# ALTA'S ENVIRONMENTAL REPORT

2003 - 2004

Alta Ski Area is dedicated to sustainable environmental practices – learning from the past, being guided by best-management practices now, and leading with innovation and research in the future.



www.alta.com

This *Environmental Report*, Alta Ski Area's first, shows the strong record of accomplishments and enduring efforts we have made during the last two decades to remedy past environmental impacts and to integrate sustainable, sensible, environmental practices into our everyday operations. With the end of the silver-mining boom in the early 1900s, Little Cottonwood Canyon was left with virtually no





timber, wide-spread mine debris, and minimal vegetation because of erosion and sheep grazing. Alta's *Environmental Report* chronicles occurrences of environmental significance of the last 100 years and Alta's ongoing efforts to protect and revitalize its unique ecosystem, while providing recreational experiences for several hundred thousand annual winter and summer visitors.



# Contents

Letter from the President/General Manager2
Alta's History in Environmental Sustainability3
Environmental Practices and Management5
Administration and Public Relations6
Building Construction and Maintenance7
Lifts8
Restaurants9
Ski Patrol and Summer Trails10
Snowmaking12
Vehicle Maintenance-Cats and Snowmobiles13
Environmental Education14
Alta's Future15
Information17



### Letter from the President/General Manager

In the mid-1980s, when environmental awareness was on the rise, it was easy for my generation of Alta Ski Area workers to see the impacts of mining, timbering, sheep grazing, and early ski-area development. Nature's healing had begun to work, but it was apparent that with smart design and hard work we could accelerate the natural process and mitigate many of the adverse impacts. With that work and progress came a growing pride in our stewardship of Forest Service lands that are permitted to us.



We have put this report together to record some of the environmental history of Alta, and to challenge ourselves to keep improving. We hope you find it helpful for whatever your relationship is with this great place – ALTA.

Onno Wieringo

Onno Wieringa President & General Manager



## Alta's History in Environmental Sustainability

In the late 1800s and early 1900s, Alta was home to intensive resource-use industries, including silver mining, timber harvesting, and sheep grazing. At that time, the town of Alta's population was over 3,000, with about 180 buildings, 6 sawmills, and 45 businesses. Timber was being harvested for mine timbers and buildings as well as for railroad construction in Salt Lake City. This clear-cutting left many slopes bare and erosion ridden. The mines were deserted in the early 1900s, leaving widespread overburden and debris. Sheep grazing had further impacted the delicate alpine vegetation, often leaving nothing to protect the soil. The town of Alta sat in a dust bowl in the summer with little vegetation to retain water. In the winter, Alta was surrounded and frequently damaged by avalanches from the newly carved avalanche paths.



The Alta Ski Area was founded in 1938 in conjunction with the U.S. Forest Service. The transformation of Alta into a ski area began and was fueled by public interest in the sport. This interest was shared by several local businessmen, George Watson, Joe Quinney, and Alf Engen, who bought the ski area's original acreage. In retrospect, the vision and sound business practice of Alta's founders enabled forest reclamation, improved water quality, and aesthetic character. Alta's management and employees are dedicated to continuing these efforts.

With mining, timbering, and grazing essentially stopped, nature started the slow process of healing Alta's environment. This healing was expedited by a revegetation project

initiated by the Forest Service in 1936 and carried out by the Civilian Conservation Corps. It involved planting hundreds of trees on Alta's steep slopes to facilitate holding soil, snow, and water. The Forest Service was then and is now an instrumental force in helping shape sound environmental practices at Alta.





### Alta's History in Environmental Sustainability



Building original Germania Lift. From left, J. Clement, H. Brogle, C. Morton, R. Williams, and F. Speyer.

In 1970 the Town of Alta was incorporated and Snowbird resort was under construction. With the combined presence of Alta and Snowbird, and with the support of the Forest Service and Salt Lake City Public Utilities, a full-length canyon sewer line was completed in 1971. This step was very important for water-quality protection. With a main sewer line to tap into, we buried sewer lines to our mid-mountain restaurants-Alf's Restaurant in 1985, and Watson Shelter Restaurant in 1989. Alta's first two managers, Fred Speyer and Chic Morton, worked with the Forest Service, the Town of Alta, Salt Lake County, and UDOT in developing and promoting the ski area. They also worked hard to make Alta financially successful. With their work and success to build on, Onno Wieringa, who became the general manager in 1988, made it a goal to incorporate sustainable environmental practices into Alta's operations and planning. Initial projects were started in the late 1980s and continue today. Some of these are:

