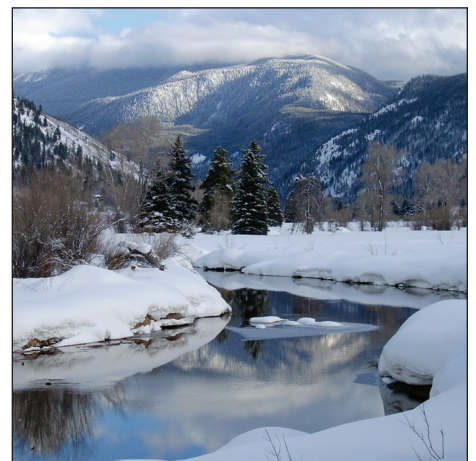


# North Star Nature Preserve Management Plan

August 2015



Pitkin County Open Space and Trails

# North Star Nature Preserve Management Plan

## Table of Contents

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<b>Introduction</b>		<b>Page</b>
1.01	Foreword	1
1.02	History	2
1.03	Process and Public Involvement	7
<b>Existing Conditions</b>		
2.01	Properties and Conservation Easements	8
2.02	Existing Plans and Policies	8
2.03	Geomorphology	10
2.04	Wildlife	11
2.05	Vegetation	12
2.06	Wetlands	13
2.07	Recreation	14
2.08	Parking	15
2.09	Signage, Interpretation and Memorials	16
2.10	Commercial Use and Special Use	16
<b>Partner and Public Comments</b>		
3.01	City of Aspen	18
3.02	Pitkin County Healthy Rivers and Streams Board	18
3.03	White River National Forest	18
3.04	East of Aspen Caucus	19
3.05	Aspen Center for Environmental Studies	19
3.06	Aspen Valley Land Trust	20
3.07	Aspen Snowmass Nordic Council	20
3.08	Commercial Operators	20
<b>Management Actions</b>		
4.01	Maintenance Actions	21
4.01.01	Mowing	21
4.01.02	Plowing	21
4.01.03	Parking Lot Maintenance	21
4.01.04	Mosquito Control	21
4.01.05	Waste Facilities	21
4.01.06	Water Rights	21
4.02	Natural Resource Management Actions	22
4.02.01	Geomorphology	22
4.02.02	Wildlife	25
4.02.03	Vegetation	26

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4.02	Natural Resource Management Actions	
4.02.04	Wetlands	29
4.02.05	Monitoring Protocols	30
4.03	Recreation Management Actions	31
4.03.01	Recreation Activities in Designated Areas	31
4.03.02	Monitor Recreational Use	34
4.03.03	Wildwood Put-in and Parking	34
4.03.04	River Access Corridors	34
4.03.05	Parking Area Improvements	35
4.04	Commercial and Special Use Management Actions	35
4.04.01	Commercial-Use Permits	35
4.04.02	Special-Use Permits	36
4.05	Education and Outreach Management Actions	36
4.05.01	Interpretive Signage	36
4.05.02	Educational Guide	36
4.05.03	River “Quiet Zone”	37
4.05.04	Expanded Ranger Program	37
4.05.05	Environmental Education Program	37
4.05.06	Explore the Use of Volunteers	38
4.06	Cost Summary	39
	<a href="#">Appendix A - Planning Area Map</a>	A1
	<a href="#">Appendix B - Public Process Timeline</a>	B1
	<a href="#">Appendix C - Public Comments</a>	C1-54
	<a href="#">Appendix D - Wildlife Species</a>	D1-2
	<a href="#">Appendix E - Wildlife Surveys Map</a>	E1
	<a href="#">Appendix F - Management Indicator Species</a>	F1-5
	<a href="#">Appendix G - Wetland Surveys Map</a>	G1
	<a href="#">Appendix H - Existing Recreational Access Maps</a>	H1-2
	<a href="#">Appendix I - Proposed Recreational Access Maps</a>	I1-2
	<a href="#">Appendix J - Management Actions Maps</a>	J1-2
	<a href="#">Bibliography</a>	Bib 1

The North Star Nature Preserve Management Plan was a collaborative effort between Pitkin County Open Space and Trails; City of Aspen Parks, Trails and Open Space; the Pitkin County Healthy Rivers and Streams Board; Aspen Valley Land Trust and Aspen Center for Environmental Studies.



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Open Space and Trails  
530 East Main Street  
Aspen, CO 81611



City of Aspen  
Parks, Trails, and Open Space  
585 Cemetery Lane  
Aspen, CO 81611

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## PITKIN COUNTY OPEN SPACE AND TRAILS BOARD of TRUSTEES MISSION STATEMENT

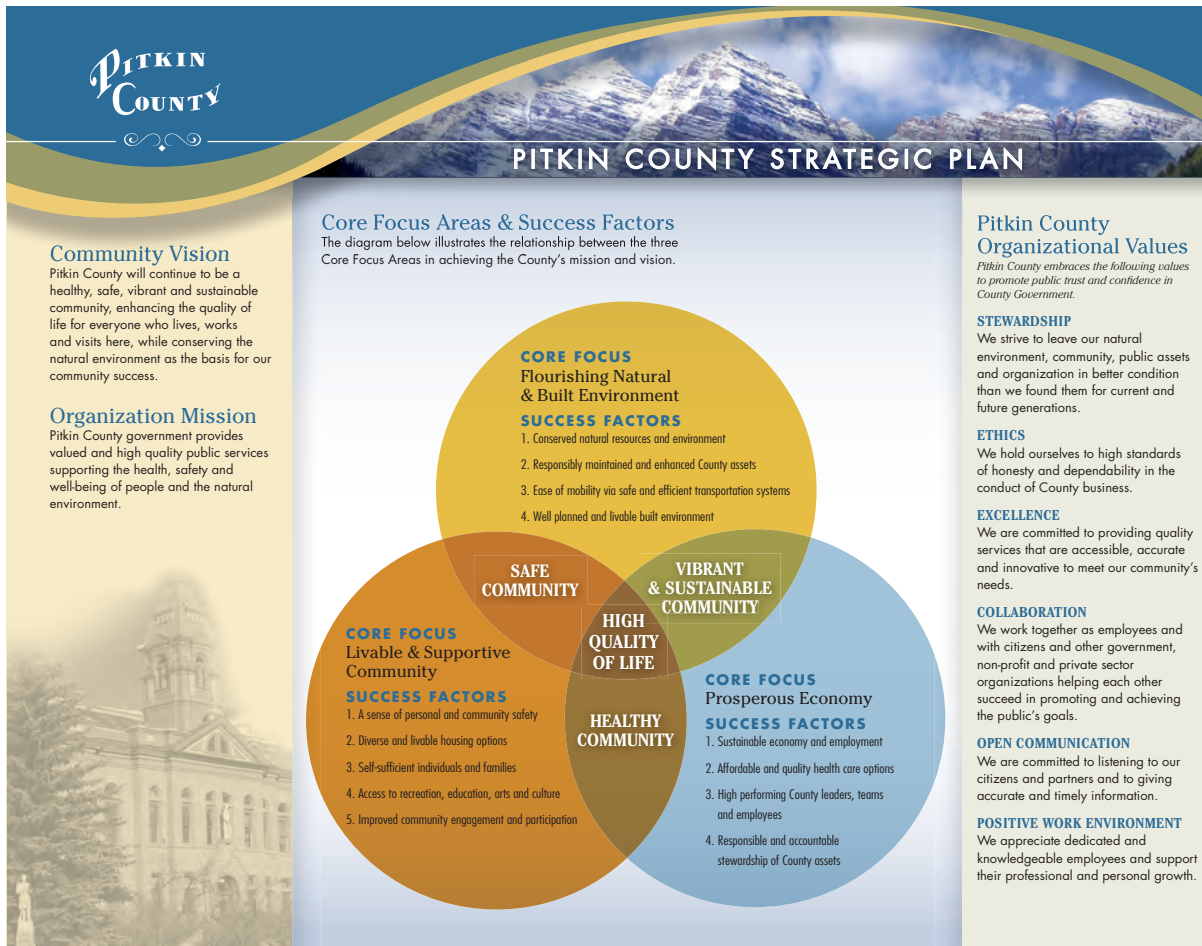
The mission of the Pitkin County Open Space and Trails Board of Trustees is to acquire, preserve, maintain and manage open space properties for multiple purposes including, but not limited to, recreational, wildlife, agricultural, scenic and access purposes; and to acquire, preserve, develop, maintain and manage trails for similar purposes.

The *Pitkin County Home Rule Charter* provision authorizing the Open Space and Trails Program defines trails as follows:

**“Trails” shall be defined as non-motorized access ways meeting one or more of the following criteria: preserving historic routes of ingress and egress to public lands and waterways; providing access to and from recreational or urban destinations; providing transportation or recreational opportunities throughout the Roaring Fork Watershed.”**



# PITKIN COUNTY HOME RULE CHARTER AND 2011 PITKIN COUNTY STRATEGIC PLAN



The 2011 Pitkin County Strategic Plan identified three core Focus Areas: “Flourishing Natural and Built Environment,” “Livable and Supportive Community” and “Prosperous Economy.” The goal is for the three Focus Areas to work together to achieve the county’s vision and mission. The *North Star Management Plan* fits with the Strategic Plan in various aspects:

## Flourishing Natural and Built Environment

### **Success Factor 1: Conserved natural resources and environment**

Potential actions identified with in this success factor include: ...preserve lands with significant recreational, wildlife, ... scenic values, ...control noxious weeds, and monitor and protect water quality.

### **Success Factor 2: Responsibly maintained and enhanced county assets**

Potential actions identified include: ...maintain county properties in an environmentally sensitive way and use education and enforcement to encourage proper use and care of public lands and assets.

## Livable and Supportive Community

### **Success Factor 4: Access to recreation, education, arts and culture**

Potential actions identified with in this success factor include protect access to rivers.

# The Peace of Wild Things

BY WENDELL BERRY

When despair for the world grows in me  
and I wake in the night at the least sound  
in fear of what my life and my children's lives may be,  
I go and lie down where the wood drake  
rests in his beauty on the water, and the great heron feeds.  
I come into the peace of wild things  
who do not tax their lives with forethought  
of grief. I come into the presence of still water.  
And I feel above me the day-blind stars  
waiting with their light. For a time  
I rest in the grace of the world, and am free.



The Roaring Fork River meanders through North Star Nature Preserve, east of Aspen.

## 1.0 INTRODUCTION

### 1.01 FOREWORD

The North Star Nature Preserve is a unique and valuable tract of open space on the edge of Aspen - an ecological sanctuary that encompasses significant wetland and riparian ecological communities and wildlife habitat. The continuing goal of this plan is to protect and restore the ecosystem processes that support biological diversity within the preserve. This updated plan strengthens conservation of the preserve through management actions that strive to restore North Star to its optimum ecological condition. Recreation that is allowed will not result in a significant impairment of habitat for native species, nor will it interfere with restoration of the preserve to its optimum ecological condition.

This 2015 North Star Management Plan addresses both the 70-plus-acre James H. Smith Open Space and the 175-acre North Star Nature Preserve, folding management of the adjacent properties into a single document that will be reviewed and updated every five years.





James. H. Smith hays his North Star Ranch in the summer of 1950. Miggs Durrance photo/courtesy of Morgan Smith

## 1.02 HISTORY

North Star Nature Preserve, a flat bottomland bisected by the meandering Roaring Fork River and bounded by steep mountainsides, can trace its topographic history to glacial activity during the Pleistocene Epoch, which ended about 11,000 years ago.<sup>1</sup>

The resulting landscape, unique to the upper Roaring Fork Valley, provides significant wildlife habitat and has been a source of enjoyment and recreation to the valley's human inhabitants since Aspen's early days, when the calm stretch of the otherwise roaring river was dubbed "Stillwater." Human alteration of the land itself can be traced primarily to two events – ranching and, more significantly, the diversion of water that once flooded the meadows and wetlands of North Star on a regular basis.

James H. Smith had been a Navy pilot, friend of famed aviator Charles Lindbergh and an executive with Pan American World Airways when he came through Aspen with his family while on vacation in 1949. They passed by a ranch at the base of Independence Pass where men were putting up hay with teams of horses.<sup>2</sup>

The following day, Smith was getting a haircut from Jim Moore, Aspen's barber and sole real estate

1 Geomorphic Assessment-North Star Nature Preserve, Golder Associates Inc., 2014.

2 *The Story of Aspen*, "Jim Smith talks of planes and ranches," Mary Eshbaugh Hayes, (Aspen Three Publishing, 1996), p. 123.

agent. “Theresa Barrailler came in and told Jim she wanted to sell the North Star Ranch...360 acres that her family had homesteaded,” Smith recalled.<sup>3</sup>

Smith said he’d like to see it and discovered it was the same ranch he’d noticed the day before. He bought the spread for \$80 per acre and moved his family to North Star in 1950.<sup>4</sup>

“The place was overgrown with willows, so we drained the land, cut down the willows, and opened up more pasture,” Smith said in a 1975 interview with *The Aspen Times*.<sup>5</sup> On the south side of the ranch, son Morgan Smith recalls attempting to drain swampland in order to grow hay.<sup>6</sup>

In 1953, Smith moved his family back East when the Eisenhower administration tabbed him to serve as Assistant Secretary of the Navy for Air. After three years, the family returned to the ranch, only to have Smith called back the following year on a different assignment, as head of the International Cooperation Agency.<sup>7</sup> Smith returned to the ranch in 1959, calling it home until its transfer to The Nature Conservancy. He died in 1982.

During his North Star Ranch tenure, Smith’s greatest impact on the landscape actually played out in Washington. He fought construction of a dam and reservoir that would have flooded North Star. Smith led the charge as president of the Pitkin County Water Protection Association, which was opposing the Fryingpan-Arkansas Project.<sup>8</sup> At one point, the envisioned dam at the lower end of Stillwater, about two miles above Aspen, was to impound a lake containing some 50,000 acre feet of water. Fifteen years earlier, the idea gave rise to dreams of a lakeside tourist resort among those hoping to boost Aspen’s fortunes.<sup>9</sup> The Smiths discovered their newly purchased ranch had been surveyed for construction of a 28,000-acre-foot reservoir, according to Morgan Smith.<sup>10</sup>

Though a reservoir at North Star never materialized, the Fryingpan-Arkansas Project included construction of Grizzly Reservoir farther upstream on a tributary of the Roaring Fork, along with the Twin Lakes Tunnel, which delivers water from the upper Roaring Fork and its tributaries to the east side of the Continental Divide. The diversions began in May 1935.



Rancher James H. Smith at North Star. Miggs Durrance photo/courtesy of Morgan Smith

3 Ibid.

4 Morgan Smith interview, July 18, 2014.

5 *The Story of Aspen*, “Jim Smith talks of planes and ranches,” Mary Eshbaugh Hayes, (Aspen Three Publishing, 1996), p. 123.

6 “Next Steps for the Roaring Fork,” Morgan Smith, *Aspen Times Weekly*, Nov. 13, 2014.

7 “James H. Smith, Jr.; Led U.S. Aid Agency,” Kathleen Teltsch, *The New York Times* obituaries, Nov. 25, 1982.

8 “Pitkin County to Fight for the Water it Needs,” *Aspen Daily Times*, Aug. 2, 1951.

9 “That big lake idea spreads very rapidly,” *Aspen Daily Times*, March 7, 1935.

10 “Next Steps for the Roaring Fork,” Morgan Smith, *Aspen Times Weekly*, Nov. 13, 2014.





Ice skating on the Roaring Fork River at North Star, then known as Stillwater, was a popular winter pastime at the turn of the 19th century. Aspen Historical Society photo

Transmountain water diversions aside, the Stillwater section of the Roaring Fork boasts a long history as a tourist amenity and local playground. There were once guest cabins at the lower end of Stillwater, and the Stillwater Club offered live music and dancing. The latter received frequent mention in Aspen news and advertisements in the late 1920s and early 1930s. In 1924, the Pitkin County Chamber of Commerce advertised Stillwater as an attraction to Aspen travelers.

A steamboat plied the Stillwater section of the Roaring Fork briefly in the late 1800s, offering a novel bit of entertainment. “A party of six couples will go this evening to upper Stillwater to enjoy themselves on the steam yacht,” the Aspen Daily Times reported in the summer of 1898.

Even more popular at the turn of the 19<sup>th</sup> century was ice skating on the frozen river at Stillwater. The Aspen Daily Chronicle reported hundreds of townsfolk congregating there for the skating. Holes were cut in the ice at various points on the river, allowing the water to come up and create a newly smooth surface after skaters roughed it up.

“There is indeed romance in a skate up the Roaring Fork. The river is frozen now so that it is possible to go up as far as the mouth of Difficult Creek. This gives several miles of skating ground as the river winds and bends many times across the valley among the willows,” said a Daily Chronicle report at the time.<sup>11</sup>

<sup>11</sup> Aspen Daily Chronicle, Jan. 17, 1891.





A woman on horseback snaps a photograph at Stillwater, which today encompasses North Star Nature Preserve. Aspen Historical Society photo

Reports of successful fishing outings at Stillwater also made the pages of Aspen's newspapers, as did the harvesting of fish eggs from the ample trout population for use at a state fish hatchery in Glenwood Springs.

More than a century later, the river through North Star is attracting throngs of visitors who experience the property as they float or paddle down the placid stretch of water.

"What we bought in 1949 and then conveyed to The Nature Conservancy in 1977 in a sale/donation was land," said Morgan Smith. "Looking back, however, I realize that water was what made this such a unique experience for us and now for the Aspen community. In one form or another, it dominated our lives there and made for an extraordinary childhood."<sup>12</sup>

In 1966, the *Aspen Area General Plan* was adopted. It allowed construction of up to 1,500 houses on North Star Ranch, plus some recreational and commercial development. North Star landowner James H. Smith rejected this magnitude of development and, in 1973, submitted an application for a 350-residence planned unit development. County commissioners denied the application in its initial form and, in 1974, a general county rezoning took place. North Star Ranch was rezoned to AF-1, reducing the development potential of the property to 36 units. The goal of the Agriculture-Forestry zoning was to reduce building potential in order to maintain the county's rural atmosphere. Conversations between Smith and the county Parks Association (precursor to Aspen Valley Land Trust) took the AF concept even further; 175 acres of the ranch were identified as potential open space.<sup>13</sup>

The county planning department sought a 50/50 matching grant of \$575,000 from the Federal Land and Water Conservation for the purchase of North Star acreage. With those funds unavailable in 1977, the county turned to The Nature Conservancy. Jon Mulford, TNC's local representative, renegotiated the purchase price to include a gift valued at \$275,000 from three generations of the Smith family. In November 1977, TNC took title to 175 acres of North Star Ranch. In December 1978, Pitkin County took title from TNC. In the meantime, a commitment of Land and Water Conservation funds materialized,

<sup>12</sup> "Next Steps for the Roaring Fork," Morgan Smith, *Aspen Times Weekly*, Nov. 13, 2014.

<sup>13</sup> 2000 North Star Nature Preserve Resource Management Plan, Section 1, pp. 2-3.



- 1977 – Acquisition of North Star Nature Preserve by The Nature Conservancy
- 1978 – Pitkin County takes title to North Star Nature Preserve
- 1999 – North Star Nature Preserve desigated as an Open Space and Trails property
- 2001 – Acquisition of James H. Smith North Star Open Space jointly purchased by County and City of Aspen
- 2002 – North Star Conservation Easement

Public Ownership Timeline

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but the sum had shrunk to \$75,000, leaving the county with a major funding burden, paid primarily through PILT monies (Payment in Lieu of Taxes) from the federal government.<sup>14</sup>

A North Star Nature Preserve Resource Management Plan was produced in 1989; it was a compilation of previous studies and plans. Ecological monitoring of North Star was funded in large part by Pitkin County and the resulting data provided a strong ecological basis for the strategies within a revised management plan, adopted in 2000, a year after the property was placed under management of the county’s Open Space and Trails program.

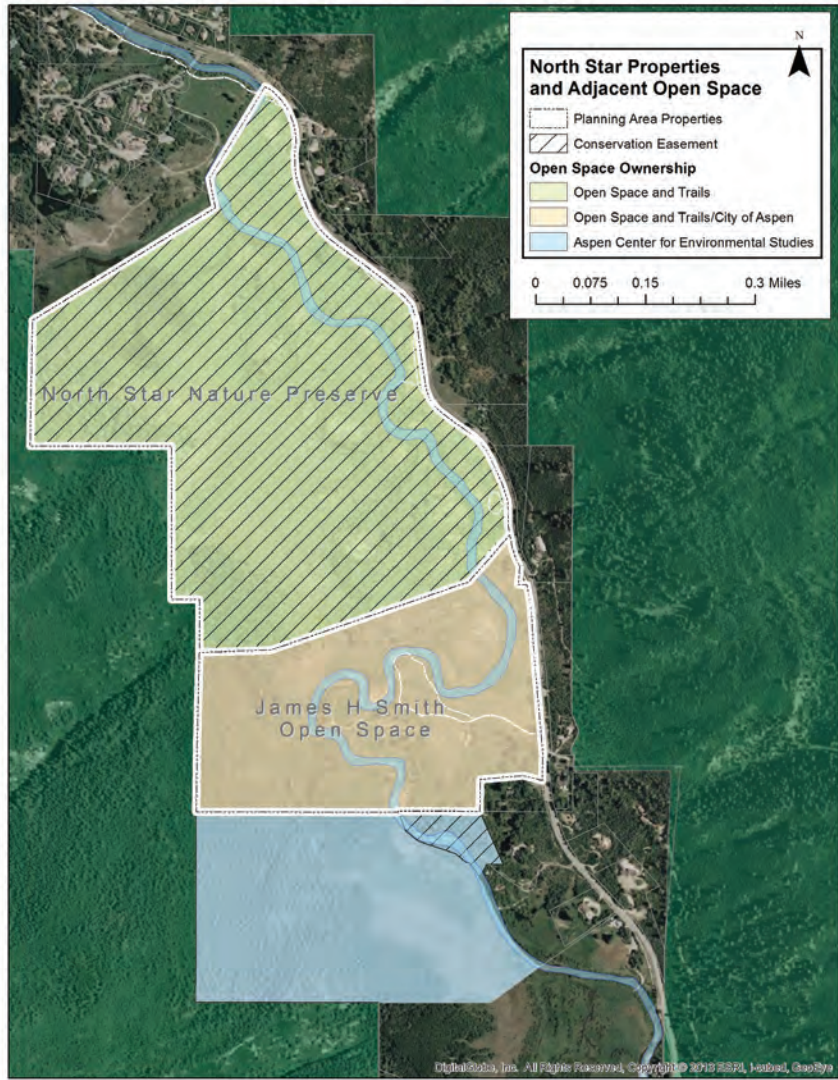
North Star visitors wander onto the property in 1985. The sign indicates the area is an “ecological sanctuary owned and operated by Pitkin County” and that it contains “critical elk and waterfowl habitat.” Aspen Historical Society photo



14 2000 North Star Nature Preserve Resource Management Plan, Section 1, p. 3.



In 2001, Pitkin County Open Space and Trails and the City of Aspen jointly acquired the 70-plus acre James H. Smith North Star Open Space, linking the 175-acre North Star Nature Preserve with a 65-acre parcel held by the Aspen Center for Environmental Studies (Appendix A). Together, the properties once comprised the bulk of North Star Ranch, acquired by the Smith family in 1949. An interim management plan for the James H. Smith parcel was adopted in 2001. A conservation easement on the 175-acre North Star property was conveyed to Aspen Valley Land Trust in 2002.



### 1.03 PROCESS AND PUBLIC INVOLVEMENT

A public process outline is attached in Appendix B. Public comments, existing conditions and our partnering agencies’ comments have been incorporated to create a Draft Plan. Appendix C contains the public comments received to date. Once the Open Space and Trails Board and Board of County Commissioners have approved the Draft Plan’s content, it will be released for a six-week public comment period. Staff will then review all comments received, update the Draft Plan and take a Final Plan to the two boards for adoption. It will also go to the City of Aspen for adoption.

## 2.0 EXISTING CONDITIONS

### 2.01 PROPERTIES AND CONSERVATION EASEMENTS

#### *North Star Nature Preserve*

Pitkin County acquired this 175-acre tract in 1978. Located between Highway 82 and the eastern flank of Aspen Mountain, southeast of the City of Aspen, the property encompasses a stretch of the Roaring Fork River, as well as wetlands and significant wildlife habitat. The James H. Smith Open Space is located directly to the south.

#### *James H. Smith Open Space*

Pitkin County and the City of Aspen jointly purchased the 70-acre James H. Smith Open Space in 2001. Located directly south of North Star Nature Preserve and north of a 65-acre parcel owned by the Aspen Center for Environmental Studies, it encompasses a stretch of the Roaring Fork River and a nesting area for great blue herons.

#### *Conservation Easement*

On Sept. 3, 2002, Pitkin County granted a conservation easement to Aspen Valley Land Trust (AVLT) on North Star Nature Preserve (Reception No. 472502, recorded Sept. 19, 2002). The purpose of the easement is to preserve and protect, in perpetuity, the natural, ecological, wildlife habitat, scenic, open space, recreational and aesthetic features and values of the property. The easement also describes specific permitted and prohibited uses of the property, as well as describes the role of this management plan as it pertains to the North Star Nature Preserve. As the Grantor of the conservation easement, Pitkin County retains ownership of the property and management responsibilities.

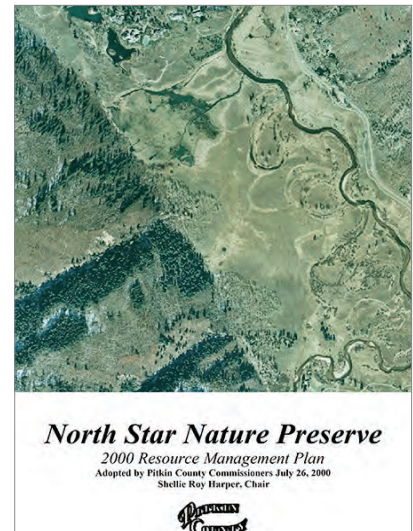
### 2.02 EXISTING PLANS AND POLICIES

#### *2000 North Star Nature Preserve Resource Management Plan (updated in 2005)*

The existing *North Star Management Plan* set the basis for long-term management of North Star Nature Preserve. The goal of the plan was to balance protection of the natural ecosystems with the recreation and educational uses of the property. The plan acknowledges the preserve as a valuable resource: as a wildlife sanctuary, a public amenity for quiet recreation, a visual resource along Highway 82, a contributor to clean air and water quality, a living classroom for environmental education, and as a contributor to underground aquifer preservation and, in wet years, flood abatement. Management actions established in the existing plan were set in place to preserve these resource values and have been implemented.

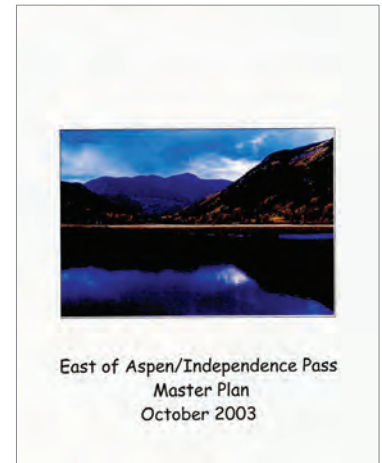
#### *2001 James H. Smith North Star Open Space Interim Management Plan*

The *James H. Smith Plan* was created for the interim management of the property. It spoke about being consistent and a complementary plan to the *North Star Management Plan*. The plan kept human access to a minimum and set the stage for the protection of the heron colony.



### *2003 East of Aspen/Independence Pass Master Plan*

This plan acknowledges North Star Nature Preserve and James H. Smith Open Space. The master plan calls for maintenance and management of the North Star and James H. Smith parcels through the use of management plans. Action Item 7, within the East of Aspen/Independence Pass Master Plan, recommends the Open Space and Trails Board require that open space management plans be referred to and reviewed by planning-area residents to obtain their input as the plans are developed and updated. The management plans should address commercial use of publicly owned open space, and commercial use should be managed in a way that does not conflict with or curtail the enjoyment of the open space by other users. The master plan also supports the efforts of a mosquito control district and acknowledges the 1985 Roaring Fork East Neighborhood Master Plan recommendation that environmentally sound methods of insect control be pursued.



### *Title 12 of the Pitkin County Code (last revised in 2001)*

All properties and trails managed by Pitkin County Open Space and Trails are subject to the regulations set forth in Title 12 of the Pitkin County Code. Individual properties are subject to additional terms set forth in their respective management plans. Title 12 is up for revision in 2015.

### *2014 Pitkin County Open Space and Trails Signage Design Guidelines*

The 2014 *Signage Design Guideline* is an update to the *Trail Design and Management Handbook*. The update covers materials, graphics, types, templates, installation and maintenance for signs on Pitkin County Open Space and Trails properties.

### *2008 Pitkin County Nordic Trails Plan*

The *Nordic Plan* guides the vision and implementation of the Nordic system within Pitkin County. Among the varied experiences offered by the system, North Star Nature Preserve offers a “mellow, contemplative ski.” The *Nordic Plan* contemplates future areas and routes for Nordic skiing and prioritizes opportunities, considering equipment and staff needs as well as how an expansion fits into the goal of creating a seamless system. James H. Smith Open Space was identified for expansion of the Nordic trail system east of Aspen; it would offer tranquil, beginner terrain on the north side of the river. Amending the property’s management plan to permit skiing and designing a connection to North Star Nature Preserve on the east side of the river are proposed. The *Nordic Plan* also identifies the potential for Nordic skiing on the East of Aspen Trail between North Star and Difficult Campground, and recommends a larger parking area at North Star for this purpose, as well as improved trail connections. Improving the Benedict Trail to North Star route is also recommended.

### *2011 Other Power Driven Mobility Devices (OPDMDs) Management Plan*

The *OPDMD Management Plan* looks at the trails conditions in the Pitkin County system and designates them as either open, closed or restricted for OPDMD use. The East of Aspen Trail and all of the public access points on the North Star property are closed to OPDMD use.



