	ME	Marvin Collins	(207) 824-3000	mcollins@sundayriver.com

Endorsing Resort	State	Charter Contact Person	Contact Phone	Contact Email
Sunlight Mountain Resort	CO	Thomas Jankovsky	(970) 945-7491	tomj@sunlightmtn.com
Swain Ski & Snowboard Center	NY	Jon Gorton	(607) 545-6511	swain@infoblvd.net
Taos Ski Valley, Inc.	NM	Gordon Briner	(505) 776-2291 x1222	gbb@newmex.com
Telluride Ski & Golf Company	CO	Deanna Belch	(970) 728-6900	DBelch@tellurideskiresort.com
Tenney Mountain	NH	Hans J. Witte	(603) 536-4125 x306	
The Canyons	UT	F. Scott Pierpont	(435) 615-3303	spierpont@thecanyons.com
The Canyons	UT	Fran Amendola	(435) 615-2581	famendola@thecanyons.com
The Homestead	MI	Adriene Kokowicz	(231) 334-5000	akokowicz@thehomesteadresort.com
The Summit At Snoqualmie	WA	Trevor Kostanich	(425) 434-7669	tkostanich.sl@boothcreek.com
The Summit At Snoqualmie	WA	Dan Brewster	(425) 434-7669	dbrewster.sl@boothcreek.com
The Temple Mountain Ski Area	NH	Thomas Dill	(603) 924-6949	templemntskiarea@monad.net
Timberline Four Seasons Resort	WV	Tom Blanzly	(304) 866-4801	tomblanzly@usa.net
Timberline Lodge & Ski Area	OR	Jon Tullis	(503) 622-7979	jtullis@timberlinelodge.com
Timberline Lodge & Ski Area	OR	Eric Merritt	(503) 622-7979	emerritt@timberlinelodge.com
Tremblant Resort	PQ	Michel Aubin	(819) 681-2000	maubin@intrawest.com
Tremblant Resort	PQ	Christine Tremblay	(819) 681-2000	ctrembla@intrawest.com
Triple M-Mystical Mountain	NM	Chris Sparling	(505) 682-2205	rca@hauns.com
Vail Mountain	CO	Luke Cartin	(970) 476-5601	lcartin@vailresorts.com
Wachusett Mountain Ski Area	MA	Tim McGuire	(978) 464-2300	tim@wachusett.com
Waterville Valley Resort	NH	Rob Batchelder	(603) 236-8311	rbatchelder.wv@boothcreek.com
Welch Village Ski Area, Inc.	MN	Leigh Nelson	(651) 222-7079 x21	
Whistler & Blackcomb Mountains	BC	Allana Hamm	(604) 932-3141	ahamm@intrawest.com
Whistler & Blackcomb Mountains	BC	Arthur DeJong	(604) 938-7220	adejong@intrawest.com
White Pass Ski Area	WA	Kevin McCarthy	(509) 672-3101	kevin@skiwhitepass.com
Whiteface Mountain Ski Center	NY	Jay Rand	(518) 946-2223 x201	jrand@whiteface.com
Whitetail Mountain Resort	PA	Mike Schuman	(717) 328-9400 x3558	mschuman@skiwhitetail.com
Wildcat Mountain Ski Area	NH	Tom Caughey	(603) 466-3326 x211	tomc@skiwildcat.com
Willamette Pass Ski Corp.	OR	Tim Wiper	(541) 345-7669	cw3@willamettepass.com
Williams Ski Area	AZ	Laird Moody	(928) 635-9330	
Windham Mountain Resort	NY	Daniel Frank	(518) 734-4300	dfrank@skiwindham.com
Winter Park Resort	CO	Gary DeFrange	(970) 726-5514	gdefrange@skiwinterpark.com
Winter Park Resort	CO	Doug Laraby	(970) 726-5514	doug_laraby@skiwinterpark.com

Endorsing Resort	State	Charter Contact Person	Contact Phone	Contact Email
Wintergreen Resort	VA	Bob Ashton	(434) 325-2200	bobashton@wintergreenresort.com
Wintergreen Resort	VA	Frankee Love	(434) 325-2200	flove@wintergreenresort.com
Wolf Creek Ski Area	CO	Davey Pitcher	(970) 264-4311	wcadmin@pagosa.net

APPENDIX B
ENVIRONMENTAL CODE OF THE SLOPES



SUSTAINABLE SLOPES

The environmental charter for ski areas

WHAT YOU CAN DO 6 Steps To Sustainable Slopes

- 1. PACK IT IN — PACK IT OUT**
Leave nature how you found it.
- 2. RESPECT WILDLIFE**
by observing trail closures and ski area boundaries.
- 3. SHARE A RIDE**
so we can breathe fresh air and see the views.
- 4. BE CONSIDERATE**
of others' experiences and let nature's sounds prevail.
- 5. GET INVOLVED**
in your local resort or community's environmental programs.
- 6. SPREAD THE WORD**
to your liftmates, friends and family.

www.nsaa.org

Get online at www.nsaa.org for participating resorts and events that promote Sustainable Slopes.

APPENDIX C
CLIMATE CHANGE/"KEEP WINTER COOL" MATERIALS



CLIMATE CHANGE POLICY

Ski areas across the country adopted an Environmental Charter in 2000 to address the environmental concerns of our industry. The Charter, commonly referred to as “Sustainable Slopes,” identifies climate change as a potential threat to the environment and our business. Although we are not a major source of greenhouse gas (GHG) emissions, many resorts across the country already are taking steps to reduce their own, limited GHG emissions.

To collectively address the long-term challenges presented by climate change and continue our commitment to stewardship under the Sustainable Slopes program, we hereby adopt this climate change policy. Through this policy, we aim to raise awareness of the potential impacts of climate change on our weather-dependent business and the winter recreation experience; reduce our own greenhouse gas emissions; and encourage others to take action as well. We are committed to working toward solutions that will keep both the environment and economy healthy and preserve quality of life. To this end, we will take the following actions:

- Educate the public and resort guests about the dependence of winter sports on natural ecosystems and the potential impacts of climate change on the winter recreation experience; educate guests on how they can help reduce GHG emissions.
- Raise policy maker awareness of the dependence of winter sports on natural ecosystems and the potential impacts of climate change on the winter recreation experience.
- Advocate the national reduction of GHG emissions through legislative, regulatory or voluntary measures.
- Support sound, science-based solutions to climate change, including the use of renewable energy technologies.
- Partner with appropriate organizations and agencies to assess opportunities to reduce resort emissions and increase energy efficiency; invest in new, more efficient products, practices and technologies; and measure our emission reductions.



Keep Winter



Cool

SUSTAINABLE SLOPES
The environmental center for ski areas

Help Stop Climate Change

- **SHARE A RIDE** carpool, drive an efficient car or take shuttles to help reduce greenhouse gas (GHG) emissions.
- **BE AN EFFICIENT CONSUMER** buy energy-efficient household appliances and replace normal lightbulbs with compact fluorescent bulbs.
- **TURN OFF LIGHTS AND HEAT** when you leave a room at our resort or your home.
- **BUY CLEAN ENERGY FOR YOUR HOME** contact your local utility to see if "green electricity" is available to power your home through renewable energy sources like wind power.
- **CONTACT YOUR ELECTED REPRESENTATIVES** and ask them to do more to reduce CO₂ emissions and keep winter cool for skiing and snowboarding.
- **SPREAD THE WORD** to your liftmates, family and friends.

www.nsaa.org

Go online at www.nsaa.org for more information on Sustainable Slopes and climate change.