

Riffles

*Of all the memorable views, the best have been framed by Montana windows.
(Quote by - William Hjortsberg)*

A Quarterly Newsletter

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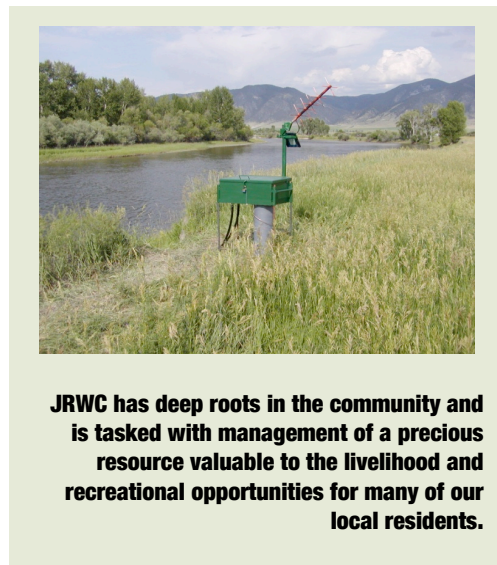
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Golden Sunlight Mine Establishes Stream Gaging Account for the JRWC

Using \$11,000.00 in funds provided by the Golden Sunlight Mine (GSM) the JRWC has



JRWC has deep roots in the community and is tasked with management of a precious resource valuable to the livelihood and recreational opportunities for many of our local residents.

established a stream gaging account. The account will be used to match other agency and organizational funds to continue flow monitoring on key reaches of the Jefferson River for the implementation of the JRWC's voluntary drought management plan.

According to Ron Spoon Montana Department of Fish Wildlife and Parks the JRWC has had to scramble to find the necessary funding to continue the operation of the gaging stations. The GSM funding will stop this last minute scramble and ensure continued operation of the gaging station.

In addition the GSM has contributed \$2,000.00 to the JRWC to provide partial funding for a water quality project on Willow Creek .

When asked about the reason for GSM's for the contribution Mark Thompson stated the JRWC has deep roots in the community and is tasked with management of a precious resource valuable to the livelihood and recreational opportunities for many of our local residents. JRWC's gaging program provides valuable data so that informed and responsible management decisions can be made by the Council. GSM is pleased to be able to support the JRWC.



Mountain Watershed and Aquatic Habitat Response to Climate Variability and Change

The Jefferson River Watershed Council (JRWC) has worked with the US Geological Survey (USGS) Montana Water Science Center and other Missouri River Watershed organizations, to spearhead a proposal to the Great Northern Landscape Cooperative Center for the development of the USGS Precipitation-Runoff (PRMS) Model for the Missouri Headwaters Basin above Toston.

If successful, the project will establish the PRMS model enabling users to calculate streamflows in the upper Missouri River and major tributaries given daily inputs of precipitation and temperature. Streamflows under future climate scenarios will be simulated using the model. These simulated flows will be used by FWP biologists to manage fisheries resources in the Missouri headwaters basin.

Several efforts are underway in the Missouri headwaters basin to manage scarce water supplies in order to sustain fish habitat and meet the needs for irrigators, ranchers, boaters and anglers. Water users in the Big Hole basin are working with state

and federal agencies to keep water in the stream for fish habitat, notably for Arctic Grayling recovery. The Jefferson River has been on the Montana FWP "chronically-dewatered" streams list since 1988. Irrigators in the Jefferson River basin have been working together to keep water flowing, creating one of the first streamflow drought plans in the state since 2000. In addition, under the Ruby River Task Force, water users have voluntarily managed flow diversions to meet minimum targeted stream flows in the Ruby since 1996.

The precipitation-runoff model will provide an increased understanding of watershed dynamics in the Missouri headwaters basin and help users quantify the relative importance of snowmelt, rainfall, evaporation, and tributary flows during different times of the year. The model will serve as a tool for understanding the effects of varying climate conditions on streamflow and fisheries habitat. PRMS can be paired with water management software such as RiverWare to help water users plan for and adapt to variable water availability and changing

irrigation demands. PRMS can couple existing and proposed groundwater models to further understand surfacewater-groundwater interactions and its effects of changing irrigation methods on streamflows. Modeling future climate scenarios will enable planners and water users to estimate streamflows 10, 20, 40, 50, and 90 years into the future based on projected climate conditions. Correlating model results with fisheries data will allow scientists and managers to estimate potential impacts to fisheries and to develop management strategies to mitigate those impacts.

The PRMS model can also be an integral part of the State Water Plan directive for the Missouri River basin, especially the plan's stated objective to provide "An analysis of the effects of drought and increased depletions on water availability." Future streamflow scenarios information is also critically important to Montana Fish Wildlife and Parks, as they plan fisheries management options for the Missouri River and its tributaries.