## 2.03 GEOMORPHOLOGY

North Star Nature Preserve is situated near the terminus of a wide, low-gradient valley, which was created by the retreating Roaring Fork Glacier at the end of the Pleistocene Epoch (about 11,000 years ago). The glacier's moraine deposits acted as a dam that accumulated a thick deposit of material consisting



North Star's channel geometry observed in 1898, overlain on a modern aerial photograph. Golder Associates

of glacial outwash and lake and stream sediments to a depth of more than 300 feet (see *Ecological Communities and Fluvial Geomorphology Baseline Report for North Star Nature Preserve*, prepared by Golder Associates, Inc., March 2015).

The moraine acts as a dam that has temporarily blocked the downstream passage of water and sediment for a length of the valley. In the past, this accumulated sediment has held a more winding river channel than exists today. In the relatively recent past, the moraine has partially breached, causing an increase in the river's gradient and a substantial straightening of its channel. While the breaching was likely an inevitable, natural process, Golder concluded it was exacerbated by human activity.

There have been numerous geomorphic studies of the Roaring Fork River at North Star Nature Preserve. The river channel travels about 4,900 feet through the

study area. Aerial views of North Star clearly show that the river formerly migrated over a larger portion of the valley floor, and historic images depict a river that followed a highly sinuous, or meandering path until roughly 1900. The river's current path through North Star has remained relatively consistent since the 1950s.

Transmountain diversions have contributed to the straightening of the river, while other land-use practices have lowered the groundwater table at North Star, resulting in a detrimental impact on ecological resources. Ditches and headgates that were previously used for agricultural purposes on the property are a likely source of the ecological transition that can be seen at North Star today.

Since 1951, North Star has appeared to be a stable fluvial system, though streambank erosion continues on the outside of the river's remaining meander bends. Eroded bank material is deposited on the next downstream point bar in a natural process.



## 2.04 WILDLIFE

North Star is managed to balance recreational opportunities with ecological integrity. The two goals are physically separated by the Roaring Fork River, allowing for management practices that protect ecological communities on the west side of the river while allowing recreation within access corridors on the east side and on the water. This management strategy is having a positive effect on those species that are most sensitive to human activity and human-caused habitat alternation (see *Ecological Communities and Fluvial Geomorphology Baseline Report for North Star Nature Preserve*, prepared by Golder Associates, Inc., March 2015).



A sow with two cubs caught on a wildlife camera at North Star Nature Preserve. Golder Associates

No federally protected species are expected at or adjacent to North Star, nor does any designated critical habitat exist at North Star for any federally listed species, though Canada lynx, a threatened species, could inhabit lands adjacent to the property, Golder noted in its report. Three other mammal species designated by a state or federal agency or other conservation concern could reasonably occur at North Star: the American marten, river otter and Townsend's big-eared bat. These species were not, however, documented on the property during wildlife baseline surveys conducted in 2014, Golder reported.

Over seven years of monitoring, between 2000 and 2007, individuals representing 77 different bird species were detected at North Star. Eleven mammalian predator species are known to use North Star as part of their home range, but only black bears, coyotes and raccoons were recorded in the 2014 surveys (Appendix D). The 35 detections of black bears during the 2014 surveying comprised at least 13 different individuals, including two sows with two cubs, and one sow with three cubs. Abundant small mammals were also documented. Though North Star provides excellent moose habitat, none have yet been observed on the property. Their appearance, Golder predicted, is "only a matter of time." Both elk and mule deer use the property; more mule deer appear to be using North Star during the non-winter months than was previously thought.

Among birds, only nocturnal birds and raptors were specifically targeted in the 2014 surveys. Based on those surveys, in combination with past efforts, Golder concluded at least 79 bird species occur on the property during breeding season (Appendix D). Seventeen species of conservation concern have been documented on the property. Between 2000 and 2008, the ratio of sensitive species to generalist species at North Star increased.

Six species of raptor have been recorded at North Star during breeding season, along with at least two species of owl. Five wetland/wading birds were identified at North Star in 2014, as were seven spe-

cies of waterfowl. An unexpected species documented in 2014 was a wild turkey. Among the raptors at North Star, one was captured repeatedly on camera. A male kestrel regularly perched on a post at a wildlife camera station and was documented hunting grasshoppers.

North Star's colony of great blue herons continues to exist, though in lower numbers since its documented peak in 2004, according to Golder. An average of six young successfully fledged from 2012 to 2014, compared to an average of 23 per year from 2002 to 2005 and an average of 10 per year since monitoring began in 2000. The decline coincided with a move of the colony across the river, Golder noted. Further study is needed to determine what has contributed to the decline, the report concluded.



A male kestrel hunts grasshoppers at North Star Nature Preserve. Golder Associates

Fish sampling at North Star has not been conducted to date. According to CPW Fish Biologist Kendall Bakich, fishes that most likely occur in the Roaring Fork River at North Star include brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), cutbow trout (*Oncorhynchus clarki x mykiss*), mountain whitefish (*Prosopium williamsoni*), mottled sculpin (*Cottus bairdi*) and white sucker (*Catostomus commersonii*). Mottled sculpin is the only native species. The federally listed, threatened lineage greenback cutthroat trout (*Oncorhynchus clarkii stomias*) was once the top predator in the river but no longer occurs in this reach. Another native species that is of special interest to the CPW and listed as a USFS Region 2 sensitive species, the bluehead sucker (*Catostomus discobolus*), may also occur, however, it is not state or federally listed.



Oxeye daisy is among the noxious species at North Star.

## 2.05 VEGETATION

Vegetation cover within North Star was evaluated by Golder through the use of transect lines along which vegetation was recorded in five distinct areas: the transition between human-influenced upland grasslands and montane wet meadow community (the transitional community), the aspen-dominated community, big sagebrush-dominated community, willow-dominated riparian community and the narrowleaf cottonwood-dominated community. No rare or sensitive species were documented within the five communities. Seven noxious species plus two additional invasive species were observed during the 2014 survey.

The transitional community included nine grass species, of which six were native and three were introduced. Introduced species accounted for 47 percent of the vegetation and included crested



wheatgrass, smooth brome and reed canarygrass. Noxious species included oxeye daisy. Golder rated the vegetative community as C , or “functioning.”

Within the aspen-dominated community, Golder noted most aspen trees appear to be under stress and suffering from SAD (sudden aspen decline). Yellow toadflax, a noxious species, was abundant. The understory was composed of two native grass species and one introduced grass species (Kentucky bluegrass). About 53 percent of the understory was occupied by introduced species. The vegetation condition was rated D, or “functioning impaired.”

North Star’s big sagebrush-dominated community was dominated by native species (93 percent), according to Golder. Eleven plant species were documented. The sagebrush appeared vigorous, though little regeneration of the species was noted. The community’s condition was ranked B, or “highly functioning.”



Aspen trees in decline at North Star. Golder Associates

Within the willow-dominated riparian community, two native species of willow were documented, as were three native grass species within the understory. About 51 percent of the understory was occupied by native plants. Plumeless thistle, a noxious species, was observed nearby. The community was rated as C, or “functioning,” and borderline B, or “highly functioning.”

The cottonwood-dominated riparian community yielded the greatest species richness of any transect at North Star, with 17 species. Several noxious species were observed nearby. Native species occupied 93 percent of the overstory and 68 percent of the understory. Crack willow, which is introduced and highly aggressive, was documented among the woody plant species. The community was rated as C, or “functioning.”

## 2.06 WETLANDS

In 2014, an assessment of 247 acres at North Star was conducted, using the Functional Assessment of Colorado Wetlands Method for evaluation. Within the assessment area, about 50 acres of North Star Nature Preserve met federal wetland criteria. The area includes a fen – a groundwater-fed wetland consisting of organic soil – in the northwestern portion of the property. Fens are considered rare and ecologically significant wetlands in Colorado and in the Rocky Mountains.

The analysis (see *Ecological Communities and Fluvial Geomorphology Baseline Report for North Star Nature Preserve*, prepared by Golder Associates, Inc., March 2015) determined an overall wetland score at North Star be “functioning” – roughly analogous to a C+ letter grade. The annual average diversion of 38 percent of the Roaring Fork River’s flow, upstream of North Star, is the single largest stresser to the property’s wetlands, followed by agricultural practices of ditching, channelization and willow removal, according to Golder. Roughly 30 percent of North Star’s historical wetlands have been lost as a result. The reduction is causing a shift from soils that are permanently or seasonally saturated with water to drier soils that in turn reflect a change in vegetative species, including invasive species.



Stand-up paddleboarding is a popular activity on the Roaring Fork River through the James H. Smith and North Star properties.

## 2.07 RECREATION

The 2000 *North Star Management Plan* section on “People and Recreation” says, “...one of the most important goals of this plan is to achieve a balance between North Star as a nature preserve and as a cultural resource.” This statement, “achieve a balance,” guides the current management of North Star. Recreation and public access are limited to the waterway and to the east side of the river only. On the east side of the North Star property, the public is allowed on the East of Aspen Trail, three access corridors connecting the trail to the river, including to the beach, a North Star landing zone, and, in the winter, a groomed Nordic loop. The public is not allowed anywhere on the property outside of these zones. On the James H. Smith property, the public is allowed on a single-track loop trail.

The East of Aspen Trail is a popular walk and ride in the Open Space system. It is a flat, crusher-fine surface, offering a slower, meandering trip that connects Aspen and Difficult Campground. The public must stay on the trail at all times. The East of Aspen Trail will undergo ADA improvements in the summer of 2015. The East of Aspen Trail adjacent to North Star does not receive winter maintenance.

The float trip through North Star is another popular recreational experience. Most users launch on Forest Service property at Wildwood Lane and take out at the North Star Pedestrian Bridge. River use has increased over the years, but accurate user counts are not currently available. The float season through North Star runs roughly from June to early September.

Three access corridors provide connection from the East of Aspen Trail to the Roaring Fork River. The



South Gate is mainly used by paddleboarders who want an out-and back-experience. The Beach Gate is accessed by those wanting to spend time on the North Star beach. The Beach Gate is not to be used as a launch or take-out point. The North Star pedestrian bridge corridor is mainly used as a take-out point for river users. Users are not allowed to leave the trail or the beach in any of the three corridors.

The North Star Landing Zone is used by pilots launching from Aspen Mountain. Non-commercial, public paraglider landings are limited to 30 per weekday and 50 on weekend days. Recreational hanglider landings are limited to 5 per day. Flyers must maintain a 200-meter distance from all heron nests. The landing zone is open during the winter months.

The James H Smith Interpretive loop and two-track road offer a peaceful walk around the property. The two-track has a seasonal heron closure at the willow hedge and does not offer river access. Winter use is allowed on the interpretive loop. It is not a groomed part of the Nordic system. A Nordic loop is groomed on North Star during the winter. Grooming must stay 10 feet away from the riverbank. Dogs are prohibited year-round at North Star.



Vehicles line the shoulder of Highway 82 near the Beach Gate at North Star Nature Preserve.

## 2.08 Parking

Two parking lots serve the property: the North Star North Parking Lot and North Star South Parking Lot. Both lots are used year-round and plowed in the winter. No trash recepticals or restrooms are provided.

Users also often park along the highway shoulder at informal pullouts. The two most popular and heavily used pullouts are at the Beach Gate and at the North Star Pedestrian Bridge access corridor. The bridge access corridor is signed for 15-minute parking but it is not uncommon to see this area overflowing, with users parking along both sides of the highway and staying much longer than 15 minutes. This pullout is located on a curve and during heavy use, sight lines can be difficult for oncoming vehicles. The Beach Gate pullout is also often lined with vehicles. Activity at both pullouts is located within the highway right of way.

An overlook at North Star, accessed from the East of Aspen Trail, features a viewing platform and interpretive signs.



## 2.09 SIGNAGE, INTERPRETATION AND MEMORIALS

All signage on Open Space and Trails properties must now follow the *2014 Pitkin County Open Space and Trails Signage Design Guideline*. To date, North Star signage does not meet the new guidelines and would need to be addressed in the future when replacement is due.

North Star has successful, but aging, interpretive signage installed as dictated in the 2000 management plan. The interpretive signs are in need of replacement. No publicly visible memorials are located at North Star Nature Preserve. Pitkin County Open Space and Trails continues to have a moratorium on new memorial opportunities.

## 2.10 COMMERCIAL- AND SPECIAL-USE PERMITS

Commercial use is prohibited at James H. Smith Open Space by the 2001 interim management plan adopted for the property. Commercial use at North Star Nature Preserve is limited to what is outlined in the 2000 management plan for the property (updated in 2005). According to the North Star management plan, any commercial or organized recreational activity operating at the property must apply for and receive a special-use permit that is reviewed annually for compliance and stewardship, and is revocable at any time. One representative from any organization holding a North Star Special-Use Permit must participate in the North Star Users Group, which is to meet at least twice a year to discuss the state of the ecology and recreation at North Star.

The North Star Users Group met from the adoption of the management plan in 2001 through 2007. The first few years of user group meetings were contentious, as different users worked through activities





A paraglider approaches the landing zone at North Star.

in conjunction with the protection of wildlife habitat. By 2007, the user group meetings were just a quick way for everyone to check in and see if everything was still working, so it was decided that an annual meeting was not necessary so long as current uses did not change.

No more than one commercial paragliding operator is permitted to operate at North Star in a given season, according to the existing North Star Management Plan. In addition, commercial paragliding landings are limited to 98 per week, with no more than 20 landings allowed on a single day. Aspen Paragliding, operating at North Star in 2014, reported 360 total landings by solo pilots and 831 tandem flights. Flights were logged in every month except November 2014; the greatest number of landings occurred in July 2014, with 93 solo flights and 287 tandem flights. The North Star Management Plan permits no more than one commercial kayaking/canoeing operator to operate at North Star in a given season. In 2014, Aspen Kayak and SUP reported 196 total clients at North Star.

Commercial filming or photography is specifically prohibited at North Star Nature Preserve, as is commercial hang gliding.

Permitted special uses on North Star Nature Preserve and James H. Smith Open Space in 2014 included: two, one-day field classes organized through Colorado Mountain College and a three floats led by the Roaring Fork Conservancy. CMC students examined stream and riparian function on both properties; they also examined North Star as an Audubon-designated important bird area. Group size was capped at 17, including staff, for each event. In addition, the Roaring Fork Conservancy, sponsored by Pitkin County Open Space and Trails, hosted three floats of the Roaring Fork River through the James H. Smith and North Star properties in June 2014. Those events were capped at 16 participants per float.

Under the existing management plan, special events (e.g., weddings, concerts), are prohibited at North Star Nature Preserve.

## 3.0 PARTNER AND PUBLIC COMMENTS

The *North Star Management Plan* has been developed in coordination with many partners and input from the public. Comments were gathered from the following agencies and groups: the City of Aspen, Pitkin County Healthy Rivers and Streams Board, White River National Forest, the East of Aspen Caucus, the Aspen Center for Environmental Studies, Aspen Valley Land Trust, the Aspen Snowmass Nordic Council and commercial operators. These comments, along with existing conditions and staff input, help guide the development of Action Items for the future management of North Star Nature Preserve.

### 3.01 CITY OF ASPEN

The City of Aspen has partnered with Open Space and Trails in the purchase and management of James H. Smith North Star Open Space. James H. Smith Open Space is being incorporated into the North Star Management Plan so that both properties can be managed under one set of actions. City and county staff share a vision for the property and will work together to implement the management actions in this plan. The city supports the restoration of riparian habitat and geomorphology at North Star, as well as the potential expansion of Nordic grooming onto the James. H. Smith property.

### 3.02 PITKIN COUNTY HEALTHY RIVERS AND STREAMS BOARD

Open Space and Trails staff has worked with the Pitkin County Healthy Rivers and Streams Board on drafting this management plan. Their main interest is river and wetland restoration. They will be a partner in the implementation of restoration actions on North Star and help draft the restoration plans. Both the Healthy Rivers and Streams Board and Open Space and Trails have funding that can be used for improving river function and wetland restoration; combining forces to implement action items in this plan can move projects along quickly.

### 3.03 WHITE RIVER NATIONAL FOREST

Open Space and Trails staff met with White River National Forest staff to discuss the Wildwood river access and associated parking issues. The most popular place to launch a river float through North Star is a Forest Service river access point and nearby, small parking area, along Wildwood Lane. At this time, the Forest Service does not formally recognize the popular Wildwood launch spot, but acknowledges the popularity of the area and the issues that arise as demand exceeds parking area capacity. Various *potential* solutions were discussed. They include: expanding the parking area, trimming back vegetation along Wildwood Lane, shuttle buses, group-size restrictions, spacing of commercial launch times, the permitting of commercial operators, management agreements with the county and bike parking. All staff present agreed this will be a long-term process that requires a collaborative effort to seek a solution.



Vehicles line the Wildwood Lane boat launch access.





The Roaring Fork River through North Star has experienced increased use.

### 3.04 EAST OF ASPEN CAUCUS

Staff attended the annual East of Aspen Caucus meeting in August 2014 to solicit feedback on the management of North Star. The caucus members present were concerned with the increase in use of the river and how that use was impacting the neighbors along the river, especially at the parking area off Wildwood Lane. They questioned if the county could stop use of the river; staff explained Colorado law regarding the right to float navigable rivers and the fact that the county does not own the put-in at Wildwood. Caucus members would like the county and/or Forest Service to enforce parking at the Wildwood put-in and to curb noise and drinking along the river and at the beach on North Star. The caucus members also were concerned about increasing commercial use along the river. They encouraged the county to work with the Wildwood School to ensure that parking at the put-in does not jeopardize the safety of children at Wildwood due to the narrow road being blocked by cars and trucks.

### 3.05 ASPEN CENTER FOR ENVIRONMENTAL STUDIES

The Aspen Center for Environmental Studies (ACES) has been a partner with Pitkin County on the management of North Star since it was purchased by Pitkin County in 1978. ACES managed North Star for the county until a management plan was written in 2000 and is still very invested in how the area is managed. Staff has been working with ACES to provide limited educational tours since the management plan was completed. ACES has helped monitor bird populations and both organizations see an expanded partnership in which Pitkin County sponsors more educational programs provided by ACES naturalists to help create more advocates for the protection of the preserve and to educate users on why the preserve is so special.

### 3.06 ASPEN VALLEY LAND TRUST

Aspen Valley Land Trust (AVLT) holds the conservation easement on the 175-acre North Star Nature Preserve. This conservation easement ensures that uses at North Star do not impact the natural resources. AVLT is concerned about growing recreational use of the property and ensuring it does not impact natural resources. Staff from both agencies have worked together to draft this plan to ensure that this update to the 2001 management plan is consistent with the conservation easement.

### 3.07 ASPEN SNOWMASS NORDIC COUNCIL

Funding for the free Nordic skiing that is offered throughout Pitkin County and on North Star is provided by Pitkin County Open Space and Trails. The Aspen Snowmass Nordic Council is an advisory board to the Pitkin County Open Space and Trails Board and has worked with OST and City of Aspen staff to create a Nordic Trails Management Plan which proposes looking at expanding the groomed trails on North Star. Currently, the James H. Smith North Star Open Space does not allow mechanical grooming of trails; the Aspen Snowmass Nordic Council would like to see if that can be changed to provide an additional loop during the winter on the east side of the Roaring Fork River.



Nordic skiing at North Star Nature Preserve.

### 3.08 COMMERCIAL OPERATORS

Currently, there is only one commercial boating and one commercial paragliding operator allowed to use North Star. Aspen Kayak and SUP has held the boating permit since the adoption of the management plan in 2001 and would like to see their use continue. They are worried about opening up the preserve to more commercial users since they have been good stewards of the preserve and don't want to see any impacts to the natural beauty of the area. The increase in stand-up paddleboard use is leading some users to take out at random spots on the river. The county should work with rental companies, hotel concierges and other shuttle providers so they can better guide their clients on the rules regarding access to and from the river. Parking and picking up clients safely, particularly at the take-out, is also an issue. In addition, there is no area for storing boats/SUPs for commercial or private boaters at the take-out; this is a problem since boats/SUPs left at the site can block egress from the river.

Aspen Paragliding is the commercial paragliding company that lands clients on North Star. Its operators feel the current management plan is acceptable with respect to the landing area and that the number of landings they are allowed is adequate. They would like a ditch near the landing area placed in a culvert to reduce the chance for broken ankles. They would also like to see the county periodically mow the landing zone, as tall grass poses a tripping hazard and makes landings more difficult.



## 4.0 MANAGEMENT ACTIONS

### 4.01 MAINTENANCE ACTIONS

#### 4.01.01 Mowing

Open Space and Trails will mow the North Star Landing Zone up to two times a year. Open Space will also mow the sides of the East of Aspen Trail through the property as needed.

#### 4.01.02 Plowing

Open Space and Trails will plow the two North Star parking lots as needed through the winter. Trails or access corridors will not be plowed.

#### 4.01.03 Parking Lot Maintenance

Open Space and Trails will maintain the North Star parking lots as needed. This includes: resurfacing, weeds, seed and delineation and/or expansion. The parking lots will not have trash cans.

#### 4.01.04 Mosquito Control

Mosquito control shall occur at the North Star Nature Preserve under the direction of the East of Aspen Mosquito Control District Board of Directors, in consultation with Open Space and Trails.

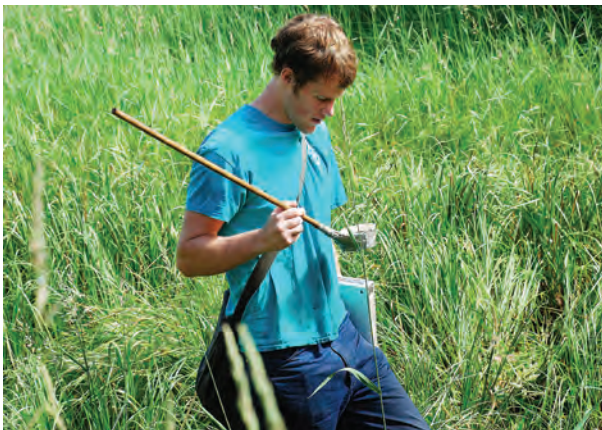
#### 4.01.05 Waste Facilities

No trash receptacles or dog pots will be placed anywhere on the North Star property or parking areas. As a nature preserve, North Star is pack in/pack out and the public is responsible for proper disposal of their trash. Bathroom facilities with trash receptacles adjacent to North Star would serve as a de facto Highway 82 rest area, creating the need for more parking and resulting in costly maintenance.

#### 4.01.06 Water Rights

Open Space and Trails will work with the county attorney to maintain the North Star Nature Preserve and James H. Smith water rights. This includes researching spring and subsurface water rights. Existing rights are:

- US Green Ditch No. 2 (Priority 528 in Water District No. 38) 1 cfs, Appropriation 1919/Adjudication 1952 (Source: Unnamed tributary to the Roaring Fork River)
- US Green Ditch No. 1 (Priority 579 in Water District No. 38) 3 cfs, Appropriation 1948/Adjudication 1952 (Source: Wheel Barrow Gulch, tributary of the Roaring Fork River)
- Joy Smith water (co-owned with the City of Aspen)
- J.H. Smith Warren Creek Ditch No. 1 (Priority 601 in Water District 38) 1.5 cfs, Appropriation 1950/Adjudication 1952 (Source: Warren Creek)
- US Green Ditch No. 1 (Priority 579 in Water Dist. 38) 3 cfs, Appropriation 1948/Adjudication 1952 (Source: Wheel Barrow Gulch, tributary to the Roaring Fork River)



Mosquito control efforts at North Star include sampling for larva.

## 4.02 NATURAL RESOURCE MANAGEMENT ACTIONS

The open meadows and wetlands of North Star Nature Preserve, where the Roaring Fork River slowly meanders, are a true gem of the Open Space and Trails system. The Nature Preserve designation is only bestowed on properties that contain very special ecological communities and wildlife habitat. North Star is beloved by people and important to wildlife; how it is managed is critical for both wildlife species that inhabit the area and the people who gently use and learn about the preserve. The west side of North Star is a wildlife sanctuary. Only authorized Pitkin County or City of Aspen personnel, volunteers, and/or others conducting authorized research, monitoring, educational tours or management will be permitted on the west side of the river. This restriction was put in place in the management plan of 2000 and is the main reason why wildlife is flourishing at North Star. The extensive biological and geomorphological reports compiled over the years are the basis for the management actions detailed below.

### 4.02.01 Geomorphology

The Roaring Fork River at North Star has seen significant change during the past 100 years. The completion of the transmountain diversion reduced the available water in the watershed and human straightening of the river through North Star, to create more pasture, are the two main events that shaped current geomorphological conditions. The following management actions are recommended to attempt to reverse some of the effects of these two human-induced events and stabilize the groundwater table within the existing wetlands, reconnect the existing channel to its floodplain where appropriate, and restore streambanks. Open Space and Trails will collaborate with the Pitkin County Healthy Rivers and Streams Board and the City of Aspen on these projects.

#### 4.02.01.01 Develop plans to stabilize and enhance the groundwater table

Maintaining and enhancing the wetlands at North Star is one of the highest priorities for management of the preserve. This action item will explore alternatives for stabilizing and enhancing the groundwater table, which is critical for maintaining wetland habitat. This will include exploring alternatives to capture more water on the preserve, removing unnecessary headgates or eliminating the adjustability of required headgates by securing them at their maximum elevation, modifying the superficial channels within the floodplain to assist in the rehydration of the North Star meadows and understanding the implications of potential new projects on adjacent properties that may have an influence on site hydrology. The channels associated with headgates and other, smaller, surface-water drainage channels should be modified to retain water. Recommended mechanisms may include: low-impact geomorphological techniques such as log placement, check-dams or par-







Above and below: Previous efforts at steambank restoration at North Star.

tial infilling of lateral channels to encourage local beaver and wildlife activities and to minimize ecological impact. Water rights will need to be investigated accordingly.

Start Date: Fall 2015

Financial Implication: \$35,000-\$55,000

#### **4.02.01.02 Stabilize streambanks in critical areas**

Streambank restoration will be achieved by installing native plant species or plant materials (biostabilization), or suitably engineered flow deflection structures, decreasing the potential for the destruction of habitat provided by the mature cottonwood stand (Appendix J). Only woody materials will be used in bank stabilization. The biostabilization or engineered flow deflectors will need to be designed to match the hydraulic conditions that the site is likely to experience and make use of local site-specific native vegetation where feasible. The specific restoration recommendations for the mature cottonwood area will include modifying the bank angle of repose to an approximate 3:1 to 4:1 grade, combined with site-specific plantings of willow wattles from local native species with containerized plantings of willow, cottonwood, alder and sub-dominant species such as sedges, rushes and other graminoids. Section







Spring flooding at North Star.

4.02.03.04 (b) further addresses the continuing restoration of streambanks.

Estimated Start Date: Fall 2015

Financial Implication: \$35,000-\$75,000

**4.02.01.03 Carefully consider the removal, or modification, of the existing in-stream structures**

Modification of the existing in-stream structures could have a significant effect on the channel morphology and existing habitat. A more detailed geomorphic assessment will be conducted at each site before removal or modification of existing in-stream structures.

Estimated Start Date: 2016

Financial Implication: This action item will be bid out to determine cost

#### 4.02.02 Wildlife

Wildlife use overall on North Star is protected and flourishing. The management action in the original 2001 Management Plan - closing the west side of the Roaring Fork River to public recreation - has been very successful. This allowed wildlife and habitat to exist with little human interference. Recreation is one of the main threats to wildlife habitat and the recreation section addresses how this is being managed to protect wildlife (Appendix E). No major changes are proposed. The most recent biological survey identified noxious weeds as the main threat to wildlife habitat and a more active noxious weed control effort will be initiated on North Star. Continuation of monitoring and some additional management actions listed below will further enhance the wildlife habitat.



A great blue heron and its young at the North Star heronry.

##### 4.02.02.01 Great Blue Heron Protections

The nesting population at the existing North Star heronry has fluctuated over the past decade and fewer nests are producing fledglings. The decrease could be attributable to various factors, including predation, former nest trees becoming unsuitable, and the increase in river use. The following actions will be implemented to help maintain suitable heron habitat.

- a) Near the heronry, close the area from the willow hedge to the river permanently and create a 200-meter “quiet zone.” Open Space and Trails will work with the Aspen Center for Environmental Studies to create the buffer and educate the public on why the “quiet zone” is necessary to benefit the herons (Appendix E).
- b) Rocky Mountain Bird Observatory will continue monitor the heronry annually.
- c) Wildlife cameras will be installed at nest trees to monitor nest success and for predators. They will also be used for educational purposes.
- d) A viewing stand with a fixed spotting scope will be installed at the edge of the willow hedge and interpretive signs will be erected to explain the conservation significance of the heron colony and its natural history.

Start Date: 2016 (cameras, monitoring, “quiet zone”)

Financial implication: \$5,000

Start Date: 2017 (viewing stand, signage)

Financial implication: \$20,000



#### 4.02.02.02 Beaver Protection

Beavers are active at North Star and provide significant ecological benefits by enhancing wetlands throughout the preserve. Identify beaver bank lodges and ensure they are protected from river recreation by educating river users about the location and maintaining a safe distance of about 50 feet to avoid disturbance. Enhancing riparian vegetation will also enhance beaver habitat. Care needs to be taken during establishment of vegetation to prevent beavers from impacting the plant material.



Beaver cuttings among the willows. Golder Associates

#### 4.02.02.03 Monitor Management Indicator Species

The 2015 Golder report identifies Management Indicator Species (MIS) that the county should monitor for and ensure these species and their habitats are preserved (Appendix F). The monitoring section outlines the timing for repeated surveys. After each survey is completed, the data will be analyzed. No management actions, beyond what is proposed in other sections, are necessary at this time for the MIS. Adaptive management will be used if data results show negative changes in MIS use of the preserve.

