



# SUSTAINABLE **SLOPES**

The environmental charter for ski areas



## FOREWORD

**A**s a society, we find ourselves needing more than ever to escape every day pressures by heading for the outdoors. With that increasing demand comes impacts and a number of emerging environmental concerns that must be addressed proactively. The ski industry adopted this Environmental Charter in 2000 as a framework for sustainability in our operations. We are revising it today to renew our commitment to responsible stewardship and foster improved environmental performance industry-wide.

The premier alpine recreation sites we have today were made possible through the vision, pioneering spirit and hard work of our industry's founders. The value of those efforts holds today, as resorts are showcases of quality recreation opportunities for skiers, snowboarders, and countless summer guests as well. Although many forces may draw us to the slopes—the thrill and excitement of sliding down a mountain, the chance to reconnect with family and friends—we can never underestimate the value of the natural surroundings in renewing the human spirit. We respect the natural settings that we call home and hope that through our current efforts, we will preserve this same experience for future generations to enjoy.

—Michael Berry, National Ski Areas Association President

December 2005

## INTRODUCTION

**2005** marks the five-year anniversary for Sustainable Slopes and the first revision to the Environmental Charter. This revision ensures that our Principles are current and reflect the latest technology and best management practices to foster continuing improvement in environmental performance. It also acknowledges and incorporates emerging resources available from our Partnering Organizations as well as specific new 'options for getting there' from endorsing resorts.

NSAA is the facilitator for this industry-led initiative to raise the collective environmental performance of the ski industry. In this role, partner and resort feedback remains critical to the success of Sustainable Slopes. We always welcome your input.

### ENVIRONMENTAL VISION STATEMENT

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

### ENVIRONMENTAL MISSION STATEMENT

We are committed to improving environmental performance in all aspects of our operations and managing our areas to allow for their continued enjoyment by future generations.

## PARTNERING ORGANIZATIONS

**T**he Partnering Organizations listed below support the industry's development of the Principles and are committed to working with the industry on their particular areas of expertise and interest.

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Bonneville Environmental Foundation

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Colorado Department of Public Health & Environment

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Conservation Law Foundation

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U.S. Department of Energy

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U.S. Environmental Protection Agency

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USDA Forest Service

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Leave No Trace Inc.

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The Mountain Institute

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National Fish & Wildlife Foundation

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National Park Service Concession Program

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New York State Department of Environmental Conservation

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Teton County, Wyoming

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Trust For Public Land

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Wildlife Habitat Council

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## PARTICIPATING ORGANIZATIONS

**W**e thank the following organizations for providing input on the Principles and sharing their unique perspectives. Participation does not imply that these individuals or organizations support the Principles.

The Alford Design Group, Inc.	ORCA – Trade Association of the Outdoor Industry
Bonneville Environmental Foundation	Pacific Northwest Ski Areas Association
The Brendle Group	Park City Municipal Corporation
Cirrus Ecological Solutions	Pioneer Environmental Services, Inc.
Citizens Allied for Responsible Growth	Outward Bound USA
Colorado Department of Public Health & Environment	Salt Lake Organizing Committee for the Olympic Winter Games of 2002
Colorado Mountain College – Ski Area Operations	S.E. Group
Colorado Ski Country USA	Sierra Club – Utah
Conservation Law Foundation	Sierra Club – West Virginia
Economics Research Associates	Ski Areas of New York
Environmental Defense	SKI Magazine
Green Mountain Club	Ski Maine Association
The Grosword Ski Company	The Citizens Committee to Save Our Canyons
Innovation Works	Surfrider Foundation/Snowrider
Interior West Center	Teton County, Wyoming
Jack Johnson Company	Town of Mammoth Lakes
Kimley-Horn & Associates, Inc.	Trout Unlimited – Colorado Chapter
Leave No Trace Inc.	Trout Unlimited – Oregon Chapter
Lyndon State College	Trout Unlimited – Utah Chapter
The Mountain Institute	Trust for Public Land
National Environmental Trust	University of Colorado – Center for Sustainable Tourism
National Fish and Wildlife Foundation	U.S. Department of Energy
National Park Service	U.S. Environmental Protection Agency
Natural Resources Defense Council	U.S. Forest Service
The Nature Conservancy	Vermont Natural Resources Council
Normandeau Associates	Vermont Ski Areas Association
North Fork Preservation Alliance/Sundance Resort	
Northwest Colorado Council of Governments Q/Q Committee	

# ENVIRONMENTAL CHARTER FOR SKI AREAS

## Preamble

### OUR VALUES

- Like their guests, ski area operators and employees enjoy the outdoors and appreciate the alpine environment as their home. A strong environmental ethic underlies our operations, makes us stewards of the natural surroundings, and is the basis for our commitment to constant improvement in environmental conditions.
- The recreation opportunities that ski areas provide contribute to improving the quality of life for millions of people each year, and the natural surroundings greatly enhance those experiences. In providing quality, outdoor recreation opportunities, we strive to balance human needs with ecosystem protection.
- Ski areas are well suited to accommodate large numbers of visitors because of their infrastructure and expertise in managing the impacts associated with those visits. By providing facilities for concentrated outdoor recreation in limited geographic areas, ski areas help limit dispersed impacts in more remote, wild areas.
- Ski areas operate within, and are dependent on, natural systems including ecological, climatic and hydrological systems. These dynamic systems can affect our operations, just as we affect them. We are committed to working with stakeholders to help understand and sustain the diversity of functions and processes these systems support.
- In addition, ski areas operate within rural and wild landscapes that are valued for their scenic, cultural, and economic characteristics. We are committed to working with stakeholders to understand and help maintain those characteristics that make these landscapes unique.
- We are committed to actively addressing the long-term challenges presented by climate change. 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 in their operations. We adopted a climate change policy in 2002 and launched the “Keep Winter Cool” campaign in 2003 with our partner, the Natural Resources Defense Council (NRDC). Please see the attached Climate Change Policy for more information on our commitment and effort to fight global warming.