- Installing culverts, water bars, and rock drains on mountain roads to minimize erosion
- Implementing a tree/vegetation program, which has planted native shrubs, grasses, forbs, and at least 1,000 conifer seedlings annually (13,000 total) with a 70-80% survival rate
- Placing and realigning summer trails that route mountain travel around delicate alpine vegetation and minimizes erosion
- Installing a gravity-based, automated, snowmaking system
- Constructing energy efficient buildings that use local materials and, in one instance, a composting restroom
- Upgrading snow grooming machines that have cleaner emissions, better fuel efficiency, and create less noise
- Replacing and relocating fuel tanks that have computerized fuel storage and containment systems
- Re-vegetating old and new disturbed areas with topsoil and area-specific native flower seeds
- Developed a *Forest Management Plan* in 1994 to establish a scientific baseline and management guidelines. The objective of this Plan is to maintain and/or improve Alta's forest's health as it co-exists with skiing. This Plan has been updated to include shrubs, forbs, and grasses and is now called the *Vegetation Management Plan*



### Environmental Practices and Management

Every Alta Ski Area department has adopted environmental friendly practices. At a minimum, each department complies with the guidelines and best-management practices of the Forest Service and the National Ski Areas Association's Sustainable Slopes Environmental Charter.

The following pages describe some of the projects each department has worked on to improve its workplace, the ski area, and the visitor experience.









### **Conservationists**practical people looking for practical methods to protect, restore, and enhance the environment.



### **Administration and Public Relations**

- Recycles office waste, including aluminum, plastic, cardboard, and paper
- Recycles old computers and donates them to charities
- Donates old uniforms to charities
- Promotes environmental education programs such as Summer Tours, Little Cottonwood Canyon Cleanup Day, Tour with a Ranger Program, NSAA Sustainable Slopes Outreach Day, and other media events

Winner of Salt Lake City County Health Department's Area-Wide Water Control Council "Outstanding Achievement in Water Pollution Control Design and Implementation" Years 1985-1990

Since 1988, Alta has participated in a Utah Transit Authority (UTA) program with the Cottonwood Canyons ski resorts to bus skiers to Alta from Salt Lake City. Alta, in part with the cooperative effort of UTA, has purchased buses for Little Cottonwood Canyon, built four Park and Ride lots, and has promoted ski bus ridership. Every season pass issued by Alta includes free bus service.



### **Building Construction and Maintenance**

### **Projects Completed**

- Automatic Lighting Control Systems Installed in Alf's Restaurant, Watson Shelter, and Buckhorn dormitory to reduce power use.
- Automatic Power Correction System Levels out harmonic imbalances in incoming power, as well as the distortion caused by lift motors, which reduces power costs and extends service life of drives and motors.
- **High-Efficiency Windows** Retrofitted in three older buildings to minimize heat loss.
- Automatic Faucets Installed in most of our public restrooms, which has shown significant water savings.
- Waterless Urinals Replacement in Alf's Restaurant, which guarantees significant water savings by virtually no water use.
- Light Bulbs Replacement through attrition of incandescent bulbs with compact fluorescent bulbs, which saves energy.
- **Digital Mechanical Controls** Installed in three buildings to ensure the most efficient operation of all mechanical systems.

### Water-Saver System in Public Toilets

Sixty public toilets have been replaced with the low-flow water-saver system, which use 54% less water in each flush and saves 21,432 gallons of water per day.

	Old system	New system	
Toilets	60	60	
Flushes/day	188	188	
Total flushes/day	11,280	11,280	
Gallons/flush	3.5	1.6	
Gallons/day	39,480	18,048	

# Renovated Patrol Dispatch at the top of Germania Lift

- Built with an architectural design and native stone that blends with the setting
- Placed strategically to complement its function and visual impact
- Uses long life, low-maintenance materials
- Uses of a composting toilet to minimize waste production

### Buckhorn Fluorescent Light Bulb Replacement Program

This graph shows the amount of energy saved by switching to fluorescent bulbs.

	Total # of Bulbs	watts/hr
60 Watt Bulbs Incandescent	80	115,200
15 Watt Bulbs Fluorescent	Bulbs 80 28,8 cent	28,800
Savings (watts/hr)		86,400





### **Radiant Heating/Insulation**

We have initiated a program to build lift enclosures that use radiant heating and insulation. These significantly reduce energy use. When lifts are updated or replaced, the heating systems at the base and top terminals are updated.