#### 4.02.02.04 Fish Monitoring

Work with Colorado Parks and Wildlife to determine if a sampling effort could be conducted on the Roaring Fork River through North Star to identify species that occur in this stretch and establish a baseline for potential future sampling.

Estimated start date: 2017

Financial Implication: TBD

#### 4.02.02.05 Aquatic Habitat Monitoring

Pitkin County Open Space and Trails funded a study by the Roaring Fork Conservancy to assess the aquatic habitat at North Star. Overall, the habitat was rated as healthy. It will be monitored at five-year intervals to evaluate changes over time.

Estimated start date: 2017

Financial Implication: \$1,000

#### 4.02.03 Vegetation

The vegetation at North Star is heavily influenced by the wetlands and the Roaring Fork River. It has also been significantly modified by prior human use. The Management Plan of 2001 set forth protections from human disturbance, but due to drying conditions - the result of transmountain diversions reducing the available water flows, and the straightening of the river by human activity - the vegetation communities are shifting. The following management actions address this shift with the goal of curtailing or reversing the change.



Non-native smooth brome at North Star.

#### **4.02.03.01 Noxious Weed Control**

Noxious weeds are a growing problem as the land at North Star becomes more xeric, pushing out species that can no longer exist in drier conditions. Once the existing species are pushed out, noxious weeds, which are already present on the property, take over the denuded land and spread very quickly. Open Space and Trails and the City of Aspen will expand the treatment of noxious weeds on all species identified in the 2015 Golder report. This will include an integrated pest management approach using chemical methods, where appropriate, as well as mechanical means, biological agents and revegetation with native species. Efforts will be coordinated with neighboring property owners.

Estimated Start Date: Ongoing

Financial Implication: Included in OST and City of Aspen annual budget

#### **4.02.03.02 Install soil moisture and groundwater monitoring devices**

To assess the effects of a continued loss of hydration on the landscape at North Star, and the likely effects of climate change, Open Space and Trails and the City of Aspen will install up to two soil monitoring stations in partnership with the Aspen Global Change Institute (AGCI), as has been done on other OST properties throughout the Roaring Fork Valley. These stations will monitor the likely reduction in available soil moisture over time and show if actions within this plan that are intended to rehydrate the landscape are increasing soil moisture. Open Space and Trails and the City of Aspen will institute a program of seasonal groundwater monitoring on North Star using, where possible, the existing wells. One representative well per community type will be outfitted with an automated daily data logger. The remaining wells will be monitored four times annually (once per spring, summer, fall and winter). Historic groundwater data will be included.

Estimated Start Date: 2016

Financial Implication: \$15,000 for soil monitors and AGCI installing and maintaining; \$10,000 for data loggers and new groundwater wells

#### **4.02.03.03 Monitor aspen habitat**

The aspen stands at North Star have been surveyed; the majority appear to be under stress and suffering from SAD, or sudden aspen decline. The primary cause of the decline is moisture stress, possibly induced in part through climate change, combined with wildfire suppression and disease damage through wildlife-induced entry of cytospora, anthracnose and other canker-borne diseases. Reproduction, noted through observation of resprouting, was low to low-intermediate. Aspen stands play an important role in North Star's habitat. Potential actions to maintain or enhance the aspen stands will be guided by the results of soil and groundwater monitoring.

Estimated Start Date: 2016

Financial Implication: None



Browsing deer can impact aspen trees. Golder Associates





Vegetation along the Roaring Fork River at North Star is a patchwork of plant communities.

#### **4.02.03.04 Riparian Habitat Management**

The vegetation along the Roaring Fork is a patchwork of willow-dominated and cottonwood-dominated communities that are in functional condition, as per the 2015 Golder report. The goal is to maintain coarse-grained habitat heterogeneity (i.e., willow riparian shrubland interspersed with mesic meadows and graminoid marsh). The following management actions aim to maintain these communities in a functioning state.

- a) Maintain, improve or facilitate flooding of riparian shrublands and avoid management activities that would diminish surface and/or subsurface flows as identified under the geomorphology action items.
- b) Continue restoration of streambanks, by adding woody riparian vegetation, which will increase breeding habitat, and modifying the bank angle, as described in the geomorphology action items.
- c) Maintain and/or restore water levels in tall emergent wetlands; eliminate channels and culverts installed to drain wetlands, as described in the geomorphology action items.
- d) Protect cottonwood seedlings and saplings from browsing ungulates and beavers with fencing or other means.

Estimated Start Date: 2016

Financial Implication: TBD



The wetlands at North Star have been reduced in size by about 30 percent.



#### **4.02.04 Wetlands**

Overall, the wetlands on North Star were rated as functioning. The largest stressors to North Star are the 38 percent annual average removal of the total upstream water from the Roaring Fork River by the transmountain diversions and the historic agricultural practices of ditching, channelization and willow removal. The result of these stressors is an approximate 30 percent reduction in the size of the North Star wetland complex. The wetland reduction is causing a shift in site hydrology from a more hydric situation to one that is more mesic or, in some cases, xeric. This shift is reflected in the change in species composition from willow- cottonwood and sedge-rush dominated systems to early herbaceous communities containing an abundance of invasive species. Many of the management actions in the geomorphology, wildlife and vegetation sections of this plan will benefit and likely enhance the wetlands at North Star.

##### **4.02.04.01 Further investigation of the fen**

Fens are rare and ecologically significant wetlands in Colorado and the Rocky Mountains, defined as a groundwater- and/or surface water-fed wetlands with a thick, water-logged, organic soil layer (peat) made up of dead and decaying plant materials. The spatial extent of fen has been mapped and the relevant soil properties, plant associations and hydrology will be investigated to evaluate current conditions and determine whether any further actions are needed to allow the continued development and persistence of the fen. (Appendix G).

Estimated Start Date: 2016

Financial Implication: Included in the OST and City of Aspen annual budget

#### 4.02.05 Monitoring

The following monitoring protocols will be implemented on North Star:

<b>Vegetation Monitoring Protocol</b>	<b>Interval</b>
Transitional Community	Every 3 years
Aspen-Dominated Community	Every 3 years
Sagebrush-Dominated Community	Every 3 years
Riparian Willow-Dominated Community	Every 3 years
Riparian Cottonwood-Dominated Community	Every 3 years
Noxious/Invasive Species	Every year at beginning and end of growing season
<b>Groundwater Monitoring Protocol</b>	<b>Interval</b>
Transitional Community	Four times annually (once per spring, summer, fall, winter)
Aspen-Dominated Community	Four times annually (once per spring, summer, fall, winter)
Sagebrush-Dominated Community	Four times annually (once per spring, summer, fall, winter)
Riparian Willow-Dominated Community	Four times annually (once per spring, summer, fall, winter)
Riparian Cottonwood-Dominated Community	Four times annually (once per spring, summer, fall, winter)
Representative Well per Community Type	Automatic daily data recorder
<b>Wildlife Monitoring Protocol</b>	<b>Interval</b>
TVES	Every 3 to 5 years
Camera grids	Every 3 to 5 years
Raptors (diurnal and nocturnal)	Every 3 to 5 years
Avian point-transects	Every 2 to 3 years (every 2, if possible for more robust results)
Great blue herons – production and recruitment	Every year by volunteer; results analyzed every 5 years by biologist

Estimated Start Date: 2016

Financial Implication: Included in OST and City of Aspen annual biological services budget

## 4.03 RECREATION MANAGEMENT ACTIONS

### 4.03.01 Allow recreation activities in designated locations

North Star is managed as a wildlife preserve, in addition to being a recreation destination. In order to protect ecological values, no member of the public is allowed on the west side of the Roaring Fork River or in areas outside designated public recreation corridors (these restrictions include prohibitions on hunting, removal of game and backcountry ski access.) Educational tours and research can be allowed outside a recreation corridor, on a case-by-case basis, through a Special-Use Permit. All users must be respectful of the tranquility of the nature preserve and the experience of others. Excessive noise is prohibited. The following locations are the public recreation corridors on North Star (refer to maps in Appendices H and I).

#### East of Aspen Trail and Wildlife Viewing Platform

The East of Aspen Trail provides a north/south recreation connection through the eastern edge of the North Star property. There is a wildlife viewing platform accessed along the edge of the East of Aspen Trail, near the north parking lot. This is a multi-use trail, dogs must be leashed, and the public is not allowed to leave the trail or wildlife viewing platform. The trail and platform will not receive winter maintenance.

The East of Aspen Trail and the wildlife viewing platform both strive to be ADA accessible. Improvements to trail grades need to be implemented in order to achieve this and periodic audits need to occur to ensure the trail and platform continue to be accessible.

#### James H. Smith Interpretive Loop

James H. Smith Interpretive Loop Trail, on the James H. Smith portion of the property, is accessed via the East of Aspen Trail. This loop trail serves as an educational walk through the nature preserve. No dogs, bikes, horses or commercial use are allowed on the James H. Smith loop. Trail users must stay on trail and the trail is closed from dusk to dawn. There are heron buffers in place on the property. If the colony moves locations, relocation or seasonal closures of the loop trail may need to occur. The existing two-track road will be permanently closed to the public at the willow hedgerow.



The James H. Smith Interpretive Loop Trail.





The beach scene at North Star.

### **River and Beach Access Corridors**

Three public access corridors provide a pedestrian connection from East of Aspen Trail to the Roaring Fork River's edge: the South Gate, the Beach Gate, and North Star Pedestrian Bridge. The North Star Beach is part of the corridor accessed via the Beach Gate. The South Gate and pedestrian bridge can be used as launch and takeout locations by river users. No launching or taking out of watercraft is allowed at the beach. No dogs, bikes, horses, amplified music or fishing from the bank is allowed on the bridge or access corridors. No glass is permitted. Trail users must stay on trail or the beach and the access corridors are closed from dusk to dawn. All river access corridors are closed in winter months.

The beach is a popular location to sit and enjoy the North Star Nature Preserve. It is a limited space with no room for expansion. Lawn chairs, umbrellas, tables and similar products are prohibited. Amplified music is strictly prohibited. Trash receptacles are not provided.

All users must pack out what they bring in. The beach is part of the nature preserve and a beautiful location from which to enjoy the valley; all users are required to do their part to keep it as such.

In general, all three access corridors need maintenance. The South Gate needs improvements to help stabilize the bank erosion, bike racks would benefit all three locations and the North Star pedestrian bridge access/Highway 82/East of Aspen Trail interface needs redesign to address multiple issues with erosion, steep trails, staging areas, parking, etc.

### **Roaring Fork River**

The public is allowed to float the Roaring Fork River through the property and take out at the South Gate or the North Star Pedestrian Bridge river access. There are quiet zones around the heronries and, in general, the public is asked to enjoy the preserve in a peaceful and respectful manner. Carpooling and bike shuttling is encouraged as parking is limited throughout. Fishing is only allowed from boats on the river. Boaters and paddlers are not allowed to exit their vessels except at designated access corridors.

### **North Star Landing Zone**

Paragliders/hang gliders are allowed to land in the designated landing zone only. Public, non-commercial, paraglider landings are limited to 30 per week day and 50 on Saturday and Sunday. The maximum number of recreational hang glider landings per day at North Star is 5 (please refer to the Commercial Permit section for commercial landings). All users

are required to sign into the log book at the landing zone. The landing zone is closed from 5 p.m. to 7 a.m. There is a no-fly zone in the air space within 200 meters (650 feet) of any great blue heron colony. Winter landings are permitted.

Open Space and Trails will mow the landing zone a few times a year and groom it during the Nordic season. OST will manage weeds and seed as needed. Open Space will also maintain a log book in which every user is required to enter the time, date, single/tandem and commercial /public classification for their trip. Open Space will also address the ditch issues in the landing zone.



The James H. Smith property offers the opportunity for additional groomed Nordic skiing.

### **Winter Use and Nordic Skiing**

In the winter, Nordic use is allowed on the North Star loop, on the James H. Smith loop and along the East of Aspen Trail. North Star is currently the only location where the system is groomed. All grooming must be set back 10 feet from the banks of the Roaring Fork River. In the future, Nordic grooming may be expanded on to the James H. Smith portion of the property, where grooming must still be set back 10 feet from the river bank. Snowshoeing is permitted on the groomed trail. Grooming is prohibited from April 15<sup>th</sup> to Nov. 15<sup>th</sup>. All river access corridors are closed during the winter months. No dogs are allowed on the preserve, including on Nordic trails.



#### 4.03.02 Establish protocol to monitor recreational use numbers

This action may include motion-triggered counters along the river, spot counts and other measures. The data will inform management decisions.

Start Date: Summer 2015

Cost: None

#### 4.03.03 Work with the White River National Forest on management of the Wildwood put-in and parking area

The most popular launch point for the stretch of river through North Star is located on Forest Service property along Wildwood Lane. Open Space and Trails will work with the Forest Service, Wildwood School and the Wildwood Lane Association to manage the Wildwood parking area and river access. Management ideas to be discussed include: education and outreach, parking management, commercial operator permits, ranger enforcement ability, shuttles and bike parking. This discussion will include exploration of a permit system for all users, parking and/or use fees, a prohibition on alcohol, safety regulations for tubes and other watercraft, and regulation of noise levels adjacent both public and private lands.

Estimated Start Date: Ongoing

Financial Implication: TBD



Boats, bikes and vehicles line the take-out point near the pedestrian bridge.

#### 4.03.04 River Access Corridors Review and Improvements

Review all three river access corridors and identify any maintenance and redesign solutions. In particular, vehicle parking, bike parking and trailhead signage at all three corridors needs to be addressed, as does bank erosion at the South Gate and pedestrian bridge corridors.

The river access corridor at the North Star pedestrian bridge is the most heavily used location on the North Star property. The review and redesign of this area will look comprehensively and address parking issues, bike parking, trail erosion, signage, ADA issues, staging area and the general functionality of the site. All redesigns will work within the access corridors, as well as with the Colorado Department of Transportation, to achieve the best design solution.

Estimated Start Date: Design would begin in the fall of 2015



#### 4.03.05 North Star Parking Area Improvements

A series of improvements around North Star parking lots should occur to facilitate the successful public use of the property. This includes: installation of trailhead signage, according the Sign Standards, reviewing and improving ADA accessibility, bike rack installation and considering the general functionality and layout of the lots.

Estimated Start Date: Summer 2016

Financial Implication: \$20,000

### 4.04 COMMERCIAL USE AND SPECIAL USE MANAGEMENT ACTIONS

#### 4.04.01 Commercial-Use Permits

Any commercial enterprise operating at North Star must apply for a commercial-use permit. This includes, but may not be limited to: river guiding, shuttle operations, bike tours, nature tours, paragliding, etc. Commercial-use permits must be renewed on an annual basis and are subject to Pitkin County Open Space and Trails' commercial-use policies. Failure to comply with the Pitkin County permit process and policies can result in the loss of the ability to use North Star. All commercial uses must take place in the public access corridors, parking lots and landing zone. It is the responsibility of the commercial operators to be knowledgeable of the unique North Star environment, respect the balance between the property's status as a nature preserve and its recreational use, and educate and share this respect with their clients. Commercial uses specifically *prohibited* at North Star include: amplified music, beaching of watercraft in any area, hang gliding and commercial use of North Star beach.



Participants in a tandem flight prepare to land. Aspen Paragliding photo

#### Commercial use of the North Star Landing Zone

Paragliders/hang gliders are allowed to land in the designated landing zone only. Commercial use of the North Star landing zone is limited to 98 paraglider landings per week, with no more than 20 landings allowed on a single day. Commercial hang gliding is prohibited. All users are required to sign into the log book at the landing zone. All users must observe the no-fly zone in the air space within 200 meters (650 feet) of any great blue heron colony.

#### Commercial River Guides and Shuttles

All commercial operators who guide, instruct or shuttle clients on or to the Roaring Fork River, via the North Star Nature Preserve and associated parking areas, must obtain a commercial-use permit from Pitkin County Open Space and Trails. A guided or shuttled group cannot exceed six people, including the guide. The number of groups per day and timing the launching of groups will be determined in the commercial-use permit created for North Star and coordinated with the Forest Service at the Wildwood put-in. All commercial guides will be required to go through training on the ecology of North Star and the quiet zone, and relay that information to their clients.







A “quiet zone” is proposed to benefit nesting herons and other wildlife.

Financial Implication: \$5,000

#### **4.05.03 Work with the Aspen Center for Environmental Studies to sign a river quiet zone**

Floating the Roaring Fork River through North Star is a special experience. To encourage users to be respectful of the nature preserve, Open Space and Trails staff will work with ACES to implement and sign a “quiet zone” throughout the preserve. This will benefit the herons and all the other wildlife species along the river corridor. Expansion and enforcement of the quiet zone at the Wildwood put-in and areas where the river passes through private property will also be explored.

Estimated Start Date: Summer 2015

Financial Implication: \$10,000

#### **4.05.04 Expand the Ranger Program to accommodate North Star peak use times**

North Star is a popular place in the summer for its variety of recreational opportunities. The Open Space and Trails ranger staff spends a significant portion of the busy summer season focused on North Star. Expanding the ranger program would help further the outreach and education goals for the property, with enforcement actions a last resort, without taking away from duties elsewhere in the Open Space and Trails system. The goal is to help all users become better stewards of North Star.

Estimated Start Date: Summer 2016

Financial Implication: \$30,000

#### **4.05.05 Develop an ACES Environmental Education Program on North Star**

Open Space and Trails and the City of Aspen will sponsor an annual offering of educational programs and on-site naturalists through the Aspen Center for Environmental Studies, with a goal of educating visitors and users of North Star about the property’s special ecological resources. OST and the City of Aspen are working with ACES on many projects throughout the Roaring Fork Valley and ACES has the expertise in running programs efficiently and effectively. Programs for the west and east side of the river will be developed to limit impact to wildlife while showcasing the unique natural resources that exist on the preserve. An on-site naturalist will also be available at the recreational access points, the boating put-in at Wildwood, and along the East of Aspen Trail to provide environmental information about North Star, emphasizing how to best protect the preserve. This will create more advocates for the protection of North Star and help river users understand the quiet zone and limit their impacts while floating through the preserve.

Estimated Start Date: Spring 2016

Financial Implication: \$21,000



Volunteers could help educate the public about how to protect the special ecology of North Star Nature Preserve.

#### **4.05.06 Explore the Use of Volunteers**

Open Space and Trails will explore developing a cadre of volunteers to assist with educating the public about how to protect the special ecology of North Star Nature Preserve. This effort could occur at the put-in, take-out, on the beach and along the river. The Forest Service uses the local non-profit Forest Conservancy to provide volunteers at popular locations to help rangers manage the public use. Open Space and Trails will look at all options to create a volunteer base at North Star.

Estimated Start Date: 2016

Financial Implication: TBD



## 4.06 COST SUMMARY

### **Natural Resource Management Actions**

2015 Geomorphology action items: \$70,000 - \$130,000  
TOTAL: \$70,000 - \$130,000

2015 Wildlife action items: No cost  
2016 Wildlife action items: \$5,000  
2017 Wildlife action items: \$21,000 plus costs TBD  
TOTAL: \$26,000 plus costs TBD

2015 Vegetation action items: Ongoing budget expenses (Aspen and Pitkin County)  
2016 Vegetation action items: \$25,000 plus costs TBD  
TOTAL: \$25,000 plus costs TBD

2015 Wetlands action items: None  
2016 Wetlands action items: To be included in Aspen and Pitkin County annual budgets  
TOTAL: No additional OST funds

2015 Monitoring action items: None  
2016 Monitoring action items: To be included in Aspen and Pitkin County annual budgets  
TOTAL: No additional OST funds

### **Recreation Management Actions**

2015 Corridor improvements: \$20,000  
2016 Parking area improvements: \$20,000  
Ongoing: Wildwood Lane management with Forest Service: TBD  
TOTAL: \$40,000 plus costs TBD

### **Education and Outreach Management Actions**

2015: None  
2016 Signage, educational guide, river quiet zone, expanded ranger program, environmental education: \$91,000  
TOTAL: \$91,000

**2015 TOTAL ACTION ITEM COSTS:** \$90,000 - \$150,000 plus costs TBD and budgeted expenses

**2016 TOTAL ACTION ITEM COSTS:** \$141,000 plus costs TBD and budgeted expenses

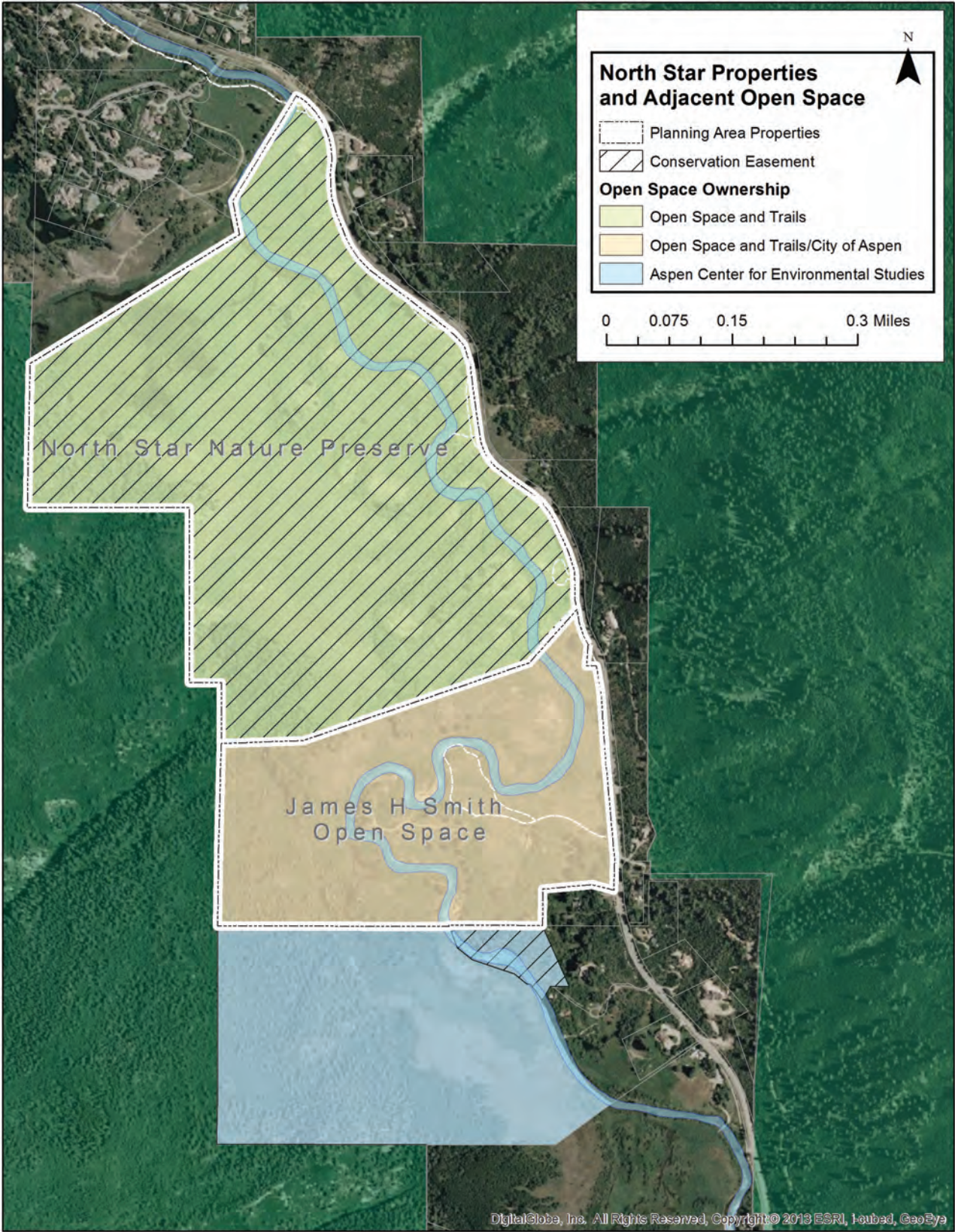
**2017 TOTAL ACTION ITEM COSTS:** \$21,000 plus costs TBD

**TOTAL PLAN COSTS:** \$252,000 - \$312,000 plus costs TBD

**Costs for 2017 and beyond TBD and budgeted through the regular county budget process**

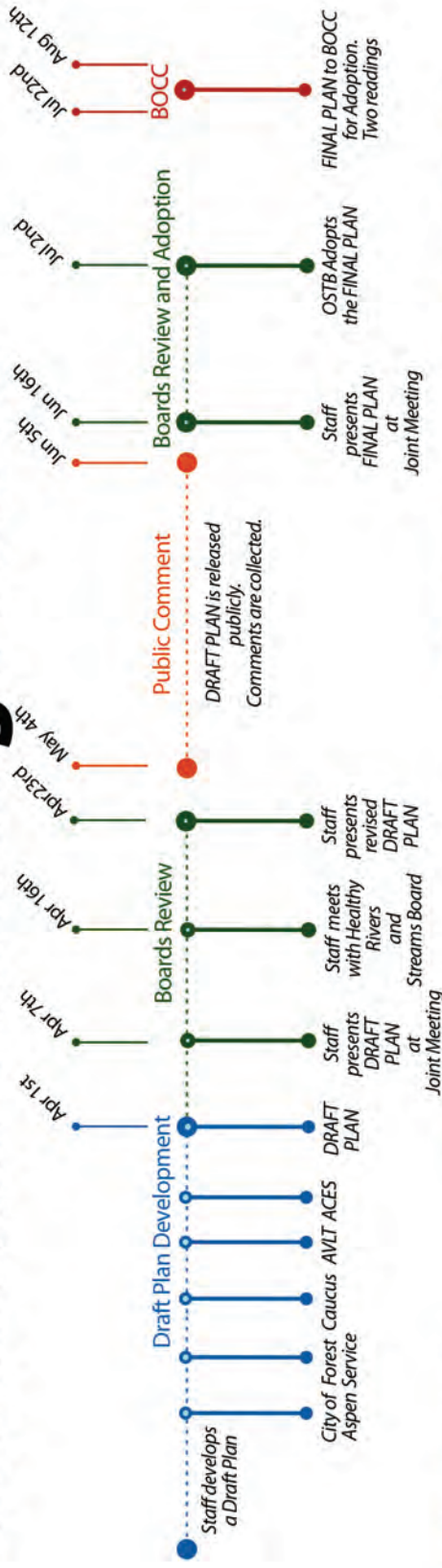
*Funding sources: Open Space and Trails, City of Aspen, Healthy Rivers and Streams*

# Appendix A - North Star Nature Preserve Planning Area





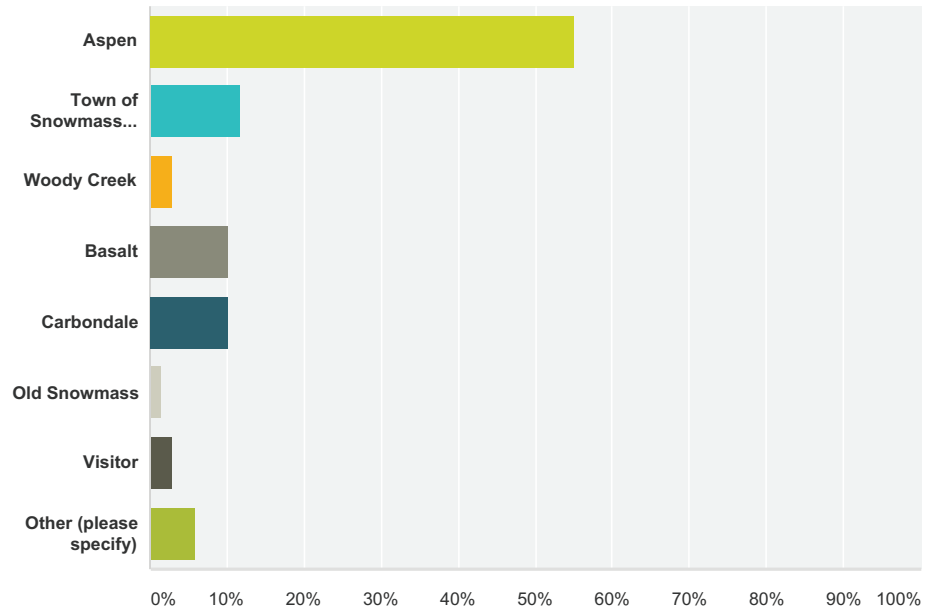
# North Star Planning Process



Stage	Description
<b>Draft Plan Development</b>	Staff reviews existing conditions, commissions ecological and hydrological studies, conducts user surveys, and meets with our partnering agencies to develop a Draft Plan.  Partners include: City of Aspen Healthy Rivers and Streams Board Forest Service East of Aspen Caucus Aspen Valley Land Trust Aspen Center for Environmental Studies Commercial Operators Nordic Council  Staff will review the draft action items with the City of Aspen, Healthy Rivers and Streams Board, Aspen Valley Land Trust, Aspen Center for Environmental Studies, and the Forest Service before taking a draft plan to the Board for review
<b>Board Review</b>	The North Star Management Plan requires the approval of both the OSTB and BOCC, due to the ordinance adopting the original management plan.  Staff will present the Draft Plan to the OSTB and BOCC at the Joint Meeting. Staff will give a detailed review of existing conditions, public and partner comments, themes that were developed and how this informed the development of the Action Items. Board will ask questions, comment and give Board direction. The purpose of the work sessions are to collaborate with the Boards on their thoughts for the Draft Plan. Public comment is encouraged to wait until after the official Draft Plan is released.  Staff will take the Boards' directions and edit the plan accordingly. The Draft Plan, with revisions, will be presented to the OST Board at the end of April meeting. Once the OST Board has approved the Draft Plan, it will be released for public comment.
<b>Public Comment</b>	After the OST Board approves the Draft Plan it will be released for a 6 week public comment period. This includes: posting the draft to our project site with a comment/survey link, advertising, press release, open houses, presentations to partners, newspaper and radio and/or other pertinent means of advertising. All comments need to be captured in writing and will become an appendix in the final report. This includes any formal comments from Boards, partners, user groups etc.
<b>Board Review and Adoption</b>	After the public comment period closes, staff will update the Draft plan to develop a Final plan. Staff will present the Final plan to both Boards at the June joint meeting, highlighting the comments received over the Public comment period and any changes in the plan. The Boards will provide any comment and/or Board direction on edits. Staff will bring the revised Final Plan back to the OSTB for adoption at a subsequent meeting.  <b>BOCC Presentation</b> Staff will present the adopted Final Plan to the BOCC over two readings for adoption.