- Along with environmental concerns, ski area operators are deeply concerned with the safety of our guests. We take safety into account in the design and operation of ski areas and in some situations need to place the highest priority on safety.

### BACKGROUND ON THE PRINCIPLES

- The ski industry is composed of a diverse group of companies, varying in size, complexity, accessibility to resources, and geographic location. These Principles are meant to be a useful tool for all ski areas, from local ski hills to four season destination resorts, whether on public or private land. Our vision is to have all ski areas endorse these Principles and make a commitment to implementing them. Some smaller areas that endorse these Principles may be limited in their ability to make progress in all of the areas addressed.
- The Principles are voluntary and are meant to provide overall guidance for ski areas in achieving good environmental stewardship, not a list of requirements that must be applied in every situation. Recognition must be made that each ski area operates in a unique local environment or ecosystem and that development and operations may reflect these regional and operational differences. Each ski area must make its own decisions on achieving sustainable use of natural resources. While ski areas have the same goals, they can choose different options for getting there.
- The Principles are meant to go “beyond compliance” in those areas where improvements make environmental sense and are economically feasible. Ski areas should already be meeting all applicable federal, state, and local environmental laws and regulations. Through these Principles, we are striving to improve overall environmental performance, whether it be in the form of achieving efficiencies, sustaining resources or enhancing the public’s awareness of our special environment.
- The Principles encourage ski areas to adopt the “avoid, minimize, mitigate” approach to natural resource management. Avoidance should be the first consideration when outstanding natural resources or settings are at stake.

1 These Principles are voluntary and are not intended to create new legal liabilities, expand existing rights or obligations, waive legal defenses, or otherwise affect the legal position of any endorsing company, and are not intended to be used against an endorser in any legal proceeding for any purpose. The “Options for Getting There” listed under each Principle are meant to serve as examples—not an exhaustive list. See the Green Room environmental database ([www.nsaa.org](http://www.nsaa.org)) for more examples of the Principles in action.



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- The Principles recognize that ski areas have some unavoidable impacts. At the same time, ski areas strive to maintain the integrity of the environments in which they operate by contributing to the sense of place in mountain communities and being responsible stewards of natural resources.
  - The Principles are aimed at improving environmental performance at existing ski areas, and can serve as helpful guidance for planning new developments. The Principles cannot fully address when and where new ski area development should occur, as that issue should be addressed on the merits of each individual project and in consideration of the specific characteristics of a particular location. What might be beneficial development in one location could be inappropriate elsewhere.
  - Ski areas are concerned about the larger issues of growth and sustainable development in mountain communities. Key issues of community planning, such as protecting viewsheds, quality of life, and open space, are inherently

linked to our business and the quality of experience of our guests. While the Principles cannot address fully some of the larger issues of growth in mountain communities, the ski industry is committed to working with stakeholders to make progress on these issues of concern to mountain communities. Many of the concepts in these Principles can provide leadership in confronting those issues.

- The Principles were developed through a collaborative dialogue process where input and awareness, not necessarily consensus on every issue or by every group, was the goal. We revised the Principles in 2005 with input from Partnering Organizations, NSAA's Environmental Committee and others. The Principles represent the major areas of agreement for ski areas and Partnering Organizations.
- These Principles are a collective step in demonstrating our commitment to environmental responsibility. We hope that this initiative will help us better engage our stakeholders in programs and projects to improve the environment.



# ENVIRONMENTAL PRINCIPLES

## VOLUNTARY ENVIRONMENTAL PRINCIPLES<sup>1</sup> FOR SKI AREA PLANNING, OPERATIONS AND OUTREACH

### PLANNING, DESIGN AND CONSTRUCTION

*In planning and designing trails, base areas and associated facilities, ski areas should explore ways of integrating our operations into natural systems and addressing short and long-term environmental impacts to natural resources. There may also be opportunities to address past disturbances from historical uses and mitigate unavoidable impacts from future disturbances.*

#### Principles

- ◆ Engage local communities, environmental groups, government agencies and other stakeholders in up front and continuing dialogue on development plans and their implementation
- ◆ Assess environmental concerns and potential restoration opportunities at local and regional levels
- ◆ Plan, site and design trails, on-mountain facilities and base area developments in a manner that respects the natural setting and avoids, to the extent practical, outstanding natural resources
- ◆ Emphasize nature in the built environment of the ski area
- ◆ Make water efficiency, energy efficiency and clean energy use and materials efficiency priorities in the design of new facilities and upgrades to existing facilities
- ◆ Use high-density development or clustering to reduce sprawl, provide a sense of place, reduce the need for cars and enhance the pedestrian environment
- ◆ Meet or exceed requirements to minimize impacts associated with ski area construction

#### Options for getting there

- ✓ Engage stakeholders collaboratively on the siting of improvements and the analysis of alternatives
- ✓ Complement local architectural styles, scale, and existing infrastructure to enhance the visual environment and create a more authentic guest experience
- ✓ Respect outstanding natural resources and consider the physical “carrying capacity” of the local ecology in planning new projects
- ✓ Use simulation or computer modeling in planning to assist with analyzing the effects of proposals on key natural

- resources and viewsheds, such as visual modeling or GIS
- ✓ Design trails with less tree removal and vegetation disturbance, recognizing safety concerns
- ✓ Incorporate green building principles, such as using energy, water and material efficiency techniques and sustainable building practices
- ✓ Use long-life, low maintenance building materials and locally-sourced materials as available
- ✓ Include parks, open space and native landscaping in base area and building developments
- ✓ Seek opportunities for environmental enhancement and restoration
- ✓ Maximize alternate transportation modes in and around the base area
- ✓ Minimize road building where practical
- ✓ Develop and select best management practices (BMPs) for construction sites with stakeholder input
- ✓ Apply sound on-mountain construction practices, such as over-snow transport techniques, stormwater control, or phasing of activities to minimize disturbances to natural habitats
- ✓ Screen contractors, designers and consultants for environmental credentials
- ✓ Develop Sustainable Design Guidelines
- ✓ Seek LEED® (Leadership in Energy & Environmental Design) certification through the U.S. Green Building Council