### **Recycling Lift Parts**

When Sugarloaf Lift was replaced in 2001, the old lift was refurbished and used to upgrade the Supreme Lift. Many of the Supreme parts were used as spares for other lifts and the remaining equipment was recycled.

# Galvanized Cross Arms on Sugarloaf, Sunnyside, and Germania Lifts

These galvanized cross arms never require paint, which eliminates over spray and reduces labor costs.



As we have replaced lifts, we have replaced painted parts with galvanized parts. The Forest Service had supported this concept, but only with tower cross-arms. With the new techniques for dulling the initial shine of galvanizing, the Forest Service now shows support for our proposed use of galvanized towers. Galvanized towers reduce heat absorption, further reducing alignment problems that lead to shutdowns, extra labor costs, and poor customer service.



#### **Alf's Restaurant**

- Recycles cardboard and batteries weekly
- Installed waterless urinals (uses virtually no water)
- Installed automatic water sensors for all rest room sinks
- Replaced foam and paper cups with reusable cups for beverages

### Buckhorn

- Installed low-flow showerheads
- Installed low-flush water-saver toilets
- Replaced by attrition incandescent bulbs with fluorescent bulbs
- Remodeled with high efficiency windows
- Contains light-management timing systems
- Guided by EPA's/DOE's Energy Star program
- Recycles aluminum, plastic, cardboard, and paper

#### Watson Shelter

- Recycles aluminum, plastic, and cardboard
- Installed low-flush water-saver toilets
- Installed automatic flush valves on urinals



### **Ski Patrol and Summer Trails**

Gavin Noyes, former Save Our Canyons Director, wrote the following about Alta's vegetation management:

"The revegetation program has advanced not only because of the numerous tests sites made available by the Forest Service, but also by the great efforts and commitment that resorts, like Alta have made to restoring the diversity and beauty of the landscape. Alta has gone beyond the USFA required seed grass distribution overlaid with erosion-control matting and follows up by reseeding with wild forbs and flowers collected by hand throughout Albion Basin. These efforts are time consuming and costly, but Alta knows that people flock to their wildflower meadows in the summer to view its scenic beauty, not the scars of development."

Save Our Canyons Newsletter, 1999



Alta is renowned for its mountain beauty in both winter and summer. Summer hiking trails traverse winter ski runs, which translate into high year-round use. Winter snow protects the slopes from traffic, but the summer is when most of the damage to this fragile environment occurs. We have taken the following steps to mitigate this summer damage:

- Cooperative trail signing program with the Town of Alta and the Forest Service
- Erosion control with crews maintaining the trail system and summer roads, road water bars, French drains, and culverts
- Comprehensive litter prevention and pick-up program
- Replacement of 4,500 feet of mountain roads with 500 feet of direct, drainage controlled roads in Collins Gulch
- Trail upgrades to Twin Lakes with the efforts of Alta Ski Area, the Town of Alta, and the Forest Service
- Catherine's Pass summer trail rerouted to meet current Forest Service design requirements, as well as the addition of a renovated trail head parking lot with bathrooms
- Albion Meadow Trail built to allow access to Albion Basin, as an alternative to road travel (Over 4,000 feet of this trail is handicap accessible)



### **Tree and Shrub Planting**

The Forest Service and Alta Ski Area both recognize the importance of managing the forest resources to meet the goals and objectives for the area. The primary objective is to maintain a healthy and vigorous forest that will contribute to a quality skiing experience. As part of our *Vegetation Management Plan*, we have been and are aggressively planting native trees and shrubs to help diversify the age spacing of the trees in the forest.

1991-2002	12,000 (1,000 per year) Engelmann Spruce seedlings were planted with a 70-80% survival rate
2003	200 Limber Pine and 800 Engelmann Spruce were planted
Total	13,000 total seedlings were planted over a 13 year period

	2001	2002	2003
Mountain Mahogany, Cercocarpus sp.	50	100	50
Woods Rose, Rosa woodsii	50	100	25
Cliff Rose, Purshia mexicana	50	100	25
Saskatoon Serviceberry, Amelanchier alnifolia	50	0	0
Rabbit Brush, Chrysothamnus sp.	0	100	0
Total Shrubs	200	400	100

This table shows the number of local shrub species planted.

