

**CRYSTAL RIVER CAUCUS
WILDLIFE AND HABITAT
REPORT
2007**

picture

**AN INVENTORY AND ASSESSMENT
OF WILDLIFE HABITAT
Crystal River Valley**

(Sections 1 thru 7 ADOPTED by the General Caucus May 24, 2007)

*If this report gives us pause to reflect
then the Crystal River Natural Heritage has been considered
and the reports purpose accomplished.*

**CRYSTAL RIVER CAUCUS
CRITICAL WILDLIFE HABITAT REPORT**

DATE July, 2007
TO: Interested parties and decision makers
FROM: The Crystal Caucus Wildlife Task Force, Bill Hanks Coordinator
RE: The Crystal River Wildlife Report

COMPLETION OF TASK - The Crystal River Caucus Wildlife Task Force finished its charge of identifying critical valley habitat with a formal report and presentation to the Crystal Caucus membership on **March 29, 2007**. The Task Force was commissioned, by resolution, on **August 25, 2005** with the task of assessing areas of wildlife habitat within the Pitkin County portion of the Crystal River Valley.

ADOPTION OF THE CRYSTAL CAUCUS WILDLIFE REPORT – At the **May 24, 2007** general Caucus Meeting (**sections 1 thru 7**) of the Crystal Caucus Wildlife Report were **adopted** by the general caucus for their consideration in determining **appropriate** management, recreation, and development plans for the Crystal River Valley within Pitkin County.

PEER REVIEW – The following members of the scientific community have reviewed the adopted Crystal River Caucus Wildlife Report. They are able to speak to the reports scientific accuracy in assessing habitats of high biological value within the Pitkin County portion of the Crystal River Valley.

Susan Spackman, Biologist, Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO spack@lamar.colostate.edu
Peggy Lyon, Biologist, Western Colorado Representative For the Colorado Natural Heritage Program, Ridgeway, Colorado, peggylyon@ouray.net
John C. Emerick, Ph.D., Professor emeritus, Colorado School of Mines, Roaring Fork Stream Health Initiative, jemerick@sopris.net
Delia Malone, M.S E.S. Scientific Investigator, Roaring Fork Stream Health Initiative deliamalone@earthlink.net
John Groves, Wildlife Biologist, CDOW, john.groves@state.co.us
John Seidel, Wildlife Biologist retired, CDOW area supervisor, jwseidel@rof.net
Mark Lacy, Biologist, USFS, White River National Forest; mlacy@fs.fed.us
Sharon Clarke, Geographer, Water Resource Specialist, The Roaring Fork Conservancy clarkesha@sopris.net
Mark Fuller, Reudi Water and Power Authority, Executive Directory, fulcon@rof.net
Eric Petterson, Former USFS Biologist, consultant, Rocky Mtn. Ecological Services ericpetterson@starbrand.net
Bob Kelley, Biologist, Colorado Mtn. College, Natural Resource Dept.; USFS Biodiversity Committee.
John Riger, CDOW, Fish Culture, john.riger@state.co.us

You may address questions and comments to Bill Hanks whanks@sopris.net
Crystal Caucus Wildlife Task Force

PRIMARY REPORT DATA SOURCES (A compilation of existing resources)

Crystal River Master Plan, Vol. 1, 2003 – Existing conditions, Hazards review.
Roaring Fork Watershed Biological Inventory; Conducted by the Colorado Natural Heritage Program, 1997-99, and funded by Pitkin County, The Wilderness Workshop and the Roaring Fork Audubon Society. The study determines baseline natural heritage and biodiversity values for species and plant communities in the Roaring Fork Watershed including the Crystal River Valley. (Rare and Imperiled)

Colorado Division of Wildlife; Wildlife Resource Information Systems (WRIS), Species Activity Mapping for the Crystal River Valley. Base mapping developed by Mary Lackner, Pitkin County GIS Office.

Colorado Division of Wildlife; Information for the Colorado Task Force on roadless areas. It provides a system for inventory and ranking of high priority (habitat) areas.

Roaring Fork Watershed Stream Health Initiative;

A three year study (2005-07) cataloging stream and riparian habitat quality for the Roaring Fork Watershed including nine reaches of the Crystal River within Pitkin County.

Field Surveys of the Crystal River Valley within Pitkin County;

Utilization of a plant survey conducted and cataloged by Dave Clark, Ph.D. Professor Emeritus, Colorado Mountain College and Bill Hanks, MA Biology, during the summer of 2006.

Two Pitkin County resource studies on birds, mammals, and a rare plant species at Filoha Meadows by biologists Jonathan Lowsky and Lisa Tasker.

The Roaring Fork Audubon bird check list for the Roaring Fork Drainage was used and modified for the Crystal Valley.

Other Sources;

Past land use decisions made by Pitkin County in 1992 regarding the Tabeguache Ranch development application requiring development to be confined to the west side of the river at Penny Hot Springs. Planning and zoning decisions to not purchase the railroad grade in the gorge area, at Penny Hots Springs, due to potential wildlife and visual impacts. Another decision required the owners at Filoha meadows to locate all residential development to the west side of the Crystal River to preserve sensitive wildlife habitat.

Correspondence with the Division of Wildlife in December, 2003 regarding Public access at Filoha Meadows and the Penny Hot Springs. The Area Wildlife Manager states that a viable alternative exists to accomplish the bike trail connection without impacting wildlife and that their support of the GOCO grant was based on protecting the Bighorn and elk herds.

Crystal Caucus Wildlife Task Force 2007

TABLE OF CONTENTS

Section	Pages
1.0 Introduction	1
2.0 Executive Summary	2
Overview Map	
3.0 Overview.....	4
4.0 The Study.....	5
Past Findings, correspondence on Filoha	
5.0 Individual Heritage Study Panels, P1-P6....	8-14
6.0 Heritage Area Profiles, critical characteristis..	15
7.0 Summary of Rankings.....	17
Tables 1-5	
8.0 Task Force recommendations.....	21
9.0 Task Force discussion/comment.....	23
Appendicies.....	25-53
References.....	56
Caucus minutes, August 25, 2005	
Trail construction costs by phase, 2004	

This complete report (minus the maps) may obtained by request and leaving your email address with whanks@sopris.net

ADOPTION

(Sections 1 thru 7) adopted May 24, 2007 by the Crystal River Caucus

ACKNOWLEDGMENTS

Grateful acknowledgment to the Caucus for Base Map funding and to the following people for their help and support in preparing this inventory and assessment of the Crystal River wildlife and habitat heritage. Dave Clark for his time with the valley plant survey. John Groves and John Seidel for their wildlife expertise, direction to source material, and timely suggestions. Bob McGill, Delia Malone, Bob Kelley, Jim Lester and Eric Petterson for their guidance and for their professional help in the project.

CAUCUS WILDLIFE TASK FORCE

A task force was formed and first met on September 3, 2005. It was created by a resolution of the Crystal River General Caucus. (August 25, 2005) The task force is comprised of knowledgeable people who reviewed existing data sets and applied them to the valley in an objective effort to identify and evaluate the wildlife and habitat areas of high value. A great deal of information in the form of mapping, reports, and surveys was utilized. The effort is consistent with and supports the goals and objectives of the Crystal River Master Plan. The committee relied on many unpaid professional investigators and consultants. One member has acted as the coordinator.

TASK FORCE COMMITTEE MEMBERS

John Seidel, CDOW, Area Wildlife Manager, retired
Bob Kelley, Professor of Biology, Colorado Mountain College
Eric Petterson, Rocky Mountain Ecological Services ,
Bob McGill, Wildlife Photographer, CMC, retired
Jim Lester, Engineer, Redstone , retired
Bill Hanks, Educator, MA Biological Science, Coordinator

CONSULTING

Delia Malone, Scientific Consultant
John Groves, CDOW, District Wildlife Manager
Dr. Dave Clark, Naturalist, Professor Emeritus,
Colorado Mountain College, retired

Spring 2007

PREFACE

The Crystal River Valley is unique in its diversity of wildlife habitats. The eighteen and one half mile corridor, within Pitkin County, contains significant populations of Colorado's Big Game Animals except for pronghorn antelope. Its bighorn sheep herds were once used as a source for transplants outside the Crystal Valley. For the last decade the herd has been in decline for undetermined reasons.

Due to its north-south orientation, steep gradients and many side drainages, the plant communities are diverse and support many species of birds and mammals. It is a very healthy ecosystem. Most of the private lands in the valley are along bottom lands adjacent to the river and the highway. Wildlife continues to be squeezed by increasing development of the private land in this narrow valley. Public lands are crucial to the survival of wildlife in its current state. These lower elevation public lands are extremely limited in this confined valley and are therefore additionally important.

This report will show that the most valuable wildlife habitats that remain in the valley are the Forest Service and County Open Space lands in the river bottom and uplands. Public lands (held in trust by the people of Pitkin County) are continuing to be put under increasing pressure to be developed for multiple uses by our ever increasing human population. This report will show that County Open Space and Forest Service lands on the east side of the Crystal River are of extremely high wildlife value and also have high attraction for public use and recreational expansion. Filoha Meadows and Avalanche Creek heritage areas represent the last two large intact parcels of public lands that extend all the way to the riparian and river zone.

Development and increase in human use of these lands beyond compatible limits would be detrimental to the wildlife populations currently using those areas and should therefore be excluded from high impact recreational development.

John Seidel,
Colorado Division of Wildlife,
Former Area Wildlife Manager

THE CRYSTAL RIVER CAUCUS WILDLIFE AND HABITAT REPORT

1.0 INTRODUCTION

Those who live in the Crystal River Valley have realized what a unique place it is, a beautiful valley with great beauty and charm. An opinion survey, in conjunction with the adoption of the Crystal River Master Plan in 2003, expressed certain **CORE VALUES** as the desires of the Crystal River Caucus. **1 (Crystal River Master Plan)**

1.1 CORE VALUES

“That our valley is first and foremost a place where preservation of the natural environment and the protection of our rural character are valued. As the rest of our state becomes increasingly urbanized, our valley is a place where the rural character should remain substantially unchanged. We value the preservation of open space, wildlife habitat, the highway view plane, and water quality in the Crystal River Valley. Agriculture is recognized as a treasure that is irreplaceable and we support using a range of tools to ensure its continued presence and viability. We support limiting growth consistent with these core values and believe that future development should not occur at the expense of endangering wildlife habitat, and we seek to include a bike/pedestrian trail within the existing highway right-of-way, and or where appropriate. H

The adopted 2003 Crystal River Master Plan and the Transportation Goals and Objectives section, requests that the Caucus work with the county in taking the bike/pedestrian trail out of the the highway right-of-way where it is **appropriate**. It is important that the Caucus members have a voice in determining the “appropriateness” of intrusions into critical habitat on the east side of the Crystal River. **Q**

Pitkin County and the Crystal Master Plan Task Force felt that it was very important that the Master Plan represent public opinion. **1** Over 375 of the 600 survey packets distributed to both homeowners and renters in the valley were returned and 74% supported a bicycle-pedestrian trail within the existing highway corridor. **H1** The Caucus resolution below was passed to help identify critical wildlife habitat threatened by high impact recreational development in county Open Space and U.S. Forest Service lands.

1.2 RESOLUTION

“That wildlife habitat areas in Pitkin County extending down to the east bank of the Crystal River be evaluated by a wildlife task force. Areas identified as critical habitat shall be recommended to the general caucus for their consideration in response to management and development plans within the Crystal River Valley” (Caucus minutes, August 25, 2005)

H, survey results, core values; **H1**, survey format; ; **Q**-Transportation section 7.4; **1**-Master Plan;

Caucus Wildlife Task Force

2.0 EXECUTIVE SUMMARY

THE PRIMARY PURPOSE of this study and report was to evaluate and identify areas that qualify as **CRITICAL HABITAT** in the Crystal River Valley and Pitkin County. The focus has been on the relatively unfragmented, intact County Open Space and USFS lands buffered and insulated by the Crystal River for the past 65 years and now home to Bighorn sheep, elk and many other wildlife species. Six miles of these lands are located below and north of Redstone and on the east side of the Crystal River. Three miles of the old McClure Pass switch backs and Bear Creek road were also examined near Placita. The entire valley was divided into six study areas.

TASK FORCE AND CONSULTANTS – The Task Force was comprised of professionals with former backgrounds in wildlife, biological, and environmental science. Also consulting with the task force have been unpaid professionals in wildlife, natural, and environmental science.

THE STUDY AREA – The Crystal Valley, within Pitkin County, was subdivided into 6 study (heritage) areas, each 3 miles in length, next to and immediately upland from the Crystal River and Highway 133. Four sets of criteria were used to inventory and assess 6 study areas, namely: Placita, Redstone, Filoha Meadows, Avalanche Creek, Red Wind Point and Thompson Creek. The 4 criteria below were used to assess the relative habitat values of 6 designated areas.

- Plant habitat and vegetation
- Rare and imperiled (threatened) species and communities
- Wildlife Activity use areas
- Stream and Riparian (streamside) habitat health

STEPS IN THE STUDY – The valley was organized for study and task force base mapping was established. Knowledgeable persons were contacted and their volunteer help was obtained. Data sources and field studies were located and a plant survey of the valley conducted. Data was organized, reviewed and reported by the task force.

THE STUDY - Data sources – The Crystal River Master Plan was used for existing conditions. The Roaring Fork Watershed Biological Inventory, a field plant survey and a plant resource study were used to rank plant habitats. Valley seasonal Wildlife Activity values were determined using CDOW data sources and Geographical information services (GIS) species activity mapping. Rare and imperiled species and communities within the Crystal Valley were derived and ranked from the Colorado Natural Heritage Program Biological Inventory and a local wildlife resource study. The Stream Health Initiative was used to assess Crystal River riparian and stream health. F

RESULTS AND RANKING OF HERITAGE AREAS – The general composition and condition of plant communities were evaluated and ranked in the Crystal Valley. Wildlife seasonal use areas of the valley were mapped and assigned values to rank high value wildlife habitats. Colorado Natural Heritage Program designations, agency status and a local study were used to rate areas according to their imperilment. Stream and riparian scores were used to assess 9 reaches of the Crystal River and to arrive at a Riparian rank for six designated areas.

Appendix F (Data source background)

*The complete report may be obtained by e-mail at whanks@sopris.net, except for maps
Crystal Caucus Wildlife Task Force*

CRYSTAL RIVER NATURAL HERITAGE Spring 2007

2.1 REPORT – This report is a literature review and compilation of existing maps, reports, surveys, sightings, and correspondence used to identify **CRITICAL** wildlife habitat in the Crystal River Valley. The Task Force has brought these sources together in an effort to objectively inventory and assess critical habitat areas of Open Space and Forest Service lands within Pitkin County. Most residents seem to recognize and applaud the use of grants and property taxes for acquiring and protecting wildlife habitat through open space easements. The intrusion of **high impact recreation development** through designated critical habitat gives the appearance of substituting one form of development for another and seemingly contradicts and betrays the announced purpose of acquisition.* This study and report provide an inventory and assessment of crucial public lands within the Crystal Valley and uses four approaches in analyzing the critical nature of native habitats. Six valley heritage areas have been identified and evaluated within the public lands east of the Crystal River and throughout the Valley.

*Correspondence with Pat Tucker, former CDOW Area Wildlife Director focuses on the apparent contradiction mentioned above. He responds to a letter from the Pitkin OST Director in this way regarding Filoha Meadows Open Space. “Our letter in support of the GOCO grant proposal of 2/25/02, (Filoha) was based entirely on protecting this **critical habitat** for wildlife; the bighorn sheep herd is also a species of concern for the USFS and we believe a viable alternative exists to accomplish the trail connection without impacting wildlife.” **appendix N (letter of 12/19/03, in response to letter, N2, (12/3/03)**

2.2 METHOD OF STUDY

- Determine how the Crystal Valley will be organized for **critical wildlife study**.
- Gather and compile information in the form of existing mapping, reports, and studies.
- Contact, interview, and secure professional volunteer help from recognized experts
- Develop base mapping and conduct field surveys as necessary.
- Compile and organize the information in a meaningful way for assessing critical habitat.
- Task force review of acquired data; report findings to the Caucus for their consideration and response to the environmental impacts of future management and development plans.

2.3 QUESTIONS USED TO GUIDE THIS STUDY

- What are the wildlife activity areas of the valley? Where are they? How are they impacted and how can wildlife vulnerability be expressed?
- What is the general plant composition within the wildlife areas of the Crystal Valley.
- What is the current condition of the stream and riparian habitats of the Crystal River?
- How is the diversity of the Crystal Valley expressed by its rare and threatened species?

2.4 TASK FORCE CONCLUSION

Six designated wildlife habitat areas have been evaluated down to the east bank of the Crystal River within Pitkin County. Five areas have been shown to contain **critical wildlife habitat**. The final rankings of these areas are shown in **table 1**, page 17 of this report. As directed by Crystal Caucus resolution, the Task Force recommends these critical habitat designations to the General Caucus for their consideration and response to future management and development plans within the Crystal Valley. (January, 2007)

Crystal Caucus Wildlife Task Force

OVERVIEW MAP (Interpretation of Wildlife Mapping)

Total Potential Negative Impact Definition

The overview map on the following page shows the activity areas for Bighorn sheep in the Crystal River Valley. The map displays seasonal activities in the 6 heritage areas of the valley. See **appendix W, W1** for other species. The CDOW supplies mapping for 16 species in the Crystal Valley. Human intrusion into activity areas create a **potential for impact** and disturbs the herd or community. The Colorado Division of Wildlife has assigned a value of 1 to 5 for each seasonal activity (winter range, summer range, production, etc., they are called **Impact Factors**). By totaling the activity(**impact factors**) in a heritage area, a measure of potential impact is determined for that area. By combining the scores of elk and bighorn sheep, example below, in the Placita area you get a **39** which is a **negative impact score** for those 2 species in that area. Appendix W,W1,W3

HIGH IMPACT SCORE = A high Potential negative impact from human activity

The valley overview maps are a general way to quantify and identify high priority habitats within the valley. Quantifying wildlife activity can be used as a general indicator of high wildlife value areas. First-hand sightings in the Crystal Valley, (Appendix S) tend to show that production areas (calving and lambing) are more extensive than the maps show. Bighorn sheep, for instance, were seen in August at Filoha Meadows and at Red Wind Point in September, 2006. **Appendix S**

BIGHORN SHEEP

6 Heritage Areas

(Impact factors) Activity Areas	Thompson Creek	Red Wind Point	Avalanche Creek	Filoha Meadows	Redstone	Placita
Status Factor *	0	2	2	2	2	2
Overall range	0	2	2	2	2	2
Winter concentration	0	5	5	5	0	0
Production (lambing)	0	5	5	5	5	5 Impact Factors*
Winter range	0	4	4	4	4	4
Summer range	0	2	2	2	2	2
Total Impact Potential	0	20	20	20	15	15

ELK

Status Factor*	2	2	2	2	2	2
Sever winter range	2	2	4	4	4	4
Winter concentration	2	2	5	5	5	5
Winter range	3	3	3	3	3	3
Production (calving)	0	0	5	5	5	5 Impact Factors*
Summer range	0	0	2	2	2	2
Highway crossing	0	0	0	0	0	2
Overall range	1	1	1	1	1	1
Total Impact potential	10	10	22	22	22	24

NEGATIVE IMPACT POTENTIALS 20 – 25 High
 (a measure of vulnerability) 15 – 19 Moderate 9 - 14 Low

STATUS 1- Secure 2 -moderately secure 3 -vulnerable 4 -Threatened 5 -Endangered

Appendix: W, wildlife activity; W1, activity scores; S, species sighting project

*See appendix (W3) (figuring negative impact score, animal activity rank

Crystal Caucus Wildlife Task Force

3.0 OVERVIEW

3.1 Defining the Study Area

The valley was divided into three (3) regions comprised of **UPPER, MIDDLE, AND LOWER** areas. These sub-divisions are consistent with the Master Plan for the Crystal Valley. The 3 regions are further divided into six (6), three (3)mile study areas referred to as **Heritage Areas** for specific study. The 18.5 mile length of the Crystal Valley corridor within Pitkin County from the Marble turn-off (**m/m 46.5**) down to the Garfield County line (**m/m 65**) is the inventory and assessment area. Mile markers were super-imposed upon the 6 areas for closer scrutiny.

Life Zone		Region	Heritage Area
UPPER VALLEY			
MONTANE	6	m/m 47 to 50	Placita
LOWER MONTANE	5	m/m 50 to 53	Redstone
MID-VALLEY			
	4	m/m 53 to 56	Filoha Meadows
UPPER FOOTHILLS	3	m/m 56 to 59	Avalanche Creek/Janeway
	2	m/m 59 to 62	Red Wind Point
FOOTHILLS	1	m/m 62 to 65	Thompson Creek

3.2 Existing Conditions G

TOPOGRAPHY – Most striking is the extreme narrowness of the Valley, barely ¼ of a mile wide at most points in the valley floor. Private land growth makes public lands more vital.

Mid-valley developed the most - The valleys natural environment has felt the effects of human activity starting with the early wagon road days and railroad. The lower valley has the most build-out potential, the upper valley the least and mid-valley is developed the most

Growth range - All regions appear to be within the accepted 2% growth range within the extremely narrow corridor of the valley floor.

Crystal River severely altered - The Crystal River has suffered major alteration due to the cumulative effects of the highway and the historic railroad grade. Both have combined to straighten the channel and increase its eroding power. **7 Stream Health Initiative**

Fragmentation - As many as eight mountain subdivisions, Redstone , and Highway 133 contribute to the fragmentation of the environment. Six miles of land east of river are intact..

