

VOICE OF THE MISSOURI

Mission Statement

To understand, conserve, and enhance the unique ecological and recreational resources of the Upper Missouri River Watershed.



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UMOWA Updates

by Sherry Meador, UMOWA Board Chair

Welcome to our Summer Newsletter. It's been a long and snowy winter that was very welcome in the drought prone areas. Canyon Ferry Reservoir is filling up and they're predicting a good flow this year.

We'd like to introduce two new board members, Riley Tubbs and Tim Tilton, and to thank Alan Shaw for his long service to the UMOWA board. Alan will always be a part of UMOWA but is moving off the board to work on other projects.

We are excited to share our River Health Summary with you this summer on our website. The dashboard will be continually updated with new data from our water quality testing, macroinvertebrate studies, and plant studies as they relate to flows and temperature.

The Dashboard will be available for you to review at our upcoming Rendezvous, June 16th, 3-8pm, at the Craig Taphouse and Stonefly Grill. We look forward to seeing you all there for this annual UMOWA event. We'll have music, free BBQ, and a percentage of each beer is donated to UMOWA. There will be a silent auction with something we're sure you can't live without.

We'll also be selling raffle tickets at the Rendezvous, and online, to our RO Boat Raffle to be held August 19th. The raffle drawing will be held in combination with the annual Bash 'N Trash event – a collaboration with Pat Barnes TU and the Sun River Watershed Group to clean up trash along the river. Sign up to volunteer for the river clean up with meganh@umowa.org.

We are pleased to have been awarded a Noxious Weed Trust Fund grant this year to help landowners treat over 2500 acres of weeds. These efforts will be combined with distribution of biocontrol agents and revegetation projects to promote healthy habitat for the wildlife and fisheries in our river system.

Please stay up to date on our projects by checking out our website, signing up for emails, and following UMOWA on Facebook and Instagram. Also, feel free to email me, smeador@umowa.org, if you would like to become involved with UMOWA or have any questions about our projects. We appreciate your support.

UMOWA Welcomes New Board Members



Tim Tilton, Helena, MT

Tim is a proud lifelong Helena resident and fourth generation Montanan. He considers himself truly fortunate to live in Helena and recreate along this wonderfully windswept eastern shadow of the

Continental Divide. He is married to another lifelong Helenan, the fair and delightful, Ann Tilton and father to two marvelous children, Scott and Alana. Tim spent his professional career primarily as a Contracts Officer, retiring in 2020, after a 30-year career with the Montana Department of Transportation. He previously served on the Smith River Advisory Council for the 2009 Smith River Management Plan Update.



Riley Tubbs, Helena, MT

Riley Tubbs is an entrepreneur and outdoor enthusiast from Helena, Montana. Born and raised in Montana, Riley studied Nature Based Tourism at the University of Montana. After Graduation,

Riley helped found Ten Mile Creek Brewery in Helena and most recently opened The Craig Taphouse in Craig, Montana. When not running the business Riley enjoys the outdoors with his two children Trippe and Pennie and his wife AshLy. Riley has a long connection to the Missouri River, starting with his grandfather Bob Tubbs who was a boat captain and manager at The Gates of the Rocky Mountains. ■

The Role of River Islands in Noxious Weed Management

by Jane Mangold, Ph.D., MSU Land Resources and Environmental Sciences

Rivers and the lands associated with them (e.g., islands, shorelines, adjacent meadows) provide important habitat and refugia for a variety of wildlife. For outdoor enthusiasts and people who live and work along rivers, the combination of flowing water, birdsong, animal sightings, fish, insects, and vegetation make river systems attractive. What is not so attractive along rivers are noxious weeds. Noxious weeds are plants non-native to Montana that cause harm to agriculture, forestry, livestock, and wildlife or harm native plant communities; examples include leafy spurge, spotted knapweed, Canada thistle, and houndstongue.

