

This edition of the Watershed Connection serves as the 2011 update to the San Miguel Watershed Ecological Health Report Card, issued in 2005. It provides information on watershed health in 2010, and upcoming watershed management activities for field season 2011. The updates are arranged according to report card categories: Climate Change, Water, Wildlife, and Vegetation. Additional information is supplied on open space, resource and recreation management activities, education, and sustainability.

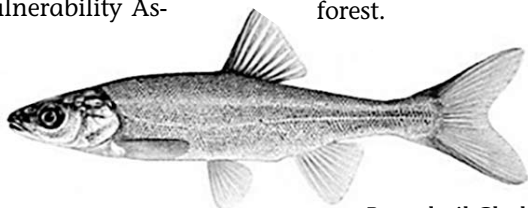
## CLIMATE CHANGE WATERSHED VULNERABILITY ASSESSMENT

The GMUG National Forest recently completed a Watershed Vulnerability Assessment (WVA) as part of a national pilot to develop methods for conducting vulnerability assessments on national forest lands. This WVA focused on aquatic resources (water uses, infrastructure, aquatic habitats and fisheries) to determine their relative vulnerability to predicted climate changes. The WVA identifies watersheds where extra scrutiny is needed to incorporate climate change

considerations into forest management.

The forest reviewed climate change predictions for the next 30 to 50 years from several different sources and models. These predictions include: increasing temperatures by 3 to 6 °F; earlier spring snowmelt and runoff by 2-4 weeks (which can be exacerbated by dust-on-snow events); more frequent and intense extreme storm events; less certain predictions of annual precipitation changes ranging from little annual change but with drier springs and summers, to much drier year round (10% decrease annually, 20% decrease in summer); and reduced snowpack below 8200' in elevation due to these warming and drying conditions. All parts of the GMUG will be

affected by climate change. Modeled results indicate that the Uncompahgre Plateau will likely see the greatest changes in both temperature and precipitation, followed by Grand Mesa and the San Juan mountains, with slightly smaller climate changes being predicted as you move east across the forest.



Roundtail Chub

Predicted changes in temperature and precipitation will affect the timing and amount of water moving

through the forest. For this assessment watersheds were evaluated based on potential for erosion or sediment production and runoff

response. Resources are most vulnerable to climate change when they occur in areas most sensitive to ex-

pected changes. The highest concentration of watersheds containing aquatic resources of concern, with the highest sensitivity to erosion or sediment production and runoff response, are found in the San Juan mountains.

By Carol Howe, USFS, 874-6647

## THE SNOWY SPRING

In recent years we have had massive dust storms and dusty snowstorms. In 2011 we experienced a little less dirty snow, mostly coming near the end of March. We were fortunate, however, to cover the March dirt with April and May snow, increasing the snowpack and decreasing the rapid runoff at the same time. Snowpack, as compared to average, increased in April and May. SW Colorado snowpack

as recorded by NRCS Snotel sites is up to 133% of long term average, and 106% average precipitation since the start of the water year 10/1/10. Lizard Head was at 92% average snowpack and 85% average precipitation on 5/22/11.

The San Miguel River experienced no major surges from low elevation melt, like 2010 when Leopard Creek and Horsefly Creek teamed for a Brooks Bridge peak of 2800 cfs. The Brooks Bridge peak flow occurred late this year on 5/14 at 1410 cfs, likely to be exceeded only modestly when the San Miguel rises in early June. In 2010 the River below Specie Creek peaked at 1969 cfs on 6/6. Expect alternating cool, wet weather with warm sunny times, as summer approaches. I am forecasting a peak of 1300 cfs on 6/8, occurring as the dirty snow is exposed.

By Jerry Greene, local climatologist



Bluehead Sucker

Threatened native fishes

## GMUG WATERSHED ASSESSMENTS COMPLETED

The USFS has taken the first steps in completing the new National Watershed Condition Framework this spring. This first step called for all Forests nationwide to classify the existing condition of 6th level Hydrologic Units, (HUC) more commonly called sub-watersheds such as Fall Creek or Beaver Creek, by using a new guide developed by the USFS Stream Systems Technology Center and Washington Office staff for Watershed, Fish, and Air.

The purpose of the classification is to categorize all 6th level HUCs containing National Forest System (NFS) lands as

either properly functioning (Class 1), functioning at risk (Class 2) or impaired (Class 3). These classes are defined by the state of the physical, biological characteristics and processes that affect the hydrology and soils supporting aquatic ecosystems. There are 12 indicators comprised of 23 components that assess the Aquatic Physical, Aquatic Biological, Terrestrial Physical, and Terrestrial Biological characteristics of the sub-watersheds.

The GMUG National Forest has completed the first step and rated all 6th level HUCs with NFS lands within Forest boundaries. The results for GMUG and other National Forests will be available on the USFS website [www.fs.fed.us](http://www.fs.fed.us) under the link for Watershed Condition Framework in June 2011. For the GMUG, no sub-watersheds were found to be in Class 3 condition, with almost 80% in Class 1 properly functioning and 20% in the Class 2 category. For the San Miguel watershed the breakdown of sub-watershed condition classifications were approximately 65% in Class 1 and 35% ranked as Class 2.

One purpose of this classification system is to help identify priority watersheds for protection or restoration. That next step of defining priority watersheds for the GMUG should be completed by September 2011 so that information can be factored into agency budgets for fiscal year 2012 and beyond to direct watershed restoration

funds to watersheds where there is additional need to protect, improve or restore watershed function.

*By Gary Shellhorn,  
USFS Hydrologist, 874-6666.*

## NRCS UPDATE

The 2011 winter snowpack in San Miguel and West Montrose Counties was generally below average during snow accumulation months (October through March). At the end of March, most of our SnowTel (automated) sites and manual Snow Courses were reading 70-80% of the 30 year average for snow water equivalent. (Snow water equivalent is inches of water in the snow pack). Thank goodness for some wet, cool weather in April and May. Consequently, our snowpack and our spring runoff projections have improved.

In light of the nuclear power plant accident in Japan, NRCS was asked to collect snow samples at the end of March and April for radiation analysis. The stated purpose is to determine if any appreciable increase in radiation can be detected within the snowpack post tsunami. Lower depths of the snowpack (snow that accumulated pre-accident), will be compared with surface layers, (snow that fell post-accident). It is unclear whether there will be any significant, measurable increase in radiation above natural background levels found in SW Colorado.

*By Jim Boyd, NRCS Norwood 327-4245.*

## TSG PARTICIPATES IN NSAA CLIMATE CHALLENGE

Telluride Ski & Golf Company (TSG) has signed up with 7 other ski areas in N. America to participate in the National Ski Areas Association, (NSAA) Climate Challenge. The Climate Challenge is a voluntary program designed to give recognition to ski areas that are committed to developing greenhouse gas inventories, setting goals for carbon reduction, implementing at least one reduction strategy per year, and reporting success in reducing their overall carbon footprint.

As a participant in the inaugural year of the Climate Challenge, TSG expects its efforts will result in measurable, quantifiable results and benefits. TSG believes that NSAA has provided a great opportunity by offering this program that includes guidance and tools to each participating ski area. The goals of the Climate Challenge include: Higher Standard: The program will raise the standard for ski areas wishing to take their sustainability performance to the next level. Long Term: The program will be multi-year, seeking to compound the benefits of actions by participants and to grow the number of participants year to year. Cost-efficient: The program will leverage the investment of participants and sponsorships to deliver more value to participants than their individual investments. Credible: Quantification of greenhouse gas (GHG) inventories, targets, and reduction measures will be developed in alignment with a credible protocol, using boundaries consistent with industry approaches. Transparent: The approach taken by the program will be transparent for participating ski areas and the public. Fair: The program will be fair, facilitating participation for ski areas of all sizes, regions, and focuses. Easy: The program will provide ski areas with guidance and tools to make participation as simple as possible. Well-recognized: The program will provide recognition for participating ski areas and for high performance.

The required elements for Climate Challenge participants include (1) building a GHG inventory for ski area operations, (2) setting a reduction target and methods for achieving this target, (3) reduce your emissions by implementing at least one greenhouse gas reduction strategy each year, and (4) report your progress. TSG is excited about the opportunity that this NSAA Climate Challenge offers and looks forward to the benefits that will result from their participation.

*By Jeff Proteau, Executive Director Planning & Sustainability, TSG, 728-7444, [www.tellurideskiresort.com](http://www.tellurideskiresort.com)*



*Watershed classification assesses aquatic resources*

Chris James



# WATER

## WILD/SCENIC UPDATE

This past winter, a subcommittee of the Southwest Resource Advisory Committee (sub-RAC) hosted a series of meetings to determine whether or not a host of river segments within the Uncompahgre BLM Field Office were suitable for designation under the Wild and Scenic River Act. The Act provides federal agencies with a way to protect the free flowing waters of rivers, and the natural and cultural values that are often present. Meetings were held in Naturita, Norwood, Placerville and Telluride and recommendations were eventually made to support Suitability on 13 of the 21 river segments. In the San Miguel watershed they include parts of Beaver and Saltado Creeks, 3 segments of the mainstem of the San Miguel, and part of Tabeguache Creek. Concerns for Suitability centered on protecting private property rights, which include current and conditional water rights vital to the agricultural and extraction industries. The Sub-RAC's recommendation was approved by the main Resource Advisory Committee in February, and now BLM will consider this recommendation as they develop their DRAFT of their larger Resource Management Plan, expected sometime in 2013.

By Peter Mueller, [pmueller@tnc.org](mailto:pmueller@tnc.org),  
728-5291w, 708-1368c.

## CDPHE UPDATE- IDARADO TELLURIDE REMEDIAION PROJECT

Success of Idarado mine remediation in the San Miguel Watershed is determined by a 50% reduction in zinc concentrations in the San Miguel River, as well as adequate vegetative cover on the tailings piles. Idarado revegetation of the Telluride Tailings piles, and remediation work in Marshall, Savage and Black Bear basins, and at the Meldrum and Mill Level tunnels, has resulted in Idarado reaching the



Wild and Scenic suitability recommended for stretches of the San Miguel

Idarado Consent Decree's performance objective of a 50% reduction of total zinc concentrations in the river. In 2010, the 52-week annual average total zinc concentration in the river was 0.30 mg/l, below the water quality performance objective of 0.336 mg/l.

Irrigation of Telluride Tailings piles occurred in July 2010 due to dry conditions. Vegetative cover is measured annually, and in 2010 exceeded requirements specified in the Consent Decree. Sampling of Telluride tailings piles during the 9th and 10 growing seasons following cessation of irrigation and fertilization will determine if Idarado has been successful in meeting performance objectives specified in the Consent Decree. Irrigation will occur if precipitation is below average between March and September. A weed management plan will be implemented to control

any weeds found on the property. Areas with low vegetative cover will be covered with 12-18" of soil and revegetated with the seed mix specified in the RAP.

The Town of Telluride, Idarado Mining Company and CDPHE are preparing an Access Agreement, which will allow Idarado access to remediate Society Turn Tailings pile #1, to be overseen by CDPHE. Preliminary site inspections, site access determination and administrative requirements commenced in 2009, with remediation to occur in a subsequent year.

By Camille Price, CDPHE, 728-5487

## URAVAN NRD PROJECT

In July, 2005, CDPHE and Division of Minerals and Geology, now known as Co. Division of Reclamation, Mining and Safety (DRMS), entered in to a contract whereby CDPHE allocated \$852,360 from the Uravan Natural Resource Damage Fund for DRMS to reclaim and safeguard abandoned, historical mine areas to benefit terrestrial and water resources and optimize riparian habitat along the San Miguel River in Montrose County.