Existing recreation includes but is not limited to fishing, hiking, camping, kayaking, rafting, cross country skiing, ice climbing, watchable wildlife, hunting, horseback riding, and biking.

G, Existing Conditions, Crystal River Master Plan, Volume 1

3.3 Potential Impacts

Annual growth - The continued 2% annual residential growth is a future source of impact. Extractive industries will continue to be a potential threat.

Invasive species - Human land disturbances and the ecological new edges created by new trails, invite non-native, invasive weed and animal species that displace native populations. Weed species follow human trails,decrease food availability and nutrient content for wildlife species.

Recreational development looms into the future as the largest potential human disturbance. The proposed bike trail within public lands has the potential to re-dissect the narrow valley corridor, resulting in fragmentation of close to 6.0 miles of intact habitat presently protected from human intrusion and buffered by the river. **East side, mm 54 to 59; 59.5 to 60.5**

Trail alignment on Public Lands preferred by the Pitco OST dept. would occupy critical Open space and Forest Service public lands in the following general pattern. **8**

	County lands	USFS lands	CDOT Right of way	
Upper Valley	0 miles	4.70 miles	2.31 miles	
Mid-Valley	1.85 miles (1.4 Filoha)	4.02 miles	3.02 miles	
Lower Valley	0 miles	0 miles	3.00 miles	total
(Approximations)	1.85 miles	8.72 miles	8.32 miles =	18.90 miles

4.0 THE STUDY - Identifying critical habitat will be guided by these 4 questions.

4.1 What is the vegetative composition and plant habitat of the valley?

The study utilizes the Roaring Fork Watershed Biological Inventory, conducted by the Colorado Natural Heritage Program (CNHP) in 1999-97, as a format for identifying significant plant species and communities. **2** A summer field survey was made and field notes used in the inventory. **C** A Pitkin county plant resource study was done at Filoha Meadows was also utilized.**6** The appendix C catalogs canopy trees, shrub layers and understory according to the valley regions. Individual species are categorized as riparian, upland or transitional plants and communities. **C** Invasive non-native species are also listed. In section 7.0, **table 5** summarizes and lists significant and dominant plant ecosystems, their status and quality of occurrence. A detailed analysis of the plants and plant communities are found in section 5.0 of the individual study areas. The CDOW ranks 33 Colorado plant habitat types most used by wildlife species. Three of the top four types are prevalent in the Crystal Valley and include: Transitional Riparian (extending from 6-9000' in elevation); Pinon-Juniper Forest; and Scrub Oak shrubland. **16**

4.2 What are the Crystal Valleys rare and imperiled species?

Biological rarity, endangerment, threatened status, sensitive status, species of concern are all referred to in this study as *degrees of imperilment*. The food, cover, and level of disturbance within a plant community will be selective for the species that live there. A diverse habitat setting will reflect a diverse assemblage of mammals, birds, fish, amphibians and reptiles. The Colorado Natural Heritage Program (CNHP) identifies and ranks threatened species and the habitats that support them. There are 7 potential conservation areas within the Crystal River drainage. **J** They advocate protection and management for the following plants and animals. **Birds:** peregrine falcon, Purple Martin, Black Swift, Bald Eagle, Boreal owl and Northern Goshawk. **Mammals** Lynx, Dwarf shrew, Townsend's big-eared bat. **Plants:** Grand Mesa Penstemon, little beaked spike rush, Canyon Bog orchid, and the Globe Mallow. **Fish:** Colorado Cutthroat trout.**2, RF Biological Inventory 5, Lowsky 6, Tasker C, Plant Survey J, Crystal PCAs**

4.3 Where are the wildlife activity areas and how can they be ranked within the Crystal Valley?

The valley overview maps and heritage area wildlife activity maps in the next few pages of this report are based on Colorado Division of Wildlife data supplied to the public by Geographic Information Systems.(GIS) We have used this mapping for the Crystal to locate activity areas on the east side of the river and throughout the upland parts of the valley. We use a DOW system of ranking life activity areas of the various species. **4, W** A measure of how impacted bighorn sheep would be in the valley is obtained by assigning a value to their to main life activities, such as production (lambing), winter range, winter concentration, and summer range, totaling them and then combining the total with the bighorn's degree of imperilment on a scale of 1 to 5. A **composite impact score** then indicates how much they may be disturbed by increased human activity in that specific heritage area of the Crystal Valley. **3, 9**

2, RF Biological Inventory 3, CDOW wildlife mapping 4, CDOW, High priority rating 5, Lowsky 6, Tasker 9, Crystal River base mapping C, Plant Survey J, Crystal PCAs W, wildlife impact scores 16 Hellmund, Planning Trails with Wildlife in Mind, CDOW "Latilong" data base.

Crystal Caucus Wildlife Task Force

4.4 What is the current health of the stream and riparian habitat of the Crystal River?

The *Stream Health Initiative* study has investigated the entire Roaring Fork Watershed. Using the accumulated data from 9 reaches of the Crystal River the stream and riparian habitat has been inventoried and assessed. The reaches were ranked according to their Stream and Riparian habitats. Placita was one of the 9 reaches that was rated Good on its **in-stream habitat**. Two reaches graded fair, 4 were poor, and 2 were severely degraded. The scores for **riparian habitat** (streamside) were similar with only the Placita reach receiving a good rating. Three reaches received fair riparian habitat scores, 2 poor, and 2 reaches received severely degraded riparian habitat scores. This emphasizes the future need for stream restoration. Historic overgrazing has contributed to poor habitat in the Filoha Meadows heritage area. This is in addition to its historic straightening of the river. Many streambanks are high and dry with corresponding narrow vegetative zones for bank stabilization. There are still quality riparian areas of cottonwoods, spruce, alder, birch, dogwood, and twin berry shrubs scattered along the entire 18.5 miles of river. Riparian zones provide shelter, food, cover for elk calving, bird nesting, and migration. Water is stored and cleaned and flooding builds streambanks. It is said that 85% of animal species visit the riparian ecosystems which comprise less than 1% of the landscape. 7, R

4.5 Past Findings

No development on east side - Files may be examined at the Pitkin County Community Development office that reveal past unsuccessful efforts to place residential development in the Penny Hot Springs on the east side of the Crystal River in the Filoha Meadows Heritage Area. *Tabeguache Ranch, 1992* In this application, the Pitkin County Planning Department ruled against development on the east side of the Crystal River because of the critical nature of the wildlife habitat in that area. All development was required to be located on the west side of the river. Planning and Zoning, in 1992, recommended against future trail development on the railroad grade in the narrows because of its sensitive wildlife and bighorn sheep activity area. (additional past findings, N4

Strongly urge that it not be built here - Pat Tucker, former CDOW Area Wildlife Manager, in a letter to Dale Will, director of OST, dated December 19, 2003, stated that: "Kevin Wright and Justin Martens have documented the presence of bighorn sheep traveling along the railroad corridor between Penny Hot Springs and lower Avalanche Creek from as early as August and as late as June. It remains our professional judgment that a developed trail on the railroad right of way would be detrimental to wildlife and we strongly urge that it is not be built there." N

N, Tucker letter, appendix N4, Pitkin County requirement that residences be located on the west side of the Crystal River at Filoha Meadows

**CORRESPONDENCE ON FILOHA MEADOWS
(Criticality of the Habitat)**

In 1942, the Crystal River railroad was abandoned and the tracks removed. Sixty-five years later it appears to be a natural for trail development. Perception and reality may not be the same and what appears to be a great idea may not be. The reality is that those same public open space and forest service landscapes are now home to classic herds of bighorn sheep, elk, and a hundred other small mammals, birds, and plant communities. The natural resources of critical habitat and wildlife are rapidly disappearing along with the rural environment that supports them. Others have recognized this:

- **No bike trail on the habitat linkage** -In December, 1992, Mary Lackner, Pitkin County Planner, in a memo to the Planning and Zoning Board, said that the issue of purchasing part of the old railroad grade at Penny Hot Springs needs to be discussed further because, “the board stated at its last meeting that it would recommend that no trail be placed through the property because of potential wildlife and visual impacts.”**N1**
- **Negative impact** - In August, 1992, in reference to the Greenwald application for residential development at Penny Hot Springs, Kevin Wright, CDOW, states that: “Impacts will include but are not limited to direct habitat loss, displacement, loss of winter forage and stress.”**N2**
- **Geologic hazard** - The Filoha meadows area is located within an active alluvial fan (mud flows) and the Pitkin Country land use code, in 1992, (5-401.2-b) stated,” “No development or activity shall be permitted in a geologic hazard area which would subject users of the area to hazardous conditions; subject other persons or the county to dangers or expenses required to mitigate the conditions or respond to emergencies . **N3** The geologic rock fall at Red Wind Point and the mud flow at Janeway Campground pose similar geologic hazards.
- **August to June** -In December, 2003, and in response to a letter from the Pitkin County OST Director, Pat Tucker, Area Wildlife Manager, CDOW, states that: “District Wildlife Managers, Kevin Wright and Justin Martens have documented bighorn sheep traveling along the railroad corridor between Penny Hot Springs and Lower Avalanche Creek from as early as August to as late as June. The area is crucial for bighorn due to the adequate cover provided by the rock slide and cliffs to the east and the effective buffer of the Crystal River to human disturbance.**N**
- **Minimal impact trail, a viable alternative** - Tucker, in 2003, further states that “We believe that a viable alternative exists which would allow for the trail connection across Filoha Meadows along Hwy. 133 on the west side of the Crystal River. Educational opportunities exist with the proposed nature trail and could provide the public with an educational experience and access to the beaver ponds blind. This minimal impact trail would provide wildlife viewing. It remains our professional judgment that a developed trail on the railroad grade would be detrimental to wildlife and we strongly urge that it not be built here.”**N**

Appendix N, N1, N3, Correspondence

Caucus Wildlife Task Force

5.0 RESULTS - INDIVIDUAL HERITAGE PANELS

8

The following (6) individual heritage study panels form the core of the Crystal Valley wildlife and habitat evaluation by bringing the inventories, assessment, and general information together for each heritage area. Below is the general outline applied to each of the areas.

HERITAGE AREA RANKINGS

*Plant Habitat; *Wildlife Activity; * Stream/Riparian Habitat *Rare & Imperiled

GENERAL INFORMATION

*Location, *Existing conditions; *Special Features; * Current Impacts; *Potential Impacts

BIOLOGICAL INVENTORY

*Vegetative Zones: (Montane, Foothills); *Dominant plants and plant communities
*Wildlife- Known and suspected species, * Rare species *Stream Health Initiative

ASSESSMENT

*Plant habitat ranking; *Wildlife Activity ranking; *Stream/Riparian Habitat ranking;
* Rare and imperiled ranking (Appendix, A2, A3, A4) Table 2 rankings, E, 5

INDIVIDUAL STUDY HERITAGE AREAS

The following pages are the heart of the study. A complete inventory, assessment, and ranking of each heritage area is presented in a one page format. There are also profiles and summaries of these studies in other parts of this report. Quite a lot of effort went into bringing all the accumulated information together on a single page for convenience of study.

The Crystal River Valley is a special place of great wildlife populations and scenic grandeur. It is a place to be treasured and cared for and its rural character sustained by the good stewardship of its residents. Where else can you find representatives of all the big game herds except antelope? Sightings of the Mountain goat and re-introduced Lynx have occurred and Moose may soon be making their presence felt.

Some would say that the critical nature of the valley has been compromised by the number of small mountain subdivisions and scattered homes. The land surrounding Redstone and extending down river through the campground and Dorais Way is still essential and required native habitat for our valley wildlife species. This study finds approximately 6 miles of intact public Forest land and County Open Space in the Filoha Meadows and Avalanche Creek Heritage areas. It is no coincidence that these are the critical habitats of the bighorn sheep and elk. It is here that they find the plant cover, food and water to lamb, calve and winter. The Bighorn summer range extends into the valley floor as evidenced by the August 2006 sightings.

S, Sightings project, see catalog;

Crystal Caucus Wildlife Task Force

PANEL HERITAGE AREA P 1
BIOLOGICAL INVENTORY AND ASSESSMENT

RANKS: *Plant Habitat (3 – Good Diversity) Wildlife Activity (5 -Low Vulnerability) (70)*
Stream/Riparian Habitat (1–Severely Degraded) Imperilment (4-High)

SCORE 13

FINAL RANK 6

GENERAL INFORMATION

LOCATION: *Lower Valley Region* The immediate lands and parcels upland from the Crystal River along Hwy. 133 between mile markers (mm) **62**, the BRB campground and **65**, the Pitkin/Garfield County line. **EXISTING CONDITIONS (1)** – *Elevation gradient*, 6,400 down to 6,300'; *Per cent built out*, 25 % estimated; *Ownership*, 50% private, 50% easements/open space; *Topography*, The Crystal River Valley opens up and meanders over a wide flood plain and upland glacial terraces border this panel. **Special Features**, Historic homesteads and ranch agriculture; Thompson Creek PCA; Proposed open space nature trail head. **Current impacts** – Hwy. 133; service roads, (N. Bill Creek, Thomas Roads); Scattered residential development; ranches. **Potential Impacts**, Future residential, recreational trail development.

BIOLOGICAL INVENTORY

LIFE ZONE – Foothills: **Plant Communities:** Upland Pinon/Juniper, sagebrush; Riparian Cottonwood/Spruce; Riparian Cottonwood/Alder/Birch. Just North of mm 62 and BRB Campground a very high value riparian area spreads over and around a braided and meandering Crystal River. Narrowleaf Cottonwoods and scattered Colorado Blue Spruce are surrounded by a dense mixed riparian shrubland of alder, birch, Silver Buffalo berry, twinberry, willow, and Hawthorne. The immediate terraced upland area is characterized by pinyon, juniper and sage. Remnant Gambel's oak, Squaw bush, Snowberry, Bitter brush, Mountain Mahogany and serviceberry are available to the large Mule Deer population in the lower part of the valley. An **understory** of Equisetum, solomon plume, mixed grass species, Oregon Grape, Indian paint brush, and Clematis fill in the riparian and upland understory. **Invasives** see (Appendix C)

WILDLIFE ACTIVITY: Known or suspected specie estimates – Twenty-five (25) mammal species, Fifty (50) birds species; Five (5) Fish species. Although no formal survey was made species of reptiles and amphibians are known to exist here. From historic sightings Mule Deer winter transitional area. From the CDOW Species Activity Mapping the potential impacts on this area of the valley can be assigned an **composite impact score** of 70 which is the lowest of the 6 valley panel study areas. Species scores: Mule Deer 17; Wild Turkey 11; Geese 11; Bald Eagle 10; Elk 15; Black bear 6; Mule deer winter range and severe and concentrated winter ranges occur here. A very significant deer highway crossing area occurs near mile marker 64. Bald Eagle roosting, forage and winter ranges are significant in this panel area. The American Kestrel, Golden Eagle, Red-Tailed Hawk and Coopers Hawk, **Rare: N. Goshawk, Boreal owl, Colorado cutthroat, Globe mallow, Bald eagle** (Appendices D,K,S,W,W1)

ASSESSMENT

PLANT HABITAT: Riparian vegetation is restricted within this study area to two quality occurrences. One just north of the BRB Campground and another near the Crystal River bridge CR5 near mile marker 64. The upland native vegetation provides outstanding deer habitat in combination with the hayfields. Though small and localized the Narrowleaf Cottonwood, Spruce, and Alder plant community is found in a locally restricted range according to the Colorado Natural Heritage Program (2)

PLANT HABITAT ASSESSMENT (3 -Good Diversity)

STREAM/RIPARIAN HABITAT: According to a Stream Riparian Health Study 7 this reach of the Crystal River had a **Stream Habitat** Score of *115/260* and a **Riparian Habitat** score of *29/61*, both **Severely Degraded** ratings. Poor streambank stability, vegetative protection and Riparian zone width together with low browse utilization of riparian vegetation. (Appendix R)

STREAM/RIPARIAN ASSESSMENT (1-Severely Degraded)

WILDLIFE ACTIVITY – Composite Impact Score: 70 This score indicates a low potential for human impact on wildlife species in this heritage area. (Appendix W1)

WILDLIFE ASSESSMENT (5 -Low Vulnerability)

Caucus Wildlife Task Force

PANEL HERITAGE AREA P 2

BIOLOGICAL INVENTORY AND ASSESSMENT

RANKINGS: *Plant Habitat (5- Very Diverse) Wildlife Activity (8- Very Vulnerable) (91)*
Stream/Riparian (2 - Very degraded) Imperilment (4- High)
SCORE 19 FINAL RANK 5

GENERAL INFORMATION

LOCATION: Mid-Valley Region: The lands and parcels along and upland of the Crystal River and Hwy. 133. Located between mile markers (m/m) 59 at Crystal River Country Estates and 62 the BRB Campground. **EXISTING CONDITIONS:** (see appendix B, G) *Elevation Gradient- 6,600' – 6,450'; Topography-*Winding relatively narrow canyon (.25 mile). Westside rises to 900'; East side to 12,850, Mt. Sopris. **SPECIAL FEATURES:** Red Wind Point Open Space; Nettle Creek; Potato Bill Creek Potential Conservation Area (PCA); Bighorn Sheep Winter and Summer Range, Lambing **convergence**. East side. **CURRENT IMPACTS :** Four housing developments *Fragment* the natural environment. The **channeling** effect that Hwy. 133 has on the Crystal River: Also the channeling effect the old railroad grade has had on the river. **Potential Impacts:** A proposed recreational trail alignment out of the highway R.O.W. near m/m 59 into USFS land and on to the old railroad grade, (East bank of the Crystal River), then exit at Nettle Creek Bridge. (8)

BIOLOGICAL INVENTORY

LIFE ZONE- Foothills; PLANT HABITAT: Plant Communities: Uplands-westside: Extensive Pinyon Pine-Juniper and mixed shrubland of Gambel's Oak/Mountain Mahogany-Bitterbrush; East side: Douglas Fir-Pinyon-Juniper; Riparian: Cottonwood-Spruce and mixed shrubs of Alder-Birch-Twinberry-Dogwood. (Appendix C) The Potato Bill Creek PCA (27 acres) on USFS land (m/m 61.3) is located in this habitat **Invasives:** Mullein, Hounds Tongue, Tansy, Sweet Clover, Thistle **WILDLIFE SPECIES Known or suspected species:** Mule Deer, Elk, Bighorn Sheep, Bald Eagle, Bear, Canadian Geese, Potential Peregrine nesting, Wild Turkey, Porcupine, Bobcat, Sparrow Hawk, Kingfisher, Dipper, at least 60 species of birds, 5 species of fish, 25 species of small mammals. (Appendix D, K, S, W)

ASSESSMENT

PLANT HABITAT – The panel 2 study area has significant plant diversity in the upland, transitional, and riparian zones on both the north and south sides of Red Wind Point, comprised of mixed riparian shrubs and a canopy of Ponderosa Pine, Douglas fir, and Narrow leaf cottonwood. There is a significant riparian Birch/Alder community the m/m 60 area. **Rarity:** The **Canyon Bog Orchid** is located within a small riparian area between the highway and the Crystal River. This is the largest documented occurrence of this species within the Roaring Fork Watershed. A proposed recreational trail may be aligned within this small area (Appendix A-2) **PLANT HABITAT ASSESSMENT: (1- Very Diverse)**

WILDLIFE ACTIVITY – Composite Impact Score 91 Impacted Species: Bighorn Sheep **20**; Mule Deer **15**; Elk **15**; Wild Turkey **11**; Peregrine Potential Nesting **7**; Bald Eagle **6**; Bear **6**; Bighorn seasonal activity is very significant within this panel area, especially centered on Red Wind point. Winter Range, Severe Winter Range, Summer Range and Lambing all **converge** on Red Wind Point according to CDOW Activity Mapping. (3) This activity extends all the way to the BRB vicinity on the east side of the Crystal River. This assessment contradicts the Pitkin County Open Space and Trails current Management Plan for the Red Wine Open Space parcel. (8) (3)

WILDLIFE ACTIVITY ASSESSMENT (8- Very Vulnerable)

STREAM AND RIPARIAN HABITAT- (Appendix R1) Stream Habitat Assessment Scores for this panel are **121/260 (poor)**; There was very low in-stream substrate cover and high sediment deposition; Sparse streambank vegetative cover and narrow streambank riparian zone width. **Riparian Habitat Score: 38/61 (poor)** Streambank: There is high lateral cutting; high erosion to deposition and insufficient soil; there is good woody vegetation for browse utilization, but low flood plain vegetation.