If funded, USGS personnel will work with personnel from local watershed groups, Montana Department of Natural Resources and Conservation (DNRC), Montana Fish Wildlife and Parks (FWP), and the Natural Resources Conservation Service (NRCS) to assure that the data input to the model are appropriate and the data produced by the model is useful for management objectives. USGS will also coordinate with the USFS and their ongoing watershed vulnerability assessments in the Gallatin National Forest as well as hydrologic climate projections produced by the University of Washington Climate Impacts Group for USFS Regions 1 and 6 across the Rocky Mountains. The Bureau of Reclamation and PPL Montana will be consulted as well. The Jefferson Watershed Group coordinator will provide in-kind support to assist with this coordination.

For more information on the proposed project go to the JRWC web site www.jeffersonriverwc.org under the news and information section.

JRWC INITIATES A VOLUNTEER WATER QUALITY MONITORING PROGRAM

After several months of research and development, the JRWC has contracted with Jodi Kountz, Environmental Service of Montana to initiate a Volunteer Water Quality Monitoring program.

The JRWC established the program in order to obtain baseline data and long-term assessments of water quality to measure the effectiveness of future conservation practices implemented on the Big Pipestone, Little Pipestone and Whitetail Creek drainages. The program is being developed in cooperation with the Montana Department of Environmental Quality, Montana Watercourse, the Natural Resources Conservation Service, Golden Sunlight Mine, Montana Department of Fish Wildlife and Parks, and the Whitehall School system. Todd Breitenfeldt and John Larsen Whitehall High School science teachers are leading the development of the student portion of the effort in conjunction with the Montana Watercourse. The Montana Watercourse is purchasing the necessary equipment for the students participating in the program as well as scheduling training for the involved educators.

The objectives of the program include:

- *Coordinating with the local school system to provide educational opportunities for students.*
- *Providing information and outreach on current water quality issues and how those issues impact surrounding communities, landowners and wildlife.*
- *Collecting water data that meets the Montana Department of Environmental Quality requirements, and*
- *Providing long-term assessment of water quality to measure effectiveness of future conservation practices implemented in the watershed.*

In order to meet these objectives, the JRWC is

preparing a Sampling and Analysis Plan and a Quality Assurance/Quality Control Plan which meets the Department of Environmental Qualities Standards, and obtaining the necessary equipment and volunteers to begin field testing on five to six sites on Big Pipestone, Little Pipestone, Whitetail Creek, and the Jefferson Slough.

At this time the JRWC is seeking individuals interested in assisting in the monitoring effort. Volunteers will assist in collecting samples and related activities. Training will be provided. For more information contact Ted Dodge JRWC Watershed Coordinator ted.dodge@ncoc.us or 406-491-4471.



Golden Sunlight Mine Installs a Riparian Restoration Project on the Candlestick Ranch

Golden Sunlight Mine (GSM) and Montana Fish, Wildlife & Parks installed a demonstration project to re-establish willows on the north Boulder River during March 2011. The project was placed on the Candlestick Ranch (owned by GSM) upstream of I-90, which allows others a viewing point to help resolve erosion problems with this type of vegetative solutions.

Approximately 1,000 dormant willows were installed between fabric soil lifts along 60 feet of the stream bank. In recent years, this technique is being widely used to achieve a rapid response of willow growth along streams. Thanks to the Golden Sunlight Mine a local example in the Cardwell area to test the idea for future projects is in existence.

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JRWC Watershed Restoration Plan Adopted

After a two year effort, the JRWC Board of Directors has adopted a Watershed Restoration Plan (WRP), which will guide the JRWC's efforts for the next five-years.

While the plan will be the guiding document for the JRWC, the council is open to new projects and initiatives that are brought to the council for consideration.

If you are interested in reviewing the plan, visit our web site www.jeffersonriverwvc.org.



Eurasian Watermilfoil: Montana's Newest Noxious Aquatic Threat

Eurasian watermilfoil (EWM) is one of Montana's newest invasive species threat and has been positively identified in Noxon Reservoir and Cabinet Gorge in northwest Montana in 2007 and recently in the Upper Missouri River, the Lower Jefferson River, and the Fort Peck Reservoir. It is a submersed aquatic plant that form dense tangled beds and can competitively displace submersed native plant communities, reduce recreational qualities of water bodies, reduce water flow, clog industrial, agricultural, and drinking water supplies, and negatively impact fish and wildlife.

Identification

EWM often roots to the bottom of low dissolved oxygen streams and lakes in water 3 to 12 feet deep. A distinguishing trait is the feathery leaflets in whorls of four with greater than 14 leaflets per leaf. While primary reproduction is vegetative, mature plants also may produce spikes of pink flowers above the water's surface in August or September.

Montana has two native varieties of watermilfoil that may be easily confused with the invasive counterpart, and any collected samples should be sent to the Extension Service for positive plant identification. An easy field test is to

remove the plant from water. Eurasian watermilfoil will go limp upon removal while the native varieties will remain rigid. Eurasian watermilfoil also contains more leaflets per stem than the natives, giving the plant its dense, feathery appearance. However, evidence suggests in isolated incidences that the native and noxious varieties may form a hybrid.