Q1 Where do you live?

Answered: 69 Skipped: 0



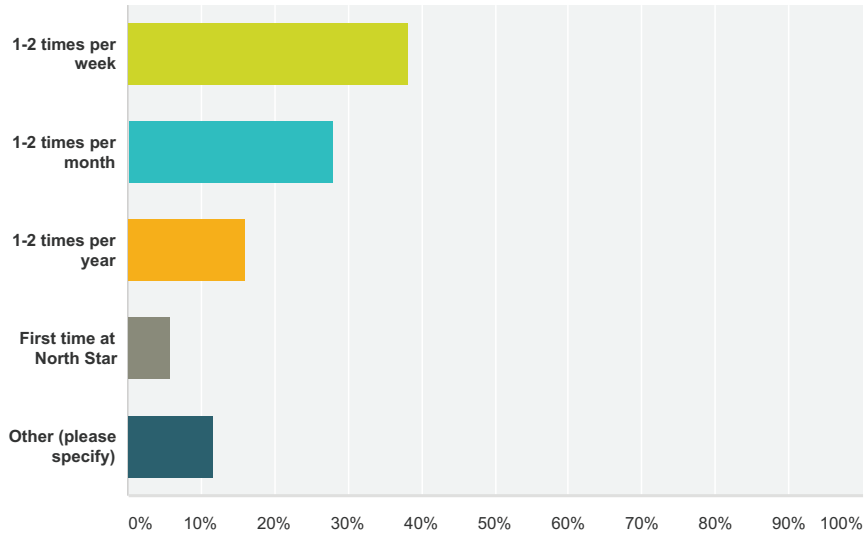
Answer Choices	Responses
Aspen	55.07% 38
Town of Snowmass Village	11.59% 8
Woody Creek	2.90% 2
Basalt	10.14% 7
Carbondale	10.14% 7
Old Snowmass	1.45% 1
Visitor	2.90% 2
Other (please specify)	5.80% 4
<b>Total</b>	<b>69</b>

#	Other (please specify)	Date
1	El Jebel	1/5/2015 9:03 AM
2	Former local (born & raised); now east coast.	8/5/2014 8:03 PM
3	Glenwood	7/30/2014 9:54 AM
4	East pf Aspen, above Northsar, bordering river	7/17/2014 3:04 PM



**Q2 How often do you visit North Star Nature Preserve?**

Answered: 68 Skipped: 1

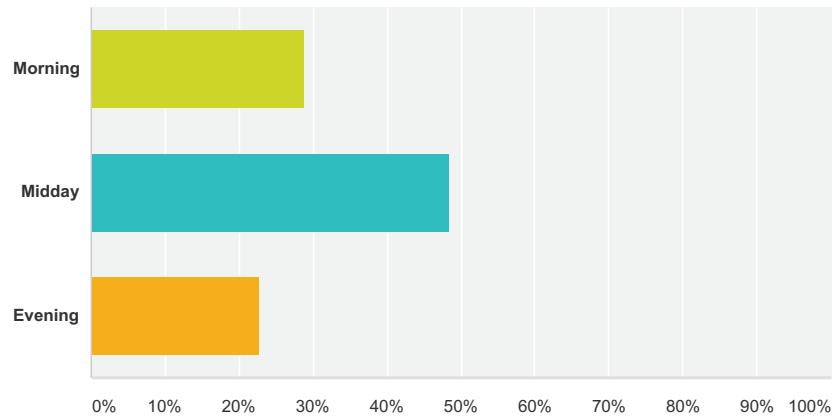


Answer Choices	Responses
1-2 times per week	38.24% 26
1-2 times per month	27.94% 19
1-2 times per year	16.18% 11
First time at North Star	5.88% 4
Other (please specify)	11.76% 8
<b>Total</b>	<b>68</b>

#	Other (please specify)	Date
1	Paragliding daily usage	3/11/2015 2:03 PM
2	occasionally	1/12/2015 9:43 PM
3	10-12 times per year	1/5/2015 9:03 AM
4	1-2 times each season (summer/winter)	8/6/2014 1:41 PM
5	more in the summer than winter	8/5/2014 9:51 PM
6	60 + times this summer	8/5/2014 8:11 PM
7	Pass through on 82 weekly, step ont preserve 2 -3 x per year	8/4/2014 9:13 AM
8	10	7/30/2014 9:40 AM

**Q3 What time of day do you most often visit North Star?**

Answered: 66 Skipped: 3



Answer Choices	Responses	
Morning	28.79%	19
Midday	48.48%	32
Evening	22.73%	15
<b>Total</b>		<b>66</b>



## Appendix C - Public Comments

### Q4 How do you typically travel to North Star (car, bike, foot)? What is your typical access point(s) (i.e. Wildwood, East of Aspen Trail)? If you drive or bike, where to park? Please be specific.

Answered: 67 Skipped: 2

#	Responses	Date
1	Landing Zone for Paragliding.	3/11/2015 2:03 PM
2	car, wildwood put in	2/11/2015 4:46 PM
3	Travel by car. Enter at Wildwood.	2/10/2015 4:16 PM
4	Bike	2/2/2015 10:42 AM
5	car, Wildwood, nordic trail	1/20/2015 6:53 AM
6	Drive and Park at the input by wildwood school	1/16/2015 3:09 PM
7	Car	1/12/2015 9:43 PM
8	car	1/5/2015 9:03 AM
9	Car or bike. All parking areas	9/3/2014 4:55 PM
10	drive and park by cottonwoods or bike. walk trail by road. ski tour trails in winter	8/19/2014 12:12 PM
11	On foot, East of Aspen Trail	8/12/2014 11:00 AM
12	Drive, wildwood.	8/7/2014 12:34 PM
13	Nordic Ski, foot, from parking lot nearest town.	8/7/2014 9:16 AM
14	Paraglide	8/6/2014 7:02 PM
15	I land in the paragliding landing zone. I do not access the trails or river.	8/6/2014 6:55 PM
16	Typically I fly my paraglider into North Star. However, when I am coming to access the beach or the river I usually travel via bicycle.	8/6/2014 3:11 PM
17	car to Wildwood access to float/bike shuttle back bike from Difficult CG	8/6/2014 1:41 PM
18	Car, Wildwood, Ranch Gate, Stillwater Bridge	8/6/2014 11:46 AM
19	Paraglider	8/5/2014 10:58 PM
20	paraglider	8/5/2014 10:04 PM
21	usually car then shuttle on foot or bike. wildwood	8/5/2014 9:51 PM
22	Paraglider	8/5/2014 8:11 PM
23	Car, east of aspen trail.	8/5/2014 8:03 PM
24	By car.	8/5/2014 2:54 PM
25	Bike via HWY 82	8/5/2014 1:35 PM
26	Foot (running) or by car to nordic ski or paddle board.	8/4/2014 8:07 PM
27	The beach by car paddle up stream or wildwood down	8/4/2014 2:37 PM
28	on foot	8/4/2014 10:42 AM

## Appendix C - Public Comments

29	Drive to ski and park at the first parking area after the bridge. Drive to kayak - park at Wildwood, leave bike at bridge. In summer, sometimes we bike there.	8/4/2014 10:09 AM
30	Bike	8/4/2014 9:13 AM
31	bike. beach area	8/4/2014 9:08 AM
32	bike	8/4/2014 8:40 AM
33	car to all access points for summer floats. winter usually main lot for xc track	8/2/2014 10:51 PM
34	I travel by Bike	8/2/2014 10:33 PM
35	bike. stillwater bridge	7/30/2014 6:03 PM
36	Car	7/30/2014 9:55 AM
37	Drove, south gate access	7/30/2014 9:54 AM
38	Car-next to the beach	7/30/2014 9:52 AM
39	we drive and park at wildwood	7/30/2014 9:51 AM
40	drive	7/30/2014 9:51 AM
41	wildwood or the beach are our access points and we get here by car	7/30/2014 9:50 AM
42	car	7/30/2014 9:49 AM
43	car and foot	7/30/2014 9:49 AM
44	car/wildwood	7/30/2014 9:48 AM
45	car/bike wildwood, stillwater bridge	7/30/2014 9:47 AM
46	car- east of aspen trail by the beach or walking on trail from town	7/30/2014 9:46 AM
47	Run by. My first time driving.	7/30/2014 9:46 AM
48	Drive, beach	7/30/2014 9:44 AM
49	Bike, car, SUP	7/30/2014 9:42 AM
50	driving, wildwood south gate, off the side of the road	7/30/2014 9:41 AM
51	Car, bike, east of aspen trail	7/30/2014 9:40 AM
52	Car	7/28/2014 3:59 PM
53	Car to Wildwood put in. Leave a bike at the take out.	7/28/2014 12:15 PM
54	Car	7/24/2014 7:00 PM
55	Car. East of Aspen Trailhead parking	7/24/2014 3:04 PM
56	bike	7/23/2014 8:26 AM
57	Drive and park before the 1st bridge	7/22/2014 3:02 PM
58	Bike. East Aspen Trail. Park bike near beach.	7/22/2014 11:53 AM
59	Car, Wildwood	7/21/2014 2:47 PM
60	Foot, east Aspen trail	7/19/2014 1:46 PM
61	By car to wildwood.	7/19/2014 7:31 AM
62	Car. With access points at Wildwood, "the beach", and Stillwater. At Wildwood, I'll park at the lot or along the dirt road if the lot is full. At "the beach", there's the turnoff on the eastbound side of the road that seems to have grown in size over the years. At Stillwater, there's space for about 4-5 cars off Hwy 82 on the eastbound side. I try to avoid taking out at the pedestrian bridge these days because it's too congested - not enough roadside parking and somewhat dangerous curves, particularly westbound traffic flying down the Pass.	7/18/2014 3:50 PM
63	Car Turn out off Highway 2	7/18/2014 10:33 AM

## Appendix C - Public Comments

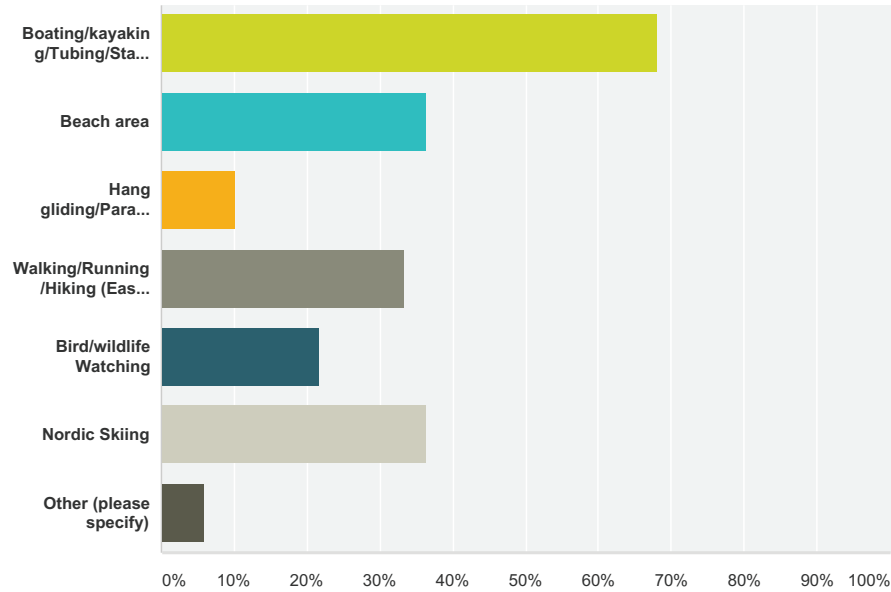
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64	Car access at Wildwood.	7/18/2014 8:38 AM
65	Bike, SUP, foot	7/17/2014 3:04 PM
66	By Foot - I access the area via Aspen East Trail from Aspen by many different trails. By Car - park either at the river access, the East of Aspen Trail parking / platform area, and or access via the parking lot by the Wildwood school.	7/17/2014 8:27 AM
67	East of Aspen Trail	7/16/2014 5:19 PM



**Q5 What activities bring you to North Star Nature Preserve?**

Answered: 69 Skipped: 0



Answer Choices	Responses
Boating/kayaking/Tubing/Stand-up Paddle Boarding	68.12% 47
Beach area	36.23% 25
Hang gliding/Paragliding	10.14% 7
Walking/Running/Hiking (East of Aspen Trail)	33.33% 23
Bird/wildlife Watching	21.74% 15
Nordic Skiing	36.23% 25
Other (please specify)	5.80% 4
<b>Total Respondents: 69</b>	

#	Other (please specify)	Date
1	bike trail	8/2/2014 10:51 PM
2	Bicycle	7/30/2014 9:55 AM
3	Picnics at the platform	7/17/2014 8:27 AM
4	Enjoying it as a Nature Preserve	7/16/2014 5:19 PM

## Q6 What is your favorite thing/memory about North Star?

Answered: 60 Skipped: 9

#	Responses	Date
1	The usages and some what restricted use of the land	3/11/2015 2:03 PM
2	paddling through the beautiful, serene, gentle, crystal clear waters	2/11/2015 4:46 PM
3	The beauty!	2/10/2015 4:16 PM
4	Magnificent scenery, undisturbed wildlife, soaring hawks, great blue herons. The beautiful meandering river.	2/2/2015 10:42 AM
5	Birds, short rapids, floating with friends.	1/20/2015 6:53 AM
6	The quiet. The connection to nature.	1/12/2015 9:43 PM
7	The huge expanse of the valley floor with the surrounding steep mountains.	9/3/2014 4:55 PM
8	There are plenty of other places to recreate convenient to aspen, so I enjoy walking the trail and looking out over the beautiful expanse of NS without see people present on the nature preserve and knowing that it will be protected as open space for wildlife habitat into the future so my kids and grandkids can enjoy the same experience that I have. NS is a very special place and should be protected and managed as a nature preserve	8/19/2014 12:12 PM
9	open space, beauty,	8/12/2014 11:00 AM
10	Beautiful view/wildlife	8/7/2014 12:34 PM
11	Easter egg hunt on skis	8/7/2014 9:16 AM
12	I love flying over this unique area. It is so beautiful. It is a special privilege for us to be able to land there.	8/6/2014 6:55 PM
13	My favorite thing about North Star is that it was protected from privatization and development. It is a beautiful and invaluable natural area for the public to enjoy.	8/6/2014 3:11 PM
14	family floating	8/6/2014 1:41 PM
15	Places to canoe without having to drive to a lake	8/6/2014 11:46 AM
16	The view from the air and the friendly people below.	8/5/2014 10:58 PM
17	My first flight off of washes	8/5/2014 10:04 PM
18	the preserve itself. buck deer crossing the river 20 feet away. the heron are great	8/5/2014 9:51 PM
19	Interaction of people and nature.	8/5/2014 8:11 PM
20	Lack of buildings, tons of peace & quiet.	8/5/2014 8:03 PM
21	Good times with friends	8/5/2014 2:54 PM
22	Its geomorphology.	8/4/2014 8:07 PM
23	River wildlife	8/4/2014 2:37 PM
24	the fact that it used to be a sanctuary more than the current playground.	8/4/2014 10:42 AM
25	Kayaking in the early evening on a super high water year, where the ox-bows were flowing, and seeing the birds and wildlife as we slowly paddled through.	8/4/2014 10:09 AM
26	Open view, Aspen's only outdoor water/swimming experience.	8/4/2014 9:13 AM
27	There is nothing more satisfying than running along the trail at the end of the day and watching the birds dance along the soft light of the tall grass as the sun sets.	8/4/2014 9:08 AM
28	nearby accessible wilderness boundary experiences	8/2/2014 10:51 PM
29	The serenity and brilliant view!	8/2/2014 10:33 PM

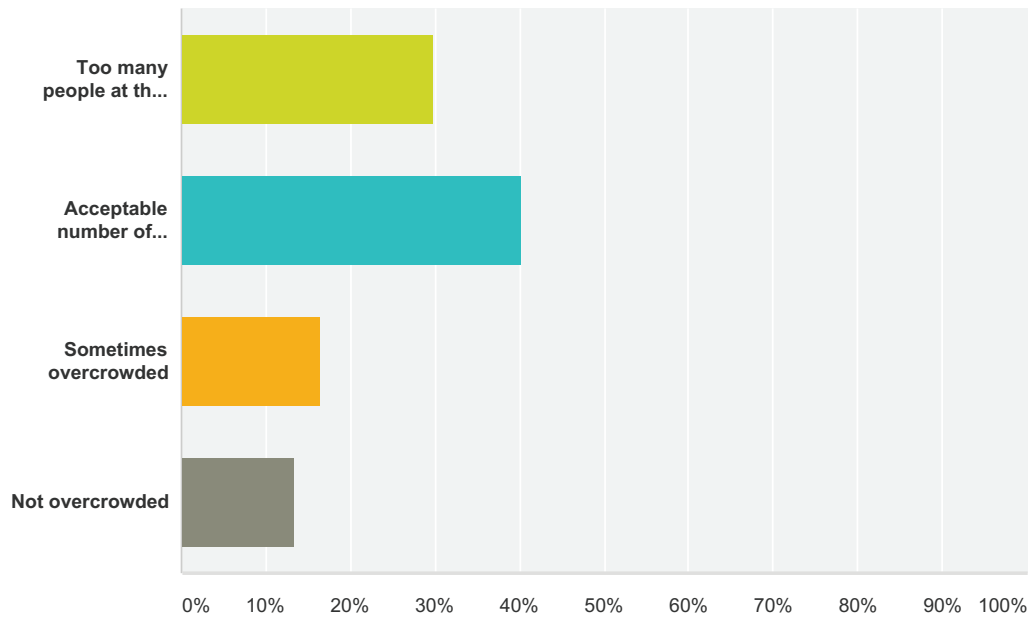
## Appendix C - Public Comments

30	the quiet solitude of undisturbed nature	7/30/2014 6:03 PM
31	Tubing/rafting with friends	7/30/2014 9:55 AM
32	Seeing people jump off the bridge with a GoPro	7/30/2014 9:54 AM
33	now! laying on the sand with baby and friends	7/30/2014 9:52 AM
34	My favorite thing to do is tube	7/30/2014 9:51 AM
35	tubing with friends and chilling on the beach	7/30/2014 9:50 AM
36	Seeing baby duck	7/30/2014 9:49 AM
37	canoeing with my parents	7/30/2014 9:49 AM
38	peace/quiet/beauty	7/30/2014 9:48 AM
39	SUPboarding/floating with friends and beach area	7/30/2014 9:47 AM
40	watching kids on inner tubes - at beach floating from wildwood to bridge, just relaxing	7/30/2014 9:46 AM
41	It's free and quiet	7/30/2014 9:44 AM
42	It is free, meeting new people	7/30/2014 9:42 AM
43	quiet and lovely	7/30/2014 9:41 AM
44	Floating to still water	7/30/2014 9:40 AM
45	paddling up stream rounding a bend to see a dear string in 3 feet of water drinking (water)	7/28/2014 3:59 PM
46	Floating quietly watching the herons, watching the sunset, looking up at Pandora's where we ski.	7/28/2014 12:15 PM
47	Natural beauty	7/24/2014 7:00 PM
48	Wildlife/nature observation from viewing platform.	7/24/2014 3:04 PM
49	It's pristine nature and quiet solitude. Great way to restore my Dosha	7/23/2014 8:26 AM
50	the peaceful mornings	7/22/2014 3:02 PM
51	Hanging out with kids on beach.	7/22/2014 11:53 AM
52	It's the bees knees	7/21/2014 2:47 PM
53	Quiet nature of the Preserve and the birds and wildlife	7/19/2014 1:46 PM
54	Cooling off in the river.	7/19/2014 7:31 AM
55	Floating in the serene preserve, observing the great blue herons.	7/18/2014 3:50 PM
56	Listening to bird song on a peaceful morning	7/18/2014 10:33 AM
57	Floating with our children.	7/18/2014 8:38 AM
58	Natural habitat, wildlife, flowing river with lots of water	7/17/2014 3:04 PM
59	Floating the Preserve is my favorite thing to do in North Star. The area is pristine and beautiful and I hope we can keep it that way.	7/17/2014 8:27 AM
60	The original intent at the time of purchase was to protect the property for its ecological values and it was purchased with the help of the Nature Conservancy. North Star is the only open space in Pitkin County designated as a nature preserve. Everybody benefits from a nature preserve. North Star Nature Preserve should be managed primarily for sustainable ecosystems and secondarily for the enjoyment of recreationalists.	7/16/2014 5:19 PM



**Q7 In your opinion, is North Star generally:**

Answered: 67 Skipped: 2



Answer Choices	Responses	
Too many people at the preserve / overcrowded	29.85%	20
Acceptable number of people / OK	40.30%	27
Sometimes overcrowded	16.42%	11
Not overcrowded	13.43%	9
<b>Total</b>		<b>67</b>

## Q8 Additional thoughts or comments

Answered: 47 Skipped: 22

#	Responses	Date
1	The times I've been there have not been to overcrowded, but I also avoid it on weekends. I've heard that it gets crazy crowded & disrespected. Hope the management plan helps address these problems. Thank you!	2/11/2015 4:46 PM
2	The paddle boarding is OUT OF CONTROL!	2/2/2015 10:42 AM
3	Too many floaters not respecting the nature of the preserve. It has turned into more of a floating party. However, at least most everyone stays on the water and not venture onto the closed parts of the preserve.	1/20/2015 6:53 AM
4	In a town with an economy founded on and fueled by recreation, this is perhaps a defining moment for OST. When a nature preserve gets potentially overused, the governmental body in charge is being asked to set specific definition of use and overuse and then to provide enforcement, and if necessary, restrictions. This will necessarily be controversial. But what a beautiful thing to be able to choose what will endure in this spot. My personal hope is that the OST board will choose to slightly contain/curtain usage today for the healthy use by animals, plants, and humans together in the long term. Thank you.	1/12/2015 9:43 PM
5	As a bird watcher, I worry about paddle boarders floating the river affecting the wildlife's habitat. I don't see crowds since I go there in early morning hours. I do see the trash they leave on the banks. For years, birders have not gotten close to heron nests so as not to disturb the birds. Now they have people right in their feeding areas. Thank you for listening.	9/3/2014 4:55 PM
6	protect as nature preserve. important bio diversity migratory wildlife corridor sanctuary for wildlife allow nature viewing from the trail in summer and cross country skiing in winter, but only limited passive activities such as fly fishing, kayaking perhaps by permit only northstar protects watershed of RF valley wetlands cleanse water plus habitat for waterfowl no recreation allowed on beaches along river preserve critical nesting site for birds protects rural character of east aspen active recreational uses threaten as a nature preserve.	8/19/2014 12:12 PM
7	Notice too many people in river this summer. Worry about a preserve having that many as it will inevitably affect the pristine area	8/12/2014 11:00 AM
8	Don't want to "love it to death" but don't want too many restrictions either.	8/7/2014 9:16 AM
9	I don't have any trouble with people using the preserve except for the trash they leave. Paragliding is a big part of my life, and I hope our club can continue to use a small piece of it for landing. It is a crucial landing zone for our club.	8/6/2014 6:55 PM
10	I understand why some people may have concerns that North Star is being overused, but I believe that as long as everyone is being responsible with their trash and not harassing wildlife, there do not need to be limits on use or access. It's important that people are able to enjoy natural areas, and North Star offers a wide range of activities to both casual and experienced outdoor recreationists.	8/6/2014 3:11 PM
11	Only feels overcrowded at put-in & take-out, but not on the river. Not overcrowded for other activities - trail, XC skiing.	8/6/2014 1:41 PM
12	The area is already restricted enough and should be left open to the public.	8/6/2014 11:46 AM
13	Northstar is a local treasure. Restricting access to the river or paragliding lz more would be a horrible blow to my outdoor activities. I love and respect this area and hope others will continue to do so as we responsibly use this area for many years to come.	8/5/2014 10:04 PM
14	more trash from more people. i worry a bit about the preserve.	8/5/2014 9:51 PM
15	Things change and seeing more people enjoy the North Star is good. River right-people, River left no people . Far right too many cars.	8/5/2014 8:11 PM
16	Not happy that the concierges at the hotels are telling guests to visit North star and float. We don't need more traffic then the locals and 2nd home owners	8/5/2014 2:54 PM
17	The heavy use destroys some of the natural beauty of the space. I feel that it's use should be more controlled and regulated	8/5/2014 1:35 PM
18	Increased patrols, both in summer and winter. Restrictions on commercial use.	8/4/2014 8:07 PM

## Appendix C - Public Comments

19	i appreciate that overcrowding is now an issue that is going to be addressed but it still doesnt speak for all the recent construction that has encroached on this nature preserve. the city of aspen has once again bent the rules to accomodate & profit from people who can afford to buy land & build homes for their own personal satisfaction all the while denying access to those who have used this area long before they even knew of aspen. im sure fritz benedict didnt have this in mind when he granted this prized piece of colorado to the city.	8/4/2014 10:42 AM
20	While the summer paddle boarding / tubing has increasingly high loads of people coming to use the area, in general I think it is still a highly regarded and reasonably respected nature preserve. Some additional signage / education / etc. certainly may be warranted to let people know the other environmental uses / concerns / benefits that the area provides. On the flip side, the cross country skiing in winter is amazing, and feel this area in particular is underutilized by skiers.	8/4/2014 10:09 AM
21	I love the authentic feel of the preserve as a wildlife refuge but the increase in number of people using the park for water recreation tells us we must join these two purposes together. or at least find a new outlet for water recreation in the city. For me, the beach offers a great and rare opportunity of sitting by a lazy Colorado river on sand. Most other rivers have rock. It is also an amazing feeling being tucked into the tall grass.	8/4/2014 9:08 AM
22	it's not hard to know and adjust to peak usage times (except for inadequate parking options) by either joining the social scene or going a few hours off then	8/2/2014 10:51 PM
23	The safety and abundance of wildlife is number one.	8/2/2014 10:33 PM
24	The N.S Nature Preserve has become a Rec area with floaters yelling, drinking alcohol, partying. The parking at Wildwood is at times creates an access problem for the Wildwood School and adjacent homes. A real education effort is needed to ensure the continued health of the Preserve as intended. Wilderness Ethics?	7/30/2014 6:03 PM
25	grills on beach would be great	7/30/2014 9:55 AM
26	Beautiful	7/30/2014 9:54 AM
27	walking trail along the river??	7/30/2014 9:52 AM
28	thank you	7/30/2014 9:49 AM
29	on busy weekends, issue passes on-line and limit number. Thank you!	7/30/2014 9:48 AM
30	more parking area / put-in points	7/30/2014 9:47 AM
31	Love it!	7/30/2014 9:46 AM
32	Visit all times of day, morning, midday and evening	7/30/2014 9:44 AM
33	It's great!	7/30/2014 9:42 AM
34	Advise Tubers (tend to be partying/drinking) to put in at South gate , (less time drinking on water- being loud around Heron nests and upper part of preserve.	7/28/2014 3:59 PM
35	It has become an amusement ride place. Watching inner tubes full of beer drinking people treat the preserve like a Disney ride has us not going there anymore.	7/28/2014 12:15 PM
36	High river/river access usage detracts from the preserves primary intent of natural habitat and public enjoyment of nature.	7/24/2014 3:04 PM
37	Drinking should not be allowed when floating down NorthStar. Getting drunk kind of can ruin the mood. Maybe a glass of wine is okay, but getting hammered and then floating the river kind of kills the preserves purpose.	7/23/2014 8:26 AM
38	Perhaps initiate a permit program that requires a test about the ecosystem, riparian sensitivity, and how to use basic common sense about interacting with the preserve. Anything that might end up as litter should be restricted (beer cans, bottles, etc). Also, watercraft should be required to register - no cheap inner tubes or Walmart floating devices, but actual seaworthy vessels (good Kayaks, SUPs, canoes, etc.)	7/22/2014 3:02 PM
39	So many more people at beach than I remember. Trails not necessarily well maintained or marked. It seems beach areas have expanded and some vegetative trampling. Kids have been swinging from a tree rope off the bridge. Questionable safety.	7/22/2014 11:53 AM
40	Good survey	7/21/2014 2:47 PM
41	This summer, it has turned into a water park, with kids jumping off bridges, garbage on the beaches and banks, the whole nature of the Preserve has been wrecked by over crowding and watersports. This should be regulated and limited to people staying on the paths and away from the banks.	7/19/2014 1:46 PM



42	More parking at the take out would be helpful. Many of us take two vehicles in order to shuttle back up to wildwood. An organized shuttle service would cut down on the number of cars.	7/19/2014 7:31 AM
43	I used to paddle the North Star section in my kayak about 10+ years ago. Tubing became popular and now SUPing. Many many more users than the small "river people" community. We need more parking at access points to address safety, particularly at the pedestrian bridge. Perhaps signage for pedestrians crossing so that vehicles traveling on Hwy 82 are aware. At the beach, which I think is the most heavily used, a toilet would be good as well as a trash can. And perhaps more signage about leaving no trace/packing out trash and where to relieve yourself (pee in the river or in the willows?). The signage about the great blue herons/wildlife is good. They topple over or get turned from time to time, so they're not quite visible. In general, we should continue to be able to use North Star. We just need to improve safety and handling of waste.	7/18/2014 3:50 PM
44	More parking at Wildwood as well as the take out would be great.	7/18/2014 8:38 AM
45	This resource needs to be carefully managed, but that doesn't mean restricting access further. Educating the public and use of rangers has been effective. More of this is needed.	7/17/2014 3:04 PM
46	Please, keep it user friendly. Signage about the area and wildlife is great!	7/17/2014 8:27 AM
47	There are many benefits to the community - as a sanctuary to wildlife in close proximity to Aspen; as an important amenity for passive recreation uses including fly fishing, bird watching, cross country skiing, limited kayaking, and nature viewing; preserved as a guaranteed source of clean air and water; protects the watershed of the Roaring Fork Valley attenuating floods and moderating droughts; the wetlands at North Star Nature Preserve cleanse water, remove sediment, dissipate flood energy, and provide habitat for waterfowl; the riparian areas at North Star slow flood waters, prevent erosion, and provide critical nesting sites for birds; the serenity and open spaces at North Star provide residents and visitors to Pitkin County with a place to maintain our connection with our natural world and renew our spirit and that experience is easily accessed by those with disabilities.	7/16/2014 5:19 PM

### Public comments received via email before draft plan's release

Please continue to allow recreational uses in the preserve. Paragliding, rafting, bird watching, cross-country skiing and other low-impact activities should be encouraged. Remember that "recreational" dollars were used to purchase this land and it has thrived with recreational use.