### OPERATIONS

*In the day-to-day operation of ski areas and associated facilities, there are many opportunities for stewardship, conserving natural resources, and increasing efficiencies. Taking advantage of these opportunities will not only benefit the environment, but can also result in long-term cost savings.*

#### WATER RESOURCES

*Water is an important resource for ski areas as well as the surrounding natural environments and communities, and should be used as efficiently and effectively as possible.*



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## WATER USE FOR SNOWMAKING

- ◆ Optimize efficiency and effectiveness of water use in snowmaking operations
- ◆ Conduct snowmaking operations in a manner that protects minimum stream flows and is sensitive to fish and wildlife resources (see Fish & Wildlife Principles on page 11).

### Options for getting there

- ✓ Use appropriate, modern technology and equipment to optimize efficiency
- ✓ Inspect and monitor systems to reduce water loss
- ✓ Use reservoirs or ponds to store water for use during low flow times of the year and to maximize efficiency in the snowmaking process
- ✓ Work with local water users and suppliers to promote in-basin storage projects to offset low flow times of the year
- ✓ Install water storage facilities to recapture snowmelt runoff for reuse
- ✓ Inventory water resources and monitoring seasonal variations in stream flows
- ✓ Support and participate in research on the ecological impacts of snowmaking
- ✓ Re-use wastewater for snowmaking as appropriate
- ✓ Use computerized snowmaking equipment for improved effectiveness with respect to air compression and better efficiency with respect to water use
- ✓ Use dirt or other alternative methods for constructing terrain features to minimize water use

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## WATER USE IN FACILITIES

### Principle

- ◆ Conserve water and optimize efficiency of water use in ski area facilities

### Options for getting there

- ✓ Conduct water use audits and investigate methods and alternative technologies to reduce water consumption
- ✓ Install water efficient equipment in facilities such as low-flow faucets and toilets
- ✓ Install no-flow fixtures such as waterless urinals and composting toilets
- ✓ Participate in existing water conservation and linen and towel re-use programs for lodging such as EPA's WAVE® and Project Planet® programs
- ✓ Educate guests and employees about the benefits of water conservation

- ✓ Purchase and use of water efficient appliances such as dishwashers and clothes washers
- ✓ Avoid use of garbage disposals through composting
- ✓ Use ozone laundry systems

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## WATER USE FOR LANDSCAPING AND SUMMER ACTIVITIES

### Principle

- ◆ Maximize efficiency in water use for landscaping and summer activities

### Options for getting there

- ✓ Incorporate water efficiency BMPs in planning and design phases
- ✓ Plan summer uses in conjunction with winter uses to maximize the efficiency of necessary infrastructure
- ✓ Use drought-tolerant plants in landscaped areas
- ✓ Use native plant species where appropriate
- ✓ Use water efficient irrigation and recycling/reuse technologies
- ✓ Use soil amendments to increase water retention and reduce watering requirements
- ✓ Inspect and monitor systems to reduce water loss
- ✓ Water at appropriate times to minimize evaporation
- ✓ Educate employees about efficient water use and conservation
- ✓ Seek Audubon Cooperative Sanctuary System (ACSS) certification from Audubon International
- ✓ Use computerized irrigation equipment

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## WATER QUALITY MANAGEMENT

### Principle

- ◆ Strive to exceed water quality-related requirements governing ski area operations

### Options for getting there

- ✓ Participate in watershed planning, monitoring and restoration efforts
- ✓ Use appropriate erosion and sediment control practices such as water bars, revegetation and replanting
- ✓ Maintain stream vegetative buffers to improve natural filtration and protect habitat
- ✓ Apply state-of-the-art or other appropriate stormwater management techniques
- ✓ Employ stormwater mitigation to minimize and mitigate runoff and effluents
- ✓ Utilize oil/water separators in maintenance areas and garages

- ✓ Use environmentally sensitive deicing materials
- ✓ Encourage guests to follow Leave No Trace™ or similar principles of outdoor ethics

## WASTEWATER MANAGEMENT

### Principle

- ◆ Manage wastewater in a responsible manner

### Options for getting there

- ✓ Plan for present and future wastewater needs with adjacent communities
- ✓ Use appropriate wastewater treatment technology or alternative BMPs to protect water quality
- ✓ Connect septic systems to municipal wastewater systems where appropriate
- ✓ Explore the use of decentralized or on-site treatment technologies where appropriate
- ✓ Reclaim wastewater for treatment
- ✓ Re-use treated wastewater or greywater where allowable for non-potable uses and appropriate applications
- ✓ Monitor wastewater quality
- ✓ Use Living Machines

## ENERGY CONSERVATION AND CLEAN ENERGY

*Ski areas can be leaders in implementing energy efficiency techniques and increasing the use of renewable energy within their operations to conserve natural resources, reduce pollution and greenhouse gases and reduce the potential impacts of climate change.*

## ENERGY USE FOR FACILITIES

### Principles

- ◆ Reduce overall energy use in ski area facilities
- ◆ Use cleaner or renewable energy in ski area facilities
- ◆ Strive to exceed energy standards in new or retrofit projects

### Options for getting there

- ✓ Audit current usage levels and target areas for improvement
- ✓ Establish seasonal baseline usage amounts and indicators (e.g., kWh/ft<sup>2</sup>)
- ✓ Develop an energy management plan that addresses short and long term energy goals, staffing, and schedules for new and retrofit projects