The project was designed to remove mine wastes from intermittent drainages that flow through the site and stabilize mine wastes with vegetation to minimize wind

*For information on the Voluntary Cleanup Program: Newmire Vanadium Mine Remediation Project, call Fonda Apostolopoulos at CDPHE: (970) 692-3411. Co. Division of Reclamation, Mining and Safety*

## ACRONYMS

ARD- Acid Rock Drainage  
BLM-Bureau of Land Management  
CDOT-Colorado Dept. of Transportation  
CDOW-Colorado Division of Wildlife  
CDPHE-Colorado Department of Public Health and Environment  
cfs-cubic feet per second  
CSU-Colorado State University  
CWCB-Co. Water Conservation Board  
DRMS-Co. Division of Reclamation Mining & Safety  
EA-Environmental Analysis  
EIS-Environmental Impact Statement

EPA-Environmental Protection Agency  
GMUG-Grand Mesa, Gunnison, Uncompahgre National Forests  
MV-Mountain Village  
NEPA-National Environmental Policy Act  
NPS-National Park Service  
NRCS-Natural Resource Conservation Service  
NWS-National Weather Service  
OSC-Open Space Commission  
OS&R-Open Space & Recreation  
SMA-Sheep Mountain Alliance  
SMC-San Miguel County  
SMCF-San Miguel Conservation Foundation  
SMWA-San Miguel Whitewater Assn.  
SMWC-San Miguel Watershed Coalition

SUB-RAC-SW Resource Advisory Committee  
SWAP-Sourcewater Assessment & Protection  
SWCD-Southwest Water Conservancy District  
TI-Telluride Institute  
TLR-Trust for Land restoration  
TNC-The Nature Conservancy  
TNCC-The New Community Coalition  
TPL-Trust for Public Land  
TSG-Telluride Ski and Golf  
UCSM-University Centers of the San Miguel  
UP-Uncompahgre Plateau Project  
USFS or FS-Forest Service  
USGS-US Geological Survey  
WEP-Watershed Education Program  
WQCD-Water Quality Control Division

and water erosion, while returning the land to the beneficial uses of rangeland and wildlife habitat. The secondary scope of the project was to provide real world reclamation experience for students at Mesa State College. The initial design portion was part of an Independent Study: Uravan Waste Reclamation class held in 2006 attended by seven students.

Phase I was conducted in 2007 and included reclamation of mine wastes and safeguarding hazardous mine openings in the Eagle Basin Area. Phase I utilized \$503,256.17 of the \$852,360. A total of 9 mine waste piles were re-graded and approximately 15 acres were revegetated on BLM lands. A Mesa State student managed a reclamation project removing mine waste from a drainage channel and 2 hazardous mine openings were safeguarded. As a matching contribution, DRMS safeguarded 40 inactive mine features within Eagle Basin. Two mines were safeguarded in the process of regrading the Rex mine.

Phase II was conducted in 2009; it utilized \$97,075.82 for Site Inventory, Reclamation Construction and Project Management. A down-slope drainage channel was constructed at Rex Mine. Mine waste was relocated out of an intermittent drainage channel at Moon Beam and Republican Mines and unnamed mines near features 1-3 of the Long Park Mine Safeguarding Project. Mesa State College spent \$16,560 in Phase II for Tamarisk control, river restoration and riparian areas planting. As a matching contribution, DRMS safeguarded 27 inactive mine features within Long Park, for a matching contribution of \$47,925.

The final Phase (III) of the project began construction in May 2011. Flow from 2 intermittent drainage channels will be diverted away from draining into 2 inactive uranium mines. Uranium mine waste will be removed from intermittent drainage channels and channels will be restored to transmit flow. The amount remaining for Phase III is approximately \$240,000. BLM funded site engineering designs for a matching contribution of approximately \$30,000. Total of Matching Funds contributed by DRMS, BLM, CDOW and UMETCO Mining Company for PHASES I and II and III to date is \$396,450.67.

By Camille Price, CDPHE,  
728-5487

## COOPERATION LEADS TO HF MINE CLEANUP PROJECTS

May 2011 marks the 10-year anniversary of water quality-cleanup efforts along the Howard Fork in the Ophir Valley. In May 2001, the Trust for Land Restoration (TLR) convened and facilitated the "Howard Fork Roundtable", bringing together landowners, local officials, state and federal regulators, and citizens to prioritize cleanup opportunities and identify information needs. As a result of those initial roundtable meetings, three sites were identified as highest priorities for cleanup and reclamation to improve overall water quality in the Howard Fork: Carribeau Mine and Millsite, a mixed-ownership site, west of Ophir; Carbonero Mine, on private property, 2 miles NE of Ophir; and Carbonero Tailings, a mixed-ownership site east of Ophir.

In 2002, TLR landed a \$60,000 EPA 319 grant to begin a series of Howard Fork wa-

ter quality studies and hydrological investigations, resulting in the "Howard Fork Acid Rock Drainage (ARD) Source Interception Study". That study established a number of water sampling data points that have established a baseline for which various water quality improvement projects can be measured. All the original 2003 data points are still being monitored twice a year by local volunteers, the EPA, and Co. Dept. of Reclamation, Mining and Safety.

In 2005, the USFS hired TLR to conduct additional site characterization of the Carbonero Tailings, identifying a preliminary clean-up plan. Also in 2005, the Town of Ophir stepped up, acquiring 20-acres of private property known as the Ferric Oxide Placer, immediately north of the Carbonero Tailings. TLR helped Ophir win a \$100,000 GOCO grant to acquire the property. Survey work by the USFS, combined with a Phase I EA conducted by TLR sub-contractors, identified over an acre of mine-waste spilling over onto the Ferric Oxide property from the Carbonero Tailings site. In 2008, Ophir donated about 2 acres of the Ferric Oxide to the USFS, so that all of the site could be cleaned up at one time. In 2010 it finally happened. Last year contractors pulled back mine-waste from the floodplain immediately adjacent to the Howard Fork, and installed a cap over the pile, to prevent rainwater and snowmelt from percolating through the pile and leaching heavy metals into the river. (See USFS article page 5)

In 2009, the EPA, in cooperation with the private landowner, successfully cleaned up the North Star Mill. This year, downstream from Ophir, the USFS is continuing to monitor flows coming from the Carribeau Mine. The neighboring landowner is cooperating with an EPA team to better understand impacts to the river from mine waste left over from the Carribeau Mill. Meanwhile, upstream of Ophir, high on the south-facing slopes, a team from DRMS, CDPHE and the EPA, with landowner cooperation, will continue with exploratory drilling begun last fall to better understand the workings of the Carbonero Mine, to determine if there is a way to divert water flows before they become contaminated with heavy metals, or somehow reduce the flows coming from the mine. Drilling is scheduled for completion during summer 2011.

By Pat Willits, TLR, 626-3236



Phil Hoyden

Exploratory drilling above mine adit seeks to direct or reduce flows.



## USFS COMPLETES CARBONERO TAILS RECLAMATION

The Carbonero Tailings Reclamation Project, located 1/4 mile east of Ophir, is complete. Initiated in September 2006, the project involved reclaiming an abandoned mill tailings site with cooperation from numerous agencies and governments. 15,000 cubic yards of mill tailings were moved out of and away from the Howard Fork of the San Miguel River's floodplain, graded, shaped to provide long-term stable slopes, and encapsulated with a waterproof cover system. The reclamation of this site eliminates potential exposure of humans and wildlife to toxic metals, primarily lead, and reduces migration of heavy metals, primarily zinc, into surrounding surface water and groundwater systems.

Norwood District Ranger Judy Schutz said "this has been a win-win project from the beginning. Cooperation among everyone involved has made it a success for the river, the environment, and local residents."

The mill tailings were deposited along the floodplain, north of the Howard Fork, via a wooden flume, from the former historic underground mining and milling activities associated with the Carbonero Mine and North Star Mill. The North Star Mill was initially constructed for the Carbonero Mines and Reduction Company and became operational in 1924. Several companies leased the mines and mill for operation over the next 6 years. For the next 80 years, these mill tailings contributed a significant source of zinc metal loading to the Howard Fork during annual snowmelt and rainstorms. The North Star Mill site was abandoned in 1930, and cleaned up by EPA, in cooperation with the current landowner, in 2009.

The USFS awarded a design/build contract to Millennium Science & Engineering, Inc. for reclamation of the mill tailings site. Construction was completed in summer 2010 with Telluride Gravel as subcontractor for the construction/build phase. The mill tailings have been pulled away from the 100-year flood elevation of the Howard Fork, consolidated, and covered with a high-density polyethylene liner, geotextile fabric, and coarse durable rock. Riprap was placed along the riverbank at the 500-year flood elevation to protect encapsulated tailings from potential river scour. All disturbed areas have been revegetated with a native seed mix spread on salvaged topsoil. During summer 2011, willows and bushes will be planted along the banks of the Howard Fork where areas were excavated. The repository site, access roads, and borrow areas will be inspected for the presence of noxious weeds and



Tailings were moved away from Howard Fork floodplain, graded and capped.

Linda Lanham

controlled, if needed. Any excavated and disturbed areas needing reseeded will occur. Cooperators include local, State and federal entities, Town of Ophir, Great Outdoors Colorado, TLR, and SMCF.

By Pat Willits, TLR, 626-3236 & Linda Lanham, GMUG AML Coordinator, 874-6633

## SOUTHWESTERN WATER CONSERVATION DISTRICT (SWCD)

SWCD was created by the Colorado legislature in 1941. The District's charter is to protect, conserve, use and develop water resources of the Southwestern basin for the welfare of the District, and to safeguard for Colorado all waters of the basin to which the state is entitled. It is one of 4 Conservation Districts in Co. and supported by a mill levy in the 9 counties it supports, which include: Archuleta, Dolores, La Plata, Montezuma, San Juan, San Miguel, and parts of Hinsdale, Mineral, and Montrose. County Commissioners in each county appoint a person to represent them on the SWCD Board of Directors.

SWCD actively supports water related projects and programs throughout the District's 9 counties and regularly gives out grants to organizations, including the following recent grants benefiting San Miguel County: San Miguel Watershed Coalition for water quality monitoring, Farmers Water for repair of Gurley dam and reservoir infrastructure, Town of Norwood, for engineering and legal support to file conditional water rights to meet their municipal water supply needs, USGS Stream Gaging Weather Modifica-

tion - cloud seeding operations that adds to precipitation during winter months, Water Information Program - repository of water information and education, Center for Snow & Avalanche Studies for dust on snow research to measure impacts of dust on snow melt. For more information go to <http://swgcd.org/>

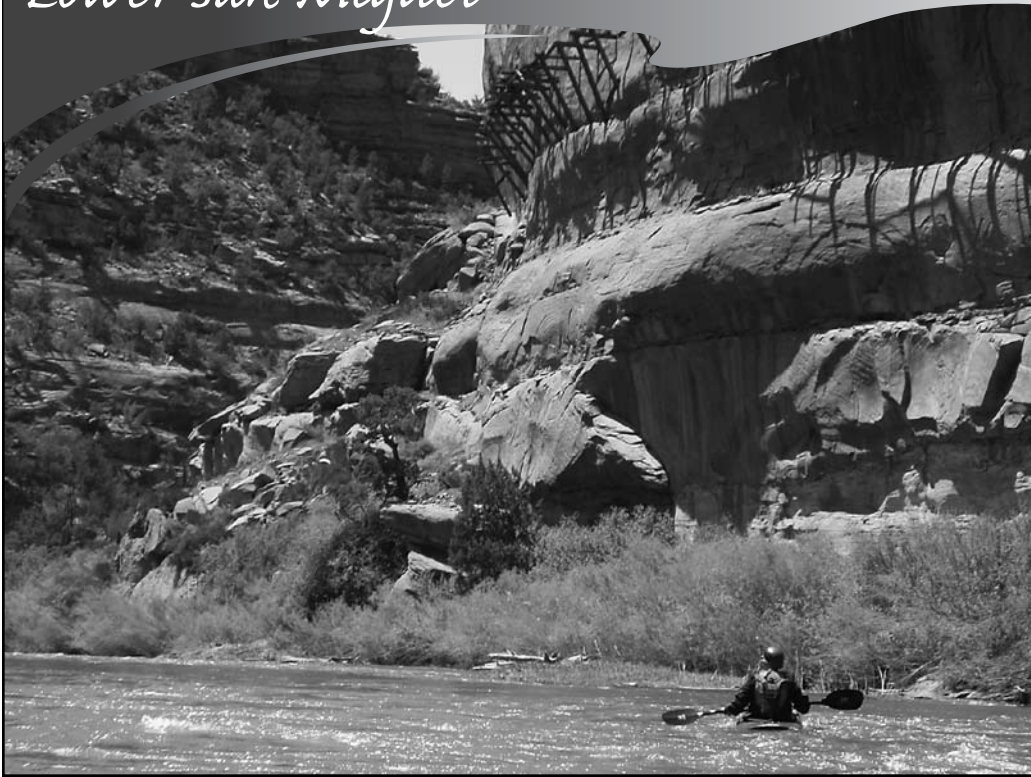
By April Montgomery, SMC Representative to SWCD, 327-4575

## COLORADO WATER CONSERVATION BOARD (CWCB)

The CWCB's mission is to conserve, develop, protect and manage Colorado's water for present and future generations. Charged by statute to establish policy to address Colorado's water issues, the CWCB is governed by a Governor-appointed citizen board consisting of representatives from each of the 8 major river basins, the City and County of Denver and several state agencies. The CWCB's responsibilities range from protecting Colorado's streams and lakes to water conservation, flood mitigation, watershed protection, stream restoration, drought planning, water supply planning and water project financing. The CWCB also works to protect the state's water apportionments in collaboration with other western states and federal agencies.