§ § §

As someone acquainted with the area since the '70s, I am impressed by the resilience it has shown in hosting both an ever increasing population of both indigenous flora and fauna as well as human numbers, time spent and activities engaged in. The primary change/impact was the cessation of active ranching activities. I spent a winter as a nearby teepee resident, taught kayaking there over more than 2 decades, enjoyed idyllic picnics with my infant to teenage daughter over the years and done many a lap on the winter tracks. I have watched both human activity and wildlife abundance increase all the while and caution against a default judgment that these are incompatible in the current reality. Study first for some time, teach and advise for voluntary behavior adjustments as unnecessary impacts are verified and honor the experiential values, memories, lessons and learning this unique amenity has generated and donated with so little planning, oversight and regulation up to now.

§ § §

I strongly recommend that any management plan for North Star Nature Preserve limits human

uses to passive activity and protects the important natural biodiversity of the preserve. There are plenty of places accessible to Aspen that are appropriate for active recreation and North Star is not one of them and should be protected for the Aspen community and general public to enjoy as a nature preserve.

I use the river for standup paddling weekly while the water is high enough. I go upstream for a great workout and then float down river back to my car. I really enjoy the beauty and the sometimes quiet times. There are so many “floaters” that don’t respect the nature preserve, that are drunk, litter, loud and go off shore. I’m afraid we won’t be able to continue using this beautiful preserve for much longer.

§ § §

1. Require all floaters to have already pre-registered with a test that shows a basic understanding of the preserve.
2. Require all watercraft to register prior to use on North Star - cheap, disposable inflatables should not be allowed.
3. Restrict cans, glass bottles, and any other items that might end up as trash in the preserve.
4. Have a clean-up day at least once a month during the summer - make it a contest!
5. Patrol and enforce!

§ § §

Hoping something will be done about the photo of very crowded Roaring Fork River.

§ § §

I understand from the newspaper that the July 4 weekend saw over 1,000 people on the river through that section. The “nature preserve” signs on the river banks are definitely being ignored by at least some people (even “environmentally conscious” people I know who think the rules don’t apply to them). I loathe saying it, but it may be time to educate, police and permit this section of river. On my float I found: 3 beer cans ( 1 full!), a Fiji water bottle and a large, popped inflatable pool toy abandoned on the riverbank. At the put-in and take-out, I found the usual - cigarette butts, trash and inadequate parking. On the bright side, the heron roost is flourishing this year, the trout were rising on a big bug hatch, and the gold finches were going crazy on their bugs, as well. I have no idea how long the herons will tolerate th enoise there. Yet another example of the urbanization of our formerly quiet, remote and wild areas around Aspen.

### **PUBLIC COMMENT ON DRAFT NORTH STAR NATURE PRESERVE MANAGEMENT PLAN**

**Comment period: May 4 - June 5, 2015**

Dear Pitkin County Open Spaces and Trails,

I would like to focus on one point: The North Star is a Nature Preserve.

This stretch of river and these parcels of land must be respected and treated as a Nature Preserve. The importance of this point can not be overstated because this is one of the few riparian areas in our area that have this designation. Wetland areas are crucial habitat, especially here in the American West where riparian areas support a disproportionately greater number of wildlife than other areas. In fact, “although less than 1% of the land in Colorado is riparian over 60% of the vertebrates are obligates to riparian ecosystems and approximately 85% require riparian habitat for some aspect of their life history” (Ohmart and Anderson 1986). The Preserve is crucial to the health of the terrestrial, avian and aquatic ecological communities of our valley.

The North Star is not a pristine wetlands, it is currently in the slow process of recovering from many years of historical overuse and mismanagement. The designation of the property as a Nature Preserve was a rare success story and a shining example of community environmental protection and stewardship. Our community and the ecological communities that we share this area with are incredibly fortunate that the North Star was protected because it has been estimated that in our region 90-95% of the cottonwood-willow riparian ecological community have been lost to development and agriculture. The North Star is a rare and special place. The tireless work that our community put into saving this area from development and working to aid the natural processes of restoration must always be remembered. The best way to honor the North Star and the massive efforts that were put into its protection and restoration is to respect and tirelessly uphold the original intention of its designation as a Nature Preserve.

Though the area no longer faces the threat of agricultural overuse and resort development that it faced in the past it now faces the pressure of recreational overuse. Over the past decade the preserve has seen an explosive growth of river use during the summer months. The Draft Management Plan proposes to “achieve a balance” between North Star as a nature preserve and as a recreational site. I find this statement highly worrisome because with the current trend of growth in our valley (as much as 50% over the next two decades) and the continued explosive growth and pressure of recreation on the preserve I see that the wildlife will be the ones to lose in this compromise.

Thank You,

Morgan Boyles

§ § §

The first step in reviewing the 2015 proposed North Star Management Plan is to review the North Star Nature Preserve 2000 Resource Management Plan, adopted by Pitkin County Commissioners July 26, 2000 to determine which elements of the original management plan should be retained. On page three of the plan:



“In a letter to the Pitkin County Planning and Zoning Commission dated July 18, 1984, Sydney Macy [Colorado Director of the Nature Conservancy] wrote,

“The intent of the acquisition, which is in keeping with The Nature Conservancy’s objective of preserving natural areas, was that North Star Ranch be managed as a natural area for scientific and educational purposes, while still encouraging and allowing some passive recreation”.

Bill Kane, in a letter to Colorado Division of Parks and Outdoor Recreation, wrote, “It is our contention that this land, if acquired, would present the prospect of an elk refuge in perpetuity”. Additionally, recent correspondence from Morgan Smith, son of James Smith, states that, “...this donation [the \$275,000 Smith family donation]...was intended to keep the land in open space and for the purposes of wildlife. Whether this is reflected in whatever documents may exist from the time of the donation, we never would have made the donation if there had been discussion of commercial usages [sic]. In addition, it was always our hope that this donation might serve as an example to others who are interested in preserving land and protecting wildlife.”

The statement by Morgan Smith, that the Smith family “would never have made the donation if there had been discussion of commercial usages” on the North Star Nature Preserve is extremely pertinent to the pressures the Nature Preserve is facing in 2015. The 2015 Management Plan makes numerous references to Commercial Users who are permitted and makes little reference to the number of non-permitted commercial operations who are promoting the use of the Preserve and profiting from the rentals of their equipment used to float on the Roaring Fork River through the Preserve.

The 2015 proposed Master Plan states that: “All commercial operators who guide, instruct or shuttle clients on or to the Roaring Fork River, via the North Star Nature Preserve and associated parking areas, must obtain a commercial-use permit from Pitkin County Open Space and Trails. A guided or shuttled group size cannot exceed six people, including the guide. It is each guide’s responsibility to make sure their group is informed about the nature preserve and the quiet zones.”

The company, Blazing Paddles, has shuttled bus loads of inner tube riders to the Wildwood Lane to float the Roaring Fork River, as it passes under the Great Blue Heron Rookery and through the North Star Nature Preserve. Currently, Blazing Paddles is advertising in the Aspen Times free beer and half price rates to their clients. There is a commercial operation in Snowmass, which is printing maps for its Inner tube renters to locate the Wildwood Lane put in, so that they will float through the Nature Preserve.

The 2015 plan includes a proposal to:

04.05.02 Develop an educational guide to educate commercial operators and their clients about the North Star Nature Preserve.

This guide can take a variety of media forms but should match the interpretive panels with regard to look and messaging. North Star is a special place in which to recreate and the purpose of the guide is to help educate and inform users about being respectful visitors to the unique mountain environment.

Estimated Start Date: Design begins in fall of 2016

Financial Implication: \$5,000

The concept of educating users is well intentioned, but the 2015 Proposal is accepting Commercial Use of the North Star Nature Preserve, which violates the intentions of the James Smith Family, in the sales agreements and gifts they have made to The Nature Conservancy and Pitkin County.

What kind of precedent does this action set for any future land acquisitions by Pitkin County for Open Space? What length of time does the landowner need to be dead, before the agreements that the landowner made with the county are broken?

On Page 28 the North Star Nature Preserve Management Plan states:

#### “04.02.02.01 Great Blue Heron Protections

The nesting population at the existing North Star heronry has fluctuated over the past decade and fewer nests are producing fledglings. The decrease could be attributable to various factors, including predation, former nest trees becoming unsuitable, and the increase in river use. The following actions will be implemented to help maintain suitable heron habitat.

a) Near the heronry, close the area from the willow hedge to the river permanently and create a 200-meter “quiet zone.” Open Space and Trails will work with the Aspen Center for Environmental Studies to create the buffer and educate the public on why the “quiet zone” is necessary to benefit the herons.”

The sign Pitkin County has posted at the Wildwood Lane Put In is beautifully illustrated and describes the need for river users to be quiet; however the noise level of the river users has not lessened.

Generally the kayakers and canoeists are quiet. It is the inner tube users and users traveling down the river in swimming pool rafts, who are the loudest for several reasons:

The water is cold. The inner tube users are in direct contact with the water and they are wearing bathing suits. The inner tubes lack maneuverability, as soon as the riders come in contact with the water, they start screaming. Quite often the screaming includes strings of profanity. The Herons are probably not picking up on the use of four letter words being used as nouns, verbs, adjectives and adverbs, but the preschoolers at the Wildwood School are often within earshot.

Many of the inner tube riders haul beer along with them, either in cup holders or trailing an entire cooler of beer in a separate inner tube, which means that much of the yelling occurs at an intoxicated level.

Many the inner tube riders and some of the SUP boarders have water proof boom boxes blaring music.

It is a lovely concept to install a 200 meter “quiet zone” in the land mass area below the rookery, but the trees of the rookery are immediately adjacent to the river, and a large percentage of the river users are oblivious to the nests above them as they pass through the rookery area.

The inner tube riders not only present an enormous noise level disturbance, but because the tubes are difficult to steer, the riders are continually getting out of their tubes and walking along the fragile edges of the riparian shorelines where the smaller warblers and vireos are nesting.

When I kayak down the river, I am very aware of being in the world of the animals for a precious moment. Highway 82 runs parallel to the river, which allows you to look over and see the man made world, and then return your gaze to the miracle of the riparian communities. It is an honor to be a visitor to the home of the Elk, Deer, Beavers, Foxes, Coyotes, Muskrats, Herons, Killdeers, Sandpipers, Geese, Ducks, Wrens, Sparrows, and Swallows, but it is an honor I will forego, if we have reached a time where too many people are making too large of an impact for the continued health of the residents of the Riparian World.

The single most important action the North Star Management Plan could take would be to discontinue any commercial use of the North Star Nature Preserve. Use by limited numbers of educational and not for profit organizations, such as ACES, The Wildwood School, and the Roaring Fork Conservancy would be compatible with the goals of the Nature Preserve, but drunken recreation is degrading the efforts of the many people who have worked to protect and preserve The North Star Nature Preserve.

§ § §

I am deeply concerned by the present recreation pressures at North Star, which I feel are severely compromising the wildlife values that make the nature preserve so unique. Having served on the original North Star Committee in the late 1970's, I feel that the parcel should be protected and enhanced as an ecological/wildlife preserve first and foremost. As with so many OST parcels, the recreation pressure is intense and will only increase over time. In the initial planning process that I was involved with, we had no idea how much the human use would expand and harass the wildlife by sheer numbers, referring especially to the boater/floaters and the beach scene.

The majority of that first committee did recognize the value of keeping all the human activity on the east side of the river. Fritz Benedict who was also on the committee wanted to build a trail along the back side as a continuation of Ute Ave. I wrote a letter arguing that it would end up being a thoroughfare for crowds and their dogs, similar to the Rio Grande Trail, effectively diminishing the rich wildlife presence on the parcel. My argument won over the group and we decided that the west side of the river should be off limits to the public, with only occasional visits for educational or research purposes. I am pleased that the present plan is continuing to enforce that boundary.

As Kevin Wright our local wildlife officer (recently retired) has noticed, the elk herds in the valley are dwindling under stress from human pressure, much of it human recreation intruding on their habitat. The heron's are another sensitive species that most likely began nesting at North Star because it was relatively undisturbed. Now with the boating mania, I feel the elk and the herons are at risk as well as many other species which are less obvious. I am pleased to see there will be monitoring, but I feel that is not enough.

Now is the time to defend the irreplaceable values of wildlife at North Star and protect that invaluable resource above all. Social floating and beaching are human focused activities that could take place in a less sensitive environment. Rangers and naturalists may help police and educate, but just the sheer numbers are a problem. I feel efforts should be made to drastically limit the number of people in both situations, if at all possible or like the Maroon Bells, North Star is at risk of being "loved to death".

§ § §



Dear Pitkin County Open Space and Trails,

Nature Reserve / Preserve is “the highest levels of protection, as described by the International Union for Conservation of Nature (IUCN)” This supersedes Wilderness areas and National Parks.

“Protected areas that are strictly set aside to protect biodiversity and also possibly geological / geomorphological features, where HUMAN VISITATION, USE AND IMPACTS ARE STRICTLY CONTROLLED AND LIMITED to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.

Primary objective:

To conserve regionally, nationally or globally outstanding ecosystems, species (occurrences or aggregations) and/or geodiversity features: these attributes will have been formed mostly or entirely by non-human forces and will be degraded or destroyed when subjected to all but VERY LIGHT HUMAN IMPACT.

Other objectives

- To preserve ecosystems, species and geodiversity features in a state as undisturbed by recent human activity as possible;
- To secure examples of the natural environment for scientific studies, environmental monitoring and education, including baseline areas from which all avoidable access is excluded;
- To minimize disturbance through careful planning and implementation of research and other approved activities.” (Cited from <http://www.iucn.org/Capitalization> for emphasis my own.)

The current management and message that Pitkin County Open Space and Trails is carrying out is not in accordance to the guidelines laid out by Jimmy Smith or the IUCN. A sign made by Pitkin Open Space and Trails for the North Star Management plan shows three spheres overlapping in a Venn Diagram: Recreation, River Ecology and Wildlife Habitat. Recreation is the largest and most prominent sphere. The sign suggests that an effort is being made to find a compromise between Recreation, River Ecology and Wildlife Habitat. However according to the guidelines laid out for Nature Preserve, the Recreation sphere should not even be on the sign. There should be no attempt at compromise with Recreation.

It is the North Star Nature Preserve, not the North Star Recreation Area.

By even suggesting that there should be a compromise with Recreation, Pitkin County Open Space and Trails is eroding the definition of Nature Preserve.

“When you compromise nature, nature gets compromised. It’s gone. It’s hurt. It’s injured. You gain nothing back ever.” –Martin Litton

In recent years the number of people choosing to navigate watercraft though the preserve and spend time on the beaches and banks of the preserve has grown exponentially. Living near where people put-in on the Wildwood Lane, I am exposed to the impacts daily. Drunk screaming tubers yelling profanities is the new sound track to, what once was, a peaceful quiet place. In effect an amusement park has been installed in a Nature Preserve. As someone who lives and works in close proximity to this, I may attempt to lend a voice to the animals who live

## Appendix C - Public Comments

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along the banks; I am stressed out by all the activity, they are very likely stressed out as well. The experience while floating down through the preserve can be enjoyable, if you are a quiet group and the loud groups are well enough in front or behind you. The difference comes for the animals and humans who live along the stream who get to hear every group pass by. When I grew up I was taught that one should only scream if it is an emergency. These days it sounds like there is an emergency going on every 15 minutes out there. Nope, the tubers are just drunk and cold. I don't react now to the screams to see if everybody is OK. I hope no one is actually in need of help, they have cried wolf too many times.

POST has been making an effort to educate people on what they need to do to lessen their impact. The sad reality is that Pitkin County can spend thousands of tax payer dollars to educate people on how to quietly go through the Preserve but the fact is that as soon as the alcohol containers are opened, the water proof boom boxes are cranked up and the party starts, the education on being quiet and respectful is disregarded and their empty beer cans and popped inner tubes are discarded.

The increase in number of users can be attributed to the following:

- Articles in promotional magazines and pamphlets for Aspen talking about the "Best things to do in Aspen"
- Rental shops and commercial outfitters showing people where to use the inner tubes and SUP boards that the operations have rented.
- Hotels dropping tourists off and picking tourists up from the put-ins and take-outs.

Here are my suggestions to attempt to reduce impact in the preserve:

- POST needs to adopt a zero promotion policy for recreational activities taking place in the preserve.
- Rental shops should not be allowed to in writing, verbally or though maps show visitors how to arrive to the various put-ins and take-outs. If they choose to do so they are complicit and should be required, to pay a percentage of the profits made from renting their inner tubes, SUP boards and kayaks to a fund that is specifically earmarked for protecting the preserve. Also like the other commercial operators who use the preserve, they should be required to carry liability insurance specifically for the preserve. It should also be illegal for people while using their equipment to consume alcohol, as people under the influence in the Preserve are a liability to safety and the protection of the preserve.
- Hotels should not be allowed to drop people off at the put-ins or take-outs, if they choose to do so, they need to also pay into the fund earmarked for protecting the Preserve, because like the rental shops they are providing a service and benefiting financially from promoting and condoning the recreational use of the Preserve.
- POST needs to send out a memo to all promotional magazines for Aspen outlining the tenets of the Preserve and inform them not to promote it as a place to recreate, as it is not a recreation area.
- Parking and access at all points should be reduced and limited to help reduce the ease of access to a place which should be, by the definition of a Nature Preserve, inaccessible.

If all or some of the above ideas seem unfeasible:

River running permits, similar to the day permits one must apply for to run Westwater on the Colorado, must be required. The amount of people permitted per day should be very few. With the permit comes education to the importance of respect and silence. If people do not respect this than they should lose their ability to apply for another permit, as well as, be fined. Westwater runs through BLM land, one of the lowest levels of protection for

land. It should be easy to set up a permit system for a river running through a Nature Preserve and National Forest Service land.

These measures must be put in place immediately. The Preserve is already being mistreated; there is no need for ongoing studies to see if there is an impact etc. If strong steps are not taken now, POST will only further aid in eroding the definition of Nature Preserve.

Jimmy Smith would be rolling over in his grave if he could see how the North Star Nature Preserve is being used and treated today. Please do not compromise. Stand true to the tenets of what a Nature Preserve is and manage it in that way.

Thank you,  
Weston Boyles

§ § §

We have lived in Mountain Valley for 40 years and walk, run, drive by North Star virtually every day. We participated in the earlier work “trashing thistles” & keeping track of human use of the preserve for the group studying the floral and fauna over a long period of time (Heather Hopton).

We are very concerned by the heavy use of the preserve. It has grown exponentially these last few years. The amount of floating, tubing, paddling, etc. has become a main thoroughfare. The beach is really upsetting, with 50 people at a time with coolers, umbrellas, etc. It is like Coney Island. The traffic, the parking, the number of people jumping off the bridge into the water, the parties, etc., etc.

This mess is not taking care of our nature preserve. This is a giant leap backwards. And we are upset. The heron rookery should be protected. To be told that “well, herons aren’t endangered,” misses the whole point. Yes, education is necessary but I truly think we are so far behind in taking measures to curb the overuse and abuse. We will lose the beauty and irreplaceable value of what was a tranquil, beautiful refuge. Please don’t let this happen.

Is it possible the current reasoning is let people come and use it and let’s hope there is not too much damage. A flip from original intent.

§ § §

In the span of 3 years, use through North Star on the river has gone from a few craft per day to 50 plus. Last summer, floating through in a kayak, I passed 70 people in canoes, kayaks, tubes, rafts, paddle boards, etc. The amount of garbage has gone from close to nothing to every eddy having plastic bags and beer cans floating in them.

I use this section of river, I love this section of river, but the general public use is destroying it. I advocate either closing or permitting the use of the river.

We (including me & my family) are degrading a nature preserve through sheer numbers.

A decision needs to be made as to whether North Star is a nature preserve or a recreation area.



While I don't live along the river, some of my most peaceful memories of North Star involve quietly gliding through the sanctuary in a kayak. The late afternoon sun burnishing the water, the murmur of its gentle eddies, the hide and seek of willow and oxbow. The loss of straight-line geography into something slower, more idiosyncratic, unexpected. It's no wonder the word about this beautiful place has slowly spread. Its another microcosm of the tragedy of this town--getting spoiled by its own beauty.

Now of course this hidden treasure has been dug up, put under the bright lights by Aspen Urgent Excess Magazine and here come the unseeing hordes, the beer, the laughter, the screeching, the smell of sunscreen and pheromones and plastic left too long in the sun. It has got to be a hell of a lot of fun.

But as has been pointed out in successive comments, this is supposed to be the North Star Nature Preserve, not the North Star Sun & Fun Zone. How do we get this can of worms back in the can?

I'm not sure how we go about doing this, but it seems like first off some kind of media blackout has to occur. The magazines, the resort association, the SUP dudes, the inner tube retailers need to be brought into the conversation in a non-adversarial way to try to convince them not to keep inflating this balloon with more publicity. The "outreach" mentioned in this document doesn't sound like enough.

Second, a permitting system has got to be on the table as probably the most effective solution to overcrowding. It shouldn't have to be particularly bureaucratic (a day-of stop off at the ACRA information booth, a phone call, or something) but the act of getting the permit gives a ranger or well-educated info attendant that critical pre-contact with groups to quickly explain the rules and their reasoning.

Finally, the quiet zone proposed as a 200-meter buffer around the heron nesting trees should be a parcel-wide rule.

The document as proposed nibbles around the edges and seems to fail to fully see the fundamental explosion of use on the North Star Open Space. If we're going to spend \$376,000 on this, we ought to get more protection than these marginally meaningful adjustments.

§ § §

North Star is first, and should remain, a Nature Preserve.

I applaud the plan to close the drainage ditch and improve the habitat on the mountain side of the river.

I totally disagree with plans to increase commercial use. There is already too much activity at North Star - it is a NATURE PRESERVE, not an amusement park.

I also disagree strongly any expansion of the Nordic track to the James Smith property. 1. The track on North Star is not heavily used, so no need for expansion. 2. Compaction of the snow for a track interferes with the habitat of small mammals that live under the snow.

§ § §

When the first management plan was being drawn up in 1999 limitations were put on paragliding both for recreational use and commercial use. We as a flying community have understood the importance of maintaining a balance of usage. We always make effort in being good stewards of the preserve by educating visiting pilots and tandem passengers why its such a special place.

## Appendix C - Public Comments

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Its now time to put some limitations on river use in general. Rules and regulations need to be implemented to control what has happened in resent years. OST with the input of the community need to determine those limitations. No matter what you do at the Northstar birdwatch, hike, fish, float or fly over it, its our responsibility to respect it and care for it.

OST has done a great job maintaining that balance for everyone to enjoy. Thanks for all your effort.

I just wanted to add a comment about liability insurance requirements for any commercial permitted activities. The permit holder should be notified well in advance of any increases. This makes the renewal of our insurance easier but also gives us the opportunity to discuss limits with the county.

§ § §

After paddling the upper Roaring Fork and the preserve for over ten years, I've seen the escalation of usage, litter and associated impacts, but feel it should remain open for limited public and commercial usage, so the public is still able to enjoy this restricted area. We moved to Aspen to be able to enjoy such natural, protected areas. The solution for PBR cans and the like, being littered along the way, is increased education and enforcement in that regard. An annual clean up day or days can easily be organized (I've picked up a bunch of items myself). Overall, I see 90% of users being responsible. Considering the incredible amount of users the last several years, there is very little pollution or problems. The parking has been organized better and I think it's a pretty healthy situation, with current usage, but could be improved in the above ways & others. Please keep it open for us to enjoy, during the brief window each year that it's float-able. Thanks!

§ § §

My family owns property on the river and fully feels, hears and sees the impact of the increased traffic. I am NOT for closing the river, but I do not believe in commercial use of the river either. I am not sure how to deal with this phenomenal increase in use on this stretch of river.

I think some time should be spent on doing research on other like areas around the country and what they have found as a solution, or what has happened to their stretch of river if they have not found a solution.

I whole heartdly support it remaining a nature preserve. But also came around a corner on my paddle board last summer only to find a truck with a huge tank full of pesticides, stuck in the middle of the river with the water flowing around the tank full of chemicals. Mr. Bass, was "mitigating weeds" on his piece of land on the opposite side of the river. The truck had to be removed from the river with a GIANT CRANE that was driven across the preserve! THIS IS OUTRAGEOUS!!! And the people who quietly float the river on paddle boards are doing damage?

Just because you own the land on the other side does not mean you don't have to follow the rules and keep the preserve pesticide free, clean and quiet. I do NOT SUPPORT the restructuring of the banks to rebuild or encourage oxbows in the river. This is a nature preserve! Let nature take it's course!! I actually do not think that most people are disrespectful. there are a few who are but for the most part people clean up after themselves and take care of the river.

§ § §

I have enjoyed spending time in the preserve in the past. I was born and raised in these mountains. On a hot summer day, there is nothing better than being on the water.

BUT- Sometimes effective education hurts. Sometimes resources are too precious to risk. Don't let us; the community (me included) and the natural world, learn the hard way when it is too late. Call a time out. Put everyone in the corner for the sake of the ones without a voice. The Nature Preserve, the herons, the wetlands. For our own sake.

After two years of being "grounded", re-visit allowing limited/regulated use of the river in the preserve.

1. Close the Preserve to all water craft for 2 years.

During this 2 years:

2. Allow pedestrian visits on the lower section below the heron nests.

3. Allow educational walking tours of the preserve.

4. Tell the wilderness pool party crew to check in at the local Hotel pool bar. The herons do not have that option as a luxury.

5. Anyone who values the existence of the Preserve will be able to wait a couple of years to perhaps have restricted use of the river in the preserve again. If not, I will be happy to see the herons fly over my head instead, and know they still have a home.

§ § §

Floating the Stillwater section of the Roaring Fork River through Northstar preserve is a magical activity and should remain so. My recommendations would be to allow private kayakers, SUPers or canoers and perhaps limiting the size of groups to 8 people. The Aspen Kayak and SUP school has had a permit to teach on these waters for many years, and they have been very respectful of the nature and parking issues. They should continue to have a permit. However, I do not think that other outfitters should be allowed to have permits; the river is just too narrow and the noise created by big groups are too much. There should be an open container rule, and significant fines for anyone leaving trash. Until 3 years ago, I'd never seen a beer can or other trash on this stretch of river.

§ § §

Pitkin County should respect the original intent of the grant of open space and nature preserve when it comes to Northstar. No need trails in summer or winter. No promotion of recreation at Northstar or licensing of commercial outfitters until river access issues at the put in and takeout are resolved. ( including security, traffic congestion, parking, access, road maintenance, and private property and Forest Service easement issues..)

OST should investigate creating a put in and take out with parking on the NorthStar/ Smith parcels-and not rely on the neighbors to take care of these issues.

This is one area that does not need development and promotion of increased use.

§ § §

The Wildwood Lane has seen explosive summer use in the last few years due to increased river use. The Lane is an non maintained USFS road built specifically to access the Wildwood School and several private properties. The cost of the maintenance is borne by the School and property owners at a significant yearly rate. It would be safe to say that if it were not for the yearly road work the Lane would not exist. The parking turnout was created



by the Lane Association to have a snow deposit location. At times during the summer the Lane becomes clogged with cars to the point that access to the School and homes is restricted and the possibility of emergency vehicles impossible. USFS, County, nor Open Space say they have no ability to control parking and keep the Lane open and safe.

Regarding the river use, the conduct of users, even if beginning outside the Preserve boundaries, because the intent is to enter the Preserve, should be in accordance with those inside the Preserve. The observation of quiet floating should be the primary requirement of floating the Stillwater through the Preserve.

It should be noted that a Preserve status is even higher than that of a Wilderness designation. Some areas are off limits to human use entirely.

It is the duty of Open Space and Trails to uphold the intent of the agreements as a Nature Preserve with limited recreational use as originally written.

§ § §

This situation is not subtle. There is universal agreement that the current tubing usage, as well as some beach usage, is inappropriate and damaging to the ecosystem, wildlife, not to mention the enjoyment of other recreational users. It would negligent for the county to not address it.

These are the times for which we elect good people -- the ones who can stand up and do what's right.

It's a \*nature preserve,\* for goodness sake. All that's left to do is decide which mechanisms should be used to reverse this negative situation. Permitting, aggressive enforcement/ticketing, weekend closure/gating, perhaps even landscaping to eliminate a good take-out and/or the beach and/or purchase of the put-in for regulation there.

Government regulation of over-use so we don't trash our refuges is not new, so learn from others about how to do it well and do it. Human appetites will, in time, destroy every beautiful thing if allowed. That is one of the fundamental reasons there is government and civilization.

Don't make us afraid to allow any new recreation on any Open Space parcels b/c we see government does not have the strength to step in when there is over use and abuse. It is always promised. Now it is time to deliver.

Thank you for preserving this preserve in a healthy and beautiful state for the long term, and for giving us government of which we can be proud!