Noxious weeds grow well in disturbed areas. Rivers, including islands within rivers, are prone to disturbance due to the scouring action of water. Water can also carry noxious weed seeds. Put the two together—disturbance and weed seed pressure—and river islands become a magnet for noxious weeds. Furthermore, cobbly soils on river islands can make it difficult for other vegetation to grow, and noxious weeds take advantage of the open space.

With the high propensity of river islands to have noxious weeds, what can river enthusiasts and people who live and work along rivers do to help? First, limit your footprint in these areas—tread lightly and avoid disturbing existing vegetation. Learn to identify noxious weeds and avoid walking through them when you see them. Make sure you, your gear, your dog, and anything else you're floating with are free of noxious weed seeds. If you find seeds (houndstongue seeds are notorious hitchhikers), put them

in a plastic bag or other container and place them in the trash at your earliest convenience. Be on the lookout for newly invading noxious weeds that like shorelines, like purple loosestrife and yellow flag iris; if you find some, take a georeferenced photo or detailed notes and report to your local weed district, Extension office, or other expert resource.

For people who live and work along rivers, acknowledge that noxious weeds may be a persistent problem. Prioritize efforts on monitoring and protecting noxious weed-free areas downstream from known infestations and work upstream from there. When controlling noxious weeds, consider integrated methods like hand pulling and digging, biological control (although this can be difficult due to repeated soil disturbance), and herbicides. If using herbicides, be sure to use products that are as selective as possible for the target noxious weeds and time applications to minimize injury to non-target plants and wildlife, including pollinators. Be sure any herbicide used is right for the setting, including factors like soil type and proximity to water.

If you'd like to help with this project, please donate through [UMOWA.org](https://umowa.org), and feel free to contact us for additional information. ■

Osprey, the MO's Hardest Working Fisher

by Joe Kerkvliet, UMOWA Board Member



Osprey male delivering fish to mate and chick. West-side Helena.

Many Upper Missouri River users like to fish the Mo and some occasionally enjoy fishing all day for several days in a row. But how would you like to fish 10 or more hours a day for seven to eleven weeks in a row? Such is the work schedule of the male osprey, who is the sole breadwinner for his family of 1-2 fledglings from the time they hatch in the spring until their first flight in early fall. To deliver about 10 fish per day to the nest the male makes dozens of 30 to 100 foot dives into rivers and lakes. They succeed in grabbing a fish of with their sharp talons about every third dive. Meanwhile, the female osprey stays on the nest, protects the babies from predators (eagles, owls, raccoons), keeps them warm, and feeds them by tearing the delivered fish into bite size pieces.

Osprey, also called fish hawks, are fairly common on the Missouri. A 1998-1999 survey found about 80 occupied osprey nests between Three Forks and Holter Dam. While there are no official counts, there are several occupied nests between Holter Dam and Cascade in a typical year.

Osprey feed almost entirely on fish, but they are not particular about fish species. On Holter Lake, a 1999 survey found osprey feeding on 80 percent suckers, 10 percent trout, and 10 percent other species (whitefish, perch, walleye, carp). Up river, near Three Forks, suckers comprised 70 percent of osprey diet, trout about 20 percent, and other species about 10 percent). The average fish delivered to the nest measured slightly less than 12 inches.

The osprey parents and their newly-flying young leave Montana in early fall. Many travel to the Gulf of Mexico. The parents reverse the migration in the spring, while the young will often stay a year or two, before returning to their natal rivers to repeat the cycle of catching fish and raising young.

Often, when I am wading the Mo and focused on fooling rising fish, I am startled by the whoosh of a diving osprey. A splashing of bird and fish often follows as the osprey pummels its five foot wings, rises skyward, turns the fish torpedo-wise, and flies off in the direction of its mate and babies. I know then that I am not the only fisher on the river, definitely not the hardest working one, and certainly not the most skilled. ■



Female (larger) and male osprey.