STREAM AND RIPARIAN HABITAT ASSESSMENT: (2 -Very Degraded)

**PANEL HERITAGE AREA P 3
BIOLOGICAL INVENTORY AND ASSESSMENT**

RANKINGS: *Plant Habitat* 5- *Very Diverse*) *Wildlife Activity* (9-*Very Vulnerable*) (96)
Stream/Riparian (3/1- *Moderate to Severely Degraded*) *Imperilment* (5-*Very High*)

SCORE: 21

FINAL RANK: 2 (tie with Placita)

GENERAL INFORMATION

LOCATION:- MID-VALLEY REGION – The lands and parcels along and upland to the Crystal River and Hwy. 133. Located between mile markers (m/m) 56 (Avalanche Cr.) and 59 (Crystal River Country Estates). **EXISTING CONDITIONS:** *Elevation Gradient:* 6,850' to 6,600' *Topography:* River Valley opens up and levels out around the confluence of Avalanche Cr. and down through the historic town site of Jane Way. The valley then constricts near m/m 59. **SPECIAL FEATURES:** Avalanche Creek Potential Conservation Area (PCA) (Appendix J); Historic Jane Way Town site; Critical Elk and Bighorn Sheep Activity; Old Wagon Trail through Jane Way Campground and historic town site. **Current Impacts:** The Swiss Village Subdivision; Avalanche Resort; alabaster Mine; Gesberg tracts; A ranch and residences; Hwy.133; **Potential Impacts:** A proposed recreational trail through the Avalanche Creek Potential Conservation Area. (PCA) and the old towns ite of **Jane Way.** (Reference 8)

BIOLOGICAL INVENTORY

LIFE ZONE: *Mid-Foothills* (First appearance of Pinyon Pine); Dominant plant communities include: A Douglas Fir/Gambel Oak Forest; Blue Spruce/Narrow leaf Cottonwood Forest; **State Rarity:** Narrow leaf Cottonwood/ Chokecherry; Gambel's Oak/Snowberry/Serviceberry Shrub land *Appendix A3*

PLANT HABITAT: (9-Tree species) (20 Shrub species) (25-Grass/Forb species) **Dominant Trees:** Aspen, Narrowleaf Cottonwood, Douglas Fir, Blue Spruce, Ponderosa Pine, Pinon Pine. **Shurbs:** Gambel Oak, Snowberry, Serviceberry, Chokecherry, Bitterbrush, Mountain Mahogany, Squaw bush. **Under story:** Mountain Rue, Oregon Grape, Scarlet Gila, Lupine, Penstemon, Purple Aster, Clematis. **Invasive:** Hounds Tongue, Mullein, Oxeye Daisy, Box Elder. *Appendix C* **Rare:** Canyon Bog Orchid, Globe Mallow, Douglas fir/Gambel oak and Narrowleaf cottonwood/chokecherry plant communities. State restricted.

WILDLIFE SPECIES: *Known or suspected species:* 31- Mammal; 60 – Bird; 5- Reptile/Amphibian; 5-Fish Representative Species: **Mammal** – Bighorn Sheep, Elk, Mule Deer, Bobcat, Mountain Lion, Black Bear, Beaver, Porcupine, Fox, Ermine, Cottontail Rabbit, Coyote;, **Bird** – Bald Eagle, American Kestrel, Magpie, Raven, Juncos, Gold Finch, Pine Siskin, White Breasted Nuthatch, Dipper, Kingfisher. **Rare:** Black Swift (*Bird*) Colony, Colorado Cut throat (drainage) *Appendices D, K, S, A3*

ASSESSMENT

WILDLIFE ACTIVITY: Composite impact Score: 96 Highly impacted Species: Bighorn Sheep 20; Elk 22; Canada goose 11; *Lynx* 9; Wild Turkey 8; Peregrine nesting 7; Mule Deer 7; Bald Eagle 6; Black bear 6; **Rare:** The Black Swift; Colorado Cutthroat; (**Appendix A3, W1**)

WILDLIFE ACTIVITY ASSESSMENT (9 – *Very Vulnerable*)

PLANT HABITAT - There are many plant communities within this study area that are designated State wide **vulnerable**. Colorado Natural Heritage Program (CNHP). In the Avalanche Creek PCA, the *Globe Mallow* is imperiled state wide and the *Canyon Bog Orchid* is critically imperiled.(2) The mixed shrub-lands of this part of the valley are very good browse for the Elk and Bighorn Sheep.(*Appendix A3*)

PLANT HABITAT ASSESSMENT: (5-*Very Diverse*)

STREAM AND RIPARIAN HABITAT ASSESSMENT: (*Appendix R1*) **Stream Habitat Assessment** Scores for this study area are 126/260 (**poor**) and 105/260 (**severely degraded**) with low scores due to steambank Instability, absence of stream bank vegetation and reduced riparian zone width. **Riparian Habitat Assessment** scores were 43/61 (**Fair**) and 27/61 (**Severely degraded**) due to down cutting erosion, reduced vegetation cover in the flood plain and steambank zone. A valuable Riparian Habitat occurs in the m/m 58 area. **STREAM/RIPARIAN ASSESSMENT:** (2/1*Moderate to severely degraded*)

Caucus Wildlife Task Force

**PANEL HERITAGE AREA P 4
BIOLOGICAL INVENTORY AND ASSESSMENT**

RANKINGS: *Plant Habitat (5- Very Diverse) Wildlife Activity (10- Most Vulnerable) (108)*
Stream/Riparian Habitat (3 - Moderately Degraded) Imperilment (5-Very High)
SCORE: 23 **FINAL RANK** 1

GENERAL INFORMATION

LOCATION: MID-VALLEY REGION. The lands and parcels along and upland to the Crystal River and Hwy. 133 between mile markers (m/m 53), the North Bridge into Redstone, and down to (m/m 56) near the confluence of Avalanche Cr. Three miles in length. **EXISTING CONDITIONS** *Elevation Gradient* of the valley floor 7100' down to 6850', (-250'). **Topography** A narrow, deep, river channel the first .5 mile with water cascading among giant boulders. Channel gradually levels and the flood plain widens for next two miles. **Appendix G, (1) SPECIAL FEATURES:** *Rare: Thompson's Big Eared Bat:* Significant Elk and Bighorn Sheep and habitat linkage in the *Narrows;* Riparian, beaver pond wetlands Penny Hot Springs Wetlands; Filoha Meadows Open Space; Fireflies; Fall elk bugling. CNHP special interest area; **(JI) CURRENT IMPACTS;** Hwy. 133 channeled river (1.0) mile; Wild Rose Ranch Subdivision; 8 scattered homes **POTENTIAL IMPACTS:** Three miles of The Crystal Trail on the East side of the Crystal River on the old railroad grade. **(8)**

BIOLOGICAL INVENTORY

LIFE ZONE - Upper Foothills, State restricted plant communities: Cottonwood/Spruce/Alder Riparian Forest ; West slope Sage-snowberry shrubland; Cattail/sedge-/pond wetland; Gambel's Oak-Rocky Mountain Juniper woodland; And a rush/sedge hot spring wetland; **(Appendix A4)**

PLANT HABITAT: (9-tree species) (25-shrub Species) (30 species ground cover) **Trees :** (Riparian) Blue Spruce; Narrow Leaf Cottonwood; (Upland) Rocky Mountain Juniper; Ponderosa Pine, Douglas Fir. **Shrubs)** (Upland : Gambel's Oak, Rocky Mtn. Juniper; Chokecherry, Serviceberry, Snowberry; (Riparian) Alder, Rocky Mtn. Maple; River Birch; Willow spp.; Twinberry. **Understory:** Bull rush; sedge spp. Green/white Bog Orchid. **Rare: Little beaked spike rush (6) Special Interest:** Green and White Bog Orchids, **Invasives: see Appendix C**

WILDLIFE ACTIVITY: Known or Suspected species (5) 51-Bird Species:30 -mammals 5- Fish species; 5-Reptile/ Amphibian species; Bighorn Sheep convergence of lambing, winter concentration, summer and winter range activity near mm 55. Sightings on west side of 133 during August, 2006, possible lamb sighting; Elk calving into late June near mm 55; Juniper/Oak shrub area, east side, Elk severe winter concentration. **Rare: Townsend's Big Eared Bat, one of 2 maternity roosts in Colorado; bald eagle, peregrine falcon; suspected dwarf shrew, Fox sparrow** **Appendices D, K, S, A4, Table 1,2,3.**

ASSESSMENT

PLANT HABITAT: The mosaic of plant habitats supports a wide array of wildlife in the Panel 4 area. The Dominant Plant within these wetland meadows appears to be a **locally rare Little Beaked Spike Rush** which may qualify for statewide rare status. (6) Moderately localized plant communities such as *Cottonwood/Spruce/ Alder and Sage/Snowberry Shrub land* may claim a statewide restricted status. Two quality Riparian zones exist here. **PLANT HABITAT ASSESSMENT: (5 -High Diversity)**

WILDLIFE ACTIVITY: Composite impact Score: 108 Highly Impacted Species: *Bighorn Sheep 20; Elk 22; Mule Deer 7; Lynx 14; Peregrine 12; Canada goose 9; Wild Turkey 7; Bald Eagle 6; Black Bear 6; mountain goat 5* This 108 score is the highest **impact** in the valley. The scores suggest that the wildlife activity in this panel is very vulnerable to development and increased human activity. **(Appendix D,K,S) (W1) Rare: (A4)WILDLIFE ACTIVITY ASSESSMENT: (10-Very Vulnerable)**

STREAM AND RIPARIAN HABITAT ASSESSMENT *Stream and Riparian Habitat scores of 140/260 and 43/61 (reach 4) and 140/260 and 45/61 (reach 5)* suggest **fair** condition and moderately **degraded** habitats due to the channelization effects of the highway and old railroad grade. Historic grazing has contributed to stream bank instability. **(Appendix R)**

STREAM AND RIPARIAN HABITAT ASSESSMENT (3- Moderately degraded)

**PANEL HERITAGE AREA P 5
BIOLOGICAL INVENTORY AND ASSESSMENT**

RANKINGS: *Plant Habitat* (5- High Diversity) *Stream/Riparian* (2-Degraded)
Wildlife Activity (9 – Very Vulnerable) 93 *Imperilment* (4- High)
SCORE 20 **FINAL RANK** 3

GENERAL INFORMATION

LOCATION: UPPER VALLEY REGION – The lands and parcels upland from the Crystal River and Hwy. 133, between mile/markers **50** (Ranch Acres) and **53** (N. Bridge to Redstone). .

EXISTING CONDITIONS – *Elevation gradient:* 7.250 to 7,100'; *Topography:* Narrow canyon width (.25 mile) rising to 11,000' on the East and 9,500 on the West, with slopes greater than 30%. Residences on alluvial fans. *Special Features:* Magnificent red cliffs, significant Elk and Bighorn Sheep populations.

East Creek PCA; Current Impacts: High, with 3 sub-divisions and a small town; Highway 133 fragments and dissects the narrow valley floor and imposes its channeling effect on the river. **Potential Impacts:** Normal 2% growth; A proposed recreational trail through Forest land the last .5 miles along the river to the North bridge entrance to Redstone.(8) **Land Ownership:** Public (USFS) land is sparse and is squeezed in on the east side of the river between m/m 52 to 53, in and around a sanitation plant and firehouse. A thin ribbon of forest service land extends between the highway and the river on the west side from the footbridge to the north entrance. The rest is private (1)

BIOLOGICAL INVENTORY

LIFE ZONE: LOWER MONTANE – *Plant Communities:* Aspen/Spruce Forest; Spruce/Cottonwood Forest; Oak/Serviceberry/Chokecherry shrub land; Sage/Oak shrub land. (*Riparian*): **Douglas-fir/dogwood**-State restricted (S2); Cottonwood/ Alder/Willow; Spruce/Cottonwood/ Birch riparian;

PLANT HABITAT- Canopy Species: Narrow leaf Cottonwood, Blue Spruce, Aspen, Ponderosa Pine, Douglas Fir. **Upland Shrubs:** Gambel Oak, Serviceberry, Chokecherry, Common Juniper, Sagebrush, Wood's Rose, Rocky Mtn. Juniper. **Riparian Shrubs:** Willow spp., Dogwood, Twinberry, Hawthorne. **Under story:** (*Upland*) Snowberry; Grass spp., Oregon grape, Snowberry. (*Riparian*) Clematis, Meadow Rue, Ground Sel, Solomon plume (false star) **Invasives:** Mullein, Musk Thistle, Oxeye Daisy, Hounds Tongue. (*Appendix C*)

WILDLIFE ACTIVITY: Known or suspected species: 55 Bird Species; 30 mammal species; 5 Fish species, 5 Amphibian/Reptiles. **Rare/Threatened:** Peregrine nesting sites, Lynx range. (*Appendix D,K,S*)

ASSESSMENT

PLANT HABITAT: A wide assemblage of plant habitats supports a diverse array of wildlife species in the panel 5 study area, in spite of significant human intrusion into the natural environment. The Spruce/Aspen and the Cottonwood/Spruce Forests are a quality occurrence state restricted (S3) rating.

Quality **Riparian Communities**, though small, narrow and localized, occur below m/m **50** and between **51** and **52** in the flood plain before the bridge and along the west bank after the footbridge. The riparian is **heavily impacted** on the east bank the .5 mile before the N. entrance bridge.

PLANT HABITAT ASSESSMENT: (5 - High Diversity)

WILDLIFE ACTIVITY: Composite impact Score 93

This total score is next highest in the Valley to panel 4, Filoha Meadows, which had a score of 107. Individual species scores from highest: Bighorn Sheep 15; Elk 22; Lynx 14; Mule Deer 4; Canada Goose 5, Bear 6, Peregrine Falcon 12; Bald Eagle 6 ; Mountain Goat 5 ; Wild Turkey 4 . The diverse composition of plant habitat supports good populations of wildlife species. (*Appendix W1, S*) (5)

WILDLIFE ACTIVITY ASSESSMENT: (9 -Very Vulnerable)

STREAM/RIPARIAN HABITAT: (*Appendix R*) **Stream Habitat Score:** (120/260) (*Poor*) This stretch of the Crystal shows a lot of stream alteration from the footbridge to the North bridge. Lots of exposed river bottom and not much of a way to dissipate the streams energy. Narrow riparian zone and significant stream alteration. **Riparian Habitat Score;** 37/61 (*Poor*) Vegetative cover in the flood plane low. Good woody vegetation and wildlife browse utilization

STREAM/RIPARIAN HABITAT ASSESSMENT (2- Degraded)

Caucus Wildlife Task Force

PANEL HERITAGE AREA P 6

BIOLOGICAL INVENTORY AND ASSESSMENT

RANKINGS: *Plant Habitat (5-Very Diverse) Wildlife Activity (8-Very Vulnerable) (90)*
Stream/Riparian Habitat (4 - Good to Poor, Degraded) Imperilment (4 High)
SCORE: 21 **FINAL RANK 2** (tie)

GENERAL INFORMATION

LOCATION: *Upper Valley Region* – The lands and parcels upland from the Crystal River along Hwy. 133 between mile markers (mm) 46.5, the Marble turnoff and mm 50, Ranch Acres.

EXISTING CONDITIONS (1) – Elevation Gradient, 7,500' down to 7,300'; *Per cent built out,* 60% estimated; *Ownership.* 90% USFS; *Topography,* A wide flood plain (.3 mile), with a gentle gradient and meandering river. A gradual upland rise to 10,000' on both sides of the valley for the first mile. Near (mm) 48 the corridor constricts narrowly for two miles and the uplands rise quickly into magnificent red sandstone cliffs. *Special Features,* Historic coal town site; Hayes Creek Falls, *McClure Pass PCA*, pristine river riparian and willow wetlands; Significant elk and bighorn activity areas with recent sightings of Lynx; Ladies tresses, Green and white bog orchids. *Current Impacts,* The fragmenting effect of Hwy. 133; invasive plant species; residential development *Potential Impacts,* Increased recreation expansion of the Crystal River Trail and a spur from it along the old railroad grade to Marble.

BIOLOGICAL INVENTORY

LIFE ZONE – Montane: *Distinct plant community ecosystems:* Narrowleaf Cottonwood/Blue spruce riparian forest; Upland/Spruce/Douglas fir/ Aspen forest; Sagebrush/Snowberry mixed shrubland; Cottonwood/Alder/Birch; riparian forest *Native Riparian Shrubs:* Alder, Birch, Willows; (Coyote, Schouler, Strapleaf, Beaked, Mountain, Whiplash); Twinberry, Dogwood, Hawthorne, spruce and cottonwood seedlings. *Native Upland Shrubs:* Chokecherry, Serviceberry, Common Juniper, Sagebrush. *Understory:* Riparian – Equisetum, Sedge spp., Rush spp., Bog Orchids (White, Green, Ladies Tresses) Upland understory – Meadow rue, Snowberry, Solomon Plume, Grass spp., Gentian, Potentilla, Yellow paint brush, Oregon Grape *Invasives:* Oxeye Daisy, Common Mullein, Butter and Eggs, Thistle (Appendix C)

WILDLIFE ACTIVITY *Known or suspected species estimates:* 25 Mammal species; 45 bird species, 5 fish species, 5 Amphibian/Reptile species. Aquatic macro invertebrates. Significant Elk and Bighorn Sheep; Bear, Coyote, Eagle, Beaver and Lynx. *Rare and Imperiled: (See appendix D,K,S) McClure Pass PCA.*

ASSESSMENT

PLANT HABITAT: The first 1.5 miles (mm 46.5 to mm 48) is characterized by a riparian forest/willow carr that is dominated by narrow leaf cottonwood, blue spruce, willow spp., bog birch and thin leaf alder. A very diverse composition of plant species exists here (7). From (mm) 48 to (mm) 50 a narrow canyon envelopes the river and highway. Douglas Fir makes a significant appearance in the canyon and uplands. The uplands are dominated by Aspen, Spruce and Douglas Fir with scattered Ponderosa and Sagebrush.

PLANT HABITAT ASSESSMENT (5– Very Diverse)

STREAM/RIPARAIN HABITAT: The first 1.5 miles of this panel (mm 46.5 to 48) have the highest ranking scores on the Crystal River. **162/260; 49/61; Good quality**; the lower reach (mm 48-50) ranks in the **Poor** range, **122/260; 36/61**, due to narrowness of riparian zone, poor vegetative cover and bank protection; channelization, and embeddedness. (*R*) **HABITAT ASSESSMENT (4 – Good to Poor)**

WILDLIFE ACTIVITY: Development and increased human activity impact potential on Wildlife species rate a *Composite Impact score 90* in the Placita panel. *Impacted species scores: Bighorn Sheep 15; Elk 24; Lynx 14; Peregrine 7; Bald Eagle 6; Black Bear 6; Mtn. Goat 5; Wild Turkey 4; Mule Deer 4;* Canadian geese 5; Significant elk migration corridor; Bighorn summer range. (*Appendix W1*)

WILDLIFE ACTIVITY ASSESSMENT (8 –Very Vulnerable)

Caucus Wildlife Task Force

6.0 HERITAGE AREA PROFILE AND RANK (Critical Habitat ranking) (Ranks and scores obtained from Sec. 7, table 1.)

6.1 Introduction The following profiles of the 6 heritage panels show the relative values as assessed by the Task Force. These profiles are summations and highlights of the individual study panels in section 5.0, scores and rankings from Table 1, page 17.

6.2 Critical Habitat Rank 1 FILOHA MEADOWS Score 23

- Mid-Valley, 3 mile stretch from N. Bridge Entrance to the confluence of Avalanche Cr.
- Contains the Filoha Open Space and Conservation Easements. Closure for past 4 years.
- Colorado Natural Heritage **Special Interest** designation. **J1, A4, 5** Lynx sighting **S**
- Composite impact score **108**; Elk, Bighorn (lambing, calving) **W, W1**
- “one of the places where critical habitat comes down to river,”⁸ Fall elk bugling.
- Next to the Placita panel, has the best riparian/stream habitat. Active beaver wetlands **.R**
- Home to the Penny Hot Springs, Fireflies, and the rare, Little Beaked Spike Rush. **6, P3**
- **A critical habitat migratory link** exists between Filoha and Avalanche Creek.
- High value cottonwood/blue spruce/alder riparian vegetation. *State restricted*
- High value Gamble oak/serviceberry/chokecherry shrub and Cottonwood/chokecherry **C**
- Bighorn/Goat sightings/ have been made in August 2006 on the west side of hwy.133. **S**
- Low Density of homes through Wild Rose Ranch-Dorais Rd.; Habitat remains critical. **P4**

6.3 Critical Habitat Rank 2 AVALANCHE CREEK -JANEWAY Score – 21

- * Mid-valley, the 3 miles from Avalanche Cr. Confluence to Crystal River Country Estates.
- * The Avalanche Cr. PCA is ranked 3rd out of 55 in the RF Watershed for biodiversity. **J**
- * Composite impact score **96**; Activity area convergence: lambing, ranges; **W**
- * Imperiled species, Black Swift bird colony, Canyon Bog orchid, Globe Mallow **A3**,
- * Prevalent Narrowleaf cottonwood/chokecherry/Douglas-fir; **(S1,2) State Rare**,
- * Very high value oak/serviceberry/mtn.mahogany/bitterbrush; browse utilization. **C**
- * Bighorn sheep sightings have been made on west side of Hwy. 133, August, 2006, **S**
- * Elk severe winter, calving area and bighorn/winter range **W, 4**
- * Old Townsite of Janeway is a potential riparian restoration site; bighorn summer range. **R**
- Proposed trail aligned through closed Janeway campground alluvial mud-flows.