§ § §

I think the plan is well thought out in general, but don't think more commercial operators on the river is a good idea, even with smaller group sizes. The river traffic is huge all summer, and has changed the feeling of the preserve, even in the last few years. If the river is somewhat challenged already, the number of operators would be better reduced, not expanded. Teaching people about the river is great, but there will still be trash and disruption for animals.

Thank you.

§ § §

Dear Sirs

What is happening at the North Star Preserve is a travesty. What was intended as a Preserve has become a party. The least you can do is prohibit commercial operations. I am sure that your guidelines allow for some control

§ § §

My wife and I live full time on North Star Dr. and we enthusiastically support the North Star plan as drafted. We are especially enthusiastic about expanding the nordic loop into the Smith area. We love the Open space and Trails folks. Keep up the great work!

§ § §

I think the river should be closed to humans. The property should be closed to people completely.

§ § §

As an Aspen local who has been enjoying floating the Northstar Preserve for the past twenty years it has been disheartening to see the increase in use by persons who have not respect or regard for the beauty and sensitive ecological system. It used to be you could float peacefully down the river and observe, blue herons, yellow finches, bear, elk, deer and otter, now what I am observing is people on paddle boards paddling up stream with cigarettes in their mouths, boom boxes blaring on front of board, drinking alcohol all at the same time!! Super annoying. I do not want to see activity on the river restricted. It needs to be better patrolled, unfortunately. I would restrict alcohol, boom boxes, disposable inflatables. I feel these have the most negative impact on the river. Better education on how to respect the river. Particularly on the weekends. I used to float every weekend in the summer. Last summer i did not float one weekend. It was just too disheartening to see how clueless people were behaving on the river

§ § §

The North Star Preserve is a special place. It has long been a place that holds good memories in my heart. I do not like the fact that people drink alcohol on the nature preserve or in the water. I think people should not be allowed to do this. How to solve problems takes skill. I also think there are too many cars in that place in the summer. I think it is disrupting the flow of wildlife. Aspen is a place that prides itself by making a small footprint on the world. We would do ourselves service I believe to hold this fact to our own nature preserves. If you pick a flower then you kill a flower. Love is for appreciation not taking. If we try to take I believe we will regret it later. Do not try to use a place for fun. Instead appreciate the place and see it is the very source of joy itself. Tread lightly is what I propose.

§ § §

The health and vitality of the North Star animal populations is being compromised by the dramatic increase in river traffic. An almost constant parade of River travelers not only disrupts wildlife nesting but also prevents parents from hunting for their broods. The Herons are particularly sensitive to river traffic while hunting. In order to preserve the WILD LIFE PRESERVE it is imperative to dramatically reduce numbers of people on the river.

I support:

- no additional commercial activity
- limited river access by restricting access during nesting and fledging periods. Time of Day restrictions? Permits?
- no additional Nordic activity

The NSP represents a unique and scarce wet lands environment and deserves to be protected and preserved. Another recreation area is not in the best interests of the non-human population of the upper valley. Do we want to support a Wild Life Preserve or a Summer X Games venue?

§ § §

I have served as the director of the Wildwood School for 33 years, and have applauded the vast efforts made through the years to limit public recreational use in this very special river corridor. The children at our school know all about “quiet” use and respect for our environment. While there may be no hard figures regarding the actual numbers of users parking and “putting in” at the Wildwood Lane site, it has clearly expanded beyond capacity in recent years. Our situation is as follows: in an attempt to mitigate traffic up and down Independence Pass and Wildwood Lane, and in compliance with our land lease agreement with the Forest Service, Wildwood School operates a full-size school bus to transport our preschoolers and teachers to and from town. There have been afternoons in the summer that the bus could not safely navigate Wildwood Lane to make the trip back to town due to the large number of cars and trucks parked everywhere up and down the narrow, unpaved road! We have inquired and pleaded that “No Parking” signs be installed along the road to at least attempt to ease a very dangerous situation, but to no avail; it is not even clear who has the jurisdiction to do it? I would hope for an environmental impact study including traffic analysis and capacity for both the river corridor and the road. Finally, will the road be improved and maintained? By whom and at what level and expense? Who will be responsible to maintain, oversee, and possibly “police” the area? I also would hope for restrictions on group-size, launch times etc. in the water; it is hard to fathom all the restrictions that would need to be enacted to allow for commercial use?? Thanks for your efforts, as well as the opportunity to submit my thoughts and feelings in regards to developing a new comprehensive plan.

§ § §

Hello,

I am a teacher and bus driver at Wildwood School since 1992. Wildwood School has been committed to teaching young children the importance of our natural world for 40 years. We are doing our part by providing a bus to lessen the impact on Wildwood Lane. The past few summers have been a big challenge maneuvering between cars that are unattended.

I feel it is important for people of all ages to have the natural connection that we provide for our children. My hope is that we can all share this beautiful river corridor with the respect, quiet and consciousness our three to five year olds do. The difference is the children are guided by early childhood educators who teach and model this respect. Unfortunately that has not been the case with many visitors to Wildwood Lane.

I appreciate the opportunity to share my perspective as an Environmental Educator of young children and as a part of this community that beyond all others, can live in nature respectfully.

Thank you  
Tina Person



§ § §

I've lived in the valley for over 25 years and feel that the river/beach traffic has unfortunately gotten out of control. Like most things it's not everyone-just the handful of people that do not respect being able to use the property (ie-float thru). It's becoming the "river party thing" to do on a hot day. If it's a rainy summer it will probably not be an issue--but if it's hot-there will be plenty of use. Patrol the area and someone even ON the river; stop the commercial river permits-(or will people then "rent" floating devices and will it be worse??) Set a limit of people/or a permit for each day-you sign up online the day in advance and keep a few spots open for people who are just "last minute" walk ups ??????. Make it a fee area ? (pay to play). I've seen trash and people being way too loud. Same with the beach---it's turned into a party in the preserve? One should be able to use the beach but it needs to be a QUIET ZONE/wilderness experience.--the whole river---a QUIET ZONE---talk should be with "inside" voices??? I've floated past deer and it's a wonderful experience but only go a few times a Summer and only during the week. (maybe close it on Sat/Sundays?) or Sunday's close it?? and limit the number of people. Make it a non beer zone? not sure how to enforce? I also use the XC trails in winter-thanks for keep the dogs off altho I do see dog tracks on occassion--and the current trail on hwy 82 side of river is just fine. It does not need to be expanded. Thank you.

§ § §

I've spent the last four years enjoying the beauty and tranquility of the NSP on a paddle board, traveling both up and down. The persons i see in canoes and paddle boards tend to be quiet and respectful of their environment.

It is an incredible place and whilst i disagree with closing it to public use i believe changes should be made.

What has become very obvious is the damage done specifically noise pollution by people floating in tubes from the wildwood put in, many drinking, by the time they have (slowly) floated towards the Herron nests they are somewhat intoxicated, loud and unaware of their actions.

I have 2 suggestions

1. Make the consumption of alcohol illegal (on that stretch of river).
2. Make the West Gate the furthest up river tubers could put in. This would put them past the Herron nests, and reduce their time on the river and their consumption of alcohol- it is also one of the largest parking areas in the NSP.

§ § §

04.02.03.01 Noxious Weed Control: Are chemicals being used to mitigate noxious invasive weeds?

Twenty years ago, I worked with Fritz Benedict and Heather Hopton to pull out by roots Canadian thistles. We pulled many. Today I walked the trail by Hwy. 82 and spotted only 2 Canadian thistles. They seem to not have returned by the trail by 82 Hwy.

What are control measures to eradicate Canadian thistles across the river? Chemicals versus hand-pulling? Twenty years ago, we only mitigated the bike trail area by hand pull of roots.

Thank you.

§ § §

Re: Tubers floating at North Star

Take one look at the Tuckee River next to Squaw Valley: Tubers every 50 to 100 feet complete with coolers and occasional rangers to manage situation. This is what we don't want but the seeds have been sown.

How can some responsibility put on shops to educate their customers?

I agree that "No!, No!, No!" doesn't work and that education as to why it needs to be a quiet zone is the best hope. Is there a way to limit the numbers on the river, the beach, etc.?

Thanks!

§ § §

Thanks to all who are trying to work out a plan that both protects the environment & wildlife and still allows people to enjoy the river. But, to me the issue is enforcement of a QUIET ZONE, respecting the environment (no littering, staying on designated trails and the no dogs rule).

I do not favor expanding the X country groomed trails into the area near the heron rookery.

§ § §

The tenor of the open house (5/18.15) has been very anthropocentric. Most of the discussion has centered on how to manage Northstarr for the human population. If N.S. is truly a "wildlife preserve" then the focus and priorities must be on the wildlife, the non-human populations.

The additional river traffic has dramatically increased over the last 3-5 years. This increased activity inhibits wildlife, especially avian species, from hunting. Herons are especially "nervous" hunters. Constant streams of river users effectively closes any grocery shopping for the herons. It is not just activity around the rookery that is disruptive. No food = no avian populations!!

The number of river users must decrease and be subject to time period restriction; no river traffic during nesting & fledgling and no launches before 10 a.m. or after 2 p.m.

Please manage Northstar for the wildlife, not just another Aspen amusement park activity.

§ § §

Short and to the point

1. Do not extend the x/c Trail to the added proposal. (I have been x/c skiing around Aspen for 50 years.)
2. There needs to be more control on numbers of people and control of the party aspect. (Float yes, party no)
3. If I had my way, it would still be a Nature Preserve.
4. 4.The word was that last 4<sup>th</sup> of July there were 1,000 people start at the Forest Service put in.
5. There needs to be more control of the people that rent the equipment and just send out the people.

§ § §

There is a way to solve the problem. In the early 70's when Wagner Park was getting over run by over use we all asked what can be done. Fritz Stammberger simply stayed "vee have vays."

§ § §

Sirs,  
Thanks to Greg Poschman's post on FB.

It's pretty simple the preserve is screaming under the pressure of urban sprawl.  
No to commercial use that's not what the nature preserve or Fritz Benedict intended it for. Neither was all the development that has slowly creeped in.

Then the new landowners close off everything for themselves just because they have the \$. It's disgusting! Why does everything have to be tainted by \$ ?

Just because it's the status quo doesn't make it right.

Reverse the trend & let nature be!





June 4, 2015

Via email to: [ihmallory@gmail.com](mailto:ihmallory@gmail.com)  
[gary.tennenbaum@pitkincounty.com](mailto:gary.tennenbaum@pitkincounty.com)

Howie Mallory, Chairman  
Gary Tennenbaum, Assistant Director  
Pitkin County Open Space and Trails Program  
530 E. Main St. Third Floor  
Aspen, CO 81611

**RE: Comments on April 2015 Draft of the North Star Management Plan**

Dear Chairman Mallory and Mr. Tennebaum:

Please accept this letter as public comments from the Pitkin County Healthy Rivers and Streams Board on the draft North Star Management Plan, dated April 2015 (NSMP).

The Pitkin County Healthy Rivers and Streams Board (River Board) assists the Board of County Commissioners of Pitkin County in administering the Healthy Rivers and Streams Fund Program authorized by Pitkin County voters. The voter mandated goals of the River Board include maintaining and improving water quality and quantity within the Roaring Fork watershed, working to secure, create and augment minimum stream flows to ensure ecological health, recreational opportunities, and wildlife and riparian habitat.

Our board is very passionate about this special property and many aspects of the NSMP have been discussed at length. Our comments here will be confined to water and riparian habitat issues for obvious reasons, although we have other heartfelt opinions about many of the recommendations in the NSMP. Three of our seven board members grew up in Aspen and have lengthy memories of North Star experiences. Two other members have resided in the area for 35 and 55 years respectively.

**Weir or low-head dam structure**

The River Board feels strongly that the weir recommendation should be eliminated for political, legal and financial reasons. While we support a majority of the Golder action items contained in the *Ecological Communities and Fluvial Geomorphology*

LETTER TO PITKIN COUNTY OPEN SPACE AND TRAILS  
RE: PUBLIC COMMENT ON 2015 DRAFT NORTH STAR MANAGEMENT PLAN  
PAGE 2

*Baseline Report for North Star Nature Preserve*, Golder Associates, Inc., March 2015, (the Golder report) the weir has met great skepticism.

- A weir is essentially a dam, typically characterized as a “short” dam that allows water to overtop it when available. This seems like a very challenging idea for the public to accept. The idea of putting a weir in a nature preserve while many other agencies are removing dams and other river obstructions seems incongruous.
- Legal costs could be excessive related to water rights issues. Out-of-priority evaporative losses would have to be augmented. Numerous opposers would be anticipated as they assess potential injury to their existing water rights due to the newly impounded water and future relationships/partnerships with agricultural water rights holders could be impacted.
- In addition, weirs can cause increased scouring, channel shifts, barriers to fish passage, and destructive eddies (Montana Audubon 2002) (Salant 2012). At low water, weirs are potentially hazardous for boaters to navigate.
- Financial costs of pursuing proposed studies in the Golder report, addressing federal regulatory requirements, construction of a large weir along with unknown legal costs gives us serious trepidation.

### **Reviewing and prioritizing objectives for riparian and wetland issues**

The River Board wishes to collaborate with the Open Space and Trails Board and staff (OST) to define and prioritize the objectives we look to achieve at North Star.

If for example, the first focus is attempting to re-wet some of the lost wetland areas, perhaps smaller, less politically controversial and less expensive ideas could be explored first.

Per Dale Will, Open Space and Trails Program Director, at the OST Meeting April 23, 2015, the inventory of water rights for the James H. Smith and North Star properties that was done in 2002 could be examined by both boards and it seems any opportunities to utilize these existing rights could be explored immediately. Other creative and less expensive, less intrusive ideas could come from this examination. This does not appear to have been done yet. Rachel Richards, Pitkin County Commissioner, also recommended this review and suggested other smaller steps should be considered during joint meetings of the BOCC and OST on 4/7/2015 and the River Board and BOCC on 4/21/2015. For example, basic wetland border delineation could be completed and acreages calculated using GIS. This would give a current baseline of the sizes of the existing wetlands and allow for comparison after

LETTER TO PITKIN COUNTY OPEN SPACE AND TRAILS  
RE: PUBLIC COMMENT ON 2015 DRAFT NORTH STAR MANAGEMENT PLAN  
PAGE 3

any initial restoration, maintenance or enhancement actions. After the smaller adjustments or manipulations are made to retain water in the existing fen, the hydrologic improvements could be assessed and next steps determined at that time.

### **Fen**

The following information should be added to the NSMP Section 4.02 defining a fen so the public has a better understanding of why further investigations might ensue and why so much effort is focused on maintaining this resource. This information will be beneficial to OST and the River Board when determining further actions or expenditures.

We recommend additional language similar to the following to better inform the public of this valuable resource.

A fen is a wetland and further defined as a unique type of peatland. Peatlands have a thick water logged organic soil layer (peat) made up of dead and decaying plant materials. Fen soils are characterized as histosols which are defined as having 16" (40 cm) or more of organic soil material in the upper 31" (80cm) of the soil profile (USDA Natural Resource Conservation Service n.d.).

Fens are fed by mineral rich surface water or groundwater or both (Mitsch 2007).

Accumulation of peat to this depth requires constant soil saturation and cold temps thereby creating anaerobic conditions that slow the decomposition of organic matter resulting in peat accumulation. The build-up of 8" of organic matter is estimated to take approximately 1,000 years in Colorado (Chimner 2000) (Chimner Rodney A. 2002). (Certainly this is an average with variation from site to site).

Fens are further characterized by the percentage of peat or organic soils in soil samples from a given wetland (Colorado National Heritage Program 2011).

### **Riparian Area Revegetation**

The River Board supports plans for extensive riparian area revegetation advocated by Hickey, Miller and Golder (Hickey 2000) (Miller 2011) (Golder Associates 2015). We support the Golder report recommendations and would like to see them expanded, especially on the west side of the Roaring Fork River to screen wildlife from recreation. We recommend language to further educate the public.

04.02.01.03 Restore Streambanks of the NSMP states:



LETTER TO PITKIN COUNTY OPEN SPACE AND TRAILS  
RE: PUBLIC COMMENT ON 2015 DRAFT NORTH STAR MANAGEMENT PLAN  
PAGE 4

Streambank restoration will be achieved by installing biostabilization bank protection, or suitably engineered flow deflection structures, decreasing the potential for the destruction of habitat provided by the mature cottonwood stand.

This pertains only to the mature cottonwood stand project on the James H. Smith parcel and we support these recommendations.

04.02.03.04 Riparian Habitat Management of the NSMP states:  
...The goal is to maintain coarse-grained habitat heterogeneity (i.e. willow riparian shrubland interspersed with mesic meadows and graminoid marsh).  
c) Continue restoration of stream banks, by adding woody riparian vegetation, which will increase breeding habitat, and modifying the bank angle, as described in the geomorphology action items.

This is the only language in the NSMP that describes riparian vegetation efforts and we recommend the restoration projects be expanded in phases over a period of years.

The River Board recommends extensive projects focused on increasing woody vegetation on multiple stream reaches on North Star for screening purposes particularly on the west side of the river. Not all areas of streambank projects will be successful, so much of the vegetation “heterogeneity” (this language in the public management may cause public confusion) will be provided by sites where plantings fail, as there is always some percentage of mortality.

Additionally, if management resources and personnel allow, we recommend public inclusion in restoration efforts through volunteer projects. Nothing will create better buy-in for what it takes to protect North Star’s habitats. This type of educational opportunity in ecological restoration and habitat improvement efforts is invaluable in creating educated advocates for the “nature preserve” into the future. We recommend pursuing partnerships with the Roaring Fork Outdoor Volunteers and the Roaring Fork Conservancy on these efforts in addition to the Aspen Center for Environmental Studies.

We are supportive of utilizing vegetation resources on the property for replanting projects, whether materials are increased through seed collecting, cuttings or willow poles. We are happy to see use of local materials and recommend strengthening the language to include plants/seeds harvested on the property. Seed collection is another potential public outreach activity we strongly support. Collections should typically occur in the fall to minimize wildlife and bird impacts.

LETTER TO PITKIN COUNTY OPEN SPACE AND TRAILS  
RE: PUBLIC COMMENT ON 2015 DRAFT NORTH STAR MANAGEMENT PLAN  
PAGE 5

The wetlands analysis and other riparian improvements should precede any decisions to fund the 1-D, 2-D and LIDAR hydrologic assessments, repeatedly pushed at least six times in the Golder report introduction and executive summary and then seven more times (a total of 13 times) in the first 30 pages of the report!

### **Surface and Ground Water**

Longtime local and heron advocate Charlie Hopton provided copies of *Preliminary Hydrologic and Biological Characterization of the North Star Nature Preserve*, Pitkin County Colorado, 2000, to the OST and River Boards.

The following excerpt discusses the surface water off the slopes of Richmond Ridge and its contribution to maintenance of the fen, wetland sites and even the river on North Star:

Modeling efforts revealed that shallow subsurface flow through unconsolidated sediments on slopes is one of the most significant components of runoff in the Roaring Fork watershed and contributes significantly to the North Star stem." And "In essence, North Star is a principal ground water discharge area for a large part of the upper watershed, transmitting water from the hill slopes and regional system to the river. These inflows to, and outflows from, the valley bottom are important for the following reasons: 1) they provide a relatively constant flow of water to maintain the wetlands of North Star; 2) they may attenuate peak flows of the river during periods of snowmelt and high runoff; 3) they may store more water for the wetland ecosystems; and 4) they provide base flow to the Roaring Fork River.

*Preliminary Hydrologic and Biological Characterization of the North Star Nature Preserve*, Pitkin County Colorado, 2000

This was one more document and additive to our understanding of the property. Portions of these findings (Hickey 2000) are reiterated and supported in Miller as well as Golder (Miller 2011) (Golder Associates 2015). Miller succinctly points out there are 3 components to the hydrologic system at North Star. (Miller 2011)

...the regional ground water system, localized riverine recharge by the Roaring Fork River during spring runoff, and surface and shallow subsurface runoff to the valley bottom.

We recommend inclusion of information from Hickey and Miller (Hickey 2000) (Miller 2011) to the NSMP. This relevant literature will help to build a broader foundation of knowledge with respect to North Star hydrology. Furthermore, all three studies advise addressing headgates in the existing wetland area. We are

LETTER TO PITKIN COUNTY OPEN SPACE AND TRAILS  
RE: PUBLIC COMMENT ON 2015 DRAFT NORTH STAR MANAGEMENT PLAN  
PAGE 6

supportive of taking action on this, as soon as possible, with direct advice on any water rights issues from the County Attorney's Office.

The Golder report includes suggestions for eliminating the channels dug years ago to drain wetland surface waters (Golder Associates 2015). The ecological impacts of filling these channels warrants further discussion between the boards before action is taken.

### **Ground Water Monitoring Wells**

The River Board recognizes the value of historical ground water data from the Hickey report (Hickey 2000). Before funding a new hydrologic study with Golder Associates Inc., we suggest at least one year of additional ground water monitoring at the existing locations to supplement and compare with the data from 2000. Needed infrastructure in the form of PVC monitoring wells is still present on site to facilitate data collection.

See Appendix A "North Star Preserve Monitoring Well Measurements", page 36 (Hickey 2000). Looking at these existing wells even for one season and making comparisons to the 2000 readings can give a first snapshot of the difference in ground water levels from 2016 versus 2000. Coupling this with river flows (pertinent USGS stream data) from the two seasons may help give us information to strategize key next steps. The Hickey report also comments on the presence of peat soils and its significance to the local hydrologic conditions. (Hickey 2000)

### **Recreational Use**

The dramatic increase in recreation on North Star has a variety of impacts on wildlife, riparian ecology and water quality. This includes disturbances to nesting birds from noise, dogs, and human presence on the river. The large volume of users has also increased the amount of trash left in the river and along the banks. We support the plan to work with commercial outfitters to train guides and rental personnel. Furthermore, increased monitoring and patrolling by OST rangers is warranted. We are excited to partner with OST on signage and public education related to the ecological values and ethical use of a nature preserve such as North Star. Additionally, we want to emphasize our concern that any plan for use of North Star and the James H. Smith property consider all inputs, including human impacts on the river from the put-in at Wildwood, downstream to the preserve.

### **Golder Report Review**

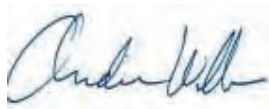
We have contracted with Miller Ecological Consultants Inc. for review of the Golder report specific to North Star hydrology. They were previously commissioned in 2011 by the County to do a geomorphic assessment of the Roaring Fork River and impacts of groundwater changes on wetlands at North Star. Because of this relevant background, we feel a review will enhance our understanding of North Star hydrology.

LETTER TO PITKIN COUNTY OPEN SPACE AND TRAILS  
RE: PUBLIC COMMENT ON 2015 DRAFT NORTH STAR MANAGEMENT PLAN  
PAGE 7

We ask these comments and concerns be considered in the final NSMP. We look forward to collaborating with and providing financial support on appropriate projects at North Star.

Thank you for this opportunity to participate in the process. With the focused attention of our two boards, as well as local residents and the general public, we are confident that the natural qualities of this amazing local resource can be improved.

Respectfully submitted,



Andre Wille  
Chairman

cc: Hawk Greenway, Vice Chairman Open Space and Trails Board of Trustees  
Board of County Commissioners of Pitkin County  
Jon Peacock, Pitkin County Manger



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June 5, 2015

Via email to: [ihmallory@gmail.com](mailto:ihmallory@gmail.com)  
[gary.tennenbaum@pitkincounty.com](mailto:gary.tennenbaum@pitkincounty.com)

Howie Mallory, Chairman  
Gary Tennenbaum, Assistant Director  
Pitkin County Open Space and Trails Program  
530 E Main St. Third Floor  
Aspen, CO 81611

**RE: Supplemental Comments on the April 2015 Draft of the North Star Management Plan**

Dear Chairman Mallory and Mr. Tennebaum:

As noted in our June 4, 2015 letter, Pitkin County Healthy Rivers and Streams Board (River Board) contracted with Miller Ecological Associates to review the geomorphic assessment chapter of the Golder Report. We are now in receipt of the review document, *Review comments on Golder Report "Ecological Communities & Fluvial Geomorphology Baseline Report: North Star Nature Preserve"*, a copy of which is attached and it supports several of our comments and addresses some additional issues.

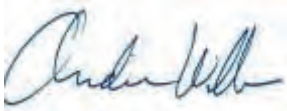
While we will let the review document speak for itself, we would like to point out that most of the points mirror or support our concerns as stated in our June 4, 2015 comment letter, an outcome of which we were obviously not certain when our request was made. One of the main statements from the Miller and Ayres review is to abandon the idea of a weir at North Star with several reasons given supporting this noted disagreement with the Golder recommendation. In addition to supporting and more fully explaining some of the River Board comments, a call for additional aquatic and geomorphological studies is recommended, but at scales much smaller and less expensive than the 1- or 2-D modeling.

With the addition of this expert review of the Golder recommendations for North Star, we feel our original comments and thoughts have received professional backing. We are fortunate to be able to employ so many expert opinions regarding the North Star Nature Preserve.

SUPPLEMENTAL LETTER TO PITKIN COUNTY OPEN SPACE AND TRAILS  
RE: ADDITIONAL PUBLIC COMMENT ON 2015 DRAFT NORTH STAR MANAGEMENT PLAN  
PAGE 2

The River Board is grateful to be able to participate in the process of planning for the future at North Star.

Respectfully submitted,



Andre Wille  
Chairman

Attachment: Miller Ecological Associates Review Comments on Golder Report "Ecological Communities & Fluvial Geomorphology Baseline Report: North Star Nature Preserve"

cc via email: Hawk Greenway, Vice Chairman Open Space and Trails Board of Trustees  
Board of County Commissioners of Pitkin County  
Jon Peacock, Pitkin County Manger



MILLER  
ECOLOGICAL  
CONSULTANTS, INC.

2111 S. College Ave., Unit D  
Fort Collins, CO 80525  
(970) 224-4505

### MEMORANDUM

**Date: June 2, 2015**

**To: John Ely, Pitkin County Attorney**

**From: Bill Miller, Miller Ecological Consultants, Inc and Bill Spitz; Ayres Associates**

**CC:**

**Subject: Review comments on Golder Report “Ecological Communities & Fluvial Geomorphology Baseline Report: North Star Nature Preserve”**

---

#### REVIEW OF GEOMORPHIC ASSESSMENT

##### Ecological Communities & Fluvial Geomorphology Baseline Report by Golder (2015)

The following is a review of the Geomorphic Assessment chapter in the above referenced 2015 Golder report on the North Star Nature Preserve. This review will consist of a general review of the Geomorphic Assessment chapter followed by a point-by-point review of the recommendations in the last section of the chapter. We also included comments regarding aquatic habitat in the review of the geomorphology. Comments regarding the terrestrial wildlife is beyond the scope of this review.

#### General Review

In general, we would agree with much of the Geomorphic Assessment except as noted below:

- The report states in Section 1.1 that “the study area of this investigation consists of the North Star Nature Preserve (North Star) and extends to near Highway 82 and Stillwater Road.” However, the downstream end of the reach as described in the report is actually at the pedestrian bridge 500 feet upstream of North Star Drive. Stillwater Drive is located approximately 2,300 feet downstream of the pedestrian bridge. This is an important distinction because the Stillwater Drive bridge is located just downstream of a steep cobble and boulder riffle and just upstream of the Salvation Ditch diversion dam, both of which provide base level control that inhibits any further degradation from moving upstream into the North Star Nature Preserve reach.
- In Section 1.3.1, the report states that the terminal moraine dam “still controls the site hydraulics and maintains the low-gradient sinuous stream and low lying wetland morphology of the site.” We would agree in part with this statement, but would also note that the Salvation Ditch diversion dam and the steep cobble/boulder riffle at Stillwater Drive are also major controls.



- Section 1.3.2.3 states that “when the bankfull indicators were used to assess the discharge at several surveyed locations during this investigation, the results were inconsistent, likely due to the influence of the TMD on the hydrology.” We would also note that the cutoff of the 3 major meander bends in the early part of the 20<sup>th</sup> century and the likely subsequent post-cutoff channel degradation that may have occurred would also have provided inconsistent results on the determination of bankfull discharge.
- Golder notes in Section 1.3.3 that they were able to locate photos taken in 1898 and circa 1900 that show that the 3 major meander bends that Ayres Associates (2012) noted as having likely been cutoff prior to the 1893 USGS topographic map is in fact incorrect. We commend Golder for locating these photos and based on their sinuosity analysis, it appears that the artificial cutoff of these bends sometime between 1900 and 1951 resulted in a 35% decrease in sinuosity and, subsequently, a 35% increase in slope in the measured reach. This major increase in slope would have likely induced channel degradation in the reach, but the degradation may have been slowed or halted by the construction of the Trans-Mountain Diversion (TMD) in 1937 if the bends were cutoff before then. Regardless, we believe that the channel has fully adjusted since at least 1951 based on current conditions.
- Also in Section 1.3.3, Golder states that “the likelihood that the breaching of the moraine dam was intentional is significantly increased.” We would disagree with this. It is much more likely and plausible that the river has naturally downcut through the moraine over the many millennia since the last glaciation ended and the moraine dam was left in place, especially during wetter climates. The steep cobble/boulder riffle at Stillwater Drive may be a relic of this long-term downcutting. The physical characteristics of the northern end of the moraine dam, floodplain, and proximity to the northern valley wall would tend to support this conclusion.
- We do not agree with the comment at the end of Section 1.3.3.1 stating that “the implication of these two conclusions is that the more recent existence of the highly sinuous channel increases the potential for successful reconnection of the river to its floodplain through replacement of the terminal moraine through the placement of a weir, or similar mechanism.” Placement of any type of structure across the channel at the downstream end of the reach could have detrimental consequences with regard to inducing upstream aggradation (with fine-grained sediment) and subsequent destruction of aquatic habitat.
- The placement of a weir in an attempt to raise the channel has implications to aquatic habitat. The current habitat conditions in the North Star preserve is dominated in much of the channel with low gradient shallow water with a fine grained sediment. This type of channel provides low quality aquatic habitat. The further reduction in water surface slope with construction of a weir would further degrade and fragment the aquatic habitat. In addition, any type of artificial structure could impede or prohibit aquatic species from moving upstream and downstream past such a structure.
- The Golder Report provides detailed analysis of geomorphology and the terrestrial and wetland conditions. It does not provide any evaluation of aquatic habitat with respect to the geomorphology. We recommend the report be expanded to include an analysis of aquatic habitat and species similar to the other sections of the report since the management of the Open Space includes a large section of the Roaring Fork River.
- Golder indicates that they used data collected at 7 cross section locations for use in their erosion calculations (Section 1.4). Figure B-1 shows the location of sediment samples, but the actual cross section locations and plots of the cross sections are not included. We would recommend

that they be included to allow for further analysis with regard to their locations in relationship to other geomorphic and structural features that may impact the erosion analysis. For example, there are areas where there are man-made structures in the channel or along the banks that may have an artificial influence on conditions at the cross section. There are also areas that have highly cohesive lacustrine deposits in the bank, whereas in other areas there may be non-cohesive sands and gravels overlain by floodplain soils. It would also be helpful to have the survey data to evaluate the channel slope between the surveyed cross sections.