CWCB is the only legal entity in Colorado that can hold instream flows. The CWCB board recently recommended its intent to appropriate instream flows on the San Miguel River between Calamity Draw and the Dolores confluence and on San Miguel tributaries, Tabeguache, North

# Lower San Miguel



Trisha Van Hellebrake

*Instream flow on lower San Miguel contested by Montrose County and Farmers Water.*

Fork of Tabeguache, and Red Canyon creeks. The San Miguel instream flow has been contested by Montrose County and Farmers Water. The CWCB board will hold a hearing in September in Grand Junction to determine whether to appropriate this instream flow water right. CWCB may also lease instream flow water rights and may be considering leasing water rights on the Dolores below McPhee Dam in the near future.

The CWCB also authorizes grants through the Water Supply Reserve Account (WSRA), created by the legislature in 2003. Recently, Rico received \$68,000 in WSRA state funding and \$20,000 in WSRA SW Basin funding for improvements to its municipal water system.

CWCB recently completed a statewide "Drought & Water Supply Assessment", to engage Colorado water users to determine how prepared Colorado is for drought and identify limitations, and related measures, to better prepare for future droughts. Following completion of this Assessment, CWCB is planning to conduct a drought assessment for recreation and tourism in SW Colorado. Phase I will consist of a scoping process to identify tourism and recreation industries vulnerable to drought. The southwest basin was chosen because of high vulnerability to drought impacts and risk of climate change.

CWCB has also been instrumental in supporting Colorado's weather modifica-

tion program (cloud seeding), which benefits the southwest. CWCB staff has worked with Telluride Ski Resort to help institute weather modification improvements.

CWCB recently approved new statewide flood plain rules and regulations with the goal of providing increased public safety and reduced flood losses statewide.

Over the last decade, Colorado has experienced rapidly increasing demands on the state's water supply by both traditional consumptive uses and more recent non-consumptive (recreational and environmental) uses. By 2050, Colorado's current population of approximately 4.5 million is expected to nearly double to between 6 and 8 million. This population growth coupled with concerns over both the recent severe drought and projections of greater climate variability raises significant concerns about water supplies Colorado has available to meet the needs of its citizens and the environment. With these concerns in mind, CWCB is conducting a multi-phase "Colorado River Water Availability Study" (CRWAS) to determine how much water from the Colorado River Basin System is available to meet Colorado's future water needs under alternate hydrologies. Specifically, the CRWAS- Phase I seeks to answer the following questions: How does historical hydrology compare to a longer hydrologic trace based on tree ring analysis under current water demands? , What is a reasonable projection for hydrology

affected by climate change?, What quantitative estimates of the amount of consumptive use, above existing levels, can occur within Colorado under certain compact assumptions ("water available for future consumptive use") and under current water demands? Find more information and reports at: <http://cwcb.state.co.us/Pages/CWCB-Home.aspx> .

*By April Montgomery, CWCB Member  
Representing San Miguel, San Juan,  
Animas and Dolores River Basins,  
327-4575*

## MONTROSE COUNTY WATER RIGHTS FILINGS

The December 2010 resume of water filings in the San Miguel basin was 124 pages long. CWCB, which had for years been considering filing for an instream flow on the lower San Miguel River to protect native fish species, agreed to a request by SMC Commissioners in December 2009 to give water users another year to file on water rights that would be senior to the instream flow. The proposed instream flow, which is to protect threatened native species and avoid Endangered Species Act listings, was recommended by BLM and CDOW. It would protect flows in the last 15 miles of the San Miguel River from Calamity Draw to the Dolores confluence. The year's delay allowed many water users, like Montrose County, to file applications that, if approved, will be senior to the instream flow. Although Montrose County was just one of many applicants that filed for water rights ahead of the instream flow filing, it filed the largest number of applications and for the greatest quantity of water.

Montrose County filed 6 applications for additional direct flow and reservoir water rights for future development in the west end of the county: the Nucla, Naturita, and Paradox areas. In total, the applications seek an additional 6,400 acre-feet per year of new water supply for the west end. An acre-foot of water is often defined as enough water for a family of four for one year, which means that Montrose County filed on enough water for almost 26,000 more people (or equivalent uses) in the west end. Montrose County obviously expects quite a bit of development in that region in the next 50 years! Sheep Mountain Alliance, the Town of Telluride and others have filed statements of opposition to Montrose County's applications. The court cases are just getting underway.

*By Jenny Russell, Water Attorney, Russell  
and Pieterse, LLC, 728-5006 ext. 1*



## SMA UPDATE

In 2010 and 2011 the San Miguel River has seen a remarkable increase in demand for water and water quality. Sheep Mountain Alliance has shifted a great deal of time and resources into addressing these threats and becoming actively engaged in protection of the San Miguel.

In the headwaters we successfully challenged the Telluride Ski Company's attempt to increase their water rights for snowmaking and other storage needs. Increasing changes in fall snowpack levels are forcing the ski area to rely more heavily on snowmaking to start the season.

As the Uncompahgre Field Office of BLM proceeds with their Resource Management Plan update, SMA partnered with regional conservation groups to organize public participation in the Wild & Scenic suitability evaluation of the San Miguel and Middle Dolores Rivers. Facilitated by BLM throughout the watershed, these public meetings and comment period were an opportunity for watershed residents and outfitters to give specific knowledge on various eligible segments of river. SMA was highly encouraged by the significant amount of well-informed and passionate input. BLM initially found 21 segments of the San Miguel and Middle Dolores "eligible" for Wild & Scenic determinations. Ultimately 8 segments of the San Miguel and 5 on the Dolores River were found to have various levels of suitability and will be included in the draft RMP, scheduled to be released in late 2011 or spring 2012. While we feel that more segments of the river are certainly suitable, we are very pleased with the potential for the San Miguel to become the 2nd Wild & Scenic River in Colorado. Private land-ownership concerns emerged as the most prevalent reason for lack of suitability. See W/S update story for locations of suitable sections. Thanks to all who participated in the public process. Please be prepared for more public comment when the draft RMP plan is released.

SMA is also engaged in a campaign to defend wildlife and riparian habitat of the lower San Miguel River from increasing threats. After an unfortunate year-long delay requested by San Miguel County, CWCB unanimously

approved an instream flow for the lower San Miguel, a minimum amount of water in the river to protect riparian habitat for native plant species and threatened Blue-head & Flannelmouth Suckers and Round-tail Chub. While this flow is a minimum flow recommended to prevent an endangered species listing for these fish, CWCB's action has been challenged by several entities including Montrose County. SMA is working to support the instream flow. In addition, we have challenged multiple water rights filings by Montrose County, which threaten the ability of the San Miguel River to maintain a healthy, vibrant riparian habitat and recreational flows. See Montrose County story- previous page.

Ultimately one of the biggest threats to the San Miguel and Dolores watersheds continues to be the proposed Piñon Ridge Uranium Mill. With operations between 500 and 1000 tons per day the mill proposes to use between 150 and 300 gallons per minute and we feel this estimate falls short of actual needs to operate the mill and safely maintain the 40-acre tailings pond. SMA continues to work with experts to evaluate the proposed mill as well as ask our state and national leadership to reconsider the rushed regulatory process this proposal has experienced to date.

A healthy flowing San Miguel River provides multiple natural and economic benefits to our entire watershed. The relatively free flowing nature of the river makes it unique in the west. With growing demands for water and increasing threats to water quality we hope that you will help us in our efforts to protect and preserve this valuable resource so that future generations can appreciate it as we do now. Please

go to [www.sheepmountainalliance.org](http://www.sheepmountainalliance.org) to learn more and sign up for email alerts.

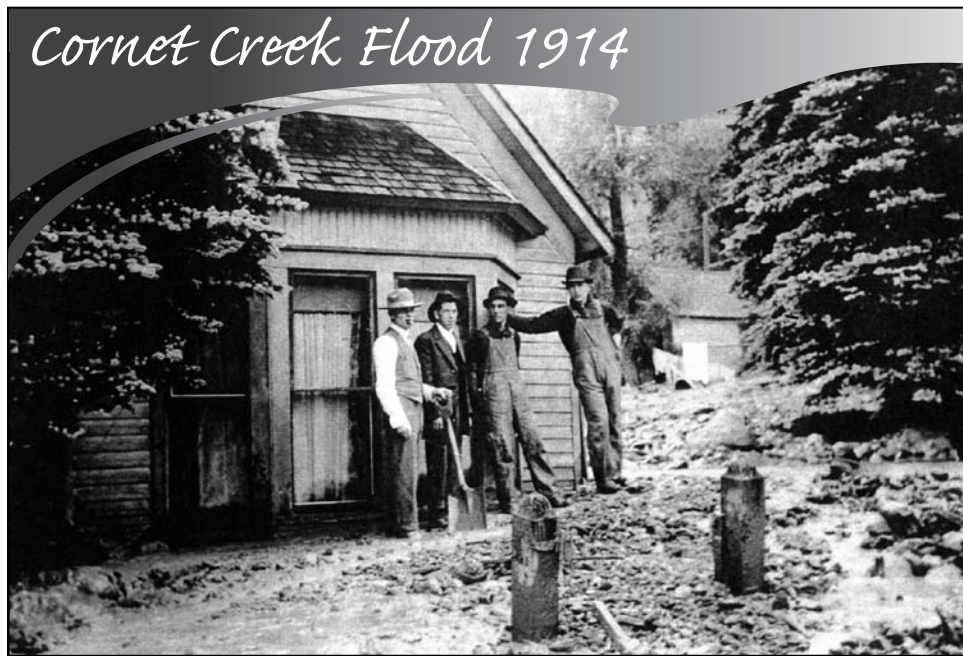
By Hilary White, Director-SMA, 728-3729

## CORNET CREEK WATERSHED ANALYSIS

The Town of Telluride, located in eastern San Miguel County, has developed around 2 primary watercourses, the San Miguel River and Cornet Creek. Telluride occupies the alluvial fan of Cornet Creek, which drains into the westerly flowing San Miguel River. Although smaller than the river, Cornet Creek has been responsible for the majority of Telluride's historic flooding problems. Consisting primarily of mud and debris, these floods have been devastating to the community. The two most destructive events occurred on 7/27/1914, and 8/1/1969. These events deposited mud and rock from 2' to 6' deep. The most recent flooding event occurred on 7/23/2007, blocked culvert and bridge crossings, and damaged property on the north side of town. These significant flood events were caused by localized heavy rainfall following prolonged wet weather.

In 2008 Telluride asked Mussetter Engineering (now part of Tetra Tech in Fort Collins) to complete the Cornet Creek Watershed and Alluvial Fan Debris-flow Analysis. Goals were to: estimate the magnitude of potential debris-flow events originating from the Cornet Creek watershed; delineate approximate extent of the debris-flow hazard area and potential deposition depths along the Cornet Creek alluvial fan within Telluride; evaluate potential debris-flow mitigation measures and installation of early-warning systems.

The study, completed in 2009, arrived at some troubling conclusions: The degree of development that has occurred on the fan since both historic events makes it likely that damages to life and property would be much higher today than they were in 1914 and 1969; Based on the occurrence of these 2 events in the last 100 years it might be argued that the probability of occurrence of a large debris flow (mudflow) on the Cornet Creek fan is approximately 2% in any given year; A large event cannot be mitigated, and public safety will require a quick and prepared



Courtesy Karen Guglielmono

Cornet Creek was responsible for historic flooding problems.

## New Solar System

### PV System Production Information as of 5/5/ 2011

Total Energy: 44,647 MWh

CO2 Avoided: 63,719 lbs

Gas Displaced: 3,244 gal

Trees Replaced: 3,861

AC Power: 80842 W

Temperature: 56.19 deg C

Status: Producing

Model: 100kW



Karen Guglielmone

Cooperation facilitates new PV system for wastewater treatment plant.

emergency response. To this end, San Miguel County's Emergency Management Coordinator, Jennifer Dinsmore, has organized a Tabletop Exercise for early summer 2011 around a debris flow event on Cornet Creek, to ensure that all parties understand their roles and responsibilities in advance.

By Karen Guglielmone, Town of Telluride Public Works, 728-0190

## PANDORA WATER TREATMENT PLANT

The Town of Telluride has been working for over 20 years to develop its water rights in Bridal Veil Basin. Upper basin lakes will provide a more adequate and secure source of drinking water than current drinking water sources. Telluride begins initial work on the pipeline in summer 2011.