6.4 Critical Habitat Rank 2 PLACITA Score – 21

- * Upper valley, the 3½ miles from the Marble turnoff to Ranch Acres subdivision.
- * Most pristine river riparian and willow wetlands habitat within the Crystal Valley., **R**
- * Bighorn **summer** range activity within this heritage area. Mountain Goat range., **S**
- * The west end of the **McClure Pass Potential Conservation Area** (PCA) is here. **J**
- * Re-introduced Lynx, Purple Martin (bird), Grand Mesa Penstemon in area. **J**
- * Proposed Crystal Trail passes through the length of the PCA and bighorn summer range.
- * Green/White, Ladies Tresses bog orchids found along water margins.**C**
- * Proposed future trail spur to Marble along river riparian forest road.**(8)**
- * Composite impact score **90**; Significant severe elk winter area, migration linkage **3, 4,W**
- * Overlapping Bighorn sheep **winter** and **summer** ranges in the Hayes creek area

Caucus Wildlife Task Force

Appendix: A3, A4, imperiled; C, Plant Survey; J, Crystal River PCAs; J1, Filoha special interest; R, Stream, riparian data; S, species sighting project; W, wildlife activity values; W1 wildlife composite values; P4, individual study; 2, biological inventory, 3, 4, CDOW; 8 trail study

6.5 Critical Habitat Rank 3 REDSTONE Score – 20

- Upper valley, the 3 mile stretch from Ranch Acres to the N. entrance to Redstone.
- Location of Big Kline Cr. PCA, a globally rare cottonwood/alder riparian occurrence. **J**
- Peregrine falcons nest in cliff areas. East Cr. PCA is here.
- Bighorn sheep winter/lambing areas converge east and above Redstone **9**
- Significant elk calving, late spring, winter concentration
- Composite impact score **93**; High wildlife vulnerability to human activity. **W, W1**
- Crystal Trail aligned through riparian USFS land west of boulevard. North of town. **8**
High value cottonwood/spruce/alder stands south of main bridge and west side below bridge. Aspen/Spruce/Douglas Fir with Oak/Serviceberry/chokecherry/dogwood shrubs

6.6 Critical Habitat Rank 5 RED WIND POINT Score -19

- * Mid-Valley, the 3 miles from the Crystal River Country Estates to the BRB.
- * Red Wind Point Open Space (12) The Management Plan calls for bike/pedestrian trail **8**
- * Composite impact score **91**; Significant seasonal wildlife activity. **W, W1, Table 3**,
- * Very high quality riparian alder/birch on the north side of Red Wind Point. **C**
- * Rock fall geologic hazard exists on the old railroad grade around Red Wind Point. **11**
- * Bald Eagle foraging and Perigrine falcon nesting site on cliffs. **Table 2, 2**
- * Cottonwood/spruce/alder/birch riparian quality stands; Gambel Oak/chokecherry. **Table 1**
- Lewis woodpeckers nest here in a remnant cottonwood stand. Historic railroad grade has altered the natural flooding regime. Potential restoration area. 100 year flood plain **G**
- * Potato Bill Creek PCA: Largest occurrence of Canyon Bog Orchid in the RF Watershed. **J**
- * Significant elk, deer winter range; Bighorn sheep summer range crosses over to the west side of highway 133 at the Red Wind Point. Unusual combination of Bighorn winter concentration and lambing at this specific site.

The Red Wind Point Management Plan refers to this open space as *critical for people*. The Management Plan has elaborate plans for this critical habitat area which is also within the view-plane of the highway. **12. Red Wind Management Plan**

6.7 Critical Habitat Rank 6 THOMPSON CREEK Score – 13

- Lower valley, the 3 miles from BRB to Pitkin/Garfield County line.
- The Middle Thompson Creek PCA extends down to near confluence. **J**
- Composite impact score **70**; **3,4 W,W1**
- Sustainable Settings, Open Space, and Conservation Easements present. **8**
- Valuable agricultural lands reduce the biodiversity of the natural environment. **H**
- Significant cottonwood/spruce/alder/birch riparian area as valley opens up. **C, 2**
- Outstanding bird assemblage, here; Bald Eagle Roosting, Red Winged black bird, ***10**
- Significant Mule Deer crossing near mile marker 64. Outstanding deer habitat. **W, S**
- Pinyon Pine/ Juniper/Sage and mixed shrublands on glacial terraces. **C, 2**
- Rare and Imperiled: N. Goshawk, Boreal Owl, Colorado Cutthroat Trout, Globe Mallow **J**
- Mule deer transitional and winter ranges. * **10, RF Audubon bird list**

Appendix: C, plant survey; G, existing conditions; H, opinion survey; J, Crystal PCAs; S, species sighting project; W, wildlife activity values; 2, biological inventory; 3,4, CDOW; 8, Trail study

7.1 Heritage panel composite scores and ranking

The table below compares and summarizes the six panel heritage areas of the Crystal River Valley to one another in four areas **Plant habitat; Wildlife activity; Imperilment** and **River/ Riparian habitat health**. The tables summarize the data accumulated in the 6 heritage studies and which may be referred to further in the report. Reference should also be made to the supporting appendices. This report borrows from the CNHP 's similar comparisons of plant communities from within the Crystal and Roaring Fork drainages .2 Relative rarity is then one way to quantify diversity. This report is an effort to assess our Crystal River natural heritage and use was made of Colorado Division of Wildlife (CDOW) GIS species data and base mapping of wildlife activity in the valley.3 The stream and riparian values were derived from the draft stream health initiative.7 Table 1 provides a *summation* of final rankings and arrives at the **Critical Habitat Rank** of each 3 mile segment to arrive at an approximation of their relative biological values.

7.2 Final Critical Habitat Ranking

(Table 1)

Heritage Area	QUALITATIVE RATING				Final	Final
	Plant Habitat Rank	Imperilment Rank	Wildlife Activity Rank	Stream/ Riparian Rank	Composite Total Score	*Critical Habitat Rank
Possible Placita	(5) 5	(5) 4	(10) 8 (90)	(5) 4	(25) 21	(1-6) 2
5 Redstone	5	4	9 (93)	2	20	4
4 Filoha Meadow	5	5	10 (108)	3	23	1
3 Avalanche Cr	5	5	9 (96)	2	21	2
2 Red Wind Pt.	5	4	8 (91)	2	19	5
1 Thompson Cr	3	4	5 (70)	1	13	6

(Negative Impact)

*Critical Habitat Rank

The table combines the totals of each of the 6 heritage panel rankings in the 4 criteria areas to arrive at a total score for each 3 mile section of the valley. This approach allows for an objective measure of the high value habitat areas of the valley. The highest values are recorded at Filoha Meadows and Avalanche Creek with total values of 23 and 21 respectively. A proposed recreational trail development poses a direct threat to these two high value habitat areas. This raises the issue of "appropriateness" of recreational development in these heritage areas. Incursion into the east bank area of the Crystal River throughout the mid-valley can then be evaluated. This critical habitat represents the heart of the Crystal River valley. Although riparian vegetation is sparse in much of the valley, enough exists to provide for the food, nesting, migratory and shelter requirements of those species obligated to utilize them. Upland plants and plant communities show good diversity in most areas,. It is apparent that the Filoha Meadows and Avalanche Creek are especially vulnerable because of the seasonal wildlife activities that elk and bighorn sheep herds exhibit there and their composite impact scores.

2, RF Biological Inventory 3, CDOW Wildlife Mapping 7, Stream Health Initiative
Caucus Wildlife Task Force

7.3 Imperiled species and communities A2, A3, A4, E, 2, 5

(Table 2)

<i>Heritage Area</i>	<i>SPECIES OF INTEREST</i>	<i>DESIGNATED STATUS</i>
6	(mm) 46.5 to 50	Imperilment Rank <u>4</u>
<i>Placita</i>	<i>Willow fly catcher</i>	<i>being determined</i>
	<i>Re-introduced Lynx</i>	<i>Critical imperilment, Candidate (C) E, FS</i>
	<i>Grand Mesa Penstemon</i>	<i>State restricted McClure Pass PCA)</i>
(5)	<i>Purple Martin (bird species)</i>	<i>In proximity of McClure Pass PCA, FS</i>
	<i>Bald Eagle, Winter forage</i>	<i>State threatened (T)</i>
5	(mm) 50 to 53	Imperilment Rank <u>4</u>
<i>Redstone</i>	<i>Peregrine potential nesting</i>	<i>State threatened (T) Endangered</i>
	<i>Bald Eagle, Winter forage</i>	<i>State threatened (T)</i>
	<i>Re-introduced Lynx</i>	<i>Candidate C, State E, Forest Service (FS)</i>
(6)	<i>Douglas fir/Dogwood</i>	<i>East Creek PCA, State restricted, S2</i>
	<i>Blue spruce/alder</i>	<i>Big Kline Creek PCA, S3</i>
	<i>Cottonwood/Douglas fir</i>	<i>State restricted, S3</i>
	(mm) 53 to 56	Imperilment Rank <u>5</u>
<i>Filoha Meadows</i>	<i>Appendix A4, (4) species</i>	<i>State threatened (T) Endangered</i>
	<i>Peregrine, potential nesting</i>	
	<i>Fox sparrow</i>	
	<i>Bald Eagle, Winter Forage</i>	<i>State threatened (T)</i>
(11)	<i>Townsend's Big eared Bat</i>	<i>USFS sensitive 1 of 2 roosts in state</i>
	<i>Dwarf Shrew, Fox Sparrow,</i>	<i>(S) CDOW sensitive (suspected, State E</i>
	<i>Little beaked spike rush</i>	<i>no status, rare, area of special interest</i>
	<i>Re-introduced Lynx</i>	<i>Candidate C, State E, Forest Service (FS)</i>
3	(mm) 56 to 59	Imperilment Rank <u>5</u>
<i>Avalanche Creek/ Janeway</i>	<i>Lynx, re-introduced</i>	<i>Candidate (C), State (E), FS</i>
	<i>Black Swift (bird species)</i>	<i>Forest Service (FS) Avalanche Cr. PCA</i>
	<i>Canyon bog Orchid</i>	<i>State imperiled Avalanche PCA, S2</i>
	<i>Globe-Mallow</i>	<i>State imperiled, Avalanche Cr., S1</i>
(13)	<i>Peregrine potential nesting</i>	<i>State threatened (T)</i>
	<i>Bald Eagle, winter forage</i>	<i>State threatened (T)</i>
	<i>Colorado Cutthroat</i>	<i>State restricted, DOW SC, FS</i>
	<i>NL Cottonwood/spruce/alder</i>	<i>State vulnerable, S3</i>
	<i>Gambel oak/mountain mahogany</i>	<i>State imperiled, S3</i>
	<i>Douglas Fir/oak</i>	<i>State vulnerable S3</i>
	<i>Common yellow throat, Band tailed pigeon, Lewis's woodpecker</i>	
2	(mm) 59 to 62	Imperilment Rank <u>4</u>
<i>Red Wind Point</i>	<i>Canyon Bog Orchid</i>	<i>State imperiled, Potato Bill Creek PCA</i>
(4)	<i>Bald Eagle, winter forage</i>	<i>State threatened (T)</i>
	<i>Peregrine potential nesting, Lewis's woodpecker</i>	<i>State threatened (T)</i>
1	(mm) 62 to 65	Imperilment Rank <u>4</u>
<i>Thompson Creek</i>	<i>Bald Eagle, forage, roosting</i>	<i>State threatened (T)</i>
	<i>Colorado Cutthroat</i>	<i>State restricted, SC, FS CNHP PCA</i>
(5)	<i>Boreal Owl, Lewis's woodpecker</i>	<i>State imperiled, Thompson Cr. PCA, S2</i>
	<i>Northern Goshawk</i>	<i>State vulnerable, CNHP, PCA, S3B</i>
	<i>NL Cottonwood/spruce/alder</i>	<i>State vulnerable, S3</i>

Final Ranking: Based on the relative numbers of rare and imperiled species as identified by the various agencies and the CNHP, The Roaring Fork Watershed Biological Inventory. Then applied to a ranking of 1 to 5.

2, RF Biological Inventory 5, Lowsky Appendices, A2 Red Wind Point; A3 Avalanche Creek; A4 Filoha Meadows; P1-P6, Individual study panels

7.4 Wildlife Activity Ranks, 3, 4, W1,W

(Table 3) (Vulnerability to Impact)

Heritage Area	Composite Impact	Species	Ranks
6 Placita	<u>90</u>	(mm) 46.5 to 50 Bear 6; Geese 5; Lynx 14; Bald Eagle 6; Bighorn 15; Elk 24; Peregrine 7; mule deer 4; wild turkey 4; Mtn. Goat 5 (calving, lambing; foraging, etc.)	Activity Rank <u>8</u>
5 Redstone	<u>93</u>	(mm) 50 to 53 Bear 6; Geese 5; Lynx 14; Bald eagle 6; Bighorn 15; Elk 22; Peregrine 12; mule deer 4; Wild Turkey 4; Mtn. Goat 5; (Winter severe, occupied range)	Activity Rank <u>9</u>
4 Filoha Med.	<u>108</u>	(mm) 53 to 56 Bear 6; Geese 9; Lynx 14; Bald eagle 6; Bighorn 20; Elk 22; Peregrine 12 mule deer 7; Wild turkey 7; mountain goat 5.	Activity Rank <u>10</u>
3 Avalanche Cr./ Janeway	<u>96</u>	(mm) 56 to 59 Bear 6; Geese 11; Lynx 9; Bald eagle 6; Bighorn 20; Elk 22; Peregrine 7; mule deer 7; Wild Turkey 8; (status factor, overall range, nesting, etc.)	Activity Rank <u>9</u>
2 Red Wind Pt.	<u>91</u>	(mm) 59 to 62 Bear 6; Geese 11; Lynx 0; Bald eagle 6; Bighorn 20; Elk 15; Peregrine 7; mule deer 15; Wild turkey 11; (highway crossing; potential range, foraging)	Activity Rank <u>8</u>
1 Thompson Cr	<u>70</u>	(mm) 62 to 65) Bear 6; Geese 11; Lynx 0; Bald eagle 10; Bighorn 0; Elk 15; Peregrine 0; mule deer 17; wild turkey 11; (winter concentration; sever winter range.)	Activity Rank <u>5</u>

Wildlife Activity Ranking – Ranking 1 to 10 based upon the relative **Composite Impact Scores**. The wildlife activity ranking was arbitrarily weighted on the basis of the significant wildlife populations within the Crystal River Valley.

7.5 Stream and Riparian Habitat Scores and Ranks, R, 7

(Table 4) HABITAT

Heritage Area	STREAM	RIPARIAN	Composite	Riparian Rank
6 Placita	Score Reach 1 162/260 Good Reach 2 122/260 Poor	Score 49/61 Good 36/61 Poor	211 158	<u>4</u> Quality stream health Degraded stream health
5 Redstone	Score Reach 3 120/260 Poor	Score 37/61 Poor	157	<u>2</u> Degraded Stream Health
4 Filoha Meadows	Score 4 140/260 Fair Reach 5 140/260 Fair	Score 43/61 Fair 45/61 Fair	183 185	<u>3</u> Moderately Degraded Stream Moderately Degraded Stream
3 Avalanche Janeway	Score Reach 6 126/260 Poor Reach 7 105/260 Very Poor	Score 43/61 Fair 27//61 Very Poor	169 132	<u>3/1</u> Moderately Degraded Stream Severely Degraded Stream
2 Red Wind Pt.	Score 8 121/60 Poor	Score 38/61 Poor	159	<u>2</u> Degraded Stream Health
1 Thompson Cr	Score 9 115/260 Very Poor	Score 29/61 Very Poor	144	<u>1</u> Severely Degraded Stream

3, CDOW, High Priority Habitat 4, Lowsky 7, Stream Initiative, Malone R, riparian habitat
Caucus Wildlife Task Force

7.6 Plant Habitat 2, 6, 12, C

(Table 5)

Heritage Panel		DOMINANT VEGETATION	STATUS – CONDITION - RANKING
6 Placita		Hwy. 133 Mile marker(mm) 46.5 to 50	Plant Habitat Rank 5 Very diverse
	Riparian-	cottonwood/ Spruce ecosystem*	Vulnerable, good condition
		cottonwood/Alder/Birch ecosystem	Very restricted, Excellent condition
	Upland-	spruce/Douglas fir/Aspen ecosystem	Secure, good condition
		sagebrush/Snowberry Shrubland	Somewhat vulnerable, extensive
5 Redstone		Hwy. 133 (mm) 50 to 53	Plant Habitat Rank 5 High Diversity
	Riparian	cottonwood/Douglas Fir ecosystem	Very restricted, scattered, rivers edge
		Douglas fir/ Dogwood -East Cr. PCA	Very restricted, riparian zones, quality
		Blue Spruce/Alder (Kline Cr. PCA	Globally vulnerable,
	Upland	Douglas fir/ Gambel oak/Aspen	Secure, good condition
4 Filoha M.		(mm) 53 to 56	Plant Habitat Rank 5 Very Diverse
	Riparian	cottonwood/ Spruce/Alder ecosystem	Vulnerable, good upper part, then poor
		cottonwood/Birch/Dogwood ecosystem	Vulnerable, 2 localized good occurrence
	Upland	sagebrush//Snowberry shrubland	Somewhat vulnerable, good patches
		Gambel oak/Rocky Mtn. juniper	Secure, very good occurrence, calving
3 Avalanche Cr Janeway		(mm) 56 to 59	Plant Habitat Rank 5 Very Diverse
	Riparian	cottonwood/ Spruce ecosystem	vulnerable, good condition, 3 locations
	Upland	Douglas fir/Gambel oak woodland	Secure in pockets, good condition
		Gamble oak/Chokecherry, Serviceber	Somewhat vulnerable, good expanse
		cottonwood/chokecherry ecosystem	State and Global imperilment, patches
2 Red Wind Pt.		(mm) 59 to 62	Plant Habitat Rank 5 Very diverse
	Riparian	cottonwood/Spruce ecosystem	Vulnerable, good conditon, 2 locations
		cottonwood/Alder/Birch ecosystem	Very restricted, good condition, patches
	Upland	pinyon/uniper/Squawbrush	Secure, good condition on west side
		oak/ Mtn. Maghogany/Bitterbrush	Secure, expansive shrublands
1 Thompson Cr.		(mm) 62 to 65	Plant Habitat Rank 3 Good diversity
	Riparian	cottonwood/Spruce ecosystem	Vulnerable, good condition, great site
		cottonwood/ Alder/Birch ecosystem	Very restricted, healthy, diverse site
	Upland	Pasture land	Very low diversity
		pinyon/Juniper/oak/service berry	Secure, expansive up 7000' eastside

*Narrow leaf cottonwood

METHOD OF RANKING

These assessment rankings and scores were combined to arrive at final heritage area habitat ranking found in summary **table 1**. Wildlife rankings were done on a scale of 1 to 10 based on composite activity scores. **W1** Plant habitat rankings were based upon the diversity expressed by the number and relative imperilment of the plants surveyed and the abundance of rare plants and communities. **2** Final stream and riparian habitat rankings were taken directly from the stream and habitat scores done and rated on a 1 to 5 scale.

**CRYSTAL RIVER WILDLIFE AND HABITAT
REPORT 2007**

SECTION 8.0 A SUMMARY OF TASK FORCE RECOMMENDATIONS:

- That accessing designated critical Open Space and Forest service land habitat with high impact bicycle thoroughfare trails in not appropriate.
- That appropriate public access of critical habitat, Open Space and U.S. Forest lands include minimal impact recreation and educational activities compatible with wildlife patterns. **N**
- That seasonal closures are not sustainable in protecting the winter range of elk and bighorn sheep and cannot be used to mitigate the impact of a bike-pedestrian trail. **M**
- That the best long term use of the dedicated property tax is to include the proposed trail on a safe and expanded shoulder of Highway 133 and avoiding wildlife.
- That the Crystal River Caucus and the Pitkin County OST seek ways to open lines of communication. A Caucus trail committee might be advisory to the OST board.
- That a bicycle-pedestrian thoroughfare not be included in the management plans for Open Space and Forest lands on the east side of the Crystal River.
- That due to the magnitude of critical habitat destruction, the county trail easement paralleling Dorais Way be permanently abandoned for bicycle trail construction.
- That the Red Wind Point Open Space management plan be amended to exclude the bicycle-pedestrian thoroughfare and include only compatible low impact activities.
- That the inactive Forest Service trails within the valley and along the railroad grade not be activated in the Forest Service Travel management plan.
- That riparian Forest lands just north of Redstone and west of the boulevard not be accessed by the proposed trail and a walk-in area be created free of motorized vehicles. That the forest road at Placita deny motorized vehicles and create a walk-in area.
- That the Forest land trail alignment through the abandoned Janeway Campground mud flow area and the historic Janeway townsite be denied.
- That the Colorado Natural Heritage Program recommendation for restricted access in their designated conservation area (PCA) at Avalanche Creek be respected for the protection of imperiled species.

Appendix – N, correspondence M, closures

8.1 GENERAL

Accessing County and Forest Service lands

Because public lands are so crucial to the sustainability of wildlife populations and because of the unique characteristics of this narrow valley corridor, the Task Force finds bicycle trail access **inappropriate** and recommends against it. The West Elk Trail Feasibility Study **8** identifies Filoha Meadows as “one of the few places where critical habitat comes down to the river.” Minimal impact nature trails are appropriate. **N Tucker**

Best use of the tax dollar in trail construction and Maintenance The Task Force further recommends that the best use of the dedicated property tax mil levy is to include the proposed trail within the existing transportation corridor and avoid critical wildlife habitat. The design for the entire right-of-way is established and a safe trail should be built on the expanded shoulder area as requested by valley residents. **H** This avoids the issues of winter range closure, constructing and maintaining two trail alignments.**8**

Closures are problematic and do not mitigate accessing critical habitat.