- ✓ Orient buildings and their windows to maximize natural light penetration, reduce the need for artificial lighting and facilitate solar heating and photovoltaic electricity generation
- ✓ Use solar heating or geothermal heat pumps for radiant heating
- ✓ Utilize building automation systems
- ✓ Use lighting controls systems, including timer controls and occupancy sensors
- ✓ Perform lighting retrofits to provide more energy efficient lamps and retrofit exit signs to use low watt bulbs
- ✓ Periodically recommission building heating, ventilating and air-conditioning systems, (e.g., calibrate thermostats and fine tune heating systems)
- ✓ Use peak demand mitigation, distributed, on-site power generation and storage, and real time monitoring of electricity use
- ✓ Work with utilities to manage demand and take advantage of cost sharing plans to implement energy savings
- ✓ Enter into load sharing agreements with utilities for peak demand times
- ✓ Partner with the U.S. Department of Energy and state energy and transportation departments to assist with energy savings and transit programs
- ✓ Participate in energy efficiency programs such as EPA/DOE's Energy Star™
- ✓ Educate employees, guests and other stakeholders about energy efficient practices and conservation
- ✓ Install high efficiency windows, ensure that all windows and doorways are properly sealed, and use insulation to prevent heating and cooling loss
- ✓ Minimize energy used to heat water by using low-flow showerheads, efficient laundry equipment, and linen and towel re-use programs
- ✓ Invest in cleaner or more efficient technologies for power generation, including wind, micro-hydro, geothermal, and solar power generation, fuel cells and natural gas turbines and generation from biomass residues and wastes
- ✓ Purchase renewable 'green power,' such as wind-generated power, from energy providers

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## ENERGY USE FOR SNOWMAKING

### Principles

- ◆ Reduce energy use in snowmaking operations
- ◆ Use cleaner energy in snowmaking operations

### Options for getting there

- ✓ Use modern, high efficiency snow guns and air compressors for snowmaking operations
- ✓ Upgrade diesel motors or convert them to alternative clean energy generation sources
- ✓ Use real time controls, sensors and monitoring systems to optimize the system and reduce electrical demand
- ✓ Use on-mountain reservoirs and ponds to gravity feed snowmaking systems
- ✓ Use distributed, on-site power generation to avoid or reduce peak demands from the utility grid
- ✓ Purchase renewable 'green power' from energy providers
- ✓ Utilize variable speed drives on pumping systems

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## ENERGY USE FOR LIFTS

### Principles

- ◆ Reduce energy use in lift operations
- ◆ Use cleaner energy in lift operations

### Options for getting there

- ✓ Use modern, high efficiency motors
- ✓ Upgrade diesel motors or use alternative clean energy sources such as fuel cells, microturbines or biodiesel fuels
- ✓ Use renewable energy sources
- ✓ Purchase renewable 'green power' from energy providers

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## ENERGY USE FOR VEHICLE FLEETS

### Principles

- ◆ Reduce fuel use in ski area vehicles
- ◆ Use cleaner fuel

### Options for getting there

- ✓ Provide shuttles or transportation for guests and employees
- ✓ Adopt a company-wide vehicle idling time limit policy
- ✓ Use energy efficient vehicles
- ✓ Use alternative fuel such as biodiesels or hybrid electric engines in ski area fleet vehicles including shuttles, trucks, snowcats and loaders
- ✓ Conduct regular maintenance on fleet vehicles
- ✓ Convert ski area snowmobile fleet to 4-stroke engines

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## WASTE MANAGEMENT

*The Principles below incorporate the "REDUCE, REUSE, RECYCLE" philosophy of waste management to help ensure materials are being used efficiently and disposed of only after consideration is given to reusing or recycling them. Reducing waste helps protect natural resources, reduce pollution, greenhouse gases and energy use by decreasing the need to produce new materials, and minimizes disposal costs.*

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## WASTE REDUCTION

### Principle

- ◆ Reduce waste produced at all ski area facilities

### Options for getting there

- ✓ Conduct a waste stream audit to establish a baseline, identify material types and amounts of each, and track progress toward reduction
- ✓ Purchase recycled products
- ✓ Purchase products in bulk to minimize packaging materials
- ✓ Adopt a company-wide green purchasing policy
- ✓ Request vendors to provide "take-back" services for used products
- ✓ Deconstruct buildings and facilities
- ✓ Educate guests and employees about reducing waste amounts generated at the area and following Leave No Trace™ or similar principles such as "pack it in, pack it out"
- ✓ Develop a waste reduction plan

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## PRODUCT REUSE

### Principle

- ◆ Reuse products and materials

### Options for getting there

- ✓ Use washable or compostable tableware/silverware in cafeterias and lodges
- ✓ Encourage guests to reuse trail maps
- ✓ Compost food wastes, grass clippings, and woody debris for use in landscaping and revegetation or erosion control areas
- ✓ Explore opportunities for reusing products (e.g. building materials from deconstruction, lift parts and equipment, and office supplies)
- ✓ Join EPA's WasteWise® program



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## RECYCLING

### Principle

- ◆ Increase the amount of materials recycled at ski areas

### Options for getting there

- ✓ Make recycling easy and convenient for guests by offering containers and displaying signage in facilities and lodges
- ✓ Recycle mixed paper, cardboard, aluminum, glass, plastic, scrap metal and food service waste
- ✓ Deconstruct and recycle building materials as an alternative to landfilling
- ✓ Partner with local government and other businesses on recycling in remote communities where recycling programs are not readily available
- ✓ Encourage vendors to offer recycled material products for purchase
- ✓ Educate guests and train employees on recycling practices
- ✓ Adopt a green purchasing policy that sets purchasing specifications to favor recycled content
- ✓ Specify a portion of new construction materials to require recycled content
- ✓ Partner with community recycling groups to market available recyclables