As proposed, Telluride's Pandora Water Treatment Plant (PWTP) is designed to treat 2 million gallons per day (mgd). The PWTP will receive raw water from Bridal Veil drainage basin via existing pipelines from upper basin lakes to Bridal Veil Power Station, located at the top of Bridal Veil Falls, and then from the power station via a proposed raw waterline/penstock to the PWTP site. Treated water will be conveyed in the proposed pipeline from the PWTP to the existing Pandora water storage tank located approximately 1 mile west of the PWTP.

Source water for the PWTP comes from Blue Lake, Mud Lake and Lewis Lake. These lakes are all in the upper reaches of basins

above the Bridal Veil Power Station (BVPS) and water from each lake is tributary to the Blue Lake Pipeline, which provides water to create power at BVPS. The BVPS was put in place to provide electricity to old mines and is still in operation today.

By Karen Guglielmone, 728-0190

## BRAND NEW SOLAR-POWER SYSTEM!

In February, the Town of Telluride fired up a new source of energy for its Regional Wastewater Treatment Plant (WWTP) -- a 100 kW photovoltaic (PV) solar energy system of 480 panels, designed to provide up to 10 % of the WWTP's annual needs.

Initially, Telluride spearheaded the solar project by providing a Project Manager and committing nearly \$610,000 within the Fiscal Year 2010 budget under its Sewer Fund, which is paid for by regional sewer service fees. In the final analysis, the project did cost just about this amount. However, Telluride was able to share the financial burden, when Mountain Village, which has a service agreement to use the WWTP, agreed to foot a share of the bill, the Governor's Energy Office provided \$150,000 in the form of a New Energy Economy Development Grant, and then San Miguel Power Authority determined that the commercial facility qualified for a \$4,500-rebate. Since Controlled Hydronics of Telluride was selected to design and build the project, all this money stayed in our communities and kept talented regional contractors employed during the difficult economy. Truly, this project was a successful collaborative effort.

By Karen Guglielmone, Town of Telluride Public Works, 728-0190

## BEAR CREEK STREAM RESTORATION

The purpose of the restoration is to mitigate deposition from the last significant discharge event of Bear Creek. The quantity of deposited alluvium, including large boulders, restricts the floodplain and is causing property damage and loss. The system will be restored to a channel profile that existed prior to the flood event. The reach will pass moderate discharge events such as spring runoff conditions without additional degradation. While grading the eastern historic channel we will be enhancing and restoring previously existing wetland areas that filled in with deposition. We will reestablish the grade and improve the hydrologic conditions for heterotrophic plants to prosper. We will shape the

channel to create additional wetland areas, while preserving channel width integrity. WSW completes passive restoration with subtle excavation activities. Our goal is for the stream reach to look natural once plants mature, to improve conditions and enhance habitat diversity. Filtering of stormwater runoff can occur through newly vegetated areas. The functions and values of the entire reach will be improved. By enhancing the floodplain and wetland areas the project reach will be restored to a healthy and revitalized aquatic ecosystem. Another aspect that may benefit migrating waterfowl during spring is the possibility of standing water during high water conditions. The eastern floodplain will pool water and create a slow water area where macroinvertebrates will flourish, a habitat opportunity that does not exist presently. Fish may take advantage of Bear Creek as a spawning channel. Created scour pools with vegetative cover will be established that at certain flow regimes offer juvenile trout habitat. Stream restoration activities, with all respect to the dynamic, ever-changing nature of rivers, can reestablish a balance: an efficiency of transferring stream flow with the least possible erosive property damage, by replicating conditions within the channel that exist in harmony between large flood events. As the flow levels recede, the stream deposits alluvium and logs and boulders. By mitigating and removing this deposited material, and reshaping enhanced flow conditions, we strive to restore balance. Our construction management style minimizes impacts and strives to benefit the stream. Existing plants and rocks will be recycled continually or



not disturbed at all; grading and shaping activity will replicate what nature has created. We will leave no trace and let nature do the rest.

By Bill Coughlin, *Western Stream Works*, 708-2139

## CC DITCH FISH LADDER

Construction of a fish ladder to assist both fish and recreation by-pass will begin this summer! The project, nearly 10 years in the making, is fully funded, designed, and ready to build. The Fishing is Fun Grant from CDOW will be allocated this summer matching additional funding sources. All permitting is complete and the Colorado Water Trust will oversee the coordination and construction of the new diversion structure. By late spring material harvesting (rock and fill) began on the Bennett property. By late summer, construction should begin in the San Miguel river channel to create the "Newberry Riffle," as designed by FlyWater, a Fort Collins based fishery engineering company. With the help of CDOW, Colorado Water Trust, BLM, a host of environmental organizations, and the Colorado Cooperative Company, Flywater Engineering will build the approximately 100' long structure to allow water to gently descend off of the CCC-Ditch diversion structure. Completion of the project will eliminate the intermittently dangerous hole that formed at high water, and allow for fish passage in dry summer months. The in-channel work should take 5-6 weeks. All normal CC Ditch diversions will continue during this time. During construction, it's anticipated that some sediment will be generated from the work done in the stream channel. The increased sediment will be short in duration and shouldn't impact downstream resources. Once the project is complete, boaters, irrigators, fisherman, and macroinvertebrates alike should appreciate the completion of the new structure!

By Jedd Sondergard, *Hydrologist, BLM Uncompahgre Field Office* 970-240-5342 and Peter Mueller, *The Nature Conservancy, pmueller@tnc.org*, 728-5291

## WILDLIFE USFS PROJECTS

Native cutthroat trout restoration work at Woods Lake, located in the Fall Creek drainage, southwest of Telluride, is scheduled for late in July. Woods Lake was identified several years ago for a potential reintroduction site for native cutthroat trout. Treatment is required to

remove brook trout that currently inhabit the reservoir and two tributaries that drain into it. Treatment is in conjunction with CDOW.

CDOW will work with the water user to replace the current diversion structure on Hughes Ditch, which diverts water from Fall Creek, a tributary to Woods Lake. The existing structure is in a serious state of disrepair and currently allows fish to move into the ditch. The new structure will be fitted with a fish screen to prevent fish from moving into the ditch.

The USFS is partnering with the Bureau of Reclamation and CDOW to reconstruct the Priest Lake dam, located northwest of Telluride. The original dam was breached in response to the determination that it was structurally unsound. The new dam will provide potential for increased recreation and the potential to develop a broodstock of native cutthroat trout. Planning will occur in 2011 and work will commence in 2012.



Fish ladder construction scheduled for 2011.

The Forest currently monitors 5 populations of cutthroat trout in tributaries to the San Miguel River. Populations will be monitored again in 2011 to obtain local population estimates. Annual sampling of cutthroat populations allows trends to be tracked over time.

Stream temperature sensors will be deployed across the watershed to record temperature throughout spring, summer and fall. Data will be used to model potential climate change impacts to native fish habitat. In addition temperature data will help identify drainages for potential reintroduction of cutthroat trout.

By Michael Carrillo, *USFS Fisheries Biologist*, 874-6661

## WILDLIFE PROJECTS

Several non-system roads exist near the Telephone draw and Cottonwood roads, which are getting unauthorized use by motorized vehicles. The plan is to identify roads not on the forest travel plan and decommission them either with signing, gates, or use of machinery to rip and seed the road bed. Public education will be important where the travel plan is being implemented. These non-system roads were used to access areas treated for wildlife habitat using a roller-chopper. Decommissioning them will increase wildlife security in the roller chop areas and reduce impacts to private lands.

The wildlife crew will be conducting several types of monitoring during summer. Starting in May, surveys for Abert's Squirrels will occur on established plots for trend data, and the wildlife crew will be conducting breeding bird surveys for neo-tropical migratory birds on the Uncompahgre Plateau.

Nest boxes that were put up for flammulated, boreal and other smaller owl species will be inventoried to determine occupancy and use. If owls are nesting in the boxes they will be monitored and the young will be captured and banded for an on going survivability study.

The wildlife crew will also be working with the San Miguel Basin Sage grouse working group to conduct habitat surveys and determine levels of use of sage grouse habitat on Forest systems lands. These inventories will help identify areas where treatments are needed to improve habitat for sage-grouse and other sage obligate wildlife species.

In March several bighorn sheep were captured near Ouray and received GPS collars as part of a joint USFS/CDOW monitoring project to determine distribution and habitat use of bighorn sheep in the area. The Western boundary of the herd is the San Miguel River down to the intersection of Highway 62.

By Curtis Keetch, *USFS Wildlife Biologist*, 327-4261

## SAN MIGUEL'S ACEC HOSTS 300 BIRD SPECIES

San Miguel's Area of Critical Environmental Concern (ACEC) is also one of Colorado's Important Bird Areas (IBA). According to Colorado Field Ornithologists, an IBA is a site that provides essential habitat to one or more bird species during some portion of the year, including breeding season, migration and/or winter. The San Miguel ACEC includes 25 of the 30

miles along the river between Placerville and Pinyon Bridge, 15 miles along Beaver Creek, and 6 miles along Saltado Creek.

This site represents the finest protected Southwest Canyon Riparian Habitat (SWCR) in the US, after Arizona's San Pedro. SWCR, recognized as the richest terrestrial bird habitat type in N. America, provides breeding sites for a wide variety of species and primary migratory routes for nearly all the West's songbirds. More than 300 bird species have been observed at the site. The expanding Black Phoebe population, which has been moving up the San Miguel River, reached the lower end of the ACEC in 1999 (a nest was found at the river bridge at Pinyon). For a complete species list check Montrose and San Miguel Counties on the Co. Field Ornithologists Co. County Birding website <http://www.coloradocountybirding.com/checklists/checklist.php?id=58&flag=html&name=San Miguel>. For photos of the species go to <http://www.cfo-link.org/> and click on Colorado Bird Photos.

Compiled by Linda Luther-Broderick, SMC  
Open Space, 369-5469

## SAGE-GROUSE UPDATE

Everyday folks perform small miracles that help bring about change, like helping the rare Gunnison sage-grouse. Many people have hoped to keep the grouse off the Endangered Species List. They've been working to that end by improving grouse habitat and conserving land. Other folks thought the bird needed the extra protection an ESA listing could provide. In February the U.S. Fish and Wildlife said they will be going ahead with a proposed rule for the Gunnison sage-grouse. It's very likely that they'll recommend the grouse be listed as a threatened or endangered species by January 2012, and the final rule should be out in early 2013.

Ouray attorney, Jim Link, engagingly shared helpful information on conservation easements and estate planning to landowners in Norwood this spring. Jim's ranching background, great sense of humor, and wealth of knowledge made the talk both valuable and fun. Local rancher, Robert Bray, also shared his family's experience with both conservation easements in grouse habitat and NRCS programs. David Oyster filmed the event. For a copy can contact Leigh Robertson at 970-708-7131 or [info@sanmiguelgrouse.org](mailto:info@sanmiguelgrouse.org).

Many other volunteers

help the grouse. Thanks to everyone who helped monitor the survival of sagebrush seedlings, collect seeds, look for grouse pellets, and count strutting sage-grouse early in the morning. Patara Oil and Gas provided a great space for volunteer training, and financial assistance to the Working Group. The Telluride Foundation also provided a grant and matching funds in their text-to-give program.

An 80-acre parcel of grouse habitat near Miramonte Reservoir made the final cut in the Co. Wildlife Habitat Protection Program, and should become part of the Dan Noble State Wildlife Area. In 2010, grouse numbers were down again in San Miguel County. Currently the 2011 lek count numbers aren't finalized, but may be even a little lower in 2011.

In March 2011, CDOW started a predator control program near Miramonte Reservoir. While many Working Group members don't support predator control, it was seen as a necessary evil to preserve the local grouse population. The program will only continue for 2 years with a goal to remove predators who've gotten a taste for sage-grouse and give the young a chance to mature and reproduce. There is also the possibility of bringing in captive-reared grouse while there are fewer predators to pick off the defenseless chicks. DOW will conduct studies to determine program effectiveness.

I don't believe we can measure success only by whether there are more grouse. By preserving and improving habitat, we support many species in addition to sage-

grouse. We break down barriers to effective, collaborative conservation. In the words of Alex Noble, "Success is not a place at which one arrives but rather the spirit with which one undertakes and continues the journey."

By Leigh Robertson, Coordinator, SM Basin  
Gunnison Sage-grouse Working Group  
708-7131

## SAN MIGUEL RIVER FISH

CDOW continues to work on projects to benefit native fish conservation in San Miguel watershed. Efforts continue to develop a brood stock of native Colorado River cutthroats from the upper San Miguel Basin to be used in future restoration efforts. Several populations of cutthroat are being evaluated to determine the best strains to use to restock historically occupied habitat.