The Task Force recommends against the use of **closures**. Intrusion into Open Space easements and Forest Service lands require seasonal closure to mitigate human disturbance to crucial winter range where wildlife have no alternate locations. Almost without exception, wildlife managers agree that closures are unsustainable and have fatal monitoring and enforcement defects that progressively degrade the wildlife habitat. Intruding upon critical habitat **cannot be justified** by winter closure. Wildlife loses. **M**

The Crystal River Caucus endorses the Crystal River Trail

Since 2001, the Crystal Caucus has endorsed a valley bicycle trail within the existing highway corridor and it is documented by the wishes of 74% of the valleys residents in the opinion survey of 2001. **H1** The task force recommends that the trail remain with the highway corridor. **H1, survey results**

8.2 FOR THE PITKIN COUNTY OPENSOURCE AND TRAILS PROGRAM

No trail alignment within Open Space management plans

The Task Force recommends that no provision be made for including a trail alignment through Pitkin County Open Space within the Crystal River Valley. There should be no plans for a bicycle/pedestrian trail in the management plans for the Red Wind Point, Filoha Meadows Heritage Areas or other county open spaces. It is recommended that only minimal impact activities, compatible with existing wildlife patterns, be included. This will provide access into Open Space for the taxpayer and allow the recreation and educational return they deserve, while protecting wildlife and habitat. **8**

Wildlife Task Force recommended Trail Alignments

	(approximations)	(mile markers)
An appropriate off-highway,	3.0 mile trail, McClure Pass to Hayes Cr.	46.5 to 49.5
A required* on-highway	2.0 mile trail, Hayes Creek to Redstone,	49.5 to 51.5
An appropriate on boulevard,	1.5 mile trail, Redstone to North Bridge,	51.5 to 53.0
An appropriate on-highway,	7.5 mile trail, North Bridge to Nettle Cr.	53.0 to 60.5
A required* on-highway,	4.5 mile trail, Nettle Creek to Garfield line	60.5 to 65.0
*limited by land availability		

M, Sustainability of closures **8, Trail feasibility study;** **Appendix N, Tucker letter**
Caucus Wildlife Task Force

Recommendations to Pitkin Co. OST, (cont'd)

Filoha Meadows – Due to its high critical rank, the railroad migratory linkage, and because of the large potential for habitat destruction, the Task Force recommends that the **County trail easement be permanently abandoned!**

Red Wind Point Heritage Area – The Task Force recommends that the adopted management plan for this Open Space be amended to allow only low impact, non-bicycle trail, compatible activities. This is a critical habitat overlapping area of ranges and the lambing could be disturbed up until the end of June. The **Potato Bill Creek PCA**, located in this heritage area, should be respected and the trail aligned accordingly.

8.3 FOR THE WHITE RIVER NATIONAL FOREST

It is recommended, by the Task Force, that the “way” **trails activated** by the Travel Management Plan be denied to applicants for use as bicycle-pedestrian trails, specifically, Pitkin County Open Space and Trails. This request is based on the critical nature of the lands in the Filoha Meadows, Avalanche Creek, and Red Wind Point Heritage areas. Trail numbers, 3-1954W.1; 3-310W.1F; 3-313W.1A; 3-N314.2.(WRNF-Travel plan)

Redstone -Deny riparian access; Create walk-in area. It is recommended that the proposed bicycle trail not be permitted into the riparian zone between the boulevard and the Crystal River where it leaves the north town limit of Redstone. Further the trail should remain on an improved and expanded shoulder of the boulevard to the north bridge. It is also advised that access be denied to **motorized vehicles** currently using the side road area just south of the bridge for restoration of the riparian zone by creating a **walk-in** use area.

Abandoned Janeway campground mud flow. It is recommended that the proposed alignment of the trail through the abandoned **Janeway campground** not be permitted, based on the critical nature of the wildlife habitat and hazardous nature of the mud-flows. Private use of that area has been denied in the past (White Banks Alabaster Mine). It is also recommended that access be denied into the section immediately north of the Avalanche Creek road and down into the historic **Janeway townsite** based upon wildlife habitat, riparian habitat and potential for hydrologic restoration. **R, 7,W**

Avalanche Creek/Janeway – The presence of the Avalanche Creek Potential Conservation Area - PCA

down to the confluence of the Crystal River and the proposed trail alignment through this area are reasons for concern. **J** Protections recommended by the CNHP for this area are: “weed control, restoration efforts, and restricted recreation access.” Also the 2005 update which states that, “the protection urgency rank stays the same unless the proposed bike path is built.**J2** The protection urgency then increases. The critical nature of this heritage area of the valley is well documented and must be protected. The CNHP asks that agencies use their recommendations in the review of proposed activities in or near PCAs. **2**

Appendix: J, Crystal River PCAs; J1, Special interest area; R, Riparian data; W, wildlife activity mapping; 2, Biological inventory; 7, Stream Health Initiative; J2, CNHP 2005 update
Caucus Wildlife Task Force

SUMMARY OF DISCUSSION AND COMMENT

*This report is meant to address all forms of development within the Crystal River Valley. One concern is the very large per foot construction costs for trail construction and the cost-benefit ratios for the small niche that would actually benefit from such large construction and maintenance expenditures.

- Within the 70 mile Crested Butte to Carbondale trail, the biker can experience all most 50 miles of off-highway trail experience before ever arriving in the Crystal River Valley.
- The West Elk Trail Feasibility Study states, “There are potential trail impacts on critical habitat in the Crystal River Valley, especially on elk and bighorn sheep.
- Concerning the reported stockpiling of bridge components, the question should be asked, are these for the Crystal Valley and have final decisions been made regarding the trail alignment? Is there a presumed exemption from County land use review and Federal NEPA review?
- If the 9th District Court rules that the trail easement along Dorais Way will be 8' in width rather than the county requested 15' , will there just be a takings on the 7' difference?
- The largest potential habitat destruction in the valley for trail construction appears to be along the Dorais Way county trail easement. This is some of the most dense and diverse plant habitat within the Crystal Valley. This area is designated critical wildlife production and winter range and is one of the few places elk can be heard bugling in late September and early October. The Crystal Caucus Wildlife Task Force has recommended that the County Open Space and Trails program abandon this trail easement.
- The preferred County OST trail alignment through the Avalanche Creek area is through a Colorado Natural Heritage Program conservation area. (PCA), along an old wagon road that has been closed for 100 years, and through the mud flow area of the abandoned Janeway campground. This has been off limits for private use. The historic Janeway townsite is also along this trail alignment and is an elk calving area.
- The Placita Heritage Area contain some of the best riparian habitat in the valley and it is recommended that the Forest Service road paralleling the river be closed to motorized vehicles and be made into a walk-in area.
- The Red Wind Point Open Space area is a significant area of overlapping bighorn sheep activity areas and is also a potential sight for riparian restoration. There is a potential 1.0 mile trail segment through this critical habitat. The County controls only .4 of a mile of this potential trail. USFS controls the remainder.
- The Caucus is requested to “work with Pitkin County and pursue, where appropriate, an off-road bike-pedestrian trail that would parallel the Highway 133 corridor.” (Transportation Section 7.4, Crystal River Master Plan) 2003. **Appendix Q, page 43**

9.0 TASK FORCE COMMENT – DISCUSSION

9.1 GENERAL

- This report addresses all forms of development within the Crystal river Valley. Its concern here is with the outside commitment of large sums of money for valley **recreational trail development** and the associated **cost-benefit** issues it raises. **Y**
- Trail development in this valley is part of a 70 mile Crested Butte to Carbondale trail plan sponsored by the West Elk Scenic Loop Commission and the Pitkin County Open Space and Trails. The bike rider can experience over 50 miles of “**unique outdoor off-road experience**” prior to arrival in the Crystal River Valley.
- The West Elk Trail Feasibility Study states, “There are **potential trail impacts** on critical wildlife habitat, especially bighorn sheep and elk.” It goes on to say, “the desire is to maximize the bicycle experience by keeping the trail away from the highway, providing access to the river and connecting tourist attractions.”⁸
- To leave the highway right-of-way, the trail must access appropriate Open Space and U.S. Forest Service lands, and the reported stockpiling of bridge components by the OST has apparently been underway for some time to accomplish this. Is there a presumed exemption from county land use and hazard review? Is there a presumption that the Federal NEPA review process is a mere formality?

9.2 SPECIFIC

- **Filoha Meadows – Wild Rose Ranch** - The upper or south entrance to this heritage area is through Dorais Way, a private road. Open Space and Trails has an existing trail easement that parallels and is above and to the east of the private road. A court ruling is pending as to whether the easement will be 8' or 15' in width.* **This will determine the magnitude of the native habitat that will be removed by heavy equipment.** This has been determined to be critical habitat by the Task Force and its critical nature has not been minimized by the few scattered homes that exist there.** This is some of the most dense upland and riparian habitat in the valley for bighorn and elk lambing, calving and severe winter range. This is the only location in the valley for fall elk bugling. The Penny Hot Springs and gaging station are where most elk and Bighorn sheep are observed from the existing highway turnout. It is the wildlife epicenter of the valley. A critical **habitat linkage** and bighorn sheep movement corridor extends from mm 55 to 56. **J1, W, W1, A4, R, P4 * 9th District Court ** County 1041 Wildlife hazard reviews**
- **Avalanche Creek/Janeway** – The study of this critical heritage area is expanded on the following summary tables, profiles, and individual study. **Access** through this Potential Conservation area by way of an **old wagon road**, abandoned for almost 100 years, should be denied. This is a convergence area of many overlapping elk and bighorn activity areas. Please see the mapping.**P3** It is an area of documented rare species, **A3**, and the **view plane** from the highway would be compromised. The historic Janeway townsite is critical habitat and a potential riparian restoration sight. **8, J1, A3**

8, West Elk Trail Feasibility Study; J, J1, Crystal River PCAs; 2, RF Biological Inventory H, core values; H1, opinion survey; A3, Avalanche Creek imperilments; W, wildlife activity mapping; A4, Filoha imperilments; R, riparian data; P4, Filoha wildlife mapping
Caucus Wildlife Task Force

Placita – Forest Service walk-in; McClure Pass PCA - An area of great scenic splendor, it contains the highest stream and riparian values of the entire Crystal Valley. This area provides quality habitat for song birds, secure areas for elk with calves, and intact habitat for lynx who frequent the area. **R S, L** A forest service road (3-N314.2) parallels the river between mile marker 47 and 48. It is suggested by the Task Force that it be denied as a potential bike trail spur to Marble and that it be closed to motorized vehicles and made a walk-in area off of the highway turn-out at mile marker 47.3 **8** This area is included in the western side of the **McClure Pass PCA**. The Crested Butte-Carbondale Trail passes through this PCA. The CNHP recommends restricted recreation access. **2, J** The proposed trail will follow the old pass switchbacks down the west side of the Crystal Valley and along the old Bear Creek wagon road (3-1966W.1-2-3). This is within the **bighorn sheep summer range** and expanded goat sightings. **S** The Task Force considers this to be **linkage habitat**.

Redstone Heritage Area – Very large riparian habitat removal. In spite of apparent fragmentation of the landscape and numerous small subdivisions, the critical nature of this heritage area is well documented. The alignment of the proposed recreational trail, as it enters and leaves the north side of town, is reason for concern. The trail is to bear left through the narrow and limited riparian zone between the boulevard and the Crystal River. It must avoid the firehouse and sanitation facility and then hook back up with the much used road area along the river, re-emerging at the bridge. The trail alignment through this riparian zone will cause **significant habitat removal**. Refer to the complete study. **J, 8, W, W2, P5 map**

Red Wind Point Heritage Area – There is a very significant Bighorn sheep and Elk convergence of activity in this area. High quality riparian habitat exist on the north side of the point and could be expanded and restored with some removal of the old railroad platform. This is the sight of the Red Wind Open Space area for the preservation and protection of wildlife. **12** The proposed trail is aligned through a rock fall area on the Forest Service railroad grade. A management plan has been adopted for this open space stating it is an area critical for people as well a wildlife. Refer to the entire study of this heritage area. **12, 8, J, 1, W, W1, R, Profile, Individual study and P2 mapping**

Thompson Creek Heritage Area – Thompson Creek ranks as the lowest critical habitat area based on the criteria applied to it. Mule deer dominate this foothills area and the Middle Thompson Potential Conservation Area borders it on the west. Open space easements are found here and plans for a nature trail head. A significant deer crossing and Bald Eagle roosting area are in close proximity to each other. **W** See the complete study **J, W, W1, S, C, 10, Profile, P1-Individual Study**

Appendix: C, Valley plant survey; J, Valley PCAs; R, riparian data tables; S, wildlife sightings; W, Wildlife Activity Areas; W1, Wildlife composite scores; W2, Wildlife scores; U, Letter of support for GoCo grants; 1, Crystal Master Plan; 1, 2, Biological Inventory; 8, West Elk Trail Study; 10, Bird check list; H, Core values.

Appendix B, valley Regions; J, valley PCAs; W, wildlife activity areas; W1, wildlife scores; S, sightings project; C, plant survey; 1, master plan; 2, biological inventory; 8, trail study P1-P6, individual panel mapping; W2, specific wildlife activity; 12, Red Wind Management Plan
Caucus Wildlife Task Force

APPENDICES

- | | |
|--|--|
| A – Imperiled species and communities | B – Valley Regions |
| C – Plant Survey of Study Areas | D – Known and suspected wildlife |
| E – Agencies status and designations | F – Data Source backgrounds |
| G – Existing Conditions, | H – Master Plan opinion survey results |
| I | H1- Opinion Survey |
| J – Crystal River PCAs | J1 – Filoha Meadows, special interest |
| K – RF Audubon Bird check lists | L – Lynx Locations |
| M - Seasonal Closure, Seidel, Wright | N - Communications, Tucker, Lackner
(N1, N2, N3, N4) |
| O – Open Space acquisition | P – Individual Study Panels |
| Q – Transportation section goals | R – Stream and riparian data tables |
| S – Crystal River Species Sighting | S1 – Sightings catalog |
| W – Wildlife species activity (impacts) | W1 – Wildlife Activity impact scores
(W2,W3) |
| W2 – Wildlife activity values for Red Wind Point and Filoha Meadows | |
| Other: Figuring potential impact | |

ACRONYMS

- CNHP – Colorado Natural Heritage Program**
PCA - Potential Conservation Area
WRNF –White River National Forest
CDOW -Colorado Division of Wildlife
CDOT – Colorado Department of Transportation
USFS – United States Forest Service
AFBL – Aspen Field Biology Lab
OST - Open Space and Trails

FOOTNOTES

1. The Crystal River Master Plan, Volume 1, 2003
2. The Roaring Fork Watershed Biological Inventory 1997-1999, Updates 2005
3. Colorado Division of Wildlife, Species Activity Mapping (GIS)
4. Colorado Division of Wildlife High Priority Habitat Activity Areas and Definitions, 2006, Deliberations for Wildlife Task Force
5. Wildlife Resources of Filoha Meadows, Lowsky
6. Plant Report for Hot Springs Ranch/Filoha Meadows, Tasker
7. Aspen Field Biology Laboratory(AFBL) Stream Health Initiative, Malone
8. West Elk Trail Feasibility Study, Newland
9. Crystal River Caucus Wildlife and Habitat, CDOW, Base Mapping
10. Bird checklist for the Roaring Fork Valley, Roaring Fork Audubon, 2005
11. Field Notes, Crystal River Valley Plant Survey, 2006, Clark, Hanks
12. Red Wind Management Plan, Pitco OST
13. Lynx locations within the White River National Forest. (WRNF)
14. Individual study panels (P1-P6)
15. The Effect of Recreation on Rocky Mtn. Wildlife
16. Planning Trails with Wildlife in Mind

Caucus Wildlife Task Force

APPENDIX A 4
HERITAGE PANEL 4 FILOHA MEADOWS
RARE AND IMPERILED - 5, Lowsky

26

SPECIES OR COMMUNITY NAME	STATUS**
American Bald Eagle	FT, ST
Peregrine Falcon , suspected	SC
Northern Leopard Frog, suspected	S SC
Townsend's Big eared Bat, known	S,
Dwarf Shrew suspected	S,
Fox Sparrow, suspected	S,
Tiger Salamander, suspected	S
Cottonwood/Spruce/Alder Riparian Forest	S3
West Slope Sage/Snowberry Shrubland	S3/4
Little beaked spike rush	S1, proposed, Tasker

APPENDIX A3
HERITAGE PANEL 3 AVALANCHE CREEK/JANEWAY
RARE AND IMPERILED (2)

SPECIES OR COMMUNITY NAME	STATUS***			
	Global Rank	State Rank	State Status	Fed. Sens.
Cottonwood/ Douglas Fir	GU	S2	(state rarity)	
Cottonwood/Choke Cherry	G2/3	S1	(state rarity)	
Cottonwood/Spruce/Alder Riparian Forest	G3	S3		
Gambel Oak/Mountain Mahogany Shrubland	G3	S3		
Gambel Oak/Serviceberry Shrubland	G3	S2		
Douglas Fir/Gambel Oak Shrubland	G5	S3/4		
Large Flower Globe-mallow	G3	S1		
Canyon Bob Orchid	G4	S2		
Colorado Cutthroat	G5	S3	SC	FS
Black Swift	G4	S3B		FS

APPENDIX A-2
HERITAGE PANEL 2 RED WIND POINT
RARE AND IMPERILED (2)

SPECIES OR COMMUNITY NAME	STATUS***			
	Global Rank	State Rank	State Status	Fed. Sens.
Cottonwood/Chokecherry		G4	S1	
Cottonwood/Douglas Fir		S2G		
Gambel Oak/ Serviceberry/Snowberry	G5	S3/4		
Douglas Fir/Gambel Oak/Dogwood		S2/3		
Canyon Bog Orchid	G4/5	S2		

* **Regional Forester's Sensitive Species List, USDA Forest Service, Rocky Mtn. Region.**

** **Status Codes: FEDERAL, (FE-endangered, FT-threatened,) STATE,(SE-endangered, ST, threatened SC-special concern; BLM, (S) Sensitive USFS, (FS) Sensitive**

*** **Colorado Natural Heritage Program (CNHP) Imperiled Statewide, (S1) Critical (S2) (S3) Vulnerable (S4) Secure (S5) very secure; REFERENCE (2) RiverWatershed Biological Inventory (CNHP) (5) Lowsky**
Caucus Wildlife Task Force

VALLEY REGIONS

The valley is divided into three (3) regions **UPPER, MID, AND LOWER**. These subdivisions are consistent with the Master Plan for the Crystal Valley. The 3 regions are further divided into six (6), three (3)mile study areas referred to as **heritage panels** for specific study. The nineteen mile length of the Crystal Valley corridor within Pitkin County from the Marble turn-off (m/m 46.5) down to the Garfield County line (m/m 65) is the inventory and assessment area

Life Zones

Life Zone		Heritage Area	
UPPER VALLEY			
MONTANE	6	m/m 47 to 50	Placita
LOWER MONTANE	5	m/m 50 to 53	Redstone
MID-VALLEY			
	4	m/m 53 to 56	Filoha Meadows
UPPER FOOTHILLS	3	m/m 56 to 59	Avalanche Creek/Janeway
	2	m/m 59 to 62	Red Wind Point
LOWER VALLEY			
FOOTHILLS	1	m/m 62 to 65	Thompson Creek

Life zones have reference to characteristic plant life associated with **climatic** conditions (temperature/rainfall) and **elevation**. Plant patterns subtly change with corresponding climatic changes. Moisture, light, temperature, and soil conditions will determine general vegetative habitat and niches. Life zones can be further characterized by their internal **ecosystems**.