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## POTENTIALLY HAZARDOUS WASTES

### Principle

- ◆ Minimize the use of potentially hazardous materials, the generation of potentially hazardous wastes and the risk of them entering the environment

### Options for getting there

- ✓ Safely store, segregate and properly dispose of potentially hazardous materials such as solvents, cleaning materials, pesticides and paints
- ✓ Collect and recycle waste products such as used motor oil, household appliance batteries, tires and unused solvents
- ✓ Reshelve and reuse partially used containers of paint, solvents, and other materials and properly dispose of empty containers
- ✓ Purchase non-hazardous products for use when effective
- ✓ Properly manage fuel storage and handling
- ✓ Maintain or upgrade equipment to prevent leaks
- ✓ Initiate programs to reduce the occurrence of accidental spills or releases

- ✓ Install sedimentation traps in parking lots
- ✓ Educate employees on the requirements for properly handling and cleaning up hazardous wastes
- ✓ Reclaim spent solvents
- ✓ Coordinate with local area emergency planning councils for response in case of a spill or release

## FISH AND WILDLIFE

*Ski areas operate within larger ecosystems and strive to be responsible stewards of fish and wildlife habitats. They need the cooperation of other landowners, managers, local communities and other stakeholders for an effective ecosystem management approach. There are measures ski areas can take to better understand, minimize, and mitigate impacts to fish and wildlife, and in some cases, enhance habitat, particularly for species of concern. The benefits of these measures include promoting biodiversity and the natural systems that attract guests to the mountain landscape.*

### Principle

- ◆ Minimize impacts to fish and wildlife and their habitat and maintain or improve habitat where possible

### Options for getting there

- ✓ Support and participate in research of fish and wildlife populations and their interactions with ski areas
- ✓ Inventory and monitor fish and wildlife and their habitat, particularly protected species
- ✓ Use snowmaking storage ponds or reservoirs to store water for use during times of low stream flows to help protect aquatic habitat
- ✓ Conduct activities and construction with consideration of seasonal wildlife patterns and behavior
- ✓ Site and design trails and facilities to include gladed skiing areas and link ungladed areas to maintain blocks of forested corridors and inter-trail islands to reduce fragmentation
- ✓ Limit access to, or set aside, certain wildlife habitat areas
- ✓ Use wildlife-proof dumpsters or trash containers
- ✓ Create or restore habitat where appropriate, either on- or off-site
- ✓ Use land conservation techniques, such as land exchanges and conservation easements, as vehicles for consolidating or protecting important wildlife habitat
- ✓ Participate in ecosystem-wide approaches to wildlife management

- ✓ Provide wildlife education programs for employees, guests, and the local community such as the Leave No Trace™ Principles of respecting wildlife
- ✓ Achieve Audubon Cooperative Sanctuary System (ACSS) certification from Audubon International
- ✓ Participate in Wildlife Habitat Council's Habitat Certification/International Accreditation Program

## FOREST AND VEGETATIVE MANAGEMENT

*Ski areas recognize the importance of responsible stewardship in managing the forests and vegetation that support ecosystems and allow for public recreation opportunities. Sound forest and vegetative management can benefit fish and wildlife habitat, protect water quality and viewsheds, and reduce erosion, pollution, and greenhouse gases.*

### Principle

- ◆ Manage effects on forests and vegetation to allow for healthy forests and other mountain environments

### Options for getting there

- ✓ Inventory and monitor forest and vegetative resources
- ✓ Adopt vegetative management plans
- ✓ Minimize the removal of trees through the careful siting and design of trails
- ✓ Use over-snow skidding to remove logs for new runs during times of sufficient snow cover
- ✓ Trim branches or top trees instead of removal where possible
- ✓ Use aerial logging where economically feasible
- ✓ Employ practices to control invasive or noxious weeds
- ✓ Remove dead and diseased trees, with consideration to habitat value, to promote healthy forests and public safety
- ✓ Revegetate roads that are no longer used
- ✓ Revegetate disturbed areas with native plant species and grasses, recognizing that faster growing, non-native species may be needed to address erosion
- ✓ Revegetate disturbed areas as quickly as possible following disturbance
- ✓ Limit disturbance to vegetation during summer activities
- ✓ Assess the role of forest stands in reducing greenhouse gases
- ✓ Provide signage informing guests of sensitive vegetation areas
- ✓ Use traffic control measures, such as rope fences, on areas

with limited snow coverage to protect sensitive vegetation and alpine tundra

- ✓ Reduce or eliminate snowcat and snowmobile access to sensitive areas with limited snow coverage
- ✓ Plant at appropriate times to minimize water use while optimizing growth
- ✓ Employ wild fire mitigation programs and involve local residents
- ✓ Use forest thinnings from fire mitigation and ecological restoration projects to build and furnish facilities

## WETLANDS & RIPARIAN AREAS

*Ski areas recognize that wetlands and riparian areas are crucial components of the alpine ecosystems in which they operate.*

### Principle

- ◆ Avoid or minimize impacts to wetlands and riparian areas, and offset unavoidable impacts with restoration, creation or other mitigation techniques

### Options for getting there

- ✓ Inventory and monitor wetland and riparian areas
- ✓ Limit snowmaking and grooming equipment access to wetlands and riparian areas if snow cover is inadequate to protect them
- ✓ Limit access to wetlands, riparian areas and vernal pools if snow cover is inadequate to protect them
- ✓ Engage in restoration, remediation and protection projects
- ✓ Establish buffers and setbacks from wetland and riparian areas in summer
- ✓ Manage snow removal and storage to avoid impacting wetlands and riparian areas as feasible
- ✓ Support or participate in research on functions of wetland habitats and riparian areas
- ✓ Use trench boxes to minimize impacts to forested wetlands from construction of utility lines