- We agree with the comments made in Section 1.5.2 through 1.5.7. We do not agree with the comments made in Section 1.5.1 with regard to the importance of the terminal moraine dam and recommendations for construction of a downstream weir to mitigate the loss of the terminal moraine. Existing conditions indicate that the terminal moraine dam is stable and placing a weir at the downstream end of the reach could induce channel aggradation with detrimental consequences on aquatic habitat. We would also argue against the need for bank protection to protect mature cottonwoods as described in Section 1.5.7. These trees, when they do fall into the channel, also provide additional aquatic habitat, cover, and nutrients.
- Although we agree with Golder’s conclusion in Section 1.5.8 that “While the recent past and predictable future of North Star are, in Golder’s assessment, a stable morphology” we feel that discussion of the potential instability of the moraine dam and the wetlands over “geologic time” is unnecessary and unhelpful since complete natural breaching of the moraine dam may take place over hundreds or even thousands of years. This also does not account for the presence of the cobble-boulder riffle and diversion dam at Stillwater Drive.
- We disagree with the conclusions in Section 1.6 that “Golder believes that this floodplain disconnection was further exacerbated by the straightening of the river channel through North Star, and that incision into the terminal moraine occurred between 1900 and 1951. The morphologic shift from the state of equilibrium, as represented by the preserved meanders in the form of oxbow lakes to the modern channel, is a result of the gradient increase caused by the moraine incision.” Given the location of the neck cutoffs and the agricultural development of the area in the early 20<sup>th</sup> century, it is highly likely that the meander bends were artificially cutoff to help drain the area for agricultural purposes. It is highly unlikely that the bends cutoff in response to the incision of the terminal moraine dam because existing morphologic conditions indicate that downcutting through the terminal moraine dam has taken place naturally over geologic time.

### **Review of Recommendations**

The following is a review of the bulleted recommendations provided in Section 1.7:

- Develop a plan to stabilize the groundwater table within the existing wetlands.
  - We agree with all recommendations under this bullet point.
- Install biostabilization bank protection or suitably engineered flow deflection structures to decrease the potential for the destruction of the habitat provided by the mature cottonwood stand.
  - We would suggest reevaluating this recommendation with regard to the advantages of introducing woody material into the channel from these cottonwood stands. There are significant benefits to aquatic habitat, cover, nutrients, etc. from the introduction of woody material to the channel. Consideration should be given to using woody materials such as logs and root wads as bank protection or flow deflection structures.

- We suggest careful review of the re-vegetation recommendations. We agree with Golder that complete re-vegetation of the banks with woody vegetation could result in unintended consequences, such as loss of sediment input and channel degradation.
- The recommendation in the Golder report appears limited to the area of cottonwoods. The same approach may be appropriate for other areas in a phased approach. The success (or failure) of the initial work could be used to guide additional re-vegetation in other stream bank locations. We advise caution in the amount of plantings in one reach to maintain the heterogeneity needed for wildlife species and maintain channel mobility. The failure of some plantings may result in the “patchwork” of vegetation needed for species and channel mobility.
- We advise caution in the recommendation to attract more beaver activity for control of water in some habitats. Expansion of beaver populations may result in more beaver activity on the main channel of the Roaring Fork with detrimental effects to both riparian vegetation and geomorphology.
- Carefully consider the removal, or modification, of the existing in stream structures.
  - We agree, but current conditions in the river suggest that these small structures are providing little or no habitat or channel stability and their removal would likely be more beneficial than detrimental.
  - We do not believe it is necessary to acquire LiDAR mapping or conduct expensive 1- or 2-D modeling of the reach to determine the impacts from removal of these structures. A more detailed geomorphic assessment of current conditions at each of these sites could be conducted much cheaper and would likely suggest that their removal would have little impact.
- Monitor downstream channel elevation.
  - We believe active incision into the moraine dam is not currently happening. The Golder report has not accounted for either the steep cobble-boulder riffle just upstream of the Stillwater Drive bridge or the Salvation Ditch diversion structure just downstream of the bridge. These features, if they remain intact, will counter any further incision of the moraine dam.
  - We do not believe it is necessary to acquire high resolution surveys, LiDAR mapping, or repeat surveys to determine if incision is occurring.
  - We do not recommend installation of weir-type structures, engineered mechanisms, or roughness elements at the downstream end of North Star as these will induce upstream aggradation, damage and fragment existing aquatic habitat.
- Golder recommends further consideration of reconnecting the existing fluvial system to its floodplain through remedial works to raise the functional crest elevation of the terminal moraine through placement of a weir or similar mechanism. 1-D and 2-D modeling, combined with LIDAR during low-flow periods, should be used to determine the specific types and locations for the recommended devices.
  - As previously discussed above, we highly discourage the use of any “remedial works to raise the functional crest elevation of the terminal moraine” as these will have little impact on perceived future channel incision, but will instead have a detrimental impact on the upstream channel.
  - Unlike Golder, which believes that “that the hydrology of the adjacent floodplain is partially controlled by the hillslope and the wetland hydrology, but that reconnecting

the fluvial hydrology through reconstruction of the terminal moraine is likely to be beneficial to the site,” we believe that the wetland and floodplain hydrology is closely tied to the nearby hillslope and alluvial fan hydrology and that controlling flow in the ditches and through the diversions on the floodplain will improve the wetland hydrology. Reconnecting the floodplain to the river already occurs during out of bank flows, but using an artificial structure to raise the water surface elevation has serious consequences.

- We agree that the cutoff meanders and oxbows should not be reestablished and reconnected to the river as this could induce additional problems.
- We do not agree that expensive hydrodynamic modeling needs to be conducted. We believe there is sufficient information and field data to determine those processes and conditions necessary to maintain and optimize the wetlands and floodplain hydrology. However, we would recommend that a more detailed groundwater modeling effort may be beneficial to identifying major gains and losses.





May 13, 2015

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Pitkin County  
Open Space and Trails  
Attn: Gary Tennenbaum  
530 E. Main St., Ste. 300  
Aspen, CO 81611

**Re: North Star Management Plan update – AVLT comments & feedback**

Gary:

Many thanks to you and Lindsey for visiting our office last week to present the draft management plan for the North Star Preserve. The presentation was very thorough and insightful and it is obvious that much thought and consideration went into the development of the updated plan. Overall AVLT feels this is a great plan and will benefit the Preserve.

We have carefully reviewed both the original management plan and compared it to the 2015 draft which has also been crossreferenced with the conservation easement. Below are some suggestions that AVLT staff have compiled for consideration.

As we discussed at the end of your visit please provide us with the final draft of the plan as it nears BOCC approval so that AVLT can sign off on it.

Again, thank you very much for taking the time to present the plan to us – we look forward to seeing this document guide the stewardship of North Star into the future.

**Aspen Valley Land Trust comments and feedback**

In Section 2.01 Properties and Conservation Easements:

- Add “Pitkin County reception #472502 recorded September 19, 2002”.

- Note that AVL T can recommend modifications to the Management Plan and has the ability to “veto any future change in the Management Plan which would allow for a level of use that may threaten the Conservation Values of the Property”.
- Reference Section 8 of the conservation easement states that the property shall be operated and managed by Pitkin County in accordance with the Management Plan.
- Not that the Management Plan shall be updated by Pitkin County no less than once every five (5) years with the next iteration of the plan to be completed by May 2020 (suggesting that implementation occur prior to the start of the summer busy season).
- AVL T may participate in any North Star Users Group meetings
- No amendments or changes to the Management Plan may increase the type or intensity of recreational, commercial, or public use beyond what is specified in the existing Management Plan.

In **Section 04.02.01.02 (Restore Streambanks)** we suggest adding that no hard materials shall be used for streambank stabilization or restoration.

Restrooms/trash receptacles are referenced in the sections listed below. It is suggested that the plan elaborate on the thought process behind refraining from installing restrooms and/or trash receptacles

- 2.08 Parking
- 04.01.03 Parking Lot Maintenance
- 04.01.05 Pack in/Pack out

**Section 1.06.A.8.e.iii** of the original management plan states that “only rafts rated for three people or less and less than or equal to ten feet in length will be allowed to access to the River at the North Star Nature Preserve”. There are no parameters in the draft plan placing size restrictions on watercraft. It might be worth adding size parameters of watercraft.

Recommend mapping the location of various informational and educational signs throughout the preserve so that future managers are aware of past signage efforts.

AVLT feels that **Section 4.03.03 (Work with the White River National Forest on management of the Wildwood put-in and parking area)** will be one of the most important factors dictating the use of North Star and strongly endorses these efforts.

Regarding **Section 4.05.01 (Update and replace the interpretive signage at the entrances to the river access corridors and along the Ease of Aspen Trail)** please keep in mind **paragraph 2.e** of the conservation easement which grants AVL T the right to place signs on the property identifying AVL T’s role in conserving the Property as sign development proceeds.

For **Section 4.04.01 (Commercial-Use Permits)** explain the thought process behind the change from the original management plan which limits the commercial kayaking/canoeing operator to no more than one to the proposed approach.

Lastly, in **Appendix A** – (North Star Nature Preserve Planning Area map) AVLT does not own the area defined in pink on the map.

Sincerely,

A handwritten signature in black ink, appearing to read 'C.P. Coleman', with a long horizontal flourish extending to the right.

Connor P. Coleman  
Stewardship Director



Pitkin County Open Space and Trails  
530 East Main St, 3<sup>rd</sup> Floor  
Aspen, CO 81611  
Attn: Dale Will, Director

Dear Dale,

Thank you for the opportunity to comment on the draft North Star Nature Preserve Management Plan. Roaring Fork Conservancy (RFC) appreciates the effort that is being made by Pitkin County Open Space and Trails (OST) to manage this area responsibly. Understanding that OST must balance the needs of both environmental and human communities in an area that has experienced disturbances for over 60 years, a management effort to maintain and/or improve environmental quality is essential.

The 2008 State of the Roaring Fork Watershed Report notes that “riparian habitat is sustainable” in the James H. Smith Open Space, and credits the wide and diverse riparian zone. The high quality riparian vegetation helps mitigate “the negative impacts of hydrologic alteration by maintaining a stable channel that is not downcut, enabling spring flooding flows to overbank and replenish groundwater.”<sup>1</sup> Management of this area must include provisions to ensure that riparian vegetation stays intact by minimizing potential recreational impacts such as trampling and trash. RFC encourages OST to maintain the limit on current commercial operations to one permit, continuing to work with the permitted party on essential education and stewardship so that visitors are informed of the importance of responsible use.

RFC concurs with the importance of implementing on-site education referenced in the Management Plan. Having a staff member or associate on site to monitor use and educate visitors is essential to the success of maintaining the balance between recreation and environment. In a continuing effort to preserve riparian habitat, OST must work with guests on proper disposal of trash and waste. RFC encourages OST to consider the implementation of garbage and recycling on site. The “pack it in, pack it out” philosophy currently in place seems only moderately successful. Increased monitoring of the site may help solve this problem; however, on-site trash and recycling receptacles available seasonally may be a beneficial first step.

The areas covered by the North Star and James H. Smith Open Space provide “essential breeding, foraging, migratory, and winter habitat for a large diversity of

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<sup>1</sup> Clarke, S. et al., November 2008. State of the Roaring Fork Watershed Report, Ch. 4, Sec. 1, p.27-28.

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native wildlife.”<sup>2</sup> In addition, North Star is designated by Audubon Colorado as an Important Bird Area. Of particular concern is the Great Blue Heron (GBH) population. GBH are sensitive to human disturbance and noise, particularly during nesting. Increasing education around the heronry through staff contact and/or signage is essential to the continuation of the heron population. The heron population anecdotally declined from 13 to 4 nesting pairs since 2005.<sup>3</sup> Careful management and education of increasing recreationists is essential to future GBH success. Creating the “quiet zone” as proposed in Section 04.02.02.01 is an important step in GBH protection. As noted in the management plan, continued monitoring is needed to ensure the health and longevity of the GBH population in North Star Nature Preserve. If populations continue to decline, OST should consider more stringent restrictions.

RFC is supportive of Section 04.02.03.04 Riparian Management Plan. Restoration of stream banks, facilitating cottonwood growth and reinvigorating wetlands are all essential to a healthy riparian area. Continued work by Pitkin County and the City of Aspen to maintain and restore hydrology, including flooding and flushing flows are also important.

RFC values the time and attention that has gone into this management plan. Please let us know if you would like further detail on any of the above comments or if we may be of assistance in any way in the future.

Thank you for your consideration.

Sincerely,

Rick Lofaro  
Executive Director

Heather Lewin  
Watershed Action Director

<sup>2</sup> Clarke, S. et al., November 2008. State of the Roaring Fork Watershed Report, Ch. 4, Sec. 1, p.30.

<sup>3</sup> Charlie Hopton, personal communication, May 12,2015



### **COLORADO** Parks and Wildlife

Department of Natural Resources

Glenwood Springs Area Office  
0088 Wildlife Way  
Glenwood Springs, CO 81601

May 13, 2015

Gary Tennenbaum  
Assistant Director - Stewardship and Trails  
Pitkin County Open Space & Trails  
530 E Main St. Ste 300  
Aspen, CO 81611

#### **RE: North Star Nature Preserve/James H. Smith Management Plan**

Dear Mr. Tennenbaum,

Colorado Parks and Wildlife has reviewed the draft management plan for the North Star Nature Preserve and James H. Smith property located south of Aspen. CPW applauds the effort to focus on wildlife protection and management while planning the future of these two properties. Overall, the plan should adequately balance human use and recreation with the natural resources present on these parcels. After careful review, CPW would like to offer the following recommendations/comments for your consideration as you move forward with finalizing the draft plan:

- Consider adding a section to the plan to address human-wildlife conflicts. Primary focus should be on how the preserve will address the presence of moose or bears within the heavily used portions of the property. Full or partial closures may be necessary until the animals have moved on and no longer pose a risk.
- Continue to allow fishing from rafts and boats as stated in the draft plan, but also consider allowing fishing from the bank within areas where the public can access the river by foot.
- Include boreal toads in the list of probable species currently present at North Star. Boreal toads are a state endangered species and have been found both upstream and downstream of the North Star Preserve. CPW recommends working with staff members to conduct amphibian surveys to determine if breeding sites are present and identify other amphibian and reptile species on the preserve.
- Consider creating an access point for big-game hunters to access National Forest Service lands west of the Preserve and James H. Smith property. CPW proposes a designated access route through the James H. Smith property for foot traffic only with absolutely no hunting on the open space property itself. Dates of access could coincide with big-game hunting seasons for unit 471.

CPW is also amenable to helping with fish sampling of the Roaring Fork River on the North Star Preserve and James H. Smith property. Contact aquatic biologist Kendall Bakich at (970) 947-2924 to schedule dates for sampling and collection of baseline data.

Colorado Parks and Wildlife appreciates the opportunity to comment on the management plan for the North Star Nature Preserve. If there are any questions or needs for additional information don't hesitate to contact Land Use Specialist, Taylor Elm at (970) 947-2971 or Area Wildlife Manager, Perry Will at (970) 947-2927.

Sincerely,

Perry Will, Area Wildlife Manager

Cc. Phil Nyland, Wildlife Biologist - US Forest Service  
Kendall Bakich, Aquatic Biologist - CPW  
Taylor Elm, Land Use Specialist - CPW  
File

Thank you for the opportunity to comment on the Draft North Star Management Plan. The Independence Pass Foundation or its predecessor, the Environmental Research Group, has done some work in the North Star area in the past (i.e. the crib walls on the north side of Highway 82 across from the N.S. Pedestrian Bridge) and is currently working with ACES to provide educational opportunities which make use of North Star, such as the “Birds of Independence Pass “ classes which have been offered in 2014 and 2015. With these interests in mind, we would welcome the opportunity to partner with the County and other stakeholders to manage North Star and adjacent areas. We are sensitive to the problems associated with heavy public use in areas with limited access and carrying capacity since we deal with similar issues on Independence Pass.

In reference to North Star and the Draft Plan we would offer the following observations:

(1) The environmental issues associated with the lowered water table and altered riparian regime are difficult and we support the Draft Plan’s recommendations and priorities. Issues arising from trans-basin diversions may be particularly intractable since a return to pre-diversion hydrology is, to put it mildly, unlikely. We support the Plan’s direction which considers how to best manage the wetlands and riparian ecosystems on the property if plans to restore, enlarge and improve riparian communities are unsuccessful or deemed infeasible. We believe that the challenge in this area is to determine how to manage the property to maintain healthy and functional wetlands and riparian areas on the assumption that continued diversions, climate change and an increasingly incised river channel will permanently alter and reduce the extent of those areas.

(2) We also support the Plan’s recommendations for managing other environmental issues such as aspen decline and weed control. Drastic measures may be necessary eventually to meet the Plan’s goals, such as man-made protection of aspen seedlings from browsing and mechanical weed control in conjunction with seeding of native grasses. For the time being, we think that low-impact treatments and on-going monitoring and study is appropriate to determine whether or not these problems can be addressed incrementally or if they will correct themselves through natural processes.

(3) We would ask that the physical aspects of management, such as signage, fencing, designation of use areas and other structures be coordinated with the design guidelines of the Top of the Rockies Scenic Byway Plan. Since Highway 82 is part of the Scenic Byway in this location, it would be appropriate for signage and other structures to be consistent with those being installed elsewhere in the Highway corridor. We would be glad to work with you on this issue to be sure that our goals and design guidelines are mutually supportive if not identical.

(4) Balancing public use and environmental preservation is particularly difficult and controversy is inevitable as this issue tends to polarize user groups. Restricting use will anger those whose quality of life may suffer as a result of those restrictions. Accommodating use will be resisted by those either directly impacted by use or by those who see increased use as a threat to the property’s most important values. “Balance” is a concept which varies according to one’s perspective and any compromise between uses will be seen as unbalanced by a certain percentage of both user groups.

Clearly both restrictions and accommodations are appropriate in response to recent use increases. Improved signage, more aggressive interpersonal contact (even including ticketing for rules violations), a more coherent parking setup, and closer cooperation with other agencies such as the City of Aspen and the US Forest Service, are called for. We endorse the idea of a put-in and take-out shuttle service for river users but that only makes



sense if it is paired with better parking arrangements. Increased or re-organized parking may require sacrificing some of the area currently within the Preserve. For instance, accommodating the current use at the “Beach” area may require that the parking for that entry point be enlarged and made more formal for the sake of control and safety. Some sacrifice of Preserve land may be a necessary trade-off if current use is to be accommodated. If it is not to be accommodated, the only fair alternative may be to close the entire Preserve to human activity except for short-term uses specifically permitted by the County such as educational programs. As for on-river uses, the only reasonable way to control littering, drunkenness or other misbehavior is to have an active ranger patrol in place to educate when possible and regulate when necessary. Inappropriate use of North Star should be prohibited under that same statutes and with the same rigor as similar behaviors would be in a public park in the middle of Aspen.

(5) Finally, we would suggest that the County, in cooperation with other entities and stakeholders, consider acquiring the Forest Service parcel that is currently the site of the upstream river put-in in the Wildwood area. That would give the County the ability to control and modify this location, something that the USFS is unlikely to do given their current resources. It would also be in line with the USFS policy to divest itself of land assets that do not contribute to USFS programs or goals.

Thank you again for the opportunity to comment, and please don't hesitate to contact us if any of the above is not clear.

Karin Teague, Executive Director  
Independence Pass Foundation  
(prepared in consultation with Mark Fuller, former Executive Director of IPF)

May 19, 2015  
Pitkin County Board of County Commissioners  
Attn: Steve Child, Chair  
and  
Pitkin County Open Space and Trails  
Attn: Gary Tennenbaum  
530 East Main Street, Suite 300, Aspen, Colorado 81612

RE: North Star Nature preserve Management Plan update:

Dear Pitkin County Commissioners and Open Space and Trails Board of Directors:

We are writing to comment on the North Star Nature Preserve Management Plan Update.

We believe that the original intent at the time of purchase was to protect the property for its ecological values and that it was purchased with the help of the Nature Conservancy. The way the mountain slopes come together with the wide river bottom land between created something unique at North Star and makes it important wildlife habitat. Everyone benefits from a nature preserve. The following paragraphs are from educational panels used to describe North Star Nature Preserve years ago:

North Star includes aquatic and wetland ecosystems, aspen groves, dry meadows, Douglas fir forest, and montane shrub land all in a river valley that has important biological diversity for all kinds of wildlife. The aquatic and wetland areas provide food, water, protection, breeding and nesting sites for species from a wide variety of habitats. The wetlands provide flood and drought protection, water purification, and critical habitat for waterfowl.

The aspen canopy provides nesting sites for American robins, western wood-pewees, and western flycatchers. The grasses and shrubs camouflage ground nests of birds. When the trees die they become nesting trees for woodpeckers, bluebirds, chickadees, nuthatches, swallows, wrens, owls, flycatchers, and other cavity nesting birds. Female elk can give birth in the secluded privacy of the aspens and deer can find nutritious forage and refuge here.

The dry meadows provide open space and nutritious forage for a diversity of mammals, birds, and insects. Herbaceous meadow plants create a canopy for protective cover for small mammals, such as voles and shrews, which make this ecosystem home. The dry meadow also provides forage for deer, elk, and bear. Raptors such as red-tailed hawks rely on these meadows for hunting habitat, using the nearby forest for nesting sites.

The Douglas fir forest has a wide range of habitat niches. The larger trees are habitat for cavity nesters such as owls. Porcupines may use the Douglas fir for shelter and food. The trees provide protection while the herbaceous understory of the open patches provide additional sources for food and cover. The Douglas fir snags provide roosting sites for birds of prey, home for insects, and feeding places for insect eating birds such as nuthatches and woodpeckers. The black bear uses this habitat for cover from mid April through the fall. He can search the fallen snags and dead stumps for insects, moving into adjacent shrub land to gorge on acorns, chokecherries, and service berries when they ripen.

In the montane shrub land the most common shrubs are Gambel oak, serviceberry, chokecherry, and bitterbrush. These shrubs rapidly recycle nutrients into fruits, acorns, and leaves, providing animals with an abundance of food.

North Star Nature Preserve is a truly a one of a kind biologically diverse nature preserve, an Aspen wildlife treasure, that we need to protect and preserve for future generations.

There are many recreational users on the East of Aspen trail next to North Star each day and in the winter many cross-country skiers enjoy North Star Nature Preserve. The trail provides a convenient place to walk, jog, observe, study, photograph, draw, and appreciate this special place. The paragliders have a use permit and have been respectful of the preserve. The kayakers also have been respectful on the river educating those who kayak there about the importance of protecting the nature preserve.

We are concerned about adverse impacts to the preserve if more licenses are granted. Another major concern for us is with the substantial addition in use during the summer months of paddle boarders and floaters that are coming in increasingly large numbers on the river in the last three to five years.

We are strongly supporting that the following recommendations be implemented. Many of these recommendations have been proposed in the new management plan and by AVL:

- 1) It is important for the North Star Nature Preserve management plan to be updated every five years as is required.
- 2) We strongly support the presence of monitors from ACES and/or Pitkin County Open Space and Trails to educate users and control use during the hugely impactful summer months of mid-June, July, and August on the river. It is important to monitor the river access corridors onto the river, and also where the outtakes are coming off the river, as well as on the beach where large gathering of people are often picnicking. We think it would be positive if volunteers from ACES, or The Forest Conservancy, or the Roaring Fork Conservancy can be added in the busy summer months to educate those who enter the Preserve.
- 3) We feel that the river recreational activities that attract large crowds of people in the busy summer months change the character of the North Star from a nature preserve into that of a park. Consumption of alcohol on the North Star Nature Preserve should be prohibited. The county should reserve the right to limit use or close access to the Preserve if the numbers of users becomes overwhelming as it did last summer until it is brought under control to a reasonable number of people.
- 4) We support having interpretive signage at entry points to explain to users and educate those who are using the preserve for recreating as to its fundamental value as a nature preserve.
- 5) It is also important that the outfitting shops in town educate their paddleboard renters about how to respect North Star Nature Preserve. We believe that they should be distributing educational interpretive materials to the renters of their equipment on North Star's importance as a nature preserve and how to be respectful of this important open space and to respect the quiet nature of the preserve.
- 6) Developing a parking plan that limits the number of cars parking on Highway 82 beside North Star, restricting the parking with signage, and ticketing and enforcing the number of cars that are allowed to park near the North Star Nature Preserve as recommended by the Pitkin County Open Space and Trails and presented at the Open House.
- 7) For Pitkin County Open Space and Trails to be developing with ACES an environmental program for North Star such as guided birdwatching, and other environmental education classes that seem in keeping with North Star's purpose as a nature preserve.
- 8) The North Star management plan should comply with and follow the terms of the underlying conservation easement.

We are grateful for the time and energy that the county is taking to update the management plan, to welcome public input, and to have an open house to educate people about the proposed management plan. We greatly support the plans to restore, maintain, and care for North Star as a nature preserve. We think that to close off the backside of North Star across the river to recreation as Pitkin County Open Space and Trails is recommending is

very important.

We are deeply concerned about the overuse on the beach by people and on the river paddle boards and tubes and the noise level in the nature preserve during the summer months that has been increasing over the last several years at the North Star Nature Preserve.

Sincerely,

Hensley and James Peterson  
P.O. Box 1714  
Aspen, CO. 81612



ASPEN PRESERVE HOMEOWNERS ASSOCIATION, INC.  
P.O. Box Po Box 11313  
Aspen Colorado 81611

June 5, 2015

Gary Tennenbaum  
Open Space and Trails Assistant Director  
Courthouse Plaza  
530 E. Main St., 3rd Floor  
Aspen, CO 81611

Dear Mr. Tennenbaum:

I am writing as President of the ASPEN PRESERVE HOMEOWNERS ASSOCIATION, INC., (the "Association") to provide the following comments on the 2015 proposed North Star Nature Preserve Management Plan (the "Plan") on behalf of our community.

Our community borders the North Star Nature Preserve ("North Star"), and as a community we would like to thank the Open Space and Trails Board for its efforts to manage North Star as a nature preserve, with protection of wildlife and the environment as a top priority, while also allowing for recreational use and opportunities for the public to enjoy the wild spaces of our county. Many of us homeowners enjoy the wildlife as well as being able to use the East of Aspen trail, cross country ski on the groomed trails, and paddle the Roaring Fork River through the North Star. We are happy to see expansion of the cross country trails. We also support efforts to mitigate the reduction of the wetlands by 30% due to transmountain diversions and agricultural practices. We also want to thank the Open Space and Trails Board and its employees and Rangers for their responsiveness and efforts in working with the Association to update legal documents and address problem areas with the East Aspen Trail as it runs through our community.

Our comments relate primarily to concerns regarding the increasing human and recreational impacts at North Star and the surrounding neighborhood communities during the summer season.

The Plan states that North Star is a significant wildlife and bird habitat. However, some of the key ecological concerns mentioned, including a decline in Heron population since 2004 and various other impacts on wildlife and vegetation are identified as being related to the increasing pressures of recreational activities at North Star. Although the Plan acknowledges that the numbers of persons enjoying North Star for recreational activities are increasing and "recreation is one of the main threats to wildlife habitat," it also states that "No major management changes are proposed." While we are not opposed to recreational activities at North Star *per se*, we would like to see those recreational activities managed in a manner and with reasonable restrictions that preserve the integrity of North Star as a wildlife sanctuary and nature preserve, and foster human enjoyment of the space as a peaceful sanctuary and preserve.

We appreciate that the Plan proposes additional ranger enforcement hours at North Star and various efforts to educate the public both regarding the rules at North Star and the importance of following these rules to minimize human impact on North Star. We would like to



see those efforts continue at a level sufficient to produce the enforcement and educational objectives. Additional efforts are likely necessary, and thus we feel the following items should be addressed more closely in the Plan:

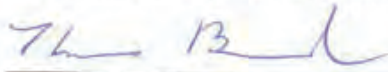
- The plan maintains that trash will continue to be managed at North Star with a “pack-in, pack-out” philosophy. While this may have worked in the past, increasing levels of trash deposited at North Star suggests that another approach may be appropriate. The County should consider other options available for controlling trash removal, including installation of discrete trash receptacles, if appropriate, or imposition of fines for littering.
- The County should work in tandem with the Forest Service and Department of Transportation to find ways to restrict parking or impose other limitations on key access points. An approach similar to that taken at Hanging Lake or the Maroon Bells may be needed as the best way to reduce the overall numbers and consequent noise during peak times. Adding rangers and staff from ACES will help to educate visitors on the purpose of the North Star and on being respectful of wildlife and thus the detriment of loud noises.
- The Plan contains specific limitations on paragliding numbers and limits the commercial paragliding permits to one, but virtually no limitations on commercial watercraft permits. Prior versions of the Plan limited guided commercial watercraft tour permits to one. The Plan lifts that restriction, while imposing a limitation on group size in any guided floating trip to six people, including the guide. However, there is no explicit limitation on how many separately guided trips any given commercial operator may run at a given time or how many commercial operators may obtain permits. The Plan should contain clear limitations on commercial float trips similar to those for paragliding and for other sections of the Roaring Fork and Colorado Rivers. Commercial providers are generally good stewards of wild spaces and respectful of guidelines, so the key goal for the management plan should be to help control the allowable numbers.
- The Plan should address additional limitations on activities at the North Star pedestrian bridge. While noise control is a priority at North Star, the public is allowed to freely jump off the bridge into the river, which not only increases noise levels and congestion at the bridge, but is an activity that disrupts wildlife and increases the County’s exposure to claims of personal injury or death. Reinforcement of rules about no fishing from the bridge and unauthorized banks is also needed. We suggest that a sign should be posted on the bridge.