Existing Conditions

Some knowledge of the existing conditions within the Crystal River Valley are helpful to understand the context within which this report addresses threats to critical habitats within and on the east uplands of the Crystal River. Appendix G expresses build-out, elevation gradients, ownership, fragmentation and current impacts upon the valley regions. These conditions should not be seen as limiting the the critical nature of the existing habitat and therefore being all right to indiscriminately add additional insult to injury . We need to recognize the cumulative effects of all disturbances to the natural environment. Decisions to increasingly fragment a very narrow valley have to be made carefully. These lower valley elevations are extremely limited and are therefore additionally important. The highway is the biggest single impact to the valley. Its effect to straighten and thus channel the river and limit riparian zones is staggering especially when taken in combination with the old railroad grade, where they come to points opposite each other in the valley, It is necessary to see the Crystal Valley and the river for the conditions that truly exist while there is still time remaining. Critical habitat is necessary to sustain the diversity that currently exists. Wildlife populations have been the big losers in the past. The loss of wildlife habitat has been enormous. **A major goal of proponents and governmental agencies should be no net loss to wildlife or wildlife habitat.**

Caucus Wildlife Task Force

APPENDIX C

VEGETATION SURVEY - CRYSTAL RIVER CORRIDOR (11)							
COMMON NAME	VALLEY REGION				HABITAT		
	UPPER - MIDDLE - LOWER				RIPARIAN	TRANSITION	UPLAND
	NATIVE	VALLEY	VALLEY	VALLEY			
TREES - CANOPY							
NarrowLeaf Cottonwood	X	X	X	X	X	X	X
Colorado Blue Spruce	X	X	X	X	X	X	
Engleman Spruce	X	X				X	X
Aspen	X	X	X			X	X
Douglas Fir	X		X			X	X
Ponderosa Pine	X		X			X	
Pinyon Pine	X		X	X			X
Rocky Mtn. Juniper	X		X	X		X	X
Utah Juniper	X			X			X
Box Elder	(non-native)		X				X
SHRUBS	NATIVE	VALLEY REGION			HABITAT		
		UPPER	MIDDLE	LOWER	RIPARIAN	TRANSITION	UPLAND
		VALLEY	VALLEY	VALLEY			
Mountain Ash	X	X				X	X
Dogwood	X	X	X	X	X	X	
Rocky Mtn. Maple	X	X	X		X	X	
Serviceberry	X	X	X	X		X	X
Chokecherry	X	X	X	X		X	X
Schouler Willow	X	X	X		X	X	
Wood's Rose	X	X	X	X		X	X
Snowberry	X	X	X	X		X	X
Willow, Coyote	X	X	X	X	X		
Willow, Beaked	X	X			X		
Willow, Strapleaf	X	X			X		
Willow, Mountain	X	X			X		
Willow, Whiplash	X	X			X		
Twinberry	X	X	X		X		
Current (Ribes spp.)	X	X	X				X
River Birch	X	X	X	X	X		
Bog Birch	X	X	X		X		
Thinleaf Alder	X	X	X	X	X	X	
Silver Buffalo Berry	X		X	X	X		
Common Juniper	X	X	X			X	X
Hawthorne	X	X	X	X	X	X	
Gambel's Oak	X		X				X
Gooseberry	X		X				X
Rocky Mtn. Juniper	X		X	X		X	X
Utah Juniper	X			X			X
Mountain Mahogany	X		X	X		X	
Sagebrush	X	X	X	X			X
Squabush	X		X	X			X
Shrubby Cinequifol	X	X	X				
Sage brush	X	X	X	X			X
Rabbit Brush	X	X	X	X			
Bitterbrush	X	X	X	X			X

Appendix C continued next page

11, Clark-Hanks Field Notes

Caucus Wildlife Task Force

APPENDIX C (Cont'd)

GROUND COVER (GRASSES -FORBS)
A PARTIAL LIST FOR THE CRYSTAL RIVER CORRIDOR (11)

GROUND COVER (Grasses/Forbs) - Oregon grape, Solomon Plume (false, star), Baneberry, Twisted Stalk, Mountain Lover, kinnikinnik, Thimbleberry, Snowberry, Groundsel, Sedge spp. (Carex) Little Beaked Spike Rush, yellow paintbrush, Bullrush, Rush spp., Bog Orchid (yellow, green), Ladies Tresses Orchids, Canyon Bog Orchid, Golden Rod, Aster (purple, golden), Cone Flower, Cow Parsnip, Grass of Parnassus Fireweed, Geranium sp., Blue Gentian, Green Gentian, Clematis, Alfalfa, grass spp. (Graminea), Wild Licorice, (Glycorriza), Tumbleweed, Sunspots, Gumweed, Veronica, Hair grass, Equisetum (horse tail) (scouring rush), Cattails, Curly Dock, Elderberry, Maretail (flowering). Red Clover, Salisfy, Golden Rod, Burreed, Meadow Rue, Bittersweet, Raspberry, Lupine spp., Penstemon spp, Scarlt Gila, Evening Primrose, Straw Flowers, INTRODUCED SPECIES (Weeds) Hounds Tongue, Chickory, Common Burdock, Tansy, Butter & Eggs, Mullein, Oxeye Daisy, Bull Thistle, Musk Thistle, Yellow Clover,

11 Survey of Plants by Clark and Hanks (8/06)

APPENDIX D

KNOWN AND SUSPECTED ANIMAL LIST (Mid-Valley)

Filoha Meadows – Jonathan Lowsky

BIRDS

American dipper, American kestrel, American robin, Bald eagle, Black-billed magpie, Black-capped chickadee, Blue grouse, Blue-gray gnatcatcher, Canada goose, Chipping sparrow, Cinnamon teal, Common raven, Common snipe, Cordilleran flycatcher, Cooper's hawk, Darley-eyed junco, Downey woodpecker, Dusky flycatcher, Fox sparrow, Great blue heron, Great horned owl, Green-tailed towhee, Green-winged teal, Hairy woodpecker, House finch, House wren, Lewis' woodpecker, Lincoln's sparrow, MacGillivray's warbler, Mallard, Mountain dove, Mountain bluebird, Mountain chickadee, Orange-Crowned warbler, Peregrine falcon, Plubeous vireo, Northern flicker, Red-tailed hawk, Red-winged blackbird, Ruby-crowned kinglet, Song sparrow, Spotted sandpiper, Stellars jay, Townsend's solitaire, Tree swallow, Vesper sparrow, Western tanager, White-breasted nuthatch, White-crowned sparrow, Wild turkey, Yellow warbler, Yellow-rumped warbler.

MAMMALS

American beaver, Big brown bat, Rocky Mountain Bighorn Sheep, Black bear, Bobcat, Bushy-tailed woodrat, Common muskrat, Common porcupine, Coyote, Deer mouse, Elk, Ermine or short-tailed weasel, Golden-mantled ground squirrel, Hoary bat, Least chipmunk, Little brown myotis, Long-legged myotis, Long-tailed weasel, Meadow vole, Montane vole, Mountain lion, Mule deer, Northern pocket gopher, Nuttall's or mountain cottontail, Pine squirrel, Raccoon, Red fox, Silver-haired bat, Striped skunk, Townsend's big eared bat pale sp.,

For threatened and endangered see appendix A4

Caucus Wildlife Task Force

APPENDIX E

CRYSTAL RIVER HERITAGE WILDLIFE AND HABITAT

AGENCY DESIGNATIONS AND RANKS

- a. Colorado Dept. of Wildlife (CDOW) STATE STATUS -
E – endangered T – threatened SC – special concern; Rank -
- b. U.S. Forest Service - FEDERAL SENSITIVE– FS
Population vitality is a concern.
- c. Bureau of Land Management (BLM) – (S) Sensitive species in
danger of becoming extinct.
- d. U.S. Fish and Wildlife Service (USFWS) FEDERAL STATUS -
LE – Endangered E(S/A) Endangered due similarity of
appearance with listed species - L/T Threatened P -proposed
for listing as T or E; C – Candidate, qualified as imperiled.
- e. Colorado Natural Heritage Program (CNHP) -
G1 – S1 Globally(over range) and Statewide, critically imperiled, 5
or fewer individuals or communities. Extremely vulnerable.
G2 – S2 Globally and statewide imperiled, 6 to 20 individuals or
or communities . Very vulnerable to extinction.
G3 – S3 Vulnerable over its range and restricted state wide.
21 – 100 individuals or communities reported.
G4 – S4 Apparently secure over range and statewide.
G5 – S5 Abundant, globally/state very secure.
- f. Colorado Dept of Wildlife
(High priority Habitat, Economic species and species at risk
ranking. COLORADO INVENTORIED ROADLESS AREAS
Information for Colorado task force deliberation. 12/06.
Species, activity area and definitions, Impact factor 1 to 5
Status Factor(risk) 1 to 5 and a combination for final

APPENDIX F

DATA SOURCES BACKGROUND

SPECIES SIGHTING PROJECT

Designed to augment wildlife data both now and in the future, Reported sightings are recorded along with mile marker, time, species, and number of individuals. Done over time, by local residents as they travel State Hwy. 133 will reveal a more complete picture with regard to wildlife activity in the valley. Recent sightings of a lynx (Dorais Rd.) and a bighorn lamb (Filoha) have occurred during August 2006. Historical sightings are also helpful, such as goat sightings west of the North Redstone bridge on the cliffs. **Appendix S**

ROARING FORK WATERSHED BIOLOGICAL INVENTORY facilitated by the Colorado Natural Heritage Program.(CNHP) Within the Crystal River drainage are seven Potential Conservation Areas, **PCA'S**, as identified by the CHNP. These are areas of imperiled and rare species of plants, animals and plant communities, including **PCA Updates** in 2005.(2)

COLORADO DIVISION OF WILDLIFE (CDOW) Wildlife Resource Information Systems (**WRIS**) species activity mapping.(**SAM**) Pitkin County GIS office

COLORADO DIVISION OF WILDLIFE: Colorado Inventoried Roadless Areas; Information for Colorado Task Force Deliberations; High Priority Habitat Activity Areas.

COLORADO DIVISION OF WILDLIFE-Impact Evaluation Process and Procedure. (3rd draft)

CRYSTAL RIVER VALLEY MASTER PLAN: In November of 2000, the Pitkin County BOCC authorized Community Development Staff to pursue the development of a Master Plan for the Crystal River Valley. The boundaries of which were roughly the same as those for the Crystal River Caucus. The plan includes history-build out analysis, caucus membership survey along with map exhibits of existing conditions, including land ownership, use, zoning, vegetation, wildlife and natural hazards. Along with associated maps and exhibits. (1).

WEST ELK TRAIL FEASIBILITY STUDY INIATIVE: Tom Newland identifies critical wildlife habitat and trail alignments impacting the Crystal River Valley.(8)

FIELD SURVEYS: Includes Field Surveys of plants and animals by Dr. Dave Clark (11) and field survey reports on Filoha Meadows by Jonathan Lowsky (5) and Lisa Tasker. (6)

ASPEN FIELD BIOLOGY LAB (AFBL), Stream Health Initiative – A comprehensive assessment of the stream and riparian habitat of the Crystal River. Delia Malone, Co- investigator for the **Aspen Field Biology Laboratory**. 7, R

CRYSTAL RIVER CAUCUS WILDLIFE AND HABITAT BASE MAPPING.

ROARING FORK AUDUBON: Bird Check list for the Roaring Fork Valley

Caucus Wildlife Task Force

**CRYSTAL RIVER HERITAGE - WILDLIFE AND HABITAT
EXISTING CONDITIONS (1)
REGIONS**

EXISTING CONDITIONS	Lower Valley	Mid-Valley	Upper-Valley
Elevation Gradients (gain/loss)	6,300' – 6,400' (100')	6,400' – 7,100' (700')	7,100' – 7,500' (400')
Length of Region	1-mile	9-miles	6-miles
Mile Markers (m/m)	63 to 65	53 to 62	46.5 to 53
% Built-out (developed)	25%	80%	60%
Ownership (private/public)	90/10	60/40	40/60 Estimate
Fragmentation /Impacts on natural habitat)	Low (Parcels) Hwy. 133	High (5-Subdivisions) Hwy. 133	Low(47-50)Very High(53-56) (3 – subdivisions) Hwy. 133 Redstone Community (Castle Property, roads) Firehouse/Sanitation Plant (Red. Blvd. To North Br.)
	<u>Lower Valley</u>	<u>Mid-Valley</u>	<u>Upper Valley</u>
Hwy.133 Impact	Stream Channelization;	Riparian plant loss	Introduced Species
Natural Hazards	Flood Plain (100 yr.)	Rock Fall Mud flows alluvial fans	Proposed trail on alluvial fans & flood plain(100 yr)
Mining Impacts	None	High- Avalanche Cr.	Historic
Grazing Impacts	Some	High- Filoha Meadows	Some – Placita

EXISTING CONDITIONS ASSESSMENT- (Highlights)

The elevation gain/loss over the 19 mile valley floor is approximately 1,200'. There are initial steep gradients as you come out of the Placita panel, 6, and as you come out of the Redstone Panel 5. A narrow down cutting channel results in high velocity water on entry into the Panel 4 area.

The greatest potential residential build out is in the lower valley. The greatest amount of private ownership in the corridor is in the LOWER three miles. The narrow valley and steep slopes, (greater than 30%), impose development constraints. The greatest fragmentation of the natural environment occurs in the Mid and upper valley regions,(Ranch Acres to the North Redstone Bridge Entrance.) Highway 133 and the old railroad platform have had and continue to have the greatest degrading impact on the riparian and stream habitats of the Crystal River. 7

1, Crystal River Master Plan, Volume 1, 2003 7, Stream Health Initiative

Caucus Wildlife Task Force

APPENDIX H

SUMMARY OF OPINION SURVEY (Approved by the Master Plan Task Force, May 10, 2001)

BASIS OF CORE VALUES

- Significant support exists to encourage safety improvements on State Highway 133, reduce highway noise, and for the **inclusion of a bike path within the existing highway right-of-way.**
- The protection of the State Highway 133 **view plane** is broadly supported together with wildlife habitat.
- The **Rural character** of the Valley should remain substantially unchanged.
- **Preservation of open space, rural character and wildlife habitat have strong citizen support. Open space objectives also received broad overall support.**
- Minimum stream flows and water quality on the Crystal River are broadly supported.
- The use of **off-road motorized vehicles** and extractive industries should not be **allowed on public lands** within the Crystal River Valley planning area.
- The current **recreational needs of the valley residents are being met**, and expanded recreational businesses and/or facilities would not be supported.

- Future development in the Valley should be limited to single family homes.
- Residents support a housing size cap.
- Support for the inclusion of caretaker units in the Crystal River Valley was inconclusive.
- The current rate of growth with the Crystal River Valley planning area (approximately 2%) is acceptable and the use of growth controls in the Crystal River Valley planning area appear to have good support.
- The concept of the use of TDR's in the Crystal River Valley is broadly supported.
- Affordable housing does not have significant support.
- Additional commercial development in the Crystal River Valley planning area is not supported with exception of limited commercial activity to assist the agricultural community and small cottage industries.
- Using a range of tools, steps to ensure continued agricultural uses in the Valley appear to have broad support.
- The pursuit of a master plan for the Valley has strong support.
- There is very strong support for the preservation of historical, cultural and archaeological sites.
- Potential ridership for RFTA service between Redstone and Carbondale would not be well utilized and probably not sufficiently to warrant service to the Crystal River Valley

APPENDIX J
CRYSTAL RIVER - POTENTIAL CONSERVATION AREAS
PCAs

In 1996 the CNHP undertook a 3 year project to do a complete assessment of the natural heritage values within the Roaring Fork Watershed. Pitkin County facilitated this project with grants awarded from Great Outdoor Colorado and local jurisdictions. The primary goal was to identify the locations within the Roaring Fork Watershed with natural heritage significance. Fifty-five (55) areas were located, of which, seven (7) were proximal to the Crystal River Valley and within Pitkin Co. These areas are referred to as Potential Conservation Areas or (*PCA's*), The seven are within or immediately adjacent to the Valley and contained within them are targeted rare and imperiled biological species and communities. They may be imperiled globally or statewide on a critical, rare, vulnerable, or secure basis. The following is a summary of Crystal River occurrences: (2)

The *Avalanche Creek PCA* affords spectacular views of Mt. Sopris, and includes one of the most intact stretches of riparian vegetation along the lower elevations of the Crystal drainage. It is ranked 3rd out of 55 PCA's for biological diversity within the RF watershed. The riparian vegetation includes a mosaic dominated by **Narrowleaf cottonwood, blue spruce, and alder community**, state rare.. Within this high quality riparian vegetation, the imperiled, **canyon bog orchid** was found as well as the globally-vulnerable **globe mallow**, (critically imperiled). The **Colorado Cutthroat**, state vulnerable, was documented in this drainage in 1993. The adjacent upland areas support mixed shrublands of Gambel's Oak and mountain mahogany and a woodland of Douglas Fir and Oak.. The Bulldog Creek falls provides nesting habitat for a **Black Swift bird breeding colony** (Vulnerable). This area is one of five locations in the RF Watershed that supports a rare orchid subspecies and one of two known occurrences of the *globe-mallow* for the watershed. The **Avalanche Creek PCA** is rated with one of the highest biodiversity ranks in the watershed. *Protections* are recommended because of developments associated with recreation and mining uses. *Management* is recommended and includes weed control, restoration efforts, and **restricted recreation access**. The CNHP has also designated **Penny Hot Springs**, with its railroad grade habitat linkage to Avalanche Creek, an area of **special interest** due to a maternity roost of Townsend's big-eared bat pale ssp, (USFS "S", sensitive species) and suspected tiger salamander, Fox sparrow, Dwarf shrew, Northern leopard frog, and Peregrine falcon, (all sensitive or state species of concern.. Also found at Penny Hot Springs is the rare little beaked spikerush, *Eleocharis rostellata* and *fireflies*. (Tasker) Total acreage is 4,672 acres. This PCA has a *Very High Biodiversity Significance and ranks #3 out of 55 Roaring Fork Watershed PCAs*.

McClure Pass PCA – This PCA includes a total of 2,174 acres ranging in elevation from about 8200' to 9600' and contains extensive aspen with bracken fern in the understory. A mixed shrubland dominated by Gambel's Oak, serviceberry, snowberry, chokecherry, Wood's rose and small rock outcrops support the globally-vulnerable **Grand Mesa penstemon**, endemic to Colorado and known in only 37 locations world-wide. The large flowered globe mallow may also exist here, but has not been seen since 1954. This is the only known location in the watershed for a bird species, the **Purple martin**, and its response to disturbance depends on the time of the breeding season. A buffer should exist at that time. Aspen harvesting and a proposed recreational bike trail will threaten this area. Management actions should include restricted recreation access, weed control and restoration. This PCA has *high biodiversity significance*.

Crystal River PCAs

The **Big Kline Creek PCA** drains into Ranch Acres subdivision near Redstone. Big Kline Creek flows northwest into the Crystal River. Riparian vegetation in this area support a globally -vulnerable plant community dominated by the **blue spruce and alder**. Other associates include narrowleaf cottonwood and mountain lover. A total of 508 acres are included and the elevation ranges from 7400' to 9600'. Protection and management urgencies are low. This PCA has a **high biodiversity value**

The **East Creek PCA** flows west from its headwaters over approximately a four mile distance to its confluence with the Crystal River at Redstone about 7200' and contains 1620 acres. The creek flows through a landscape dominated by a Gambel's Oak shrublands, aspen, Douglas Fir, dogwood, and red sandstone outcrops. Here resides a **state-rare** riparian community characterized by **Douglas fir and dogwood**. This community supports mixed shrub species including snowberry, Drummond's Willow, mountain ash and alder. Management actions recommended for this area mainly include implementation of an exotic plant removal program. This PCA has a **Moderate biodiversity significance**.

Middle Thompson Creek PCA – The headwaters of Middle Thompson Creek flow east into Pitkin County down to about 6300' at its confluence with the Crystal River and containing 17,431 acres. This area is characterized by rolling hills with open parks, ridges and summits, and mature riparian forests. The vegetation includes narrowleaf cottonwood with blue spruce and alder, a state- moderately vulnerable plant community. They are allied with a diversity of other species including Douglas Fir, Rocky Mountain Maple, thimbleberry, dogwood, and mixed forbes. The adjacent upland areas support pinyon pine/juniper woodlands, and a mixed shrubland of of bitterbrush, snowberry, Gambel's Oak, serviceberry and mountain mahogany. Patches of sagebrush and scattered Ponderosa pine inhabit the area. The Assignment area immediately south has been evaluated as a potential Research Natural Area for the White River National Forest. (Lyon 1995) The Colorado River cutthroat trout has been documented in this PCA. It is considered Sensitive by the USFS and is on the State Special Concern list. This area is a probable breeding location of the Boreal Owl, a state-rare species. There is also an occurrence of a Northern Goshawk nest here. Recreational development is a definable threat to this PCA. Recommended management actions include weed control and restricted recreation access. This PCA has a **Very high biodiversity significance**.

Crystal River at Potato Bill Creek PCA - A total of 21 acres are included with this PCA at an elevation of approximately 6400' and located just up stream from the BRB campground and the confluence of Potato Bill Creek with the Crystal River. The riparian vegetation in this small area is dominated by narrowleaf cottonwood , coyote willow, yellow willow and sedges. Within this small riparian area between the highway and the Crystal River the rare *canyon bog orchid* was found in good condition. This is the **largest** occurrence of this species documented in the Roaring Fork Watershed. **Management actions** that address impacts of road maintenance and the proposed recreational bike trail are needed to maintain this occurrence. This Crystal River PCA has a **Moderate biodiversity significance**.

2 – The Roaring fork Watershed Biological Inventory. April 1999, prepared for Pitkin County, the Aspen Wilderness Workshop, and the Roaring Fork Audubon Society. Updated June, 2005.

APPENDIX K

ROARING FORK AUDUBON - BIRD CHECK LIST

(Edited for Crystal River Valley)

GEESE, SWANS, DUCKS – Canada goose, Mallard, Blue-winged teal, Cinnamon teal, Green-winged teal, **GROUSE & TURKEYS** – Blue-grouse, Wild turkey, **VULTURES** – Turkey vultures **EAGLES AND HAWKS** – Bald eagle, Cooper's hawk, Ted-tailed hawk, Golden eagle, American kestrel, **PLOVERS** – Killdeer, **SANDPIPERS** – Spotted sandpiper, Wilson's snipe, **PIGEONS & DOVES** – Rock dove, **OWLS** – Great horned owl, Northern Saw-whet owl, **NIGHTJARS** – Common Nighthawk, **SWIFTS** – (**Black swift**) **HUMMINGBIRDS** – Black chinned hummingbird, Broad-tailed hummingbird, Rufous hummingbird **KINGFISHER** – Belted kingfisher **WOODPECKERS** – Lewis's woodpecker, Downy woodpecker, Hairy woodpecker, Northern flicker, **JAYS, MAGPIES, CROWS** – Gray jay, Stellar's jay, Black-billed magpie, American crow, Common raven **SWALLOWS** – (**Purple martin**), Violet-green swallow, Barn swallow, Cliff swallow **CHICADEES, TITMICE** – Black-capped chickadee, Mountain chickadee, **DIPPERS** – American dipper **THRUSHES** – Mountain bluebird, Townsend's solitaire, American robin **WARBLERS** – Yellow warbler **TANAGERS** – Western tanager, **SPARROWS** – Chipping sparrow, Vesper sparrow, Song sparrow, Lincoln's sparrow, White-crowned sparrow, Dark-eyed junco **GROSSBEAKS** – Black-headed grossbeak **BLACKBIRDS** – Red-winged blackbird, Brewer's blackbird **FINCHES** – House finch, Pine siskin, American goldfinch **WEAVERS** House sparrow

Reference: Bird Checklist for the Roaring Fork Valley, Roaring Fork Audubon, 2005

December 19, 2006

To: Crystal River Caucus Wildlife Task Force

From: **John Seidel, Former Area Director, CDOW**

Re: The sustainability of seasonal closures and their effectiveness

My experience with trail closures is limited but I do know that enforcement of road and trail closures and restrictions are difficult. Enforcement of regulations where there is no obvious victim get low priority from government agencies. The Forest Service has not been able to enforce closures to motorized vehicles in roadless or wilderness areas. These locations are too remote and agencies do not have the budgets or personnel to enforce them. They are physically difficult to close. Violation on Federal Land end up in Federal Magistrate court in Grand Junction where the maximum fine is usually \$50 and charges are often dismissed due to time constraints by prosecutors and court schedules. Would violations of Crystal Valley trail seasonal closures be put through Pitkin county courts? They are also full and have little time for these types of violations where there is no victim and no obvious damage. Judging from the letters to the editors they have difficulty enforcing leash laws on the Rio Grand Trail in the center of Aspen. It might be necessary to ask the Pitkin County Courts and District Attorney if they would diligently prosecute these types of violations. The DOW has had difficulty getting compliance on closures to protect winter range in the Christine State Wildlife Area and the Avalanche Creek Bighorn sheep closure. If the proposed trail is placed on the east side in the Avalanche/Floha Meadows/Placita winter range habitats, their value to wildlife would be compromised and reduced in value if violations occur. In these locations there is no alternative area or habitat that these animals can move to if displaced from these historic ranges **John Seidel**

SUMMARY: 1. Enforcement, where there is no victim or obvious damage, get low priority. 2. Locations are remote and budgets and personnel are not sustainable. 3. Difficulty of enforcement through courts. 4. No alternative locations for animals on the east side of the Crystal River.