## AIR QUALITY

*Ski area guests and operators value fresh air as an integral part of the skiing experience. Although there are many sources in and around the community that, combined, may compromise air quality, ski areas can do their share to help minimize impacts. Some of the many benefits of cleaner air and reduced air pollution include enhanced visibility and lessening human influences on climate change, which is of particular concern to ski areas.*

### Principles

- ◆ Minimize negative impacts to air quality
- ◆ Reduce operations-related air pollution and greenhouse gas emissions as feasible

### Options for getting there

- ✓ Reduce air pollutants and greenhouse gas emissions from buildings, facilities and vehicles through clean energy and transportation-related measures identified in these Principles
- ✓ Use dust abatement methods for dirt roads during summer operations and construction
- ✓ Revegetate as appropriate to control dust
- ✓ Reduce the sanding and cindering of ski area roads by using alternative deicing materials
- ✓ Vacuum sweep paved parking lots and roads periodically
- ✓ Reduce burning of slash through chipping or other alternative uses
- ✓ Limit wood burning fireplaces or using cleaner burning woodstoves and fireplaces and install gas fireplaces
- ✓ Work with local and regional communities to reduce air quality impacts
- ✓ Purchase or support green energy

## VISUAL QUALITY

*Scenic values are critical to surrounding communities and guest experiences. Although ski area development is a part of the visual landscape in many mountain areas, it can be designed and maintained in a manner that complements the natural setting and makes the natural setting more accessible to guests. Where opportunities for collaboration exist, ski areas should work with appropriate partners in the protection of open lands that define the visual landscape in which their guests recreate.*

### Principles

- ◆ Create built environments that complement the natural surroundings
- ◆ Explore partnerships with land conservation organizations and other stakeholders that can help protect open lands and local viewsheds

### Options for getting there

- ✓ Plan with landscape scenic values in mind
- ✓ Minimize ridgeline development where feasible
- ✓ Promote protection of open space elsewhere in the community to enhance regional viewsheds
- ✓ Apply local architectural styles and highlight natural features to minimize disruption of the visual environment and create a more authentic experience
- ✓ Use visual simulation modeling in siting, planning and design to assist in demonstrating visual effects of projects
- ✓ Design lifts and buildings to blend into the natural backdrop or complement the natural surroundings
- ✓ Construct trails to appear as natural openings
- ✓ Use non-reflective building products and earth tone colors on structures
- ✓ Plant trees or other vegetation to improve visual quality
- ✓ Incorporate low level lighting or directional lighting to reduce impacts of lights on the night sky while recognizing safety, security, and maintenance needs
- ✓ Keep parking areas free of debris and garbage
- ✓ Place existing and new utility lines underground to reduce visual impacts



## TRANSPORTATION

*Travel to and within ski areas has unavoidable impacts. Through transportation initiatives, ski areas can do their part to help ease congestion and impacts to air quality and improve the ski area experience. (See related topic of ski area vehicle fleets under Energy Principles.)*

### Principle

- ◆ Ease congestion and transportation concerns

### Options for getting there

- ✓ Provide employee transportation benefits, including shuttles, bus passes or discounts, van pools, and ride-share incentives
- ✓ Provide and promote ski area guest transportation through shuttles or buses
- ✓ Offer and promote carpooling or HOV (high occupancy vehicle) incentives for guests such as discounts or preferred parking in proximity to lodges
- ✓ Offer and promote non-peak travel incentives for guests such as Sunday night stay discounts
- ✓ Increase density in base area development when appropriate to reduce the need for vehicle use
- ✓ Support and participate in transit initiatives in the community and region
- ✓ Work with travel agents to market and promote “car free” vacation packages

## EDUCATION AND OUTREACH

*Because of their setting in an outdoor, natural environment and the direct connection between that natural environment and the guest experience, ski areas have an excellent opportunity to take a leadership role in environmental education and in enhancing the environmental awareness of their guests, surrounding communities, and employees.*

### Principles

- ◆ Use the natural surroundings as a forum for promoting environmental education and increasing environmental sensitivity and awareness
- ◆ Develop outreach that enhances the relationship between the ski area and stakeholders to ultimately benefit the environment

### Options for getting there

- ✓ Train employees and inform guests of all ages about the surrounding environment
- ✓ Promote the Environmental Code of the Slopes® and the Keep Winter Cool campaign ([www.keepwintercool.org](http://www.keepwintercool.org))
- ✓ Educate stakeholders about the Sustainable Slopes program
- ✓ Provide leadership and lobby on environmental concerns with particular importance to the alpine or mountain environment, such as climate change
- ✓ Dedicate personnel to environmental concerns and incorporate environmental performance measures and expectations into departmental goals
- ✓ Dedicate a portion of the ski area’s website to environmental excellence and Sustainable Slopes and contribute entries to the Green Room on-line environmental database
- ✓ Offer environmental education and awareness programs that provide on-mountain instruction and offer classroom information for use in schools
- ✓ Partner with local school systems, businesses and the public on initiatives and opportunities for protecting and enhancing the environment
- ✓ Display interpretive signs on forest resources, vegetative management and fish and wildlife
- ✓ Publicly address environmental considerations in stated company values, policies or mission statements
- ✓ Issue an annual environmental report or release annual environmental data
- ✓ Offer guests the opportunity to reduce their own environmental impacts associated with travel to and from the ski area by purchasing Cool Tags,™ mini Green Tags,™ or similar products
- ✓ Provide guests the opportunity to purchase green energy for their homes by partnering with local utilities
- ✓ Create funding mechanisms for environmental outreach projects, both in-house as well as in the community
- ✓ Encourage employees to participate in community environmental initiatives
- ✓ Ask guests their opinions about ski area environmental programs and initiatives and use their feedback to improve programs and guests’ experiences.