DOW also continues to work on native warmwater fish conservation in the lower watershed. Populations of native flannelmouth suckers, bluehead suckers, and roundtail chub have declined considerably in the Dolores River basin, and these important native species need to be protected to ensure their future survival and to avoid federal listing under the endangered species act. The lower San Miguel River from Tabeguache Creek to the Dolores River confluence is one of the last refuges of good native fish populations in the lower Dolores basin. Native fish in this reach benefit from a natural spring peak hydrograph that has not been altered by large dams. Base flows

in the river are protected by senior water rights in the Nucla and Naturita areas. While the river is de-watered in certain reaches and fish populations are impacted, downstream irrigation flows return to the river, and good native fish habitat is provided. The current water use patterns of the agricultural community have benefited native fish in the river below Brooks Bridge. CDOW partnered with BLM, TNC, and CWCB to recommend an instream flow water right to protect this vital native fishery. (See CWCB story page 5) The instream flow water right would be an important tool in preserving native fish species of the river, preventing future federal



Gunnison Sage Grouse may be listed as Threatened/Endangered by 2012.

Courtesy CDOW



listing of the species, while continuing to allow for current water use in the basin for agricultural, municipal, and industrial purposes.

By Dan Kowalski, DOW Aquatic Biologist, 252-6017.

## VEGETATION PONDEROSA PINE MAINTENANCE

Re-entry treatments using prescribed fire to reduce fuel loads in previously treated ponderosa pine stands on the Uncompahgre Plateau are scheduled for 2011. The areas identified for treatment include the Copper King and Glencoe areas and Hanks Valley. This project will occur in phases and the first phase is conducting noxious weed inventories and treatments prior to burning. Some burning may occur this fall in the Glencoe area.

By Curtis Keetch, USFS Wildlife Biologist, 327-4261

## BLM ECOLOGIST UPDATE

The BLM's Uncompahgre Field Office has focused on several projects in and near the San Miguel Watershed over the past year. In May 2010 the Beaver Fire burned over 400 acres of BLM land and 2,200 acres of National Forest land. The fire started next to the San Miguel River just upstream of the Norwood Bridge, and was driven uphill by fierce winds. About 1 mile of river frontage burned. The BLM determined that the most critical areas for post-fire stabilization were the steep slopes of Gutshall Basin which needed seeding, and the riparian/highway corridor which needed noxious weed control to prevent further expansion. Gutshall Basin was seeded in the winter, while weed treatment took place last summer and will be followed up with treatments this summer.

The East Paradox Landscape Unit was the focus of the BLM's yearly Land Health Assessment. This landscape includes small portions of the San Miguel Watershed. The assessment determines whether BLM lands are meeting basic levels of ecological health, as measured by BLM Colorado Standards for Rangeland Health. The assessment relies on extensive collection of field data, and looks at parameters ranging from vegetation to soils, and wildlife habitat to water quality. In addition, likely causal factors and possible remedies for impaired ecological health are identified. A final report should be completed by July.



Sheila Grother

*Weeds in upper watershed travel and spread.*

The UFO has also been preparing to address riparian restoration on BLM lands along the Dolores River. The San Miguel River joins the Dolores near Uravan. The Dolores River suffers from dominance by tamarisk and Russian knapweed. While this may be partly due to substantially altered river flows, opportunities for improvement are still considered good. A partnership between 4 BLM offices, TNC, and the Tamarisk Coalition has developed to address riparian restoration along the length of the river. The UFO is putting in 4 pilot project areas to analyze best restoration techniques this summer. The intention is to apply the most successful approaches on a large-scale basis.

By Amanda Clements, BLM ecologist, 240-5306

## MOUNTAIN VILLAGE WEED STRATEGY

Town staff has begun discussions with adjacent property owners including the USFS and TSG to identify and locate invasive species infestations and develop a comprehensive weed management plan for Town. We are working with the State and County Weed Coordinator Sheila Grother to create a weed management strategy and draft a policy for weed management within Town boundaries for Council's consideration later this year.

Weed management is important in Mountain Village as we are situated at the headwaters of the San Miguel River, and weeds that exist here can travel and spread throughout downstream communities via the river and its tributaries. Although Town staff actively manages weeds on its own property and has worked in conjunction with the SMC Weed Program for over 10 years, we believe we will not be able to

accomplish the desired degree of success unless we have cooperation from adjacent private land owners, in the form of a Memorandum of Understanding or other agreement.

By Deanna Drew, MV 369-8236

## SPRUCE BEETLE THREAT

Most attention regarding forest health statewide has been directed at the mountain pine beetle (*Dendroctonus ponderosae*) and the almost 4 million acres of lodgepole, limber and ponderosa pines that have been heavily impacted with tree mortality rates approaching 90%.

We are fortunate in the western San Juans that we do not have many MPB susceptible species represented in our forests. Our forests are predomi-

nantly spruce/fir mixed with Douglas fir and ponderosa pine in the lower elevations and stands of pure to mixed aspen. This diversity of species makes our forests more resilient to insect infestations and disease but does not mean we won't be affected by bark beetles. Douglas fir beetle (*Dendroctonus pseudosugae*) has killed numerous trees along highways 145 and 62 and Western Balsam bark beetle (*Dryocoetes confusus*) has persistently been taking out subalpine fir at higher elevations. The greatest threat to our high elevation forests will likely be the spruce beetle (*Dendroctonus rufipennis*).

The 2010 Report on the Health of Colorado's Forests shows an increase from 114,000 to 208,000 acres infested with spruce beetle since 2009. This increase is mostly in the upper Rio Grande Basin, where the outbreak was first detected in 2003. While most mature spruce in the Weminuche Wilderness has been killed, new attacks were detected from the town of South Fork south to Wolf Creek Pass. Mature spruce forests around Lake City and Lake San Cristobal in Hinsdale County are immediately threatened by this outbreak as well. If spruce beetle populations spread across the 550 corridor on Red Mountain Pass they will pose a significant threat to high elevation forests of the San Miguel watershed.

Spruce beetle outbreaks can easily be spread in stands that have experienced large wind events, resulting in blowdowns, where large numbers of beetles can develop under the bark of the defenseless trees and spread to the rest of the stand. Spruce beetle outbreaks can be hard to detect due to the fact that their primary host, Engelmann spruce, occur at elevations between 9,000'



and 11,000', making them relatively inaccessible. Signs of a beetle attack on an individual tree are boring dust in bark crevices or around the base of the tree where the beetles have entered and pitch tubes of sap where the tree tries to push out the invading beetles. When Engelmann spruce die due to a beetle infestation their foliage turns a dull yellow-green color instead of the highly visible, bright red-orange of lodgepole pines killed by mountain pine beetle.

Management strategies to mitigate bark beetle outbreaks range from pesticide applications, pheromone treatments to silvicultural practices. Individual trees that are attacked or vulnerable can be sprayed with the insecticide Carbaryl. This is fine for individual trees but is impractical on a landscape scale. The ant-aggregation pheromone MCH has proved effective in protecting individual trees and areas from spruce beetle infestation by mimicking the scent that the beetles give off when a tree is full and cannot support any more beetles. Again this is an application best suited to the homeowner to protect valuable trees on their property rather than to protect a stand. Landscape scale mitigation for beetle outbreaks must take place before an outbreak occurs.

The timely harvest of mature Engelmann spruce stands creates a mixture of stands composed of different age classes and tree species, resulting in young, diverse stands that can withstand insect and disease attacks. One of the main goals of forest management for the San Miguel watershed has to be the conversion of overstocked even-aged stands, whether spruce/fir or aspen, to multi-aged stands where competition is decreased, large trees are preserved and regeneration can become established.

*By Dave Bangert, Town Forester, Mountain Village, 369-8215*

## LANDSCAPE HEALTH ASSESSMENTS

The Uncompahgre Field Office of the BLM completed the data collection phase of the East Paradox Area Landscape Health Assessment (LHA) in the summer of 2010. Work has begun on the compilation of the data and preparation of the LHA report.



Mallory Dimmitt

*SMWC grant from El Pomar supports Dolores River Restoration Partnership tamarisk eradication efforts.*

It is expected that the report will be completed by August of 2011. The East Paradox area involves approximately 80,000 acres of BLM lands between Naturita and Bedrock including East Paradox Valley, Monogram Mesa, La Sal Creek, Sawtooth Ridge, Club Bench, and Saucer Basin. The report will discuss the status of lands relative to BLM Rangeland Health Standards. Where Standards are not being met, the report will identify causative factors and make recommendations to address problems. There are 9 grazing permits and 8 allotments in the East Paradox area. New 10 year term permits for those allotments will also be issued by the end of August 2011. The LHA will serve as supporting documentation for terms and conditions associated with the new grazing authorizations.

*By Dean Stindt, BLM Norwood, 327-4261*

## RIPARIAN RESTORATION

The El Pomar Foundation awarded San Miguel Watershed Coalition \$20,000 for riparian restoration work on the Dolores River – On the heels of the successful Save the Natives campaign that treated tamarisk, Russian olive and Siberian elm in the San Miguel Watershed, the Coalition is delighted to be able to support work being done by the Dolores River Restoration Partnership on the Dolores River near its confluence with the San Miguel. The Dolores River Restoration Partnership has been hard at work the last 2 years treating tamarisk and other invasive weeds from McPhee Reservoir towards our goal of restoring native vegetation cover all the way

to the Colorado River.

But what about the beetle? The tamarisk beetle, *Diorhabda elongate*, has been present throughout the San Miguel and Dolores watersheds for over 5 years. While the presence of the tamarisk beetle has had a substantial and often pronounced visual impact on tamarisk foliage, this has yet to lead to wide spread tamarisk mortality in riparian areas. The beetle has helped level the biological playing field for other native species, but in areas that have been become dominated by tamarisk over the last half century – mother nature needs a helping hand. The Dolores Restoration Partnership has found it necessary to continue treating tamarisk and the co-existing Russian knapweed that lock out native vegetation, in order to

restore natural river processes and improve wildlife habitat along the banks of the Dolores River.

*By Peter Mueller, Nature Conservancy, 728-5291*

## SMC WEED BOARD UPDATE

In the broadest sense, a weed is any plant growing where it is unwanted or interferes with desired land uses.

Although native plants can be weedy, undesirable, and even toxic, the plants that should and do concern land managers are those that are exotic, having arrived in this country from elsewhere and that are now spreading without the controls that kept them from overwhelming their original habitats. Many plants were introduced here intentionally for their edible, medicinal or forage properties. Others were brought here accidentally often as contaminants in seed or soil and still others have been intentionally introduced for their ornamental qualities only to escape the garden and invade new areas. Introductions of new species are still occurring as people move across the globe at ever increasing speeds often bringing back a few surprises.

Some of the escapees are less problematic than others. They have integrated into our native ecosystems and can even be considered to be desirable additions. Asparagus is a good example of a plant that has escaped cultivation and now grows wild. It is invasive, as it is spreading on its own but isn't so prolific or greedy for space, water and nutrients that it displaces other plants. Besides, it tastes good.



Other introduced plants are far less desirable. The worst of the exotic plants have few if any useful qualities and have the ability to reproduce well in their new homes displacing native and desirable plants. Many of these plants have been determined to be threats to the environment and have been identified by federal, state and local agencies as “noxious”- a legal term. These are plants whose desirable qualities are far outnumbered by their undesirable qualities. Many are toxic to animals and even to humans. Some may be desirable as ornamentals but that quality is superseded by the potential to overwhelm the environment- think oxeye daisy on the San Miguel River. Some appear to be innocuous until they have expanded to take over an entire environment- think hoary cress in rangeland on Wright’s Mesa. Some are easy to hate because they are ugly, toxic or have thorns but others require education and thought.

These plants spread quickly and can out-complete native and desirable plants leaving them nowhere to go. The worst of these plants can even poison the soil to keep other plants from competing with them. They reduce species diversity by creating monocultures suitable only to themselves and can cause soil erosion because they often do not hold the soil as well as the natives they are replacing.

The San Miguel Basin is home to many native plant species- some of which we may not even have identified yet. The Basin starts in the high peaks of the San Juans and extends to the semi-desert areas of the lower river. Many of the native plants live only in a limited elevation or rainfall range. You wouldn’t expect to find rabbit brush in a lush pocket at 10,000’ or subalpine fir growing in clay soils at 5,000’. You would, however, find many of the same noxious weed species at both locations. Canada thistle, arguably the most common noxious weed in the state, is present from the highest sites to the lowest and places in between with suitable habitat- it only demands enough water, perhaps a small disturbance and a seed introduction. Other locally common noxious weeds that can grow at both locations include Russian knapweed, whitetop (hoary cress), bull thistle, oxeye daisy, musk thistle and many other less picky noxious weeds.