UMOWA Creates New Data Dashboard

by Melissa L Muradian, Ecosa Consulting

UMOWA's data dashboard is a publicly available website and the centerpiece of the River Health Summary Report. The data dashboard provides new insights through visual and analytical interpretation of a suite of data sets collected along a core segment of the Upper Missouri Watershed—the reaches between Holter Dam to Cascade. The dashboard synthesizes not only data from UMOWA's annual field studies—such as the aquatic macroinvertebrate (aquatic insects) study, the multi-parameter water quality study—but also pairs UMOWA's data

with MT FWP trout abundance and USGA discharge data to gain new insights into the past and current state of river health. Is there a lag in environmental sensitivity between different macroinvertebrate taxa? Under warming temperatures or increased nutrient concentration, is there synchronicity or a lag found in impact to aquatic insect and trout populations? Do these relationships differ by reach? The Health Summary data dashboard makes these insights more accessible than a standalone document by emphasizing visualizations over text

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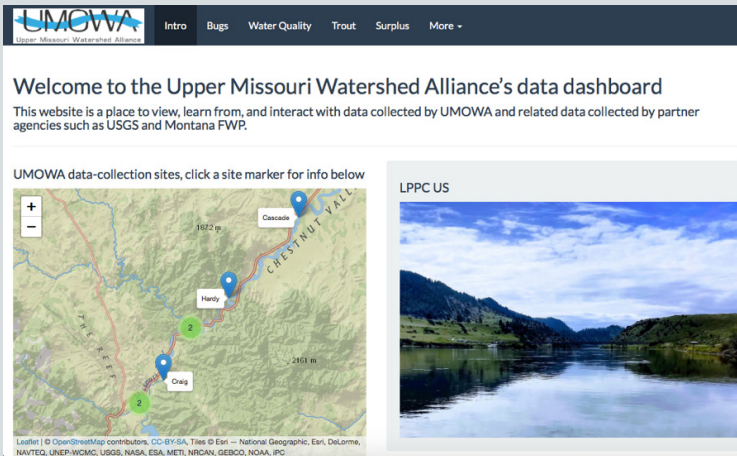
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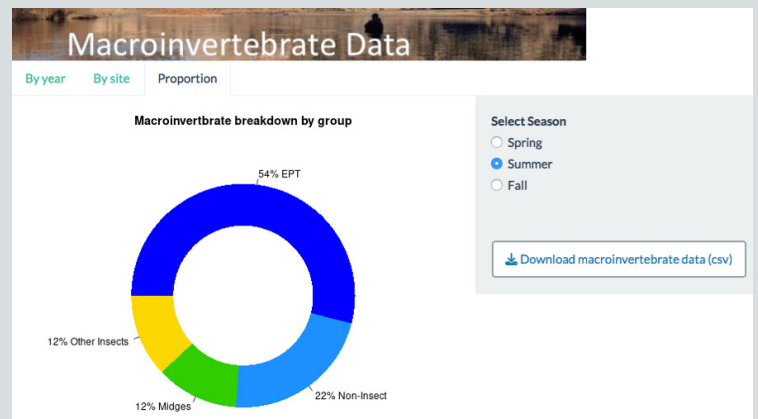
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and allowing the user to “drive”. The dashboard is first divided into major tabs by: Bugs (aquatic macroinvertebrates), Water Quality, and Trout. Then within each major tab, the user can choose to view single or correlated trends by reach, year, or season.

Two screenshots from the dashboard are below.



The photo above displays a portion of the landing page. Users are introduced to UMOWA’s field studies by site, with an interactive map that allows users to see a photo and read a description (not shown) of each river reach sampled in the study.



The photo above here is a graphic from the Bugs tab showing the proportion by group of macroinvertebrates found on the river bottom in summer, averaged over all reaches and years in the study. The most pronounced feature of the figure is the 54% EPT, which says that over half of the aquatic insects (of all life stages) in summer are stoneflies, mayflies, or caddisflies! These 3 invertebrate taxa are not only favored by many anglers, but are often studied by freshwater ecologists as a single group for their unique sensitivity to changes in sediment or nutrient concentrations. More to come!

The narrative of river health is multidimensional and UMOWA’s new data dashboard reflects the complexity and “interdisciplinary” reality of the Upper Missouri River system. ■