Thank you for the opportunity to provide input and for your efforts to maintain North Star as a valuable asset to our community.

Best Regards,

ASPEN PRESERVE HOMEOWNERS ASSOCIATION, INC.  
A Colorado nonprofit corporation

By:



Thomas Bernard, President

## Appendix D - North Star Nature Preserve Wildlife Species

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### Bird species detected at North Star during avian monitoring, 2000-2014

#### Common Name | Scientific Name

American coot   <i>Fulica americana</i>	MacGillivray's warbler   <i>Geothlypis tolmiei</i>
American crow   <i>Corvus brachyrhynchos</i>	Mallard   <i>Anas platyrhynchos</i>
American robin   <i>Turdus migratorius</i>	Mountain bluebird   <i>Sialia currucoides</i>
Band-tailed pigeon   <i>Patagioenas fasciata</i>	Mountain chickadee   <i>Poecile gambeli</i>
Bank swallow   <i>Riparia riparia</i>	Northern flicker   <i>Colaptes auratus</i>
Barn swallow   <i>Hirundo rustica</i>	Northern goshawk   <i>Accipiter gentilis</i>
Belted kingfisher   <i>Megaceryle alcyon</i>	Northern saw-whet owl   <i>Aegolius acadicus</i>
Brewer's blackbird   <i>Euphagus cyanocephalus</i>	Northern shrike   <i>Lanius excubitor</i>
Black-billed magpie   <i>Pica hudsonia</i>	Olive-sided Flycatcher   <i>Contopus cooperi</i>
Black-capped chickadee   <i>Poecile atricapillus</i>	Orange-crowned warbler   <i>Oreothlypis celata</i>
Black-headed grosbeak   <i>Pheucticus melanocephalus</i>	Pied-billed grebe   <i>Podilymbus podiceps</i>
Broad-tailed hummingbird   <i>Selasphorus platycercus</i>	Pine siskin   <i>Carduelis pinus</i>
Brown creeper   <i>Certhia americana</i>	Plumbeous vireo   <i>Vireo plumbeus</i>
Brown-headed cowbird   <i>Molothrus ater</i>	Red-naped sapsucker   <i>Sphyrapicus nuchalis</i>
Canada goose   <i>Branta canadensis</i>	Red-tailed hawk   <i>Buteo jamaicensis</i>
Cedar waxwing   <i>Bombycilla cedrorum</i>	Red-winged blackbird   <i>Agelaius phoeniceus</i>
Chipping sparrow   <i>Spizella passerina</i>	Ring-necked duck   <i>Aythya collaris</i>
Cinnamon teal   <i>Anas cyanoptera</i>	Ruby-crowned kinglet   <i>Regulus calendula</i>
Common raven   <i>Corvus corax</i>	Song sparrow   <i>Melospiza melodia</i>
Cooper's hawk   <i>Accipiter cooperi</i>	Sora   <i>Porzana carolina</i>
Cordilleran flycatcher   <i>Empidonax occidentalis</i>	Spotted sandpiper   <i>Actitis macularia</i>
Dark-eyed junco   <i>Junco hyemalis</i>	Spotted towhee   <i>Pipilo maculatus</i>
Dusky flycatcher   <i>Empidonax oberholseri</i>	Steller's jay   <i>Cyanocitta stelleri</i>
Dusky grouse   <i>Dendragapus obscurus</i>	Swainson's thrush   <i>Catharus ustulatus</i>
Fox sparrow   <i>Passerella iliaca</i>	Tree swallow   <i>Tachycineta bicolor</i>
Gadwall   <i>Anas strepera</i>	Vesper sparrow   <i>Pooecetes gramineu</i>
Golden eagle <i>Aquila   chrysaetos</i>	Violet-green swallow   <i>Tachycineta thalassina</i>
Great blue heron   <i>Ardea herodias</i>	Virginia rail   <i>Rallus limicola</i>
Great-horned owl   <i>Bubo virginianus</i>	Virginia's warbler   <i>Oreothlypis virginiae</i>
Green-tailed towhee   <i>Pipilo chlorurus</i>	Warbling vireo   <i>Vireo gilvus</i>
Green-winged teal   <i>Anas crecca</i>	Western kingbird   <i>Tyrannus verticalis</i>
Hairy woodpecker   <i>Picoides villosus</i>	Western tanager   <i>Piranga ludoviciana</i>
House finch   <i>Carpodacus mexicanus</i>	Western wood-pewee   <i>Contopus sordidulus</i>
House wren   <i>Troglodytes aedon</i>	White-breasted nuthatch   <i>Sitta carolinensis</i>
Killdeer   <i>Charadrius vociferous</i>	White-crowned sparrow   <i>Zonotrichia leucophrys</i>
Lincoln's sparrow   <i>Melospiza lincolnii</i>	Wild turkey   <i>Meleagris gallopavo merriami</i>
	Willow flycatcher   <i>Empidonax traillii</i>
	Wilson's warbler   <i>Cardellina pusilla</i>
	Wilson's snipe   <i>Gallinago delicata</i>
	Yellow warbler   <i>Setophaga petechia</i>
	Yellow-rumped warbler   <i>Setophaga coronata</i>



## Appendix D - North Star Nature Preserve Wildlife Species

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### Mammal species detected at North Star during monitoring in 2014

#### Common Name | Scientific Name

American black bear | *Ursus americanus*

Coyote | *Canis latrans*

Least chipmunk | *Neotamias minimus*

Microtine vole | *Microtus* species

Mule deer *Odocoileus hemionus hemionus*

North American red squirrel | *Tamiasciurus hudsonicus*

Northern pocket gopher | *Thomomys talpoides*

Raccoon | *Procyon lotor*

Rocky Mountain elk | *Cervus elaphus nelsoni*



A coyote caught by a wildlife camera at North Star Nature Preserve in 2014. Golder Associates





### Wildlife Management Indicator Species (MIS)

The North Star Management Plan incorporates the MIS concept as an integral part of the adaptive management effort. Since managers cannot measure everything of potential interest within an ecosystem, the choice of what to measure is critical. Valuable indicators may possess some or all of these characteristics:

- Provide early warning of natural responses to environmental impacts.
- Directly indicate the cause of change rather than simply the existence of change (e.g., Measuring fecundity and survival rather than simple measurements of abundance).
- Provide continuous assessment over a wide range and intensity of stresses. This allows to detect numerous impacts on the ecosystem and also means that an indicator will not bottom out or level off at certain thresholds.
- Are cost-effective to measure and can be accurately estimated by a broad-range of all personnel (including even non-specialists) involved in the monitoring.

Both avian and mammalian MIS are recommended for future management of North Star in the *Ecological Communities and Fluvial Geomorphology Baseline Report* by Golder Associates (2015). They are: Warbling vireo, Lincoln's sparrow, song sparrow, red-winged blackbird, American beaver, yellow warbler, great blue heron and Rocky Mountain elk. The criteria for selection of these species and conservation issues associated with each of them are detailed below.

**Warbling vireo:** Selection of the warbling vireo addresses concerns regarding management of aspen woodlands. In Colorado, the vast majority of warbling vireos breed in aspen woodlands of the western mountains (to around 9,000 feet) from around May 21 to around August 10. They are also commonly found in montane and lowland riparian forests but are rarely found where conifers dominate. Warbling vireos show a particular affinity for aspen stands that are interspersed with willows. In addition, warbling vireos are believed to be negatively correlated with Sudden Aspen Decline (SAD). Research suggests that the warbling vireo may be used as an indicator species of aspen habitats, given their strong association with aspen.

Conservation issues: Since warbling vireos commonly favor nest sites with canopy cover, probably to provide thermoregulation and protection from heat stress, the decrease in canopy cover and associated increase in crown fade in declining aspen stands may be particularly impactful on warbling vireo populations. This species is sensitive to removal of aspen or other deciduous vegetation in breeding areas and conifer invasion of aspen stands are likely to negatively impact warbling vireo population. Habitat disturbance by humans may limit breeding success. Warbling vireo nests are frequently parasitized by brown-headed cowbirds, which combined with nest predation, may be limiting to the population in some areas.

**Lincoln's Sparrow:** Selection of Lincoln's sparrow addresses the management and ecological condition of riparian-shrub communities. This common songbird breeds in high-elevation shrubby habitats associated with wet meadows, freshwater marshes, riparian thickets or forest edge. They prefer mesic areas with dense vegetation, often willow and alder and will serve as an indicator for the condition of North Star's riparian shrub communities. Lincoln's sparrow is a distinct microsite specialist, preferring low willow cover with dense ground vegetation and building its nest in sites that are relatively wet. Interspersion of riparian shrubs and dense graminoids is considered essential for reproduction which is typically from around June 1 to around August 10. In Colorado, Lincoln's sparrows lower elevational limit is around 8,000 feet, and nest sites are typically found in the subalpine and montane zones.

Conservation Issues: Lincoln's sparrow's riparian habitat is negatively affected by grazing and browsing by mule



## Appendix F - Management Indicator Species

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deer and elk, riparian and riverine recreation, and alteration of flood regimes. Conversely, their habitat can be positively affected via riparian restoration and facilitation of seasonal flooding by managers. Breeding Lincoln's sparrows are particularly sensitive to human activity, which is known to cause nest desertion. Also, nest parasitism by brown-headed cowbirds may be more common near human activity.

**Song sparrow:** The song sparrow was selected as an MIS for riparian areas because its abundance is indicative of riparian management and reflects the overall health of riparian communities. Because over 80 percent of song sparrows observed for the Colorado Breeding Bird Atlas occurred in lowland and montane willow carrs (37 percent), lowland and montane riparian woodlands (33 percent), and emergent wetlands (10 percent), its population trends are considered indicative of changes to riparian habitat. Unlike Lincoln's sparrows, song sparrows typically nest a few feet off the ground in dense willow stands. Song sparrows are residents of the Roaring Fork watershed, migrating to lower elevations in winter and back up to the montane and sub-alpine in late April and early May. Breeding is from around June 2 (courtship) through around August 22 (fledging).

Unlike Lincoln's sparrows, song sparrows typically nest a few feet off the ground in dense willow stands. Incubating or brooding females often remain on their nest with humans 1 to 3 meters away but rarely within 0.5 meters. Females often return to nest with humans at or less than 5 to 10 meters from a nest, then return more rapidly if one averts eyes. Males visit nests to feed with humans present more readily than female.

Conservation Issues: Song sparrows are at risk due to loss of riparian habitat to development, changes in riparian habitat that may result from diversions or flood regime alteration, brood-parasitism by brown-headed cowbirds, and predation by native wildlife as well as introduced cats, dogs, and rodents. The amount of riparian habitat in Colorado has been greatly reduced by development. Flood control channels, dams and agricultural and residential development have destroyed thousands of acres of habitat. Song sparrows are also threatened by habitat fragmentation. A banding study in the Pacific Northwest found that population sizes of adult song sparrows correlate negatively with the amount of fragmented edge, and more adults were captured at stations surrounded by larger contiguous patches of habitat.

**Red-winged blackbird:** The red-winged blackbird is one of the most abundant species in North America with an estimated winter population of 190 million. They are most commonly associated with permanently flooded emergent wetlands, but they will nest in a variety of habitats including riparian areas and grasslands. Emergent wetland nest sites, however, may be 10 times more successful than upland nest sites and experience higher reproductive success in natural habitats (60 to 77 percent) than in anthropogenic habitats (less than 25 percent). They construct nests in sturdy herbaceous vegetation, and feed primarily on emergent aquatic insect larva. Predation is a major cause of nest failures and birds breeding in anthropogenic habitats suffer higher predation rates than those that nested in natural habitats. This difference may be due in large part to the presence of human-commensal predators, such as domestic cats and raccoons.

Conservation Issues: Loss of emergent wetland habitats is the most significant threat. Diversions, overgrazing by native and domestic ungulates, and cutting or burning tall emergent vegetation such as cattails and bulrushes for agriculture and other management purposes reduces breeding habitat. Fragmentation of habitat for recreation, transportation infrastructure or development reduces breeding success. Red-winged blackbirds are a common host for brown-headed cowbirds.

**American beaver:** This species is selected due to: (1) its relationship to riparian/aquatic habitat condition; (2) status as a keystone species; (3) available monitoring protocols; and (4) its dependence on riparian forest and shrub habitat. Likely limits to persistence of beaver at North Star include degradation and/or loss of riparian shrubs and forests from historic management activities, as well as the loss of hardwood (i.e., aspen) components on adjacent uplands. Historically, beavers at North Star influenced riparian vegetation and changed streamflows, often converting intermittent drainages to perennial streams.

## Appendix F - Management Indicator Species

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Beavers improve many aspects of riparian habitats for wildlife. Ponds created by beavers improve water quality, increase riparian area and store water during dry periods. A number of studies have documented higher bird abundance and diversity associated with beaver activity in comparison with sites without beavers. In one case, bird densities in active beaver habitats were shown to be three times that of adjacent riparian habitats. Forage production is improved around beaver ponds, which increases grazing capabilities for wild and domestic ungulates. Beaver also create excellent habitat for trout. Studies have shown that trout size and biomass are greater in streams with beaver ponds. In addition, beaver can serve as a surrogate species indicative of the occurrence of amphibian habitat and populations on montane streams. Allowing for and encouraging beaver recolonization in appropriate areas is widely viewed as a cost-effective wetland and riparian habitat restoration strategy, especially when compared to the cost and challenge of other human-engineered restoration alternatives.

**Conservation Issues:** Historically, the greatest threats to beavers in the Roaring Fork Valley were overharvesting by the unregulated fur trade from the early 1800s to the early 1900s, coupled with extensive degradation of riparian areas by livestock overgrazing and other human land uses during the late 1800s to early 1900s. The most serious remaining threat to beavers region-wide is loss and degradation of habitat to human land uses including water manipulations, livestock grazing in riparian areas and urban and agricultural development in riparian areas. Excessive browsing of woody riparian vegetation by wild ungulates, particularly elk and moose, can also reduce the quality and abundance of beaver food. Trampling and browsing by large herbivores can suppress aspen reproduction along streams and reduce beaver food availability.

**Yellow warbler:** Yellow warblers were selected for monitoring to answer the question, “Does current management maintain populations of species dependent on riparian forest?” Yellow warblers are among the most common species in the riparian bird community and one of the most common and widely distributed warblers in North America. In Colorado, yellow warblers breed in deciduous habitats across the state. Preferred breeding habitat, however, is deciduous (i.e., cottonwood) riparian woodlands and shrublands. Breeding territories often include tall trees for singing and foraging with a shrub (typically willow) understory for nesting. Many authors have documented preference for moist habitats with vertical structure. Using ordination analysis, research has found that yellow warblers occupy habitats with high canopy cover, low ground cover, low shrub density and many trees.

Yellow warblers are particularly sensitive to cowbird brood parasitism. Yellow warblers do, however, defend against these attacks by constructing false nest bottoms over the cowbirds eggs. Nesting near a colony of blackbirds reduces the cowbird threat since the blackbirds will drive away the cowbird threat since the blackbirds will drive away the cowbirds.

In Colorado, breeding is approximately from May 16 through August 19. Nests are built 0.5 to 2.0 meters above the ground in a bush or tree. A clutch of three to six eggs is laid and then incubated by the female alone for about twelve days.

**Conservation Issues:** Riparian habitat destruction and degradation is the most significant threat for this species. Cottonwood riparian forests in western Colorado are on a trajectory toward rapid decline. Regeneration of these forests has been disrupted in many areas due to overgrazing (by both livestock and elk) and flood control. Residential, transportation and recreational development in riparian areas has led to reduction of cottonwood riparian patch size, resulting in corresponding reduction in the richness and abundance of habitat interior species. Non-native invasive plant species can also degrade habitat. Exotics such as salt cedar, reed canarygrass, crack willow and Russian olive displace native plant species and provide little in the way of habitat values for yellow warblers.

**Great blue heron:** Great blue herons, due to their large size, graceful flight and interesting feeding behavior, generate much attention among the public. For many people, observing a great blue heron is often a memorable



## Appendix F - Management Indicator Species

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and meaningful wildlife experience. In natural systems, the great blue heron supports ecological functions as predator and prey, colonial breeder, habitat bridge (between aquatic, riparian, and upland zones) and as an indicator of environmental health. With widespread distribution, herons use a variety of habitats, consuming both aquatic and terrestrial organisms. During nesting and reproduction, heron eggs and young fall prey to raptors and other predators, further linking the complexity of species and habitats. All colonial wading birds, including great blue herons, are classified as nongame species, and are protected under the Federal Migratory Bird Treaty Act (MBTA).

**Conservation Issues:** Populations of great blue herons have fluctuated throughout their range over time. Colorado's great blue herons historically bred chiefly in northeastern Colorado, with some, however, breeding up to 8000 feet in the mountain parks. Today they occur throughout the state, with most heronries along major rivers and their tributaries. As of 2013, there were 3186 breeding great blue herons in 82 colonies across Colorado. Most western Colorado heronries are on the Yampa, White, Gunnison and Colorado rivers.

Activities like forestry and development have led to the loss and degradation of heron habitat, disturbance to nesting and foraging grounds, and to direct mortality. Habitat removal, water diversions, and urban and agricultural development are the chief causes of habitat loss in Colorado. Increased human disturbance at breeding and foraging sites can lead to increased predation, lower breeding success, nest failure and less efficient foraging. Although herons can nest in disturbed areas, disturbance can lead birds to terminate breeding attempts, especially when a disturbance occurs early in the nesting period or when it is a large-scale or novel event.

Klein (1993) reported that great blue heron responses to humans in vehicles and afoot varied from no response to flying away, and that they reacted more to humans on foot than in vehicles. Rodgers and Smith (1995) reported that great blue herons flushed at a mean distance of  $32.0 \pm 12.3$  meters in response to persons approaching on foot. Skagen et al. (2001) found a reduction in the number of great blue heron nests when they were exposed to humans on foot. Vos et al. (1985) studied a heronry at Fossil Creek Reservoir in Larimer County, Colorado. They found that heron response to human activity changed as the breeding season progressed each year. Herons were most responsive to human intrusions early in the breeding season (March), flushing from the nest at the slightest disturbance and not returning until the cause was no longer present. During egg laying and incubation (mid-April), herons were less willing to abandon nests and returned more readily. Attachment further strengthened in late-May to early-June when young were present.

Because of the transitory nature of many of western aquatic habitats, heronries can be transitory, persisting only until the habitats become unsuitable. Colonies may greatly alter nesting locations from year-to-year. This results in an inherent variability of local breeding populations. Their characteristic breeding behavior, together with the reliance on often limited and impacted aquatic habitats, make great blue herons and other colonial waterbirds particularly vulnerable to disturbance and loss of breeding sites.

**Rocky Mountain Elk:** Elk have been chosen for two reasons: (1) elk are sensitive to the size and configuration of habitat patches across a landscape; (2) they are good indicators of ecological conditions at broad scales and, therefore, are helpful in the process of landscape scale conservation planning; and (3) they are charismatic and provide excellent watchable wildlife opportunities. Elk migration and seasonal use of the property could be monitored via seasonal counts, cameras, winter track surveys and browse assessments. Elk are a habitat generalist typically associated with early succession vegetation including spruce-fir, Douglas-fir, lodgepole pine, aspen and mountain shrub. Although habitat generalists, elk dependence on early successional vegetation represents a large number of wildlife species that are also dependent on early successional vegetation

**Conservation Issues:** North Star provides summer range and is part of an important migration corridor linking habitat on the west side of Smuggler Mountain with habitat on the east side of Richmond Ridge. In some places, elk can live around people, although this is not their normal behavior. There are certain things elk need — early spring food, safe calving areas, nutritious summer forage, room for rutting — that are not easily found if their

## Appendix F - Management Indicator Species

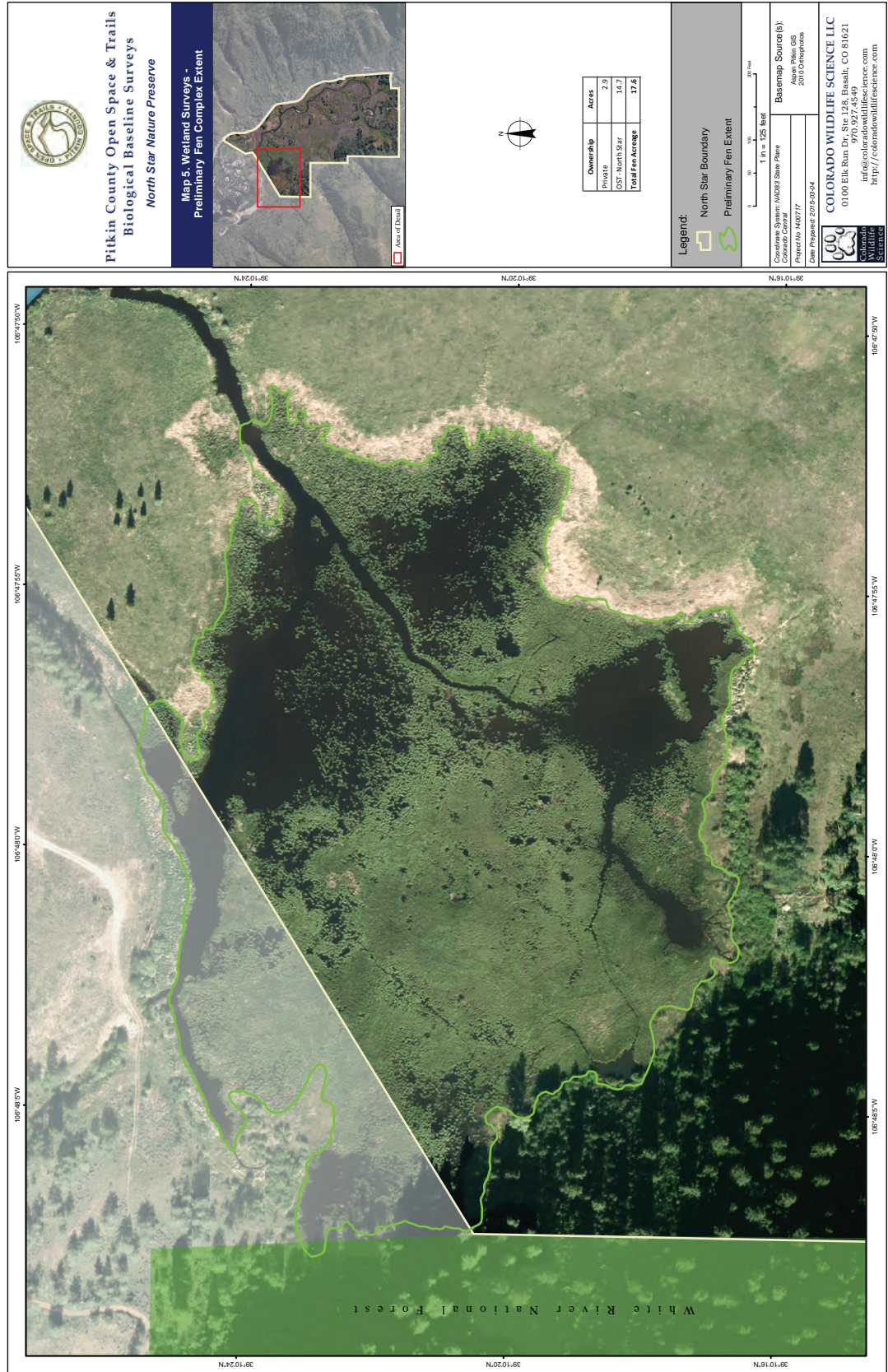
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habitat has been reduced or disturbed. As described above, residential development in the upper Roaring Fork watershed has resulted in the direct and indirect loss of important winter range, calving habitat and blocked historic migration routes.

Recreation can cause problems for elk, also. The disruption of migration routes, loss of seasonal habitat, and the reduction in habitat security on winter range and calving habitat from recreation, roads, livestock grazing, etc., are serious problems for many elk herds. One researcher has reported even the sight of a relatively quiet backcountry skier in Yellowstone National Park caused wintering female elk to move an average of 1,675 meters (usually until a topographical break or tree line shielded their view from the skier). The authors recommended a minimum buffer of 650 meters between cross-country skiers and non-habituated elk on winter range. Other research found that human disturbance caused elk with young calves to move to secondary forage areas away from the central parts of their home ranges. Phillips and Alldredge (2000) were able to show that repeated displacement resulting from hiker disturbance during the calving season resulted in major declines in survival of elk calves. Whenever elk or any wild animal must move unnecessarily, that extra action burns calories the animals cannot afford to lose at this time of year.

Increasing recreational use of North Star presents risks to elk. If human use becomes excessive in amount and distribution, elk could abandon North Star, particularly during parturition and in summer. In the unlikely event that elk remain in the face of increased human use, they will be subject to increased stress and decreased access to critical habitats. In either case, the result probably will be decreased survivorship (i.e., fewer calves or healthy calves born and lowered calf survival through their first year).

# Appendix G - North Star Nature Preserve Wetlands Surveys





# Appendix H - Existing Recreational Access - Summer





# Appendix H - Existing Recreational Access - Winter





# Appendix I - Proposed Recreational Access - Summer





# Appendix I - Proposed Recreational Access - Winter



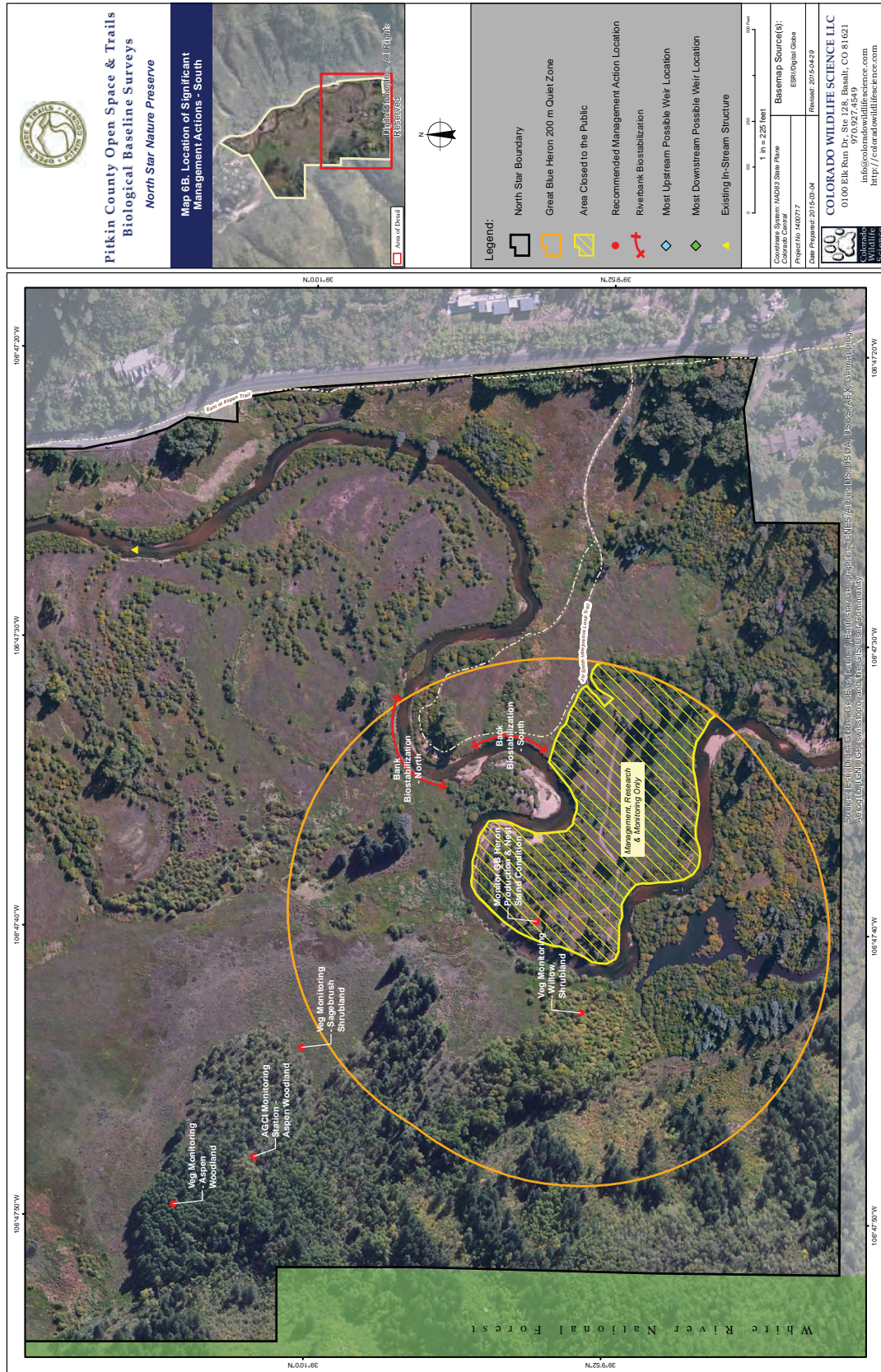


# Appendix J - Management Actions - North





# Appendix J - Management Actions - South



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