As residents, landowners and visitors to the region it is our responsibility to prevent new introductions of noxious weeds by limiting transport of seed from one location to another. Using weed

free certified hay, mulch and seed is a good start. Cleaning recreation or construction equipment before moving between locations and even cleaning socks of seeds before going to a new recreation site can be steps towards prevention of new noxious weed infestation sites. Choosing carefully the landscape plants and seeds and even choosing natives over non-natives when planting helps to prevent new invasions or even new invaders.

*By Sheila Grother, SMC Weed Board,  
327-0399*

## UP PROJECT AWARDED \$8.5 MILLION USDA GRANT

Western Colorado is one of only 10 communities in the US to be awarded a 10-year grant through the USDA’s Collaborative Forest Landscape Restoration Program. The goal of the Uncompahgre Plateau Collaborative Restoration Project is to enhance the resiliency, diversity and productivity of the native ecosystem on the Plateau using best available science and collaboration. If fully funded, the project will receive \$8.5 million over the next 10 years for a variety of forest health treatments including: prescribed burns, mechanical treatments, timber harvesting, invasive species treatments, re-vegetation

with native seed, trail and road relocations to reduce sediment, riparian restoration, and improvements for Co. River cutthroat trout.

The restoration project is expected to create close to 750 part-time or seasonal jobs, support the enlargement of biomass markets for renewable energy, and help to sustain local timber mills, currently the last remaining large sawmills in Co. A local, sustainable supply of wood is critical to the economics of both mills, which are needed to service forest health projects statewide. Projects will involve local youth, providing work, job skill training, and educational opportunities.

The incredible cooperative relationships that exist on the Western Slope among community members, public land agencies, environmentalists, recreation groups, local governments, ranchers, and timber companies have made this opportunity possible.

As part of this large-scale effort, the Uncompahgre Partnership is reaching out to local communities to participate in ‘citizen-scientist’ ecological monitoring. Community monitoring provides an excellent opportunity to engage local citizens and promote mutual learning. Through monitoring, we can assess how well a project is meeting desired outcomes, respond to diverse concerns, and identify how



*Thistle grows at all elevations throughout the watershed.*

Sheila Grother



management can be adapted to improve results in the future.

For more information go to [info@UPartnership.org](mailto:info@UPartnership.org) or [http://www.upartnership.org/landscape\\_assessments/unc\\_mesas.htm](http://www.upartnership.org/landscape_assessments/unc_mesas.htm)

By Pam Motley, UP Outreach Coordinator, (970) 209-9087, [www.UPartnership.org](http://www.UPartnership.org)

## OPEN SPACE SAN MIGUEL CONSERVATION FOUNDATION

In the last year, SMCF started regular monitoring of the Valley Floor conservation easement. This is a responsibility of all land trusts that hold easements to insure that conservation values are being protected and no violations are occurring on the property. In addition to many days spent hiking and biking the Valley Floor, over 4 days in July and August 2010, SMCF staff completed its first formal monitoring of the Valley Floor Conservation Easement. Be-

cause this is such a unique easement with conservation values ranging from scenic and open space, natural habitat for fish, wildlife, plants and ecosystems, to opportunities for low-impact outdoor recreational uses like hiking, bicycling, and nordic skiing, it will continue to be important for the Town and SMCF to work together to insure that the balance of all these conservation values is maintained.

SMCF worked closely during summer 2010 with the Town of Ophir and USFS as work progressed on the capping of the Carbonero Mine tailings located adjacent to the Ferric Oxide conservation easement. Issues included installation of an access road through the Ferric Oxide property, re-forestation of an area where the road was abandoned and clean-up of debris left from the road cut. Thanks to Tyler Schultz of Telluride Arborist for all his work on the project.

*For additional land conservation information, contact Gary Hickcox, Executive Director, SMCF, at 728-1539, [ghickcox@rmi.net](mailto:ghickcox@rmi.net) or visit the SMCF office at 121 N. Pine St. in Telluride.*

## VALLEY FLOOR UPDATE

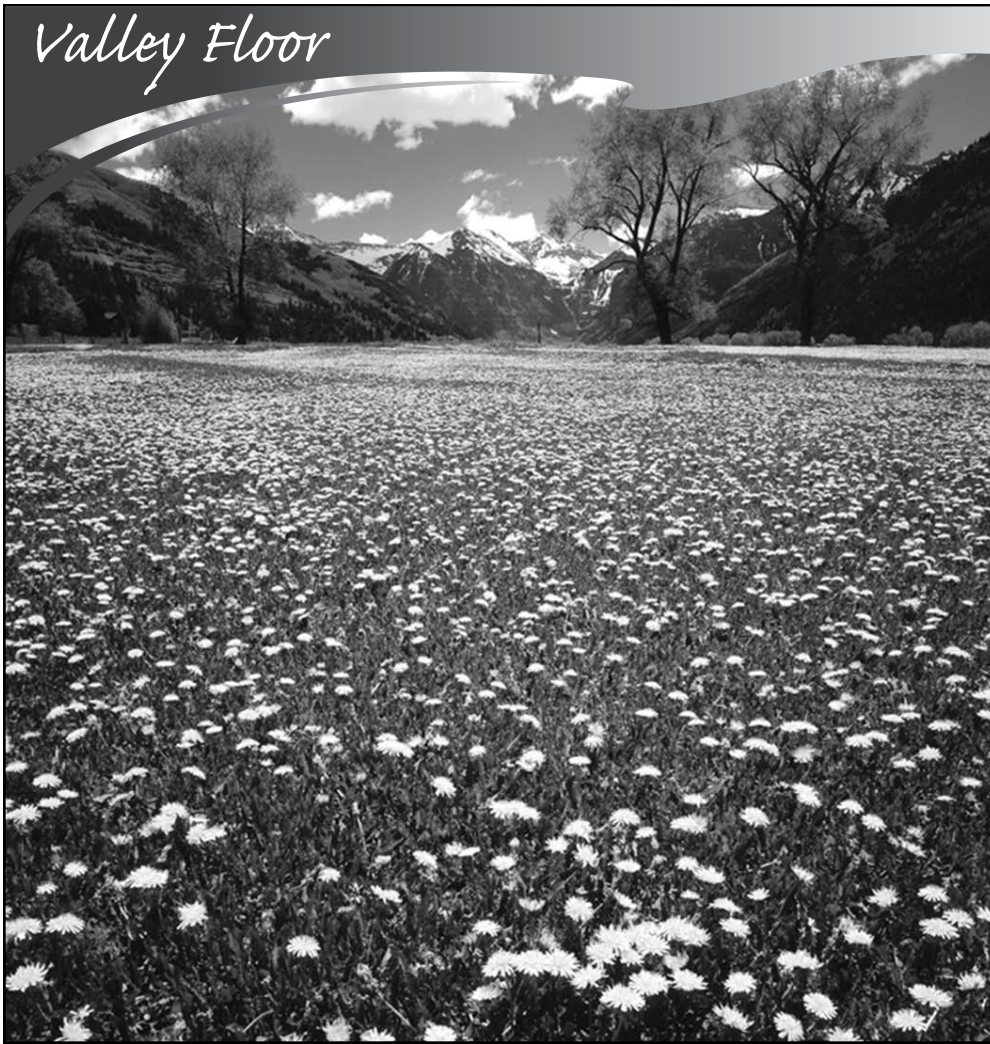
Following is a summary of recently completed and planned activities for the Valley Floor Open Space. In February, the Telluride Town Council approved the Trails/Conceptual River Restoration Plan for the Valley Floor property as formulated by the Telluride Open Space Commission (TOSC). These plans will guide many future activities and decisions on the property, such as priority and sequencing of future restoration efforts, locations of existing trail re-locations, location of new trails, and types and character of trailheads and signage. The Valley Floor Preservation Partners provided \$30,000 in matching funds for the Plan's preparation. This summer the TOSC Commission will identify specific trails projects for future implementation, and pursuant to River Restoration Plan's priorities, develop a strategic approach for funding, permitting and implementation for the first phase of restoration of the San Miguel River. Also proposed for 2011, are small capital projects such as re-routing the River Trail at Prospect Creek.

The irrigation system for the Valley Floor is integral to achieving several management objectives on the property, such as fully utilizing the property's water rights, weed management, and improving wetland habitat. Work in 2011 will continue to bring the system to full functionality, with improvements to points of diversion; installing flumes/headgates; cutting of new laterals, and continued repair of existing ditches.

In 2010, weed management consisted of continued hand pulling with limited chemical herbicide being applied on approximately 3.75 acres targeted at Oxeye Daisy, Canada Thistle, Yellow Toadflax, and Musk Thistle. Limited success is occurring, as some areas that were treated the previous two seasons are now manageable through routine hand pulling and are re-seeded. While the use of chemical herbicide is discouraged, currently the extent and concentrations of the infestations are such that limited chemical control continues to be necessary in certain locations. Additionally, last October, a study plot non-chemical treatment was established in a zone of Canada Thistle surrounded by mature willows.

In January, Town Council directed that a management plan for the Gunnison's prairie dog be developed for consideration and public comment in early summer. A key component of the Plan will be to change the management approach for the species from "containment" to one supporting natural dispersion.

A priority for 2011 is to develop an Integrated Monitoring Plan for the property. This plan will provide valuable informa-



John Richter

*Trails/River Restoration plan will guide future activities.*



tion and data for a variety of activities such as future restoration work, wildlife and human management decision-making. A Request for Qualifications for professional assistance will be issued for the development of this plan.

By Lance McDonald, Town of Telluride, 728-2167

## RESOURCE MANAGEMENT / PROTECTION

### BLM UFO RESOURCE MANAGEMENT PLAN

The BLM Uncompahgre Field Office is revising its 1985 Resource Management Plan (RMP). The revised Uncompahgre RMP will cover about 675,677 acres of BLM-managed land. BLM began public scoping and the public comment period in January 2010, with meetings in 6 communities.

The RMP will involve many issues, including vegetation, soils, wildlife, habitats, human activities, utilities, renewable energy, minerals, non-renewable energy, cultural and historical resources, recreation, special management areas, livestock grazing... The RMP will also make recommendations regarding suitability or non-suitability of river segments for inclusion in the National Wild and Scenic River System.

A multi-disciplinary team of BLM staff, as well as 19 Cooperating Agencies and a subgroup of the Southwest Resource Advisory Council have been working on the RMP. BLM and the Cooperating Agencies and RAC have been working on developing management alternatives.

BLM anticipates releasing the draft RMP for public review and comment in late 2012. For more RMP Information go to the planning web page at: [http://www.blm.gov/co/st/en/fo/ufo/uncompahgre\\_rmp.html](http://www.blm.gov/co/st/en/fo/ufo/uncompahgre_rmp.html).

By Bruce Krickbaum, BLM Montrose 240-5384.

## NRCS RESOURCE CONSERVATION

NRCS continues to be available to provide technical and financial assistance to private landowners in the San Miguel River Basin. The NRCS mission is to encourage and assist with natural resources conservation on private working lands. The soil, water, air, plant, and animal resources that we all depend on are the focus of our efforts, and the NRCS motto is "Helping people help the land."

The NRCS has various cost-share programs to help facilitate their mission. They include natural resource improvement programs such as the Environmental Qual-

ity Incentive Program (EQIP) and the Wildlife Habitat Improvement Program (WHIP).

Through these programs, conservation practices can be utilized to promote irrigation water conservation, rangeland and pasture health, and wildlife habitat restoration. Installation of pipelines, fences, livestock and wildlife water developments, grass seeding and tree and shrub planting, and weed control are common practices utilized.