## CLIMATE CHANGE POLICY

To collectively address the long-term challenges presented by climate change, resorts adopted a climate change policy in 2002. Although we are not a major source of warming pollutants, we are already taking steps to reduce our greenhouse gas (GHG) emissions in our operations. We also launched the Keep Winter Cool Program in 2003 along with our partner, the Natural Resources Defense Council (NRDC).

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.

## ENVIRONMENTAL CODE OF THE SLOPES®

### \* Follow the Leave No Trace™ Principles of outdoor ethics when visiting ski areas

- **Dispose of waste properly:** Recycle your glass, plastics, aluminum and paper at resorts. Reuse trail maps on your next visit or recycle them rather than throwing them away. Never throw trash, cigarette butts or other items from the lifts.
  - **Respect wildlife:** Observe trail closures, seasonal closures, and ski area boundaries. These closures are in place not only for your safety, but the well-being of plants and animals located in sensitive areas. In summer, stick to designated trails when hiking and biking to avoid disturbances to vegetation and wildlife.
  - **Be considerate of other guests:** Respect other guests, protect the quality of their experience, and let nature's sounds prevail.
- \* Carpool with friends and family or use transit to reduce warming pollutants as well as traffic and congestion.
  - \* Turn off the lights when leaving your room and reuse bath towels and linens to help conserve energy and water.
  - \* Use washable tableware and silverware in cafeterias and lodges instead of paper or plastics to help us reduce waste.
  - \* Take advantage of environmental or alpine education programs offered at ski areas to learn more about the surrounding environment and how to help protect it.
  - \* If you have kids, get them involved in environmental and alpine education programs at a young age.
  - \* Support "clean up days" or other environmental programs at your local ski area.
  - \* Provide feedback and let ski areas know how they can improve their environmental performance.

Visit [www.nsaa.org](http://www.nsaa.org) for more information on Sustainable Slopes.



# KEEP WINTER COOL™

## WHAT SKIERS AND SNOWBOARDERS CAN DO TO HELP STOP CLIMATE CHANGE

### \* **MAKE A CLEAN GETAWAY**

When buying your next car, pick the least-polluting, most efficient vehicle that meets your needs. Maybe it's an innovative hybrid that combines a gasoline engine with electric motors (and never needs to be plugged in). Be on the lookout for new hybrid SUVs on the market.

### \* **DON'T BE A DRAG**

Take your ski rack off your car and replace your snow tires with your regular tires at the end of the season. Both could save you 6 percent at the pump. A tune-up could boost your miles per gallon anywhere from 4 to 40 percent. A new air filter could get you 10 percent more miles per gallon.

### \* **SHARE A RIDE**

When heading for the hills, carpool or take transit or shuttles to help reduce greenhouse gas (GHG) emissions associated with your travel.

### \* **BE AN EFFICIENT CONSUMER**

Believe it or not, picking the right appliances, air conditioners and computers can make a big difference in reducing pollution from power plants. So look for the most energy-efficient models. You might have to spend a bit more up front, but you'll save on electricity bills.

### \* **HAVE A BRIGHTER IDEA**

Those curly compact fluorescent light bulbs will lower your energy bills by about \$15 a year (more than \$60 over its lifetime). It will also keep half a ton of carbon dioxide out of the air. Ski resorts are using them by the hundreds! While compact fluorescents are more expensive than regular bulbs they last up to 10 times as long, too.

### \* **CONSIDER CLEANER ENERGY**

If you live in a state that lets you choose your power company, pick one that generates at least half its power from wind, solar energy or other clean sources. If you don't have the option to select a supplier yet, you might still be able to support renewable energy through an option on your electricity. Another way to help spur the renewable energy market and cut global warming pollution is to buy "wind certificates," "Green Tags"™ or "Cool Tags."™ They represent clean power you can add to the nation's energy grid in place of electricity from fossil fuels.

### \* **STAND UP AND BE COUNTED**

Contact your elected representatives and ask them to do more to reduce CO<sub>2</sub> emissions and keep winter cool for skiing and snowboarding.

### \* **SPREAD THE WORD**

Tell your liftmates, family and friends about the Keep Winter Cool campaign.

Keep Winter Cool is a partnership between NSAA and NRDC.  
Visit [www.keepwintercool.org](http://www.keepwintercool.org) for more information.