Control

While EWM is highly susceptible to 2,4-D, only aquatic formulations should be used, and in Montana, a 308 permit is required from the Department of Environmental Quality (DEQ).

Maintaining herbicide contact with the plant is also difficult. Mechanical control by hand pulling can be highly effective, but can also hasten spread if any plant fragments escape collection. While natural biocontrol agents exist, they are not commercially available for use in Montana. Drawdown of reservoirs for 96 hours has also proven effective, but can also hamper desirable species and promote rapid reestablishment.

Spread

Water recreationalists are the

predominant vector of long distance spread of Eurasian watermilfoil, though plant fragments may also be transported by waterfowl. Early detection and immediate action to contain and eradicate infestations are the most important management actions for Eurasian watermilfoil in Montana. It is not yet widespread in the area, so now is the best time to stop its advance and begin eradication from state waters.

By: Stephanie Blasenak, Jefferson County Weed District

[Source: NRCS technical notes on Eurasian Watermilfoil](#)

Watershed Special Initiative Moving Forward

An initiative to address the sedimentation on Big Pipestone Creek, Little Pipestone Creek, White Tail Creek, and the Jefferson Slough.

The JRWC and the Natural Resources Conservation Service (NRCS) continue to work on a watershed special initiative for the northern portion of the Jefferson River watershed. The proposed initiative addresses the sedimentation on Big Pipestone Creek, Little Pipestone Creek, Whitetail Creek and the Jefferson Slough. If funded, the watershed initiative will provide technical and financial assistance to implement conservation practices in the targeted area.

Twenty landowners attended a meeting on January 17, 2011, in Whitehall to gauge local interest. During the meeting JRWC and NRCS representatives provided reasons to use a watershed approach and detailed the

sedimentation issue as well as identified some potential funding sources.

Based on the support expressed for the initiative at the meeting, JRWC and NRCS are now gathering information on the current conditions of the area and possible strategies to deal with the sedimentation issue. With spring now here NRCS is starting to collect the necessary field data. NRCS will soon be contacting landowners in the target area to get input on potential projects within the area and permission to access their land.

Landowners will continue to be updated on the initiatives progress and will be given an opportunity to review it prior to its submission to the Montana NRCS State

Office for consideration.

JRWC and NRCS are pursuing funding sources to assist in implementing projects in this watershed proposal. Some of the potential funding includes; NRCS program funds, Montana Natural Resource Development grant funds, EPA 319 grants.

By Ron Mauer, Whitehall NRCS Office

Weed Sprayer Equipment Available



As part of an ongoing effort to develop a watershed restoration plan that encompasses all the resource issues in the watershed, the Jefferson River Watershed Council (JRWC), and the Jefferson County Weed District are launching a program to rent weed control equipment to landowners in the watershed area. Through grant funds provided by the Natural Resources Conservation Service,

the JRWC recently purchased an ATV mounted weed sprayer and seeder. The equipment is available to rent to organizations and private landowners who are located within the Jefferson River Watershed River area.

“Noxious weeds are one of the major issues in the watershed,” said JRWC Chairperson Gary Nelson. The JRWC recently adopted its comprehensive watershed restoration plan for the watershed. Noxious weeds are one area we can immediately begin to engage sportsman’s clubs, and others to making a positive change in the watershed.

For more information on how to rent the equipment, contact Stephanie Blasenak at 287-9330.

Watershed Coordinator

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Fun Kids & Parents Magnetism Experiment

Pointing North

Materials you will need:

- Water
- A Bowl or Puddle of Water
- A Compass
- Two Small Pieces of Paper or Sliced Cork
- Two Needle-Magnets (refer to experiment - Make Needle-Magnets)

Did you know that the Earth acts like a giant magnet and attracts other magnets towards its north pole? Try this experiment with two needle-magnets to see how the Earth pulls on magnets.

Steps:

1. Float a small piece of paper in a bowl of water or puddle, and rest a needle-magnet on it. When the needle is still mark which way it points.
2. Now do the same with the second needle-magnet. Both needles should point the same direction, which is along a north-south line.

How to find north: To find out which end of your needle-magnet points north, you can either use a compass or you can use your shadow. Go outside at midday on a sunny day. If you are north of the equator, your shadow will point north. If you are south of the equator, it will point south.

Make Needle-Magnets

Materials you will need:

- A Magnet
- A few Straight Pin
- A few Sewing Needles

Magnetism can be passed from magnets to other magnetic materials so they become magnets too. Here is a way to magnetize two needles. You can use these needle-magnets for other experiments in this site.

Steps:

1. Hold a needle by the eye and stroke it gently 30 times with your magnet, in the same direction. Do the same with the second needle, making sure that you use the same end of the magnet.
2. Test your needle-magnets on some pins before you use them for other experiments.

<http://www.kids-science-experiments.com/makeneedlemagnets.html>