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Bi-annual Newsletter Volume 27, Issue 1

Preserving the Yellow Dog Watershed in its most natural state for the use of the public, now, and for the benefit of future generations.

YDWP PREMIERS MODEL FOR WATERSHED EDUCATION

By Brian Noell, Administrative Assistant

In 2022 YDWP received a grant from The Community Foundation of Marquette County to create a scaled-down replica of the Yellow Dog Watershed that we could use in school presentations and public events to illustrate hydrologic processes and to spur behavior change and action on behalf of the region's rivers, streams, and lakes. Using topographical maps, Project Coordinator Sarah Heuer and volunteer Les Milligan built the model using foam insulation for land and water contours. They then modeled clay on top of the foam base, topping it with miniature foliage and adding architectural details, including local landmarks.

On April 21, 2023, YDWP presented the model to third, fourth, fifth, and sixth graders at Powell Township School in Big Bay. We were delighted when the first group of students, third and fourth graders, walked through the door, rushed to the model, and, without prompting, indicated landmarks in Big Bay and beyond. After a brief introduction, we allowed the children to send water through the model from the highest point in the river. Once Lake Independence and Lake Superior began to fill up, they used small syringes to apply dyed water simulating pollution, green for fertilizers and pesticides on lakeside lawns and blue for



Powell township students showing excitment and genuine interest in the 3-D model of their community. Photo by John Gillette, 3rd and 4th grade Powell Township educator.

oil on roads and parking lots. We sprayed the surface of the model with water representing rainfall, and students got to see how runoff brings pollutants into their watershed.

We were happy with how well the model held up in successive classes, as students eagerly lined up to send water through the river channel with the large syringe, apply pollutants with smaller ones, and simulate rainfall with spray bottles. Areas of the watershed representing marshes actually flooded, and property along major waterbodies became slightly waterlogged, thus allowing the dyes representing pollutants to flow easily and noticeably from the miniature lawns into Lake Independence and Lake Superior.

To build on observations about pollution made during this activity, we asked students to create a watershed of their own using a sheet of paper. After making a pencil drawing of a town, complete with houses, roads, stores, and parking lots, they used water-soluble markers to color the areas where pollution might be generated. They then crumpled their paper town so that it had ridges and valleys. They indicated the tops of all the ridges with black permanent marker and used blue water-soluble marker to show the water courses in the valleys. We then sprayed their paper models, simulating rainfall, and they made observations about how, why, and where pollution flowed into the watercourses.

LOCAL WELDER CREATES PAY PIPES FOR COMMUNITY FOREST AND PINNACLE FALLS PRESERVE By Sarah Heuer, Programs Coordinator

This spring, Big Bay native Pat Havel teamed up with YDWP to design and create pay pipes for the Community Forest and Pinnacle Falls Preserve. Formerly lead plant mechanic and welder at the Marquette Power Plant, Pat has been doing specialty projects in the community for years. Pat enjoys recreating and hunting year-round at his camp near the Yellow Dog River, and we are thrilled to have the opportunity to collaborate with him.

The 8-foot long pay pipes are constructed of upcycled steel and will be erected in concrete at our trailheads on both properties. Throughout the years, YDWP has experimented with different types of collection boxes, all of which have succumbed to theft and vandalism. These pay pipes, virtually theft and vandilism proof, will help to secure the generous donations of our ever-increasing number of visitors.

We also will be placing a QR code on the pipes so supporters who do not have cash on hand can make online donations. Non-motorized recreation and camping are free on our lands, but we do encourage folks to give what they can so we can continue to manage and maintain our properties for all to enjoy.

Our thanks go out to Pat for crafting these one-of-a-kind collection pipes that will be in use for many years to come.



Say It in The Howl

The Yellow Dog Howl is published biannually by The Yellow Dog Watershed Preserve for its members and friends. We welcome your thoughts on environmental issues, stories of the history and legacy of the watershed, or anything you feel is related to our mission. Comments, suggestions, articles, poems or art can be shared with Sarah Heuer: sarah@yellowdogwatershed.org



A 1963 photo of Pat Havel (left) with best friend Jody Burns in Big Bay, posing for a photo during a sledding session. The old Ford factory can be seen in the background.