## ENDORISING RESORTS

49 Degrees North Mountain Resort (WA)	Brighton Ski Resort (UT)	Grand Targhee Resort (WY)
Alpine Meadows Ski Resort (CA)	Bristol Mountain Winter Resort (NY)	Greek Peak Mountain Resort (NY)
Alta Ski Area (UT)	Brodie Mountain Resort (MA)	Gunstock Area (NH)
Alyeska Resort (AK)	Bromley Mountain Resort (VT)	Heavenly Mountain Resort (NV)
Angel Fire Resort (NM)	Brundage Mountain Resort (ID)	Hidden Valley Ski Area (MO)
Arapahoe Basin (CO)	Bryce Resort (VA)	Holiday Valley Resort (NY)
Arizona Snowbowl (AZ)	Buttermilk (CO)	Hoodoo Ski Area (OR)
Ascutney Mountain Resort (VT)	Camelback Ski Area (PA)	Hunter Mountain (NY)
Aspen Highlands (CO)	Cannon Mountain (NH)	Hyland Ski and Snowboard Area (MN)
Aspen Mountain (CO)	Cascade Mountain Ski & Snowboard Area (WI)	Jackson Hole Mountain Resort (WY)
Attitash (NH)	Cataloochee Ski Area (NC)	Jiminy Peak Mountain Resort (MA)
Balsams Wilderness (NH)	Copper (CO)	Keystone Resort (CO)
Bear Creek Mountain Resort (PA)	Cranmore Mountain Resort (NH)	Killington Resort (VT)
Bear Mountain Resort (CA)	Crested Butte Mountain Resort (CO)	Kirkwood Mountain Resort (CA)
Beaver Creek Resort (CO)	Crystal Mountain (MI)	Liberty Mountain Resort (PA)
Beaver Mountain Ski Area (UT)	Crystal Mountain, Inc. (WA)	Lookout Pass Ski Area (ID)
Belleayre Mountain (NY)	Dartmouth Skiway (NH)	Loon Mountain Recreation Corp. (NH)
Berthoud Powder Guides (CO)	Deer Valley Resort Company (UT)	Lost Trail Ski Area, Inc. (MT)
Big Mountain Resort (MT)	Devil's Head Resort & Convention Center (WI)	Loveland Ski Area (CO)
Big Sky Resort (MT)	Discovery Ski Area (MT)	Mammoth (CA)
Black Mountain Ski Area (NH)	Dodge Ridge Ski Area (CA)	Massanutten Ski Resort (VA)
Blacktail Mountain Ski Area (MT)	Durango Mountain Resort (CO)	Mission Ridge (WA)
Blue Mountain (ON)	Dyer Mountain Associates LLC (CA)	Mohawk Mountain (CT)
Bogus Basin Mountain Resort (ID)	Eaglecrest Ski Area (AK)	Monarch Ski and Snowboard Area (CO)
Bolton Valley Resort (VT)	Eldora Mountain Resort (CO)	Mont Orford Int'l Tourist Area (PQ)
Boreal Mountain Resort (CA)	Elk Ridge Ski & Outdoor Recreation Area (AZ)	Mont Ste-Marie Resort (PQ)
Boston Mills/Brandywine Ski Resort (OH)	Gore Mountain (NY)	Montana Snowbowl (MT)
Breckenridge Ski Resort (CO)		Mount Bohemia (MI)
Bretton Woods Mountain Resort (NH)		Mount Snow Resort (VT)
Bridger Bowl Ski Area (MT)		Mount Sunapee Resort (NH)

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Mount Tone Ski Area (PA)	Shawnee Peak Ski Area (ME)	Sundance (UT)
Mount Washington Alpine Resort (BC)	Sierra Summit Mountain Resort (CA)	Sunday River Ski Resort (ME)
Mountain Creek (NJ)	Sierra-at-Tahoe Ski Resort (CA)	Sunlight Mountain Resort (CO)
Mountain High Resort (CA)	Ski Anthony Lakes (OR)	Swain Ski & Snowboard Center (NY)
Mt. Ashland (OR)	Ski Bluewood (WA)	Taos Ski Valley, Inc. (NM)
Mt. Bachelor, Inc. (OR)	Ski Cooper (CO)	Telluride Ski & Golf Resort (CO)
Mt. Hood Meadows Ski Resort (OR)	Ski Denton (PA)	Tenney Mountain Ski Area (NH)
Mt. Hood Skibowl (OR)	Ski Plattekill Mountain Resort (NY)	Terry Peak Ski Area (SD)
Mt. La Crosse (WI)	Ski Roundtop (PA)	The Canyons Resort (UT)
Mt. Rose - Ski Tahoe (NV)	Ski Snowstar Winter Sports Park (IL)	The Homestead (MI)
Mt. Shasta Board & Ski Park (CA)	Ski Wentworth (NS)	The Summit At Snoqualmie (WA)
Mt. Spokane Ski & Snowboard Park (WA)	Sleepy Hollow Sports Park, Inc. (IA)	The Temple Mountain Ski Area (NH)
Northstar-at-Tahoe (CA)	Smugglers' Notch Resort (VT)	Timberline Four Seasons Resort (WV)
Nub's Nob Ski Area (MI)	Snow Creek Ski Area (MO)	Timberline Lodge & Ski Area (OR)
Okemo Mountain Resort (VT)	Snow Summit Mountain Resort (CA)	Tremblant (PQ)
Otis Ridge (MA)	Snowbasin, A Sun Valley Resort (UT)	Triple M-Mystical Mountain (NM)
Panorama Mountain Village (BC)	Snowbird Ski & Summer Resort (UT)	Vail Mountain (CO)
Paoli Peaks, Inc. (IN)	Snowmass (CO)	Wachusett Mountain Ski Area (MA)
Park City Mountain Resort (UT)	Snowshoe (WV)	Waterville Valley Resort (NH)
Pats Peak (NH)	Soda Springs Ski Area (CA)	Welch Village Ski Area, Inc. (MN)
Pebble Creek Ski Area (ID)	Solitude Mountain Resort (UT)	Whistler Blackcomb (BC)
Peek 'n Peak Resort & Conference Center (NY)	SolVista Basin (CO)	White Pass Ski Area (WA)
Pelican Powder Cats (OR)	Spirit Mtn. Recreation Area (MN)	Whiteface (NY)
Pomerelle Mountain Resort (ID)	Squaw Valley USA (CA)	Whitetail Mountain Resort (PA)
Powder Ridge Ski Area (MN)	Steamboat Ski & Resort (CO)	Wildcat Mountain Ski Area & Summer Gondola (NH)
Powder Ridge Ski Area (CT)	Stevens Pass (WA)	Willamette Pass Ski Corp. (OR)
Powderhorn Resort (CO)	Stowe Mountain Resort (VT)	Windham Mountain (NY)
Red Lodge Mountain Resort (MT)	Stratton (VT)	Winter Park (CO)
Red River Ski Area, Inc. (NM)	Sugar Bowl Resort (CA)	Wintergreen Resort (VA)
Saddleback Inc. (ME)	Sugarbush Resort (VT)	Wisp at Deep Creek Mountain Resort (MD)
Seven Springs Mountain Resort (PA)	Sugarloaf/USA (ME)	Wolf Creek Ski Area (CO)
	Sunburst Ski Area (WI)	