December 20, 2006

To: The Crystal River Caucus Wildlife Task Force

From: **Kevin Wright, Former Crystal River Wildlife District Manager**

Re: The effectiveness and sustainability of seasonal closures

My experience with seasonal closures is that they look good on paper but are very difficult to monitor and enforce. They will not work unless there is very active and aggressive enforcement. There will be a lack of funding for enforcement and the Open Space in the Crystal Valley is quite removed from Aspen. How often would they get over to enforce and then would it just be a verbal warning? Unless you hit people in the pocket book, warnings do little. If enforcement is not consistent, all it takes is just a few violations to change and impact big game winter range use. Winter range is limited and we need to strive to minimize any impacts. The area of Avalanche Creek through Penny Hot Springs is critical and cannot receive disturbance during the winter months. I have tried seasonal closures at various locations such as Avalanche Creek, River Valley Ranch, Rio Grand trail (seasonal and dog restrictions), and in areas of various subdivisions adjacent to winter (cont'd)

Caucus Wildlife Task Force

(cont'd from 38)

ranges. In every case, the success has been compromised or enforcement basically nonexistent. I use to have people go up to the Avalanche Creek closure and leave their pop and beer cans right in the middle of the bait site, for lung worm medication, just to let me know they were there. People were always taking their dogs in after I left in the morning from working with the sheep. Constant violations on dog restrictions. People don't pay much attention to signs or gates. There are people who will respect and abide by closures, but many do not and where limited winter range exists in a narrow valley, there are not alternate locations for the wildlife to move to. There has been success at Aspen Glen with the bald eagle closure. Most people have bought into it. A test of closures will be the new section of Rio Grand Trail from Catherine to River Bottom Ranch. Their present signs and gates look good. Time will tell. Closures are generally respected at first, but over times it diminishes as people administering it change. Also, directions from public agencies change. Once a trail is there, down the east side of the Crystal, it will never be removed and will be increasingly used. Impacts may last forever. We have to ask the question, what's more important, a new trail so people can hike and bike, or preservation of habitat and the wildlife that depend on it? Do people want to see and know that Bighorn Sheep are there and will continue to be there or do they want a new trail when there are so many trails already?

Kevin Wright, District Wildlife Manager

SUMMARY: 1. Seasonal closures look good on paper but have not been sustainable because of budgets for enforcement and monitoring. 2. The Crystal Valley is far removed from Aspen and without aggressive enforcement they will not work. Violations of winter ranges are magnified by the limited amount of winter concentration space. 3. Closures seem to work for a while but people and enforcement change and there is little margin for error. 4. Once the trail is down the east side of the Crystal, habitat is probably lost forever.

Date: December 26, 2006

To: Crystal River Wildlife Task Forces

From: **John Groves, CDOW, District Wildlife Manager, current**

Re: The sustainability of seasonal closures and their effectiveness.

I agree with John and Kevin. Trail closures and road closures are seldom enforced. Without enforcement they re mostly ignored. In my limited time in the area I have seen many problems with the current closures in the Crystal River Valley and the lack of enforcement. Last winter I contacted a couple and their dog hiking into the closure area above the bighorn bait site. Needless to say they ran off the 12 sheep I was watching that morning. After contacting them I discovered one was from Swiss Village. Today I hiked onto Red Wind Point to look for sheep and found a major trail packed into the snow from people and dogs, leading from Crystal River Country Estates. My point is that it is often the residents of the area that are violating the existing closures. The proposed trail would bring in more people and problems, but the residents need to be the first ones to abide by the existing closures. It makes my job much easier when there in an informed group within the community speaking together rather than a single voice. **N John Groves, DWM**

SUMMARY: 1. Enforcement of closures are difficult. 2. Local residents are often the violators. 3. The proposed trail will bring in additional problems with enforcement.

N, Letter, Pat Tucker, Area supervisor, CDOW, on the effectiveness of winter closures, Caucus Wildlife Task Force

APPENDIX N

STATE OF COLORADO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE

Russel George, Director
6060 Broadway
Denver, CO 80216

December 19, 2003

Dale Will, Director
Pitkin County Open Space and Trails
530 E. Main, Suite 301
Aspen, CO 81611

RE: Public Access at Filoha Meadows /Penny Hot Springs

Dear Mr. Will

I've received your December 3rd letter asking for clarification on the Division of Wildlife's position regarding public access at Filoha Meadows/Penny Hot Springs. I've talked with DWM's Justin Martens and Kevin Wright about this issue and appreciate the opportunity to clear up any confusion that may exist about this matter. We recognize the position that Pitkin County is in trying to balance the competing uses desired for this property.

I believe the following points help to frame the following discussion: For nearly 15 years the Division has consistently advocated protecting this important wildlife area, as evidenced by various correspondence with interest groups and Pitkin County; the Division of Wildlife's February 25, 2002 letter in support of the GOCO proposal was based entirely on protecting this critical area for wildlife; this bighorn sheep herd is also a special species of concern for the USFS and lastly, we believe a viable alternative exists to accomplish the trail connection without impacting wildlife.

BACKGROUND

DWM's Kevin Wright and Justin Martens have documented bighorn sheep traveling along the railroad corridor between Penny Hot Springs and lower Avalanche Creek from as early as August to as late as June. This area is crucial for bighorn due to the adequate escape cover provided by the rock slide and cliffs to the east, the mineral rich grounds provided by the natural hot springs and the effective buffer of the Crystal River from vehicle and other human caused disturbances. Bighorn sheep are very susceptible to stress related illness and the combination of these attributes in this area makes it an ideal winter use area for the sheep. These sheep also use the area just across the river from the hot springs as a breeding and rutting area, which typically occurs between late November and late December.

DECLINE IN BIGHORN SHEEP LAMBING

Over the past few years, there has been a noticeable decline in bighorn sheep lambing for the Avalanche Creek/Penny Hot Springs herd. Last year, Justin Martens documented one lamb out of 28 sheep in the Avalanche Creek drainage and one lamb out of 26 sheep in the Penny Hot Springs. This winter to date, one lamb has been seen in Avalanche Creek and two lambs have been documented in Penny Hot Springs. While the cause for this decline is undetermined, careful consideration must be taken to avoid further detrimental impacts to the bighorn herd in this area.

WINTERING ELK

In addition, this area has traditionally been used by wintering elk throughout the late winter and into the spring. Jonathan Lowsky, Pitkin County Wildlife Biologist, documented three elk calves in the wetland areas west of Filoha Meadows this past spring. While elk are more adaptable than bighorn sheep to disturbance, elk calving is a very sensitive time for both cow elk and their calves. Calving usually occurs between May 15 and June 15, depending on the location and altitude. During this period, exhausted cow elk and fragile calves are susceptible to predation and higher levels of stress. It is critical that cow elk and calves are not disturbed during this period.

A VIABLE ALTERNATIVE

We believe that a viable alternative exists which would allow for the trail connection across Filoha Meadows but would have much less of an impact on wildlife. This alignment would be along Highway 133 on the west side of the Crystal River through this area. This route would allow hikers and bikers to enjoy the scenic qualities and wildlife diversity of this area all year round with a minimal disturbance to wildlife using this area. This trail could also be open year round instead of the very limited time frame that a railroad right of way trail would allow for.

EDUCATIONAL OPPORTUNITIES FOR THE PUBLIC

Educational opportunities also exist with the development of the proposed nature trail. We believe a nature trail behind the Filoha Meadows cabins could provide the public with an educational experience and access to the beaver ponds blind. This MINIMAL impact trail could provide a valuable experience to wildlife viewers and educators. While being limited in duration and season of use. This would need the permission of the adjacent landowner for access.

We believe that this alignment and limited access educational trail would provide for the needs of trail users and their expectations as stated in the GOCO grant proposal while protecting wildlife, also a component of the GOCO proposal, and should be carefully considered as a viable and preferred alternative.

I would like to explain what I believe caused the confusion about the Division's position. The Division is usually a technical adviser representing wildlife and in this role we provide recommendations to the controlling entity. Our FIRST and FOREMOST recommendation to Pitkin County IS NOT TO BUILD A TRAIL IN THIS LOCATION due to wildlife impacts, foreseen problems and the existence of an alternate route. However, we recognize that the final decision rests with Pitkin County and, in the event the County elects to DEVELOP a trail here, the DOW strives to come up with effective mitigation measures to protect wildlife.

IT REMAINS OUR PROFESSIONAL JUDGEMENT THAT DEVELOPED TRAIL ON THE RAILROAD RIGHT OF WAY WOULD BE DETRIMENTAL TO WILDLIFE and, for all the reasons above we strongly urge that it not be built here. However IF, for other reasons, the decision was made to build the trail here, then the following recommendations should be implemented to protect the wildlife values of the area.

*Limited trail construction, if needed should only take place between June 16th and September 1st.

*Dogs would not be allowed on the trail at any time.

*Locked gates, fencing, and sign-age would be installed on all access points to public of seasonal closures and dog prohibition.

APPENDIX N (cont'd)

*A winter closure to reduce impacts on bighorn sheep and elk from November 15th to June 30th. If elk calving is not to be protected, the closure should be from November 15th to March 31.

*Strong enforcement with stiff penalties should be adopted.

*If non compliance becomes an issue, Pitkin County and the Division should review this arrangement and make the necessary changes, which could include complete closure.

TRAIL CLOSURES ARE INEFFECTIVE AND UNENFORCED

There is a strong cautionary note in the above recommendations. While we believe these are necessary to protect wildlife if the trail is built on the railroad right of way, the Division has serious reservations about the effectiveness of such provisions. (Past experience with agreeing to trail closures has shown them to be ineffective and unenforced. Even if only a FEW people choose to violate a closure, impacts to wintering wildlife occur and over time will force these animals to move out of their preferred area, which could ultimately affect their recruitment and/or survival. Enforcement in this area is complicated by the remoteness of the location and the lack of enforcement personnel dedicated to it. There are several local examples where, in the beginning of the project, a seasonal closure was committed to wildlife protection but later became compromised due to a lack of compliance from users and a lack of enforcement actions to the violators.

I believe the above statements are consistent with past comments we've made on the area and our letter of support to GOCO as well as comments made by both DWM Kevin Wright and DWM Justin Martens. Thank you for the opportunity to clarify our interest in this important matter.

These comments were based on the GOCO grant submittal made by Pitkin County. If plans have changed from what was represented in that grant, or other ideas are being considered, please contact DWM Justin Martens for additional comments.

Sincerely,

Pat Tucker
Area Wildlife Manager

Cc: Kevin Wright, Justin Martens
Pitkin County, Jonathan Lowsky
GOCO, Wally Picone
file

ORIGINAL LETTER ON FILE

APPENDIX N-1

To: Planning and Zoning commission
From: Mary Lackner, Planner
Date: December, 8, 1992

Re: Excerpt from Tabeguache Development Application
(at Penny Hot Springs) on the Crystal River (Filoha Meadows)

MID-CONTINENT RAILROAD RIGHT OF WAY THROUGH PENNY HOT SPRINGS

The applicants are still in negotiation with Mid-continent's legal counsel with regard to the purchase of the old right-of-way through lots C and D. Because Mid-Continent has filed for bankruptcy, it is a debtor in possession with the right to sell this property. The only problem which has arisen is that Mid-Continent counsel has been approached by Mark Fuller, on behalf of the County Parks and Open Space Board. This issue needs to be discussed with the Planning and Zoning Board which stated at its first hearing that **IT WOULD RECOMMEND THAT NO TRAIL BE PLACED THROUGH THE PROPERTY BECAUSE OF POTENTIAL WILDLIFE AND VISUAL IMPACTS.**

APPENDIX N-2

SUBJECT: Tabeguache 1041 Hazard review for Penny Hot Springs development.

To: Planning and Zoning Commission
From: Mary Lackner
Date: 1992

Although the applicant's geologist has indicated that hazards to home site A from the alluvial fan can be mitigated, the staff opinion is that these hazards should be avoided if possible. Section 5-401.2 (b) of the Land Use Code states:

“No DEVELOPMENT or ACTIVITY shall be permitted in a geologic hazard area which would subject occupants or USERS of the area to hazardous conditions ; create or worsen such conditions affecting other developments, activities, and lands; subject other persons or the County to dangers or expenses required to mitigate such hazardous conditions, respond to emergencies created by such conditions, or rehabilitate the improvements, activities and lands.”

ORIGINAL ON FILE

APPENDIX N-4

MEMORANDUM

DATE: February 2, 1993
TO: Planning and Zoning Commission
FROM: Mary Lackner
Re: Tabeguache Ranch 1041 Amendment (Excerpt)

The neighboring parcel to the south, Filoha Meadows, was approved for construction of five resort cabins in 1991. The applicant originally proposed development for two cabins on the eastern side of the river. However, based on concerns to WILDLIFE and the difficulties associated with emergency vehicular access to the east side of the river, the Planning Commission requested the applicant submit a modified developemnt plan clustering all development on the WEST SIDE of the Crystal River. Filoha Meadows was subsequently approved with ALL development on the west side of the river.

ORIGINAL ON FILE

APPENDIX O

The acquisition of Open Space in the Crystal River Valley

As the core value states, “We value the preservation of open space, wildlife habitat, the highway view plane and water quality.” The Caucus applauds the Open Space and Trails (OST) Department for conservation easement land acquisitions including portions of the old railroad grade. The Crystal River Valley Caucus is grateful for this use of our tax dollars and we are supportive for the Great Outdoors Colorado grants and trades for land preservation. It is necessary that these acquisitions have management plans. Placing the signage and closures as required by the previous owner, at Filoha Meadows, was wise and that period of closure, is about to run out. Management plans must be consistent with the announced reasons for making the land acquisition. The purchase of relatively undisturbed lands to “protect” wildlife and habitat should not employ management plans that contradict those announced intentions resulting in a net loss for wildlife and open space through seasonal closure mitigation.

APPENDIX P

**See Heritage Areas Mapping P1 – P6
(pages 21-26)**

APPENDIX Q

Section 7.0 Transportation Goal and Objectives to achieve that goal. Crystal River Master Plan.

The **goal** of the Crystal River Master Plan Transportation section 7.0, adopted 12/13/01, is stated as follows: **“To provide for the inclusion of a bike path within the existing highway right-of-way (ROW) on highway 133 and other county roads.”** Three objectives then follow to achieve the stated goal: **7.2** - “work with the Colorado Department of Transportation (CDOT) to create a paved bike path within the (ROW) and provide paved shoulders on the highway.” **7.3** - “support the consideration of new non-motorized trails that provide connections between existing trails within and outside the Crystal planning area.” **7.4** - “work with Pitkin County and the CDOT to pursue, where appropriate, an off-road bicycle pedestrian path paralleling highway 133. The last objective may have difficulty supporting the stated goal, the “appropriateness” of incursion into lands isolated and undisturbed since 1942, when the railroad grade was abandoned. Lands now home to significant populations of elk, deer and bighorn sheep.

Caucus Wildlife Task Force

**CRYSTAL RIVER RIPARIAN AND STREAM HABITAT
STREAM HABITAT ASSESSMENT(7)**

Stream Habitat Parameters 1. Substrate Cover (0-20); 2. Embeddedness (0-20);
3. Velocity/Depth (0-20); 4. Sediment Depositions (0-20); 5. Channel flow (0-20);
6. Channel Alteration (0-20); 7. Riffle Frequency (0-20); 8. Bank Stability (0-20);
9. Bank Vegetation Protection (20); 10. Riparian Zone Width (20)

(Panel #)	m/m	STREAM HABITAT PARAMETERS										(Assessment)		
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	TOTAL	Habitat Quality	
(6)	(Reach) Placita													
	1 (47 to 48)	16	18	16	16	16	16	19	15	14	16	162/260	High	
	Ranch Acres													
	2 (48 to 50)	13	13	16	10	16	8	18	16	5	7	122/260	Poor	
(5)	Redstone													
	3 (50 to 53)	13	15	16	9	9	9	16	14	10	9	120/260	Poor	
(4)	North Bridge													
	4 (53 to (54)	16	13	16	15	16	11	18	12	11	12	140/260	Fair	
	Filoha													
	5 (54 to (55)	11	16	14	13	16	12	15	16	13	14	140/260	Fair	
(3)	Avalanche Cr													
	6 (55 to 57)	15	16	16	11	18	10	17	7	7	9	126/260	Poor	
	7 (57 to 58)	11	16	15	9	10	8	16	8	4	8	105/260	Severely Degrade	
(2)	Perham Cr													
	8 (58 to 62)	11	16	15	10	15	9	16	11	9	9	121/260	Poor	
(1)	BRB Resort													
	9 (62 to 65)	11	13	15	8	14	11	13	10	10	10	115/260	Severely Degrade	

RIPARIAN HABITAT ASSESSMENT:

Riparian Habitat Parameters 1. Stream Incisement (0-8); 2. Lateral Cutting (0-6); 3. Stream balance (erosion/deposition) (0-6); 4. Sufficient bank soil (LB 0-3)(RB 0-3); 5. Streambank vegetation composition (LB 0-6)(RB 0-6); 6. Weeds (LB 0-3)(RB 0-3); 7. Disturbance caused undesirable plants (LB 0-3)(RB 0-3); 8. Woody species establishment and regeneration (LB 0-8)(RB 0-8); 9. Browse utilization of trees and shrubs(LB 0-4)(RB 0-4); 10. Vegetation cover in the Riparian flood plain & Streambank zone(LB 0-8 (RB 0-8); 11. Riparian energy dissipation (LB 0-6)(RB 0-6)

(Panel #)	(Reach) (m/m)	RIPARIAN HABITAT PARAMETER S										(Assessment)		
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	TOTAL	Habitat Quality
(6)	Placita													
	1 (47 to 48)	6	4	4	3	6	1	1	8	4	7	5	49/61	Good
	2 (48 to 50)	8	4	4	2	6	1	0	4	3	2	2	36/61	Poor
(5)	Redstone													
	3 (50 to 53)	4	3	4	2	6	1	0	8	4	2	3	37/61	Poor
(4)	North Bridge													
	4 (53 to 54)	4	3	4	2	6	2	2	8	4	4	4	43/61	Fair
	Filoha Meadows													
	5 (54 to 55)	6	4	4	3	6	2	2	6	4	5	4	45/61	Fair
(3)	Avalanche Cr.													
	6 (55 to 57)	8	3	4	2	6	1	1	8	4	2	4	43/61	Fair
	7 (57 to 58)	2	2	2	2	6	0	1	4	4	2	2	27/61	Severely Deg rated
(2)	Perham Cr.													
	8 (58 to 62)	6	2	3	1	6	1	2	8	4	2	3	38/61	Poor
(1)	BRB Resort													
	9 (62 to 65)	6	2	2	1	6	2	0	4	0	2	2	29/61	Severely Degraded
(7)	Aspen Field Biology Lab Stream Health Initiative, Delia Malone													

Caucus Wildlife Task.

APPENDIX S

CRYSTAL RIVER WILDLIFE AND HABITAT
SPECIES SIGHTING PROJECT

OBJECTIVE

To encourage increased awareness and appreciation of our valleys wildlife and to assist the Task Force and Division of Wildlife in identifying species and habitats of concern within the Crystal River corridor and Pitkin County. Expands and updates CDOW Species Activity Mapping

SIGHTINGS OF VALUE

All mammal and bird sightings along highway 133 and both sides of the Crystal River. Large mammal species, elk, deer, big horn, lion, bear, coyote, etc. Bird species, grouse, raptor species: peregrine, eagle, owl, hawk, and any large groups of birds. Record numbers and kinds. Any lambs within Big Horn populations, etc. You might note road kill locations. Any species that are collared. Dog harassment of wildlife. Reports may be mailed into 0073 Cherokee Lane, Redstone, CO or call 963-2011. A point person will compile a master record.

MILE MARKERS

Become familiar with the mile markers (MM) between the Marble turn-off (46.5) and the Garfield Co. line (65) you will learn to associate markers with landmarks. Redstone (52); north bridge in to Redstone (53); Filoha Meadows (55); Avalanche Cr. (56); Old Janeway (57); Red Wind Point (60), BRB (62) Thompson Creek (63) Use tenths in between to approximate.

LOG

NUMBER	SPECIES	(m/m)	DATE	TIME	COMMENT (reporter)

Put past sightings on the back. Think back a couple of years or so.