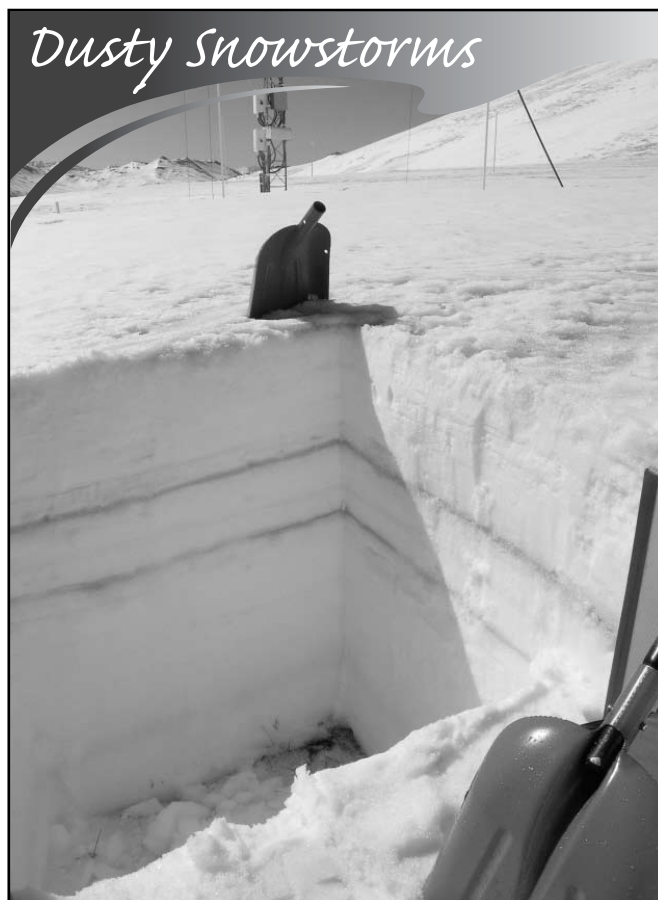
The NRCS can also assist with land preservation through our conservation easement programs. These programs include the Wetlands Reserve Program (WRP), the Grassland Reserve Program (GRP), and the Farm and Ranchland Protection Program (FRPP). In administering these programs, NRCS seeks willing partners such as land trusts and county governments to help with preservation of working agricultural lands, valuable wildlife habitat, and open space.

The NRCS cost-share programs are competitive, and projects with the most environmental benefits and the lowest cost per benefit ratio have the best chance of funding. I encourage interested landowners to contact me for NRCS technical and/or financial assistance regarding their natural resources conservation needs.

By Jim Boyd, Resource Conservationist, Norwood, 327-4245

## AIR QUALITY MONITORING

Recent developments have reinvigorated interest in monitoring regional air quality for particulate matter in the Telluride Region. In particular, during CDPHE public hearings for the pending Pinion Ridge Uranium Mill radioactive materials license, concerns were raised regarding potential for transport of radionuclide containing particulates from the mill and associated mining activity and deposition in local municipal water supply watersheds. Also, increased frequency and severity of regional "red dust" storms are impacting local air quality and changing the timing and duration of the melting of the



Dust storm impact local air quality and timing/duration of snowmelt.

snowpack in local watersheds. In response to these concerns, San Miguel County has partnered with CU Boulder and USGS to become a sampling site in the American Southwest Dust Collection Network, whose goal is to better understand the sources and chemical composition of dust deposition in the Southwest. San Miguel County installed a Total Suspended Particulate (TSP) sampler that will continuously sample all airborne suspended particulates on to a filter. The filters will be removed after a 2 week sampling interval or significant dust events and sent to CU where their mass will be measured and they will be archived for future analysis to determine their chemical composition, geologic origin and track changes in radiological constituents. At present, the TSP sampler is co-located with the CDPHE particulate samplers that collect particles of less than 10 microns (Pm10) located on the roof of the Miramonte Building in Telluride. The first TSP sample was collected as a partner in this network in late April 2011. For more information, go to the dust collection network website at <http://moabcolorado.edu/TSP.html>.

By Dave Schneck, SMC Environmental Health, 728-0447

## Watershed Education



Courtesy Deanna Drew

Mountain Village Water Department employee Patrick Drew shows 4th-grade students from Nucla and Naturita how to measure a streamflow with a bucketwheel meter on the San Miguel this spring.

## RECREATION MANAGEMENT 2011 BLM UPDATE

This spring BLM River Rangers and staff from local river outfitters worked to remove many strainers from the river. Strainers are trees that have fallen into the river, and can pose serious safety hazards. River flows in early spring are typically low, which presents lower risk for strainer removal. However, debris continues to fall into the river throughout the year, so boaters must always remain on alert for new hazards and changing conditions.

Last year BLM contracted with researchers from Northern Arizona University to conduct a 2 year study on the BLM-managed portions of the San Miguel River. Research has focused on monitoring of physical impacts from recreational use of the river, and on understanding the quality of experience of recreational users. This will be the second and final year of the study. BLM managers will use the results of the study, along with public input, and recommendations from staff, specialists, and cooperating agencies to refine its management of the recreational use of the BLM-managed portions of the river.

By Edd Franz, BLM Recreation Staff  
240-5337

## USFS TRAILS UPDATE

The Norwood Ranger District will be focusing maintenance efforts on the Hope Lake Trail this summer. The District was awarded a trail grant from the Roundup Riders of the Rockies to fund maintenance activities on the popular trail. In addition, the Colorado Mountain Club (CMC) was awarded a grant from the National Forest Foundation that will help support the trail project. The CMC will be coordinating all volunteer efforts associated with the project.

The Hope Lake Trail, 10 miles south of Telluride, offers hikers and horseback riders spectacular views of Trout Lake, Hope Lake and surrounding peaks. The 3.2 mile route goes to Hope Lake, a small lake situated in a scenic alpine basin at 11,900'. The trail receives heavy use from June through mid-October. The project will repair several braided trail segments where trail users have created multiple parallel routes through the fragile alpine tundra. Signs at the trailhead and along the trail will be replaced or upgraded.

The USFS trail crew will work on the trail throughout the summer. A volunteer project is planned for September 9-11th. Those interested in volunteering for the project should contact CMC or the Norwood Ranger District at 327-4261.

The trail crew will maintain the following trails this summer: Galloping Goose, Jud Wiebe, Wilson Mesa, Prospect, Village,

Indian and Red Canyon. Trail maintenance will stabilize trail tread and improve drainage helping to minimize erosion. Trail signage will be inventoried and replaced as needed.

By Scott Spielman, USFS Recreation  
Manager, 327-4261.

## EDUCATION TELLURIDE SUMMER COLLEGE RETURNS

For the 2nd year, UCSM will host a summer of education in sustainable living and environmental science. The University Centers of the San Miguel (UCSM) is partnering with Mesa State College and local organizations to offer 4 classes for up to 7 college credits.

Options include: The Permaculture Design Certificate, Native Plants, and Eco-psychology offered for undergraduate credit, Outdoor Education offered for in-service graduate credit and especially targeted at teachers. All classes are available for non-credit. Two workshops are Beekeeping and Cob Building: Oven Construction.

Local access to the important and popular topics of Sustainability and Environmental Science is provided, and college students are encouraged to include them in their studies. Skill-based education that emphasizes local resources and strengthening our relationship with the environment is part of the long-term solution in a changing world. Recently, Mesa State College announced their new Certificate in Sustainable Practices, which includes the Telluride Summer College courses.

UCSM is a local non-profit organization that acts like a community college, partnering with different colleges to offer accredited classes and certificates, non-credit classes focused on skill building, and college and career counseling.

For more information and a full schedule contact Robyn Wilson or Liz Cichella at 970-369-5255, or go to [www.ucsanmiguel.org](http://www.ucsanmiguel.org).

## SMWA ACTIVITIES

This summer the San Miguel Whitewater Association is focusing on introducing local youth to kayaking. We are partnering with Telluride Kayak School to offer lessons to "Team Telluride" kids Tuesday and Thursday evenings. Contact the Telluride Kayak School for more information. In order to make the river corridor beautiful for Bluegrass festival visitors, we will again have a full day river clean up the week before. Contact Cari at Jagged Edge for more information. Later this summer, in partnership with Telluride Kayak School, we will spend a day with a Montrose youth development program at Ridgway Reservoir to engage kids in outdoor water activities they seldom have access to.

By Cari Mackey, SMWA, 728-9307



## TI WATERSHED EDUCATION UPDATE

Telluride Institute is busily preparing for the 4th biannual Bridal Veil Living Classroom (BVLC) program in June. This is a dual accredited intensive summer science program offered free of charge to regional high school students. The 6 month course starts 6/28 with 2 weeks of intensive fieldwork in beautiful and ecologically rich Bridal Veil Basin, and culminates in fall with writing scientific research papers about fieldwork conducted and public presentations of results. Field topics to be covered by regional experts include: biodiversity, botany, forest ecology, aquatic insect ecology, water quality, ornithology (birding), snow science, threats of climate change in the alpine ecosystem, and art in nature.

In 2011, 2 students each from Nucla, Norwood, and Telluride High Schools and 1 Telluride Mountain School student will participate. Past students of BVLC have often been inspired to seek out educational and career paths in the environmental sciences and conservation. For more information contact [jacobson.alessandra@gmail.com](mailto:jacobson.alessandra@gmail.com).

Telluride Institute's Watershed Education Program (WEP) held its annual Nucla Middle School Snowshoe Overnight, 2/10 and 11, in collaboration with Cindy Farny, owner and operator of the High Camp Hut, and through a generous donation from the Lifton-Zoline Family Foundation. Each year, the program is offered free of charge to 10 carefully selected middle schoolers from the West End School district. This year the students were accompanied by West End teachers Stacie Schoppman and Vicki Phelps, and WEP program director, Laura Kudo. The program includes an intensive snow science and safety course conducted by Mark Frankmann of Telluride Helitrax.

All of the programming for this project aligns with Colorado State Standards in Science, Language Arts, Geography, and Physical Education.

For more information on WEP programs, contact Laura Kudo at [laura@tellurideinstitute.org](mailto:laura@tellurideinstitute.org).

**Mushroom Festival** Mycologist and author Paul Stamets will return as a featured speaker at the Telluride Mushroom Festival's 31st annual gathering Aug. 18-21. For over 30 years, Paul has named new mushroom species, pioneered techniques in edible and medicinal mushroom cultivation, and written 6 books, including his latest, *Mycelium Running: How Mushrooms Can Help Save the World*.

The 4-day destination event "celebrates everything fungal & entheo-

genic" and features workshops, panels, lectures, slide shows, movies, cooking demonstrations, free identification tent, cook-your-own tables, forays, poetry, music and a famed mushroom parade down Telluride's main street. Searching for mushrooms across our watershed's diverse ecosystems is a great way to learn about the San Miguel river basin.

For more info go to [www.shroomfest.com](http://www.shroomfest.com) or contact Art Goodtimes, at [shroompa@paleohippie.com](mailto:shroompa@paleohippie.com)

**TI's Puppet Theater** is entering its 4th season. The group has been making new puppets such as "Paddy the Paleontologist" who tells the story of dinosaur bones recently discovered on Norwood Hill. Puppeteers include Ashley Boling, Sally Davis, Jeb Berrier, Laurie Lundquist, and Colin Sullivan. Buff Hooper works with Sally and Laurie on props and puppets. The puppeteers have been performing throughout the watershed in various schools and libraries with the goal of educating and entertaining. The real stars of these shows are the animals and insects of the watershed, such as a bear, a coyote, a beaver, a cricket, an eagle, and even a mosquito. Watershed dynamics are complex and it is fun to learn from the horse's mouth... and the dog's bark and the cricket's chirp...! If you are interested in having a puppet show at your school or event please contact

Laura Kudo at [laura@tellurideinstitute.org](mailto:laura@tellurideinstitute.org).

**Life Straw** The innovative life straw water filters are point-of-use water systems that provide affordable, safe drinking water at home and outside. One personal straw lasts one year and costs \$5. A family of five can use a \$25 family filter, which lasts 3 years. New TI Board member, Vicki Phelps, a long term Nucla resident and science educator at the Naturita School, is working with her 4th graders to raise funds for sending these innovative and life-saving devices to Haiti.

For more information contact [vickiphelps@aol.com](mailto:vickiphelps@aol.com)

**Atlas of the San Miguel:** Art, Education, and Community Engagement is an exhibition that addresses the shifting ecological, economic, political, and cultural dimensions of the watershed. Organized by TI, the project uses art and technology as dual lenses for investigating the San Miguel river basin.

The exhibition will be held in the Ah Haa School East Gallery during August. A public reception will be held on July 30th from 6:30 - 10:30 pm. All events are free.

For more information contact [dan.collins@asu.edu](mailto:dan.collins@asu.edu)

**Navajo Camp**, hosted regionally for the first time this summer, is a new partnership between TI, Diné College, and UC Boulder. Scheduled for July 9-16, Diné College will bring 25 middle school students from the Navajo Reservation to the Telluride region for an educational camp focused on surrounding watersheds and featuring local experts and educators. Matching USFS funding will allow Diné College to plan a forestry component. To volunteer, contact [dan.collins@asu.edu](mailto:dan.collins@asu.edu)

For more information on TI's programs and projects, go to <http://www.tellurideinstitute.org> Info provided by TI staff, 728-8312



Sheri Worth

Searching for mushrooms is a great way to learn about the watershed.