### **Vegetation Management Plan**

The Vegetation Management Plan was developed in 1994. It includes sections on:

- Control and removal of noxious weeds
- Removal of diseased trees
- Revegetation using native grasses, forbs, shrubs, and trees
- Marking sensitive vegetation areas to minimize impacts to wetland and riparian areas
- Active restoration and remediation of past disturbances

### Garbage pick up

- Every department budgets for summer garbage cleanup.
- Boy Scouts participate in the annual Summer Cleanup Program.
- Little Cottonwood Canyon Clean Up Day has hundreds of volunteers for one day every June.
- Summer signs encourage hikers to help pick up litter and take it to the nearest mountain road, where Alta employees pick it up.
- Winter signs remind guests that they are on National Forest land and these signs have worked well to reduce littering.





### Snowmaking

### **Cecret Lake Pipeline**

The Cecret Lake Reservoir is a beautiful area surrounded by high, rugged quartz and limestone peaks and alpine vegetation, attracting both wildlife and outdoor enthusiasts. Alta was recently awarded the Silver Eagle Award for Excellence in Visual Impact by SKI Magazine for a pipeline project that allows us to withdraw water for snowmaking and fill Cecret Lake for Salt Lake City water needs.



To preserve the integrity and beauty of the Alpine ecosystem along the pipeline, we designed an underground siphon system for the lake and avoided conventional trenching and pipe-laying methods. A horizontal shaft was drilled into the lake from a remote avalanche protected location, with the exit end of the shaft at a higher elevation than the high water line of the lake. This design created a gravity-generated water-pressure system that is more efficient to make snow for the entire ski area. This design allows us to reduce labor and energy costs for pumping because of the gravitational pressure developed once the siphon is started.

Additionally, 95% of our snowmaking system is fully automated with computermonitored, automatic hydrants, and guns. This reduces labor and saves energy by making adjustments to maximize snow production using only the power and water necessary. This computer automation results in higher snow quality, which equates to better skiing for customers.



### **Vehicle Maintenance-Cats and Snowmobiles**

# The snow-grooming equipment and snow-transportation vehicles are an essential component to a successful ski area operation, especially one like Alta with 500 inches of annual snowfall.

### **Renovation of Vehicle Maintenance Shop**

- State-of-the-art fuel-storage and containment system Location is out of view from public and pumps are monitored by computer
- Oil- and fuel-drainage system Traps and filters spills
- Sump System Traps and separates oils to be recycled
- Heater Uses waste oil from the maintenance shop
- Waste-Product Recycling Program Handles motor oil, batteries, tires, and unused solvents
- Sediment traps All parking lots filter run-off
- High maintenance standards Equipment is regularly maintained and upgraded (For example, vehicles that use hydraulic fluid are regularly maintained to prevent fluid leaks.)

### **SnowCat Replacement Program**

All new snowcats comply with Euro standards, which have higher environmental protocols than U.S. emission standards.

### Hydraulic Biodegradable Oil

In the late 1990s, Alta switched to

hydraulic biodegradable oil, which:

- Decomposes fully (by soil and water microorganisms)
- Prevents gumming and deposits because of its oxidation stability under high pressure and high temperature
- Provides superior wear protection
- Is non-toxic and non-hazardous



### **Snowmobiles with Four-Stroke Engines**

Two-stroke snowmobiles are powerful machines useful in high altitude areas, yet they have high hydrocarbon output and noise levels. About 20 - 33% of the fuel in these machines leaves the tailpipe unburned, with lube oil being emitted in the exhaust. Alta Ski Area is in the process of replacing the majority of its fleet of two-stroke to four-stroke snowmobiles, otherwise known as "green machines." The machines with 4-stroke engines use fuel more efficiently, have lower engine noise, and emit 41% less emissions than the two-stroke engines.

### **Aqueous Cleaning**

Alta has converted its auto parts cleaning system to an aqueous cleaning method, which is:

- Less toxic than the old system using petroleum distillate solvents
- Minimizes labor costs (a worker can perform other duties while the part is being cleaned (Previously manually scrubbed.)
- Contains less than 5% VOCs (volatile organic compounds), particulates that are released into the air when using petroleum distillate solvents
- Minimizes waste disposal
- Worker friendly
- Nonflammable