**CRYSTAL RIVER WILDLIFE AND HABITAT HERITAGE
SPECIES SIGHTINGS**

49

Number	Species Sighted (road kill important)	Date	Time	Mile Marker (location/ .1)	Comment Reporter Name
1	mountain goat	7/15/05	mid-day	53.5 Wild Rose Sub	Jay Engstrom high cliffs w. side
2-6	Deer (does, bucks)	11/04-09/06		53.3 Dorais Way	around Dorais home
?	Bighorn Sheep	11/15/05			John Groves DWM
6	Bighorn Sheep	11/16/05	mid-day	55.4	Running, B. Hanks
1	Deer road kill	11/17/05	evening	64.0	
Herd	Elk	11/21/06		55.0 Filoha	M. Dorais
6	Bighorn Sheep	12/03/06		55.0 Filoha	M. Dorais
15	Elk + Bighorn	12/08-10/06		55.0 Filoha	M. Dorais, 2 bulls
8	Bighorn Sheep	12/06/05	afternoon	55.1 Filoha	B. Hanks
12	Bighorn Sheep	12/12/05	3 pm	55.3 Filoha	
1	Coyote	1/11/06	morning	64.5 Co. Line	crossing field
2	Golden Eagles	1/11/06		47.0 Placita	M. Ferguson
Herd	Bighorn Sheep	2/26/06		55.0 Filoha	
1	Cow elk, rd kill	2/28/06		54.5 Filoha	
1	Golden Eagle	2/20/06		54.5 Filoha	Feeding on elk rd. kill
8	Elk	2/26/06		53.3 Dorais Way	in yard
11	Bighorn Sheep	3/02/06	4 pm	55.3 Filoha	
150-200	Deer	4/12/06	6 pm	63.8 Thompson Cr	
1	Mt. Lion	mid April		Redstone Blvd/River	Phil & Carolyn
Gaylord					
12	Elk	4/22/06	7 pm	55.2 Filoha	Some laying down
7	Bighorn Sheep	5/07/06	7 pm	55.2 Filoha	Bighorn and elk together
10	Elk	5/07/06	7 pm	54.8 Filoha	grazing
2	Deer	5/07/06	7 pm	55.0 Filoha	doe, yearling
1	Coyote	5/24/06	10 am	55.4 Filoha	gauging station
12	Wild Turkey	6/04/06	afternoon	56.5 Avalanche Cr	Janeway CG
3	Elk	6/13/06	mid-day	54.3 Filoha	Hill side
5	Elk, cows	6/20/06	evening	55.0 Filoha	standing wetlands
3	Elk	6/25/06	evening	54	
1	Lynx	7/15/06	mid-day	53.3 Dorais Way	pic. by M. Dorais
1	Mtn Lion	7/25/06	dusk	50.0 Ranch Acres	E. Engstrom
2	Bighorn Sheep	7/31/06	noon	55.0 Filoha	ewe, possible lamb
2	Bighorn Sheep	8/14/06	mid-day	54.0 Filoha	Small ewes, west side
2	Bighorn Sheep	8/25/06	morning	54.8 Filoha	yearlings? Laying down
2	Bighorn Sheep	8/29/06		55.0 Filoha	M. Dorais
2	Bighorn Sheep	9/10/06		59.0 Red Wind Pt.	M. Dorais
1	Bobcat	9/19/06	morning	56.4 Swiss Village	C. Loose, picture
1	Mtn. Lion	9/20/06	11 pm	59.4 Crystal River CE	entering (Melby)
2	Bighorn Sheep	9/22/06	noon	58.2 Perham Cr	lamb, M. Schilling
1	Mtn. Goat	9/23/06	mid-day	53.8 Wild Rose	West side on cliffs
2	Deer	10/01/06	11 pm	56/5 Swiss Village	in field
5	Mule deer	10/13/06	5 pm	53.5 Dorais Way	
3	Mule Deer	10/14/06	8 AM	53.5 Dorais Way	
3 to 6	Mule Deer	10/15,16,17,18,/06		53.5 Dorais Way	
13	Bighorn Sheep	10/27/06	1 PM	55 Filoha	
25	Elk	10/27/06	1 PM	55 Filoha	
2	Bighorn Sheep	11/7/06	2 PM	55 Filoha	
8	Mule Deer	11/7,8,13, AM/PM		53.3 Dorais Way	
2 to 20	Bighorn	11/17,18,19 20/06		55 Filoha	
30	ELK	11/17/06		55 Filoha	

20	Bighorn Sheep	11/27/06		55.0 Filoha	T. McBrayer
50 or more	Elk	11/30/06		55. Filoha	Moving herd
8	Bighorn	11/30/06		55 Filoha	
1	Mt Lion	Late Nov		Dorias Way	Positive Track Sign/Gaylords

Species Sighting's continued:

Number	Species Sighted (road kill important)	Date	Time	Mile Marker (location/ .1)	Comment Reporter Name
10-14	Bighorn	Daily sightings	12-1to 12-10	55/Filoha	Dorais
5	Elk	12/ 6	3PM	55/Filoha	
2	Bald Eagles	12/14	9AM	58	One flying low over river One perched on tree/river
1	Mt Lion	12-19		Swiss Village	Phil Haines sees sm Lion Photographed footprint
8	Big Horn Sheep	12-24	9 AM	55	
1	Bald Eagle	12-24		54	
1	Elk	12-26		53 ½	Near Highway west side
10	Big Horn Sheep	12-27	11 AM	55/Filoha	Penny Hot Springs
10-12	Big Horn Sheep	12-28		55/Filoha	Penny Hot Springs
12	Big Horn Sheep	12-29	Noon	55	
12	Big Horn Sheep	12-30	3 PM	55	
10	Bighorn sheep	(1/17/07	4:30 pm	55.0	Penny Hot Springs
6	Elk	(1/17/07	4:30 pm	55.0	Elk appeared to be eating around bait cage. the elk and bighorn were only 20 yd. Apart, 18 F 2' of snow, baiting site
2 sets	Lynx tracks in snow	1/25/07		47.0	Old McClure Pass switchbacks, Malone
6	Elk	2/25/07		54 Dorais way	1 bull, 3 cows, 1 yearling
15	Wild Turkey	3/15/07		54 Dorais way	reported by D. Malone
1+ 1	Bighorn (mountain lion)	3/15/07		55.2	lion on bighorn bait cage
19	Bighorn sheep	3/19/07		55 gaging sta.	Grazing 3:00pm
100	Elk	4/11/07		54.3	Grazing, 6:30 PM
12	Elk	4/11/07		56.0	Grazing, on cattails, A.Cr.
19	Bighorn sheep	4/11/07		55.2	South of narrows, in oaks

FRAMING THE PROJECT

OVERVIEW: An attempt to analyze the Crystal River Valley *habitat* and *wildlife* has to begin with an understanding of the physical parameters of this part of Pitkin County. We understand: (1) that valley *glacial forces* formed the valley and the terraces of the lower valley. That the uplift and intrusive forces into the area geologic column gave us the granitic West Elk mountains. (2) that the Crystal River Valley includes a wide range of *ecosystems* in a relatively short and *narrow* river valley. (3) that the river, riparian, and upland habitats are linked to provide the necessary food, water, and cover for wildlife.

LIFE ZONES change as we move south and up the valley. The *lower* valley **FOOTHILLS ZONE** of Pinon Pine, Sage, and Utah Juniper gradually elevate 1,100' through a *mid-valley transitional* mix of plant communities and we arrive at the **MONTANE ZONE** of the *upper valley* with the Spruce and Aspen. Along the way the *river riparian ecosystem* is dominated by Narrow Leaf Cottonwood. In between the two life zones, at *mid-valley*, the Ponderosa Pine, Douglas Fir and accompanying mixture of riparian and upland shrublands reflect species from both the upper and lower life zones. This blending of live zones is referred to as an **ecotone**.

ECOSYSTEMS of plants and animals interact with each other and their physical environments within these two life zones. Along the *nineteen mile* trip from the lower valley foothills life zone to the upper valley montane zone, the riparian ecosystem nearly maintains nearly the *same* cast of plant communities the *entire way*. We begin to see that *elevation* and *climate* dictate plant life which in turn determines wildlife. *Moisture* (water) availability together with *temperature* and *elevation* will tell us why living things are where they are and that very diverse compositions of plants and animals are very healthy ecosystems. Where are these critical habitats within the Crystal River Corridor?

RIPARIAN ZONES are the areas immediately next to streams. Healthy zones are wide and have diverse compositions and numbers of plants. Riparian zones make up less than 2% of the land area and yet 85% of the animal species visit and depend up on them for survival. Riparian zones facilitate *migrations*; provide *productions areas* for calving, fawning and nesting; they act as *filters* and places of *sediment deposition* and provide for the *recharging* of ground water. *Human activities*, (roads, trails, residences, gravel pits, etc.), seriously *fragment* healthy riparian habitats and negatively impact wildlife populations.

IDENTIFYING CRITICAL HABITAT that may not be "*appropriate*" for future residential or recreational *development* is a challenging task.. We need to ask the following questions.

- (1) Where are the **RESIDENTIAL** build-outs likely to occur in the Crystal Valley?
- (2) Where are the **RECREATIONAL** developments likely to occur in the valley?
- (3) What are the **EXISTING IMPACTS** on wildlife and habitat and where are they?
- (4) Where are the **WILDLIFE ACTIVITY AREAS** in the valley and what are they?
- (5) Where are the existing **CRITICAL HIGH VALUE HABITATS** in the Valley?

Caucus Wildlife Task Force

APPENDIX W

SEASONAL ACTIVITY	HERITAGE AREAS (Point Values)					
	1	2	3	4	5	6
	Thompson Cr.		Red Wind Pt.		Avalanche Cr.	Filoha Redstone Placita
IMPACT FACTORS (down)						
	BLACK BEAR					
STATUS FACTOR S (across)	2	2	2	2	2	2
FALL CONCENTRATION	4	4	4	4	4	4
TOTAL-IMPACT POTENTIAL	6	6	6	6	6	6
	CANADA GEESE					
STATUS FACTOR (est.)	1	1	1	1	1	1
NESTING AREA	4	4	4	4	4	4
WINTER RANGE	2	2	2	1		
BROOD CONCENTRATION	2	2	2	1		
FORAGING	2	2	2	2		
TOTAL IMPACT POTENTIAL	11	11	11	9	5	5
	LYNX					
STATUS FACTOR			4	4	4	4
OCCUPIED RANGE			5	5	5	5
POTENTIAL RANGE				5	5	5
TOTAL IMPACT PORTENTIAL			9	14	14	14
	BALD EAGLE					
STATUS FACTOR	4	4	4	4	4	4
WINTER RANGE	2	2	2	2	2	2
ROOST	4					
TOTAL IMPACT POTENTIAL	10	6	6	6	6	6
	BIGHORN SHEEP					
STATUS FACTOR		2	2	2	2	2
OVERALL RANGE		2	2	2	2	2
WINTER CONC.		5	5	5	0	0
PRODUCTION (Lambing)		5	5	5	5	5
WINTER RANGE		4	4	4	4	4
SUMMER RANGE		2	2	2	2	2
TOTAL IMPACT POTENTIAL		20	20	20	15	15
	ELK					
STATUS FACTOR	2	2	2	2	2	2
WINTER, SEVERE AREA	4	4	4	4	4	4
WINTER CONC. AREA	5	5	5	5	5	5
WINTER RANGE	3	3	3	3	3	3
PRODUCTION (calving)			5	5	5	5
SUMMER RANGE			2	2	2	2
HWY. CROSSING						2
OVERALL RANGE	1	1	1	1	1	1
TOTAL IMPACT POTENTIAL	15	15	22	22	22	24
	PEREGRINE FALCON					
STATUS FACTOR		4	4	4	4	4
POTENTIAL NESTING		3	3	3	3	3
NESTING AREA				5	5	
TOTAL IMPACT PORTENTIAL		7	7	12	12	7
	MULE DEER					
STATUS FACTOR	2	2	2	2	2	2
WINTER RANGE	3	3	3	3		
WINTER SEVERE AREA	5	4				
WINTER CONC. AREA	5	4				
SUMMER RANGE	2	2	2	2	2	2
Total Impact Potential	17	15	7	7	4	4

Caucus Wildlife Task Force

SEASONAL ACTIVITY	WILD TURKEY					
	PANEL AREAS					
	1	2	3	4	5	6
	Thompson Cr.	Red Wind Pt	Avalanche Cr.	Floha M	Redstone	Placita
	WILD TURKEY					
STATUS FACTOR	2	2	2	2	2	2
OVERALL RANGE	2	2	2	2	2	2
PRODUCTION AREA	1	1	1			
PERENNIAL WATER	3	3	3	3		
WINTER RANGE	3	3				
TOTAL POTENTIAL IMPACT	11	11	8	7	4	4
	MOUNTAIN GOAT					
STATUS FACTOR				3	3	3
SUMMER RANGE				2	2	2
TOTAL POTENTIAL IMPACT				5	5	5

APPENDIX W-1

COMPOSITE

WILDLIFE ACTIVITY RANKING BY PANEL (3)(4)

PANEL # Species	POTENTIAL FOR NEGATIVE IMPACT						Total
	1	2	3	4	5	6	
	Thompson Cr	Red Wind Pt.	Avalanche Cr	Floha M.	Redstone	Placita	
BLACK BEAR	6	6	6	6	6	6	36
CANADIAN GEESE	11	11	11	9	5	5	52
LYNX			9	14	14	14	51
BALD EAGLE	10	6	6	6	6	6	40
BIGHORN SHEEP		20	20	20	15	15	90
ELK	15	15	22	22	22	24	120
PEREGRINE FALCON		7	7	12	12	7	45
MULE DEER	17	15	7	7	4	4	54
WILD TURKEY	11	11	8	7	4	4	45
MOUNTAIN GOAT				5	5	5	15
Negative Impact Scores by Heritage Areas	70	91	96	108	93	90	548

SUMMARY

With the help of the Colorado Division of Wildlife Species Activity Mapping six areas can be analyzed along the Crystal River Valley, within Pitkin County. The seasonal activity of ten (10) different species can be seen. Their activities carry different values depending upon their critical nature. Different areas of the valley are used for different life sustaining activities. Applying point values to these activities allows them to be rated, High Priority Habitat Activity Areas. Jim Goodyear of the CDOW, assigns a point value to the species activity (the impact factor) and combines it with the relative imperilment point value, (status factor), of the species to arrive at a **potential negative impact** on that species by human incursion. Combining the impacts of many species in an area gives a **negative impact score for the area. High score = high negative impact.** It can be seen from the table above that the negative impact on wildlife will be greater on the areas higher in the valley. Residential and Recreational expansion will impact areas undeveloped from Red Wind Point and up on the east side of the Crystal River. Recreational trail development into Open Space, Easements, Forest, and private lands will have critical effects on Wildlife. Horizontal totals above show the relative species activity in the valley.

3, Colorado Division of Wildlife Species Activity Mapping and

4, CDOW High Priority Habitat Activity Areas For Deliberation by The Wildlife Task Force

APPENDIX W-2
 FILOHA MEADOWS -- RED WIND POINT
 PANELS 3 & 4
 WILDLIFE INVENTORY
 ACTIVITY AREA MAPPING (3) (4)(CDOW)

AREA ACTIVITY MAPPING	SPECIES	IMPACT +	STATUS =	POTENTIAL NEGATIVE TOTAL IMPACT(4)
Production				
(Calving)	Elk	5 +	2 =	7 very high
(Lambing)	Bighorn Sheep	5 +	2 =	7 very high
(Potential Nesting)	Peregrine Falcon			G5, S2B, E
Severe Winter Range	Elk	5 +	2 =	7 very high
	Bighorn Sheep	5 +	2 =	7 very high
Winter Range	Elk	3 +	2 =	5 moderate
	Bighorn Sheep	4 +	2 =	6 high
	Bald Eagle	2 +	4 =	6 high
Winter Concentration	Elk	5 +	2 =	7 very high
	Bighorn Sheep	3 +	2 =	5 moderate
Summer Range	Bighorn Sheep	2 +	2 =	4 mod-low
	Mule Deer	2 +	2 =	4 mod-low
Occupied Range	Lynx (S) (0-10)	5 +	5 =	10 very high
Fall Concentration	Black Bear	4 +	2 =	6 high
Overall Range	Mountain Lion**	2 +	2 =	4 mod-

Colorado Natural Heritage Program

G5 Secure over range S3-State moderately secure S2B- State Imperiled, Breeding
 Species Sighting Project (Appendix S) E- Endangered (Federal Status)

ASSESSMENT

COMPOSITE RANKING VALUES FOR ACTIVITY AREAS(4)
 (IMPACT FACTOR + STATUS FACTOR = POTENTIAL FOR NEGATIVE IMPACT)
 IMPACT RATING Composite Activity Score = (many species taken together)
 (1-3 Low) (4-5 Moderate) (5-6 High) (7-8 Very High)

Other Wildlife Representative Species -Wild Turkey, Fox, Coyote, Beaver, Bobcat,
 (Appendix D) for the complete list of known or suspected small mammal and bird species

IMPERILED, RARE, AND SPECIES OF CONCERN (5)

Bald Eagle (FT)(ST) Peregrine Falcon (SC) Northern leopard frog (S,SC) Townsend's big-
 eared bat pale ssp. (S) Dwarf shrew (S) Fox sparrow (S) Tiger salamander (S)
 (FT Federally Threatened) (ST State Threatened) (SC State Special Concern) (S -USFS
 Sensitive)

WILDLIFE SUMMARY and ASSESSMENT

The wildlife activity mapping provided by the CDOW makes it apparent that extremely high wildlife values exist within Filoha Meadows and Red Wind Point panels. It makes very clear that any recreational or residential expansion on the east side of the Crystal River within these panels would be very disruptive. The lower 2 miles of the Filohas Meadows panel, m/m 54-56, are clearly within the VIEW PLANE of hwy.133. The Crystal River Master Plan strongly supports the protection of this view plane.(H) The number of imperiled species within this panel is very significant and points out the HIGH WILDLIFE DIVERSITY that exists here.

Caucus Wildlife Task Force

NUMERICAL RANK (NEGATIVE IMPACT POTENTIALS)

Impact factor + Status Factor = negative impact potential

THE VALUES BELOW WILL ASSIST IN UNDERSTANDING SCORES ON PAGE 54

BIG GAME SPECIES

(scale) (vulnerability and negative impacts)

1 to 3	Low
4	Moderately lower
5	Moderate
6	Very High

SPECIES AT RISK (IMPERILED)

(scale) (vulnerability and negative impacts)

1 to 3	Low
4 to 5	Moderately low
6	Moderate
7 to 8	High
9 to 10	Very high

Impact factor – a seasonal animal activity in a defined area.

(Activities like production(calving, lambing), summer range, winter range.)

(The factors are assigned a value of 1 to 5)

Status Factor- a risk factor, (threatened, imperiled) (assigned a value of 1 to 5)

(Lynx = 5, Bald Eagle = 4, elk = 2, bighorn sheep = 2; Mountain goat = 3)

HIGH COMPOSITE IMPACT SCORE = HIGH NEGATIVE IMPACT CAUSED BY INCREASED HUMAN ACTIVITY

This page may be used to understand how composite impact scores are determined. The higher the score a species has the more impacted they would become if a road or a trail were constructed and there was increased human activity. In this report a species with a high individual impact score is highly vulnerable. A group of species negative impact scores totaled together in a heritage area like, Filoha Meadows, produces a COMPOSITE IMPACT SCORE. Filoha is 107 (The highest in the CR valley)

Data source: CDOW, High priority Habitat Activity Areas and Definitions, 2006
Deliberations for the Roadless areas Task Force.

REFERENCES

- Chronic, Halka, 1980, Roadside Geology of Colorado, Mountain Press
- Craighead, John, Frank, 1963, Field Guide to Rocky Mountain Wildflowers, Houghton, Mifflin
- Clark, Hanks, 2006, Field Notes, Crystal River Valley Plant Survey
- Colorado Division of Wildlife, Ski Area Impact, Evaluation Process and Procedure, 3rd Draft
- Crystal River Master Plan, Volume 1, 2003, Existing Conditions and Survey Results
- Crystal River Wildlife Task Force Base Mapping, Mary Lackner, Pitkin County GIS Office
- Goodyear, Jim, 2006, High Priority Habitat Activity Areas and Definitions, CDOW
- Hellmund, Paul, 1998, Planning Trails with Wildlife in Mind, Trails & Wildlife Task Forces
Colorado State Parks
- Joslin, G., Youmans, H., 1999, Effects of Recreation on Rocky Mountain Wildlife, Montana
Wildlife Society
- Kershaw, MacKinnon, Pojar, Plants of the Rocky Mountains
- Lowsky, Jonathan, Wildlife Biologist, Wildlife Resources of Filoha Meadows
- Malone, Delia, 2007, Stream Health Initiative, Habitat Assessment of the Roaring Fork
Watershed, (Draft) The Aspen Field Biology Laboratory
- Nelson, Ruth Ashton, 1969, Handbook of Rocky Mountain Plants, Dale Stuart King
- Newland, Tom, 2004, West Elk Trail Feasibility Study, West Elk Scenic Loop Commission
- Open Space and Trails Staff, Pitkin County, 2005, Red Wind Point Management Plan
- Peterson, Roger Tory, 1961, Field Guide to Western Birds, Houghton, Mifflin
- Roaring Fork Audubon, 2005, Bird Checklist
- Shaw, Richard J., Vascular Plants of Northern Utah
- Spackman, Fayette, Siemers, Murrell, Sherman, 1999, Roaring Fork Watershed Biological
Inventory, Colorado Natural Heritage Program, Colorado State University
- Tasker, Lisa, Plant Ecologist, Report for Hot Springs Ranch/Filoha Meadows
- Robbins, Bruun, Zim, 1969, Birds of North America, Western Publishing Co.
- Wildlife Resources Information Systems, Species Activity Mapping, Global Information
Systems (GIS), Colorado Division of Wildlife
Caucus Wildlife Task Force

Dedicated to Nick