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It should come as no surprise that, given the current demand for rare earth minerals, particularly nickel, in today's industrial and commercial applications, production has been expedited in the few places around the world where these metals are being extracted. In the US, only one actively producing source of nickel exists today, Eagle Mine on the Yellow Dog Plains. With the mine scheduled to close in 2027, there is considerable pressure to discover and exploit additional ore bodies to satisfy the demand for batteries and other components for electric cars, computers, cell phones, as well as any product requiring solid-state circuitry. The financial payoff for a new discovery could be in the billions of dollars, according to Talon Metals Corporation, who now have entered a partnership with Rio Tinto, former owners of Eagle Mine, to explore for deposits in the central and western UP.

Talon presently have their focus on Tamarack Minnesota, where they hope to establish an underground nickel mine and have begun the environmental reviewing process. However, Talon also has their gaze set on our region. Last fall, Talon procured the rights to explore for rare earth minerals in over 400,000 acres located in Marquette, Baraga, Houghton, and Iron Counties. These were rights formerly owned by the Ford Motor Company. In addition, Talon is requesting a lease of 23,288 acres of mineral rights owned by the residents of the State of Michigan, administered by the Michigan Department of Natural Resources Mineral Management Group.

Initially, the public comment period for the debate on leasing state-owned mineral rights was set to end May 31; however, the Upper Peninsula Environmental Coalition has successfully requested that the time period be extended. The DNR has allowed at least an additional 30 days for the public to share their views.

In their request, UPEC pointed out that such a delay was justified because of the size of the mineral lease request and the fact that Talon Metals has no history of conducting mineral exploration in Upper Michigan. Moreover, the mineral lease request includes land in four different counties, and UPEC asked the Michigan DNR to hold public meetings in close proximity to the proposed lease impact areas, so the public can be informed of the company's mission and intent. The request also noted that Talon Metals is not based in Michigan, and should be vetted financially before operating here.

A confusing aspect of this project is that Talon is an exploration-only company, with only 6 drill rigs, which they expect to be fully using in Minnesota. If Talon will not actually be conducting the mineral exploration in the UP, why is Talon the applicant? If Rio Tinto will oversee the actual mining operation, or hire subcontractors, why isn't Rio Tinto the lease applicant? As the "joint ven-

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exploration.

The public comment period extension request points out, as well, that, by statute, the State of Michigan has the right to conduct leasing either via direct lease (nominations by companies) or via lease auctions. In either case, the DNR has the obligation to protect state-owned minerals for future generations, as well as today's needs, and it should be able to assure the public that this is being done.

Finally, UPEC's request addresses environmental concerns. The State of Michigan DNR, they assert, should take steps to ensure that all drilling activities prohibit the use of PFAS chemicals, water pollutants deemed "forever chemicals" which are widely understood to be present in proprietary drilling lubricants. The public has a right to know how the DNR will protect ground and surface water from contamination introduced by drilling practices.

Efforts by groups like UPEC to establish accountability before the exploration and drilling process gets underway are crucial to ensuring that, if an ore body is discovered and another mine developed, it operates with human communities, wildlife, forests, and living waters in mind.

24 years ago, I was in my cabin on a county road approximately 7 miles from the current Eagle Mine, whose initial ore body is partially under the headwaters of the West Branch of the Salmon Trout River. I felt a vibration, seemingly more than just passing logging trucks. After investigation, large trucks with rising and falling piston driven pads were pounding along the AAA road west of



A Talon Metals drill rig in Tamarack, Minnesota. Photo: FederalUAV.

ture" (providing funding and expertise) partner of Talon, Rio Tinto should be forthcoming about its involvement and liability in the proposed mineral

the current mine site. Later they would come east of that site to a place named Eagle Rock, designated as a place of worship and ceremonial activities for an undisclosed period of time by First Nations inhabitants of the land.

The trucks were performing a seismic grid to identify constituents under the surface: rare earth metals, water and soil densities. Wire with transducers were placed on the ground measuring the rate at which the seismic reactions traveled between points identifying certain geological formations which would indicate presence of anomalies that may contain rare earth metals. At the same time, some areas around the Eagle Rock were clear cut of then 60-80 year old Jack Pine to make way for future exploration. Later, smaller areas for individual drilling were established.

In 2003, then Governor Jennifer Granholm allowed a body of diverse individuals to form regulatory authority to draft legislation for underground mining regulations, which, up to that time, did not exist in the state of Michigan. By 2005 those rules and regulations were written and put into place.

In 2006, The Kennecott Corporation, a subsidiary of Rio Tinto, revealed that it was to be the company to build the underground mine in Marquette County. The next four years saw meetings in townships, colleges, and schools for the public to inquire about and comment on the details of the mining project and process.