## SUSTAINABILITY LOCAL SUSTAINABILITY ACTIVITIES

The New Community Coalition continues to work in all areas of sustainability. Our main task is facilitating community connections and education on regional sustainability issues.

Our EcoAction project seeks participants! To participate you give us the past 12 months of data for your energy use, including electricity, propane, and natural gas. We use our software program to help assess your energy use, assign a mentor and do a walk-through of your home or business to suggest ways to save energy.

TNCC hosts monthly gatherings to discuss additional energy savings and to share ideas and discuss ways to lower bills and be more comfortable in your living space. You'll also learn about waste, food and travel components in the overall energy picture. Tracking of energy bills will continue as changes are made with a goal of reducing energy used – and costs! Contact us at 728-1340 or [ecoaction.tncc@gmail.com](mailto:ecoaction.tncc@gmail.com) to get involved.

The Governor's Energy Office also provided grant funding to recruit businesses for their Main Street Energy Efficiency Initiative. TNCC's Kim Wheels worked with 11 local businesses that are getting rebates on energy audits and building upgrades (lighting and thermostats) with goals of saving energy and creating a better working environment.

Festival season approaches! TNCC works with nearly every festival in Telluride to provide compost/recycling/trash information and services. For the Bluegrass Festival, Blues and Blues and the Jazz Celebration we provide compost supervisors and assistance. Our job – train and manage the army of volunteers that assist festiviarians with putting their 'trash' in the right place. The supervisors and crew do their very best to divert as much trash as possible into recycling and composting streams – and educate to reduce overall trash produced by festivals and attendees.

TNCC is working to facilitate local food connections. We completed our community food assessment in late May. Surveys went out via email and mail to residents, restaurants, caterers and schools to determine local food buying habits – and desires. The survey has had excellent response, particularly from Norwood and points west. We believe the ultimate results of this process and a feasibility study for a local food distribution network (both funded by the Telluride Foundation through the Paradox Strengthening Communities grant) will be more local food on local plates. Since food on the average dinner plate travels over 1700 miles, connecting growers with the culinary market will have strong economic and environmental benefits.

For more information go to [www.newcommunitycoalition.org](http://www.newcommunitycoalition.org) or 728-1340. We are always open to new ideas as partners in a sustainable future!

By Kris Holstrom, TNCC

## TMV ENVIRONMENTAL DEPARTMENT

The Town of Mountain Village strives to reduce the high alpine community's impact on the environment, and has organized a new department to oversee and manage the Town's ongoing conservation efforts. The Environmental Services department will be responsible for working to ensure the Town's environmental health and sustainability through the research, development, implementation and oversight of conservation and restoration strategies, policies, programs and projects.

Specific department goals include: to track and analyze data including energy use, fuel usage, water consumption, waste and recycling; to research Town policies and procedures to ensure protection and preservation of our Open Spaces, including weeds, wildlife and wetlands; to provide environmental education and information to employees, community and guests; to participate in local, regional, state or federal projects, programs and committees related to the health of the Mountain Village/Telluride environment, and to apply for local, regional, state or federal grant funds.

By Deanna Drew, MV staff, 369-8236

## MICRO-HYDRO FEASIBILITY STUDY

Mountain Village received a 50/50 match grant award from the Colorado Rural Water and Power Development Authority (CRWPDA) for McMillon Engineering to perform a feasibility study for installing electricity-producing turbines on a new municipal water supply line planned for construction in 2014. Preliminary figures indicate that by installing two turbines on the line during construction, Town could potentially produce about 250,000 kwh of electricity annually (approximately 14% of Town water department usage), offsetting approximately \$40,000 in electricity costs annually and having an estimated 8-10 year ROI.

By Deanna Drew, MV staff, 369-8236

## OPHIR UPDATE

The Ophir water project is on schedule to be completed in 2011. This project was made possible through a \$500,000 loan at a 0% interest rate via the American Recovery and Reinvestment Act (ARRA) from the Colorado Water Resources and Power Development Authority (CWRPDA). In

addition to federal stimulus funds, Ophir was awarded approximately \$390,000 in grant funds from the Colorado Department of Local Affairs (DOLA). The improvements to Ophir's water system include: 1) Headgate/intake improvements on Waterfall Creek. 2) Construction of a new water treatment facility with upgrades to the treatment and filtration mechanisms. 3) Installation of an additional 35,000-gallon storage tank to improve the town's treated water storage capacity and to bolster fire suppression capability. This project will make Waterfall Creek Ophir's primary water source, with Warner Springs available as back-up.

In an effort to divert from traditional sources of energy to renewables and create alternative revenue streams, the Town of Ophir through renegotiation of our San Miguel Power Association (SMPA) Franchise Agreement, received a \$75,000 grant to be applied towards renewable energy projects or improving energy efficiency within the town. Currently, Ophir is completing a Micro Hydro Feasibility study and with promising results hopes to move forward to construct a Micro Hydro plant.

By Randy Barnes, Ophir Town Manager, 728-4943



Growing local vegetables for possible local distribution.



## CC DITCH HISTORY

100 years ago the members of the Colorado Cooperative were racing to finish the ditch to Tabeguache Park. Here are excerpts from a slide show Margaret Galley and Mary Helen deKoevand put together.

"At the annual meeting in 1901 an important decision was made to let contracts to individuals for completion of the remaining ditch work." In spring 1901, M.D. Bowen and Company were granted a contract for 4.5 miles of construction running from the end of the completed ditch. They established their first camp 3.5 miles below Pinon and called it Peek-A-Boo. It consisted of a cook shack, a stable for the horses and a number of boarded tents for the men.

When work progressed beyond convenient reach of Peek-A-Boo, the camp was moved farther downriver to a spot named Rocky Ford. This camp was called String Town. Men carried their guns to work in hopes of getting some fresh meat.

As time went on more contracts were let. One was for 2 miles of ditch beginning at the lower end of the ditch or Initial Point and running east toward Bucktail Canyon. It was let to a group of men who called themselves the Road Machine Club. These men, having agreed that some up-to-date equipment would help speed the work, bought a second hand road grader, horse-drawn of course, for use on the ditch. With Cris Rod as their elected foreman and Charles Lockwood as their bookkeeper they went to work. They made an agreement with the Company that would allow them an additional length of ditch if their work was completed on schedule. The work was completed and the

contract extended. It appears, however, that the latter part of the contract was done under the name of the Champion Ditch Company. Their second run was to meet Bowen's construction with the exception of a tiny stretch of ditch that has its own story.

Louis Myers, a member of the Colorado Cooperative Company, had fought in the Franco-Prussian War and the experience had left him shell-shocked. At the time the Company was letting contracts for ditch construction, Meyers declared that he would build his share of the ditch by himself. Dividing the number of miles by the number of members in the Company he came up with a fraction of a mile. He staked off the required number of feet between Bowen's construction and the Champion Ditch Company's. Then he set to work with a pick and shovel, drills, and a wheelbarrow. The Company let him go ahead until the Champion Ditch Company caught

up with him. Then they helped him finish the job. There were other minor contracts let for short distances of ditch. Gibbs and Company and the Black Cat Gang had some of those contracts, but we don't know just where they were.

In 1904 the ditch was completed to the initial point on First Park and the families started moving, lock stock and barrel, to the Nucla area on Tabeguache Park."

*By Marie Templeton and the Rimrocker Historical Society*



Aaron Rodriguez

*Proposed Piñon Ridge Mill needs 150 to 300 gallons of water per minute to operate.*

## TSRC TOWN TALKS—9th Season

Talks happen Tuesday evenings from 6/21 to 8/2 (excluding 7/19) from 6pm to 7:15 weekly at the Palm Theater 721 W. Colorado. Free admission, but donations needed.

- June 21st *In the Footsteps of Shackleton: The science of sea ice*
- June 28th *Directing Traffic on Tiny Highways: Strategies for biomedical nano devices*
- July 5th *The Physics of Synchrony: Heartbeats, wobbly bridges, and the God Particle*
- July 12th *The BP Oil Spill and Deepwater Drilling: Lessons from the Gulf*
- July 19th NO TOWN TALK
- July 26th *Green Chemistry . . . For Real?*
- August 2 *The Evolution of Diversity*

By Nana Naisbitt, Executive Director, Telluride Science Research Center 708-0004 cell. nana@telluridescience.org

### PINHEAD PUNK SCIENCE

Tuesdays, 5-6 PM, FREE, Telluride High School Cafeteria, July 5, 12, 19, 26, August 2, 9. Children learn about atomic reactions, chemistry, and physics in FREE hands-on, kid friendly activities with leading PhD scientists.

### STARGAZING SERIES

FREE, Lecture at 7:30 PM, Stargazing at 9:00 PM; July 18, Aug 1, Aug 8. Location and additional details TBD, check [www.pinheadinstitute.org](http://www.pinheadinstitute.org) for update.

Twinkle, Twinkle Little Star...come find all about what they are...as we host astronomers from Lowell Observatory who teach more about our night sky...including comets, asteroids, the milky way and more!

By Sonchia Jilek, Executive Director, Pinhead Institute 708-7441

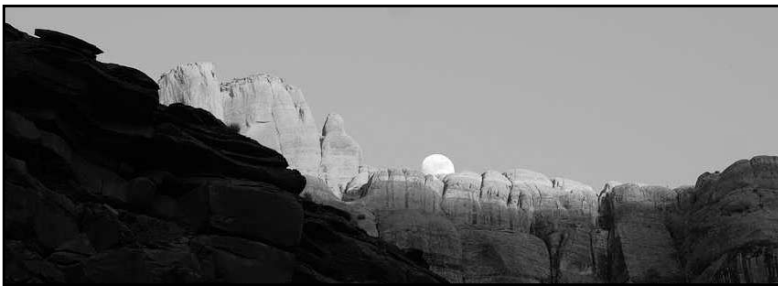
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*Moon over Paradox Valley*

## SMWC MONITORING

SMWC has supported a tributary flow monitoring program since 1995, measuring more than 35 tributaries. Flow levels are recorded monthly May through October. During 2004, a monthly water quality monitoring program was initiated, with support from SMWC partners. Sampling for parameters of temperature, conductivity, ph, and dissolved oxygen are performed with a YSI water quality meter. In addition, SMWC is currently funding a Riverwatch program. CDOW supports metals and nutrient sampling by schools and watershed groups statewide. Locally, SMWC monitors six Howard Fork stations monthly year-round to establish baseline data on metals impacting HF water quality. During summer 2010, the alpine water quality monitoring program was continued, with funding from SWCD. Water quality data was collected at approximately 100 high alpine locations, documenting the status of headwater tributaries. Data from these projects will be included in the USGS water quality website and on the SMWC website at [sanmiguelwatershed.org](http://sanmiguelwatershed.org). These projects are funded by many watershed partners, including USFS, BLM, Towns of Telluride, Mountain Village, and Ophir, San Miguel County, Telluride Foundation, and SWCD.

*By Leigh Sullivan, 728-3204, [lsullivan@mindspring.com](mailto:lsullivan@mindspring.com)*

## Message From the SMWC Board

SMWC's guiding principle is to enable all watershed stakeholders to communicate, collaborate, and accomplish together what we can't accomplish alone. Our 2011 goals are: Watershed Health Report Card Update-incorporated into this newsletter; Website update and expansion; CCC Ditch/Fish Ladder-progress toward installation, River Ranger-Continued sponsorship of RR program, which includes extensive water quality and quantity monitoring work, especially important in light of climate change concerns.

Our ultimate goal is a healthy watershed that provides a sustainable and quality lifestyle. These important projects are made possible by your financial support. Please join us in the effort. If you are a member, THANK YOU, and please renew your membership.

Let us know your preference. A bi-monthly electronic version of this newsletter, a yearly printed version, or both. Send your comments and email address to [lsullivan@mindspring.com](mailto:lsullivan@mindspring.com).

### PARTNERS IN STEWARDSHIP

Please join us as a member today. Allow your voice to be heard.

- |                                     |      |                                  |       |
|-------------------------------------|------|----------------------------------|-------|
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| <input type="checkbox"/> Family     | \$40 | <input type="checkbox"/> Steward | \$100 |

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Address \_\_\_\_\_

City \_\_\_\_\_ ST \_\_\_\_\_ ZIP \_\_\_\_\_

e-mail \_\_\_\_\_

SAN MIGUEL WATERSHED CONNECTION SUPPORTERS INCLUDE:  
 BLM, USFS, Telluride Foundation, San Miguel County, Telluride Institute, Town of Telluride, Town of Mountain Village, Art Attack, Leigh Sullivan, The Nature Conservancy