### **Environmental Education**

- **Summer Tours** Walking tours to share Alta's Best Management Practices with the public. Topics include revegetation, erosion control, seed collection, tree replacement, species identification, and trail maintenance.
- **Tour With A Ranger** The Forest Service conducts tours at Alta where skiers can join a volunteer for informative winter tours in Albion Basin. Topics include animals, trees, geology, and Alta history.
- SkeCology Alta was a pilot for this program designed to teach skiing children about the environment. Signs with information about the local wildlife and forest were placed along ski trails and incorporated into ski lessons. Over 3,000 children went through this program every season.
- **Cottonwood Canyons Foundation** A non-profit cooperative effort created with Salt Lake City Water, Forest Service, Alta, Snowbird, Brighton, and Solitude. Their mission statement is: "Working to maintain and improve the environmental health of Big and Little Cottonwood Canyons through public education and stewardship."
- Salt Lake City Public Utilities-Watershed Management Their "Keep It Pure" program has placed educational signs at the mouth of Little Cottonwood Canyon, the Park and Ride lots, trailheads, and our ticket offices to inform the public about watershed protection. Two trailhead toilets were installed where none existed as a co-op project with Alta Ski Area, Forest Service, and the town of Alta.
- Alta Community Enrichment (ACE) Alta Ski Area supports this nonprofit organization, which provides environmental educational courses and cultural events.
- **The Nature Conservancy** Alta Ski Area hosts an annual outreach day, Ski for Nature, with the Salt Lake Chapter of the Nature Conservancy.



## **Alta's Future**

ALTA SKI ARE/

In its *Annual Report on the Sustainable Slopes Environmental Charter for Ski Areas*, the National Ski Area Association states its vision for ski areas as the following:

"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."

We subscribe to this vision. In our continuing partnership with the Forest Service, we operate a ski area that serves as many as half a million-visitor days per ski season. Our environmental and conservation future depends on the combined efforts of Alta Ski Lifts Company, our employees, as well as the Forest Service, Alta business owners, and Alta visitors.



### **Alta's Future**

### The following goals will keep us motivated to improve our environmental efforts.

### **Short-Term Goals and Objectives**

#### **Expansion of Recycling Program**

-Place refillable containers in restaurants and employee food areas -Improve education about our recycling program with our employees,

other resort businesses, and the public

#### **Educate Resort Community**

-Distribute *ALTA'S ENVIRONMENTAL REPORT* widely to explain our environmental agenda and to increase awareness

-Continue the education of employees and public about the value of our environmental efforts

#### **Remodel Collins Gulch Building Facilities**

The remodeling of the Collins Gulch Ski Facilities will be guided by the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) guidelines and the Energy Star Program.

### **Long-Term Goals and Objectives**

#### **Environmental Education**

-Continue the education of employees and public about the value of our environmental efforts

-Update and distribute ALTA'S ENVIRONMENTAL REPORT -Participate in various meetings, conferences, symposiums to present Alta's environmental and conservation philosophy,

and report on our successes and failures

#### **Energy Efficiency**

Pursue energy audit for facilities

-Focus on light, water, and energy efficiency

-Continued replacement of bulbs with incandescent lights -Refinement of heated slab energy use

-Research on micro-hydro power development

#### **Galvanized Lift Towers**

Alta is currently seeking approval from the Forest Service to replace through attrition, all painted lift towers with galvanized towers

#### **One Point Power Source**

Continued refinement of power infrastructure to be able to buy power as one unit for efficient distribution in the area

#### **Mass Transit**

 -Continued refinement, improvement, and encouragement of mass transit
-Promote and facilitate ridership

Thank you for your time in reviewing our report. If you have thoughts for us to consider, please contact us at info@alta.com. You can visit our website at http://www.alta.com

Many people and organizations must be credited and thanked for their part in any success we have had with our projects and programs. Among these are:

- Alta Ski Area Employees for their innovation, completion, and continued support of our environmental projects and programs
- Salt Lake City Public Utilities for overseeing water quality in Little Cottonwood Canyon
- The Forest Service for being our partners in skiing for 65 years and for guiding us through the National Environmental Policy Act
- The Town of Alta and Mayor Bill Levitt for their help with all of our building projects
- The Aspen Skiing Company and their President/CEO Pat O'Donnell for being industry environmental leaders and being the prime inspiration for putting this report together
- Save Our Canyons and their President Gale Dick for their dialogue on our projects

### Links to Related Organizations

The Nature Conservancy www.nature.org



EPA www.epa.gov/region08



U.S. Forest Service www.fs.fed.us/r4/wcnf



Cottonwood Canyons Foundation www.cottonwoodcanyons.org



Energy Star www.energystar.gov



Town of Alta www.townofalta.com





Sustainable Slopes, NSAA www.nsaa.org



Salt Lake City Public Utilities www.keepitpure.com



Authors: Lindsey Christensen and Mark Pollish Cover Photo by John Barstow www.alta.com

Printed on recycled paper