In 2010, the Director and all divisions of the Michigan DNR approved the mining plan and Kennicott/Rio Tinto was allowed to occupy 120 acres of state-owned land on the Yellow Dog Plains for 40 years. A perimeter fence was installed, but not

before dedicated members of the Keweenaw Bay Indian Community occupied the land around and on Eagle Rock in a final protest against the project.

For the next four years the Kennecott/ Rio Tinto company developed the required facilities for the mine. Electrical upgrades from Marquette to Big Bay and the mine were undertaken. In 2014, the AAA road to the mine gate and the northern part of County Road 510 were paved. In a surprise development that same year, Rio Tinto/Kennecott sold the Eagle Mine to Lundin Mining Corporation for 325 million dollars, a 75-million-dollar loss on their investment. Finally, in September of 2014, the first shipment of ore left the mine for the redesigned and redeveloped Humboldt Mill. It would be processed there and hauled in rail cars to Sudbury, Ontario.

Dedicated folks from these organizations worked diligently to protect our lands and environment during this period: Keweenaw Bay Indian Community, Great Lakes Indian Fish and Wildlife Commission, Wolf River Band, Superior Watershed Partnership, National Wildlife Federation, Front Forty, Huron Mountain Club, Northwoods Recovery, Upper Peninsula Environmental Coalition, Friends of Land Keweenaw, Sierra Club, Northern Michigan University, Michigan Department of Natural Resources, Michigan Department of Environmental Quality, Powell Township, Ishpeming Township, Champion Township, Longyear LLC, A. Lindberg and Sons, Save the Wild UP, and countless others.

The Yellow Dog Watershed Preserve has monitored the effects of the development and operation of the mine from its infancy until the present and is committed to biannual evaluation of the quality of area's rivers and streams until its closure and beyond. We have been in the air as well, conducting low-level overflights to survey mining activity. Superior Watershed Partnership continues to monitor test wells at the Eagle site as well as the Humboldt Mill and Salmon Trout Springs north of the mine. Great Lakes Indian Fish and Wildlife Commission monitors Salmon Trout tributaries, springs, and hydrologic outflow from Humboldt Mill.



Aerial view of Kennicott explorations on the Yellow Dog Plains in 2006. The Huron Mountains and Lake Superior are visible in the background. Photo by Chauncey Moran.

Having been down in the belly of the mine some years ago, I can conclude it was one of the cleanest mines I had been in, having visited many of them over the decades. The attention to safety was evident, and water treatment was functioning as planned. However, I still have reservations about this and future projects, since 100% of all mines with sulfide rock as the host for mined material have degraded surface and ground water resources over time. My hope is that the stewards of our resources do not relent in their scrutiny by continuing the monitoring of air, land, and water downstream from these facilities.

The words and actions of the Talon Minerals group must be closely watched before these newcomers to the UP mineral rush can be considered responsible actors. Respect must be earned, statements need to be verified, loyalty must be demonstrated, and trust must be earned. We urge anyone holding surface rights to any properties listed for possible leasing to voice your opinion and bring to the table any grounds for removing a parcel from potential exploration. Keep in mind that a lease does not give full authority to develop without going through the permitting process and putting in place the proper environmental or other protections.



Participant Kaitlyn Millard displays the brook trout she caught in the Yellow Dog River on the second day of last year's fly-fishing workshop. Photo by Hollie Koning.

YDWP TO HOST FLY-FISHING WORKSHOP AGAIN THIS YEAR

In case you missed it last year, YDWP, in partnership with the Fred Waara Chapter of Trout Unlimited and Superior Outfitters, will host another fly-fishing workshop this year. The event will take place on August 19 and 20 at the Yellow Dog River Forest Retreat, 2.5 miles west of County Rd. 510 on the south side of the Yellow Dog. TU and Superior Outfitters will supply the expertise and the equipment, while YDWP will provide the camping area as well as meals on Saturday and Sunday. No fly-fishing experience or gear is necessary. Even though the workshop is geared toward novices, we can also accommodate intermediates.

Pre-registration is required and will be available on the YDWP website in early July. The workshop will be capped at 20 students, so register early! The price for the weekend is \$45 per person. Stay tuned for further announcements.



We all know that technology is always changing. Those changes make things easier, more efficient, and convenient, but they also open the door to alienation and disregard for our environment. For example, the mountain snowmobile was a groundbreaking innovation for rescue efforts in the deep snow in mountainous areas. However, here in Michigan's north woods, some of us are experiencing the negative impacts of this new mountain sled

Since the early 1990s, the mountain snowmobile has continued to grow in popularity, and by the 2020s has come to dominate the snowmobile market. They are designed with a more powerful engine, a narrower body, and much longer track, with larger paddles than the conventional snowmobile. According to Power Sports Guide, "A mountain snowmobile is a purpose-built sled specially designed for use in deep snow and steep terrain These off-trail snowmobiles can go virtually anywhere." And they do. This is the problem.

The Yellow Dog Watershed Preserve has been witnessing a steady increase in mountain snowmobile riding in the backcountry over the last several vears, but the winter of 2022-23 marked a new high, and along with that, increasing concern. With sleds that can go anywhere, riders choose not to use the groomed trails, but instead seek the remote wilderness, the hills and ravines, usually visited only by backcountry skiers or snowshoers. In their quest for virgin terrain, they often venture onto private property, causing damage to young trees, backcountry ski areas, and private access trails. In addition, riders do not understand or simply disregard the rules concerning Commercial Forest lands (CF). According to Michigan laws, "CF lands must be open to foot access for the acts of hunting and fishing." They are not open to motorized vehicles, including snowmobiles, unless the riders have the owner's permission and consent, and in most cases, they do not.

Not only are these snowmobilers trespassing and causing physical damage on the land, they are extremely noisy. Mountain sled owners often modify the exhaust system presumably to enhance performance, and this modification makes the sled



Mountain snowmobilers have adapted a verb used in other offroad motorsports, to braap, the act of gunning the engine to create a short, loud, high-pitched burst of sound. It is popular to modify exhausts to enhance the capacity of the sled's engine to produce this sound, and to make it louder.



"No snowmobiling" signs were posted for the first time in the Community Forest this winter. Photo by Rochelle Dale.



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OUR WINTERTIME BLUES By Rochelle Dale, Administrator

much louder. The DNR does have a noise law: "Each snowmobile must be equipped with a muffler in good working order and in constant operation from which noise emission does not exceed the current standards." The current standard is 88 decibels. The fine for violating this standard may be up to \$250. However, since these snowmobiles are everywhere, and the DNR has a limited staff, most offenders are never fined or even warned.

This past winter, for the first time, snowmobilers ventured into the Yellow Dog Community Forest, driving on the ski and snowshoe trail, even crossing the narrow wooden footbridge on the south side of the river. They entered the Community Forest on the north side of the river as well where snowshoers who a want a more remote experience usually go. We posted signs at both entrances as the DNR suggested, and we hope this curbs the trespass in the Community Forest, but the situation for the private landowner may be more difficult to control. The problem is systemic, from the manufacturers to the snowmobilers themselves and everywhere in between. Locally, we have discussed the issue with the Big Bay Snowmobile Club, which is also concerned about renegade riders going off trail and alienating private landowners. Hopefully, we can work together to disseminate information on where and how to ride responsibly without infringing on other peoples' rights to privacy, peace and quiet, and other forms of outdoor recreation.

Please contact us if you have any advice on this matter or would like to help in some way. YDWP is not against snowmobiles; they are not only fun, but are a necessary form of transportation for many of us. However, as climate change progresses, the U.P. will increase in popularithy as a reliable wintertime outdoor recreation destination, and these issues, unfortunately, are likely to proliferate.



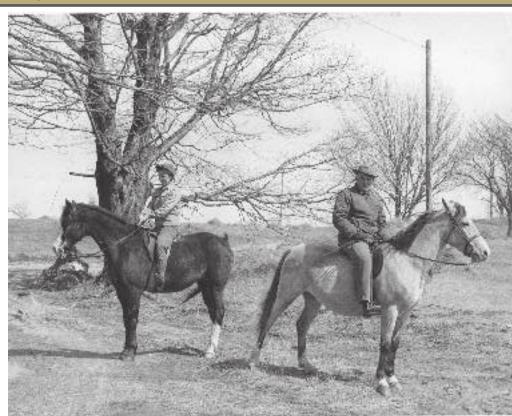
BACK IN THE DAY TED TALKS: THE LIFE AND PHOTOGRAPHS OF TED CARLAND By Brian Noell, Administrative Assistant

Many longtime residents of northwestern Marquette County know of the Drury family, who have a long history in the region. Ted Carland, who has worked as a photographer for the Yellow Dog Watershed Preserve for the last 4 years through a program administered by the American Association of Retired People, is now one of the elder statesmen of the family and a font of local knowledge. Not only a storyteller, Ted has helped YDWP illustrate the grandeur of the Yellow Dog and surrounding landscape to the outside world through iconic images on our website and in other media.

Ted's grandfather was Charles P. Drury, a physician and Marquette City health officer from 1917 to 1924. In 1921, Charles and his friend, fellow physician Arthur King Bennett, purchased an old homestead on the eastern shore of Conway Lake, inside what is now the Huron Mountain Club. Three years later, Doc, as Charles was known, moved his family to Iron Mountain, largely abandoning the camp to Bennett. After an 11-year sojourn, a debilitating illness made family practice in Iron Mountain difficult, and Doc reassumed his former post, remaining Marquette's health officer through the 1950s.

Ted recalls that his grandfather was thrifty to a fault. Upon Doc's return in 1936, it was apparent that the cabin that served him and Bennett on Conway was too small for their growing families. After purchasing more land, instead of putting up new buildings, Doc hired a former patient to move a cabin and its log horse barn from the windswept shores of Lake Superior to the more protected and placid Conway. Finally, in 1953, as a retreat from the growing brood of grandchildren at camp, he disassembled the family's garage in Marquette and carted it to the family compound. Resurrected, it was affectionately dubbed Doc's Folly.

Although Ted was raised in Frankfort, Michigan, near Traverse City, he has early childhood memories of Marquette, spending his first-grade year (1950-51) as a refugee from a polio outbreak then ravaging downstate communities. Although the polio vaccine was not introduced until 1955, Ted recalls that his grandfather administered other vaccines to himself and his classmates at Graveraet School and that they spent time on Conway Lake as well as on Middle Island Point, where the family had another camp. Marguette was much smaller then, the town ending on the west side as scrub land at the terminus of Washington St. Jilbert's Dairy was still pasturing cows in the vicinity. The Big Bay Road itself was a dusty two-track, virtually impassable for much of the winter. Middle Island Point, now within Marquette Township limits, was rustic, but Conway Lake was very remote indeed, and the accommodations there primitive. Although the Huron Mountain Club had its own power plant by that time, Ted remembersthat the spotlight at the gate house was powered by

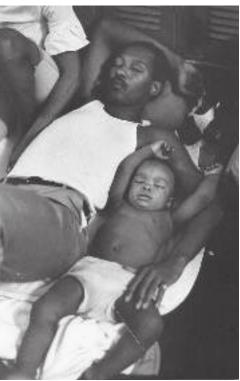


Ted's mother, Jeanne, and father, Custer Theodore, on horseback on their hobby farm in 1960. Ted was 16 at the time, working at the photo shop at Interlocken Institute for the Arts, where he likely developed the film.

a gas generator.

Ted's mother, Jeanne, the oldest of Doc and Hazel Drury's 5 children, had little interest in the family compound until the advent of electricity and running water, so Ted's visits there during his childhood were sparse. However, he did spend considerable time on Conway in his thirties and early forties, helping build additions and the outhouse at Doc's Folly, where his name and that of his first wife are inscribed in the concrete slabs. Upon Doc Drury's death on a Florida golf course in 1967, each of his and Hazel's five children inherited a parcel on Conway, and Doc's Folly fell to Jeanne and Ted's father, Custer Theodore.

Ted fell in love with photography as a teenager after he received a scholarship to attend a summer program at Interlocken Institute for the Arts. This opened the eyes of this small-town boy to the world of art, and to the possibility that one could make it a career. After working in the dark room at Interlocken during and after high school, Ted studied at Brooks Institute in Santa Barbara and launched his career in the late 60s as a photographer and darkroom technician for the American Red Cross. In this capacity he was dispatched to document the organization's response to hurricanes, floods, earthquakes, tornadoes, and refugee crises in the US and abroad. He also went on freelance assignments with a friend who took pictures for Newsweek, photographing, among other things



Evacuees sleeping in a New Orleans school that served as a Red Cross shelter during Hurricane Camile, 1969. This was Ted's first assignment to photograph a hurricane. He explains, "When you are in the eye of a hurricane, the air pressure is low and people get quite lethargic." So, it was no surprise to find this father and baby slumbering while the storm raged outside.



The immediate aftermath of Hurricane Agnes in downtown Wilkes Barre, Pennsylvania, 1972. Ted took the photo from another boat, supplied to transport reporters and photographers around the disaster zone. Ted remembers that the water was so high that they had to duck to go under traffic lights.

Ted moved to Big Bay full time in 2003, when he bought a tracked 1982 Tucker snow cat grooming machine, ostensibly to get into the wilderness to take pictures of the winter woods. At this time explorations that would end up in the creation of Eagle Mine were getting underway, and a friend connected Ted with officials at Kennecott Mining Company, who hired him during 5 winters to haul geologists, engineers, and their gear to sites in the back country.

In 2019, however, Ted came over to the other side to help document YDWP's work to preserve the watershed and educate the public. He has also been extremely generous with the images he has taken in the region. As Ted's tenure at YDWP comes to an end, we present a selection of his photographs with the stories of their creation.



His office in Washington D.C. lent Ted to the International Red Cross to document an earthquake in Guatemala in 1975. This image was taken inside a canvas tent that housed refugees in the Department of Chimaltenango, west of Guatemala City. As a "gringo" with a camera, Ted was a curiosity to the children of the remote mountain camp, who peered at him sheepishly as he took their picture.



the funerals of Dwight Eisenhower and Robert Kennedy, both of Richard Nixon's inaugurations, and Vietnam War protests.

At a fork in the road, Ted returned to Michigan in 1980 to help with his father's business. There he married for the second time and began a family, but he never lost his passion for photography, enthusiastically documenting the early lives of his children.

Once Doc's Folly and the other cabins at the Drury compound on Conway Lake were fitted out with electricity and running water and the roads were improved, Ted's mother could be persuaded to spend time there. Late in life, his parents began to visit more frequently. Jeanne died in October 2001, his dad in January 2002, and that Memorial Day, Ted came to open up the camp by himself. Before this time, he had never visited the Yellow Dog, but in summer 2002 he acquired some exceptional camera equipment, and, led by a local character by the name of Blue Tarp Mark, visited the falls in what is now the Community Forest. That began a photographic obsession with the Yellow Dog that continues to this day.

Ted's second son, Custer, asleep in a motorcycle helmet in the shadow of his mother's bike in the backyard of their home, Summer 1987.

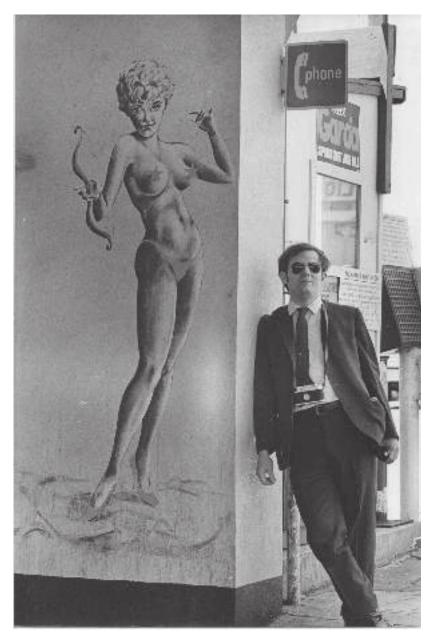


Leatherby Falls on the West Branch of the Huron River, 2010 or 2011. Ted remembers that the light was dim, and the film was slow, so he needed a long exposure to capture the image. The movement of the water caused it to blur, creating the effect of a continuous stream."



A cowboy "bulldogging" at a rodeo in Ventura, California, 1964 or 1965. At the time, Ted was in photography school at Brooks Institute in nearby Santa Barbara. He used a technique of panning along with the object of focus to capture the sense of movement. The other horse and rider, the calf, and the cowboy's now riderless horse were moving at different speeds, while the background was stationary, causing all these elements to blur. Meanwhile, the cowboy's body, upon which the camera was trained, remained sharp in the resulting image.





Ted in San Francisco during a Red Cross convention, 1971 or 1972. Rudy Vetter, Ted's boss, posed him in front of this compelling backdrop and snapped the image. Vetter had been in the Navy on Guam in WWII and made the first prints of the famous image of US Marines raising the flag on Iwo Jima. Vetter also had worked for the Memphis Commercial Appeal and published images in Life Magazine. He took the famous 1937 photo of a Mississippi lynching that appears in the now legendary Best of Life collection. The image was labeled "Photographer unknown" for Rudy's safety. The sheriff had taken him to the location but told him to leave his camera at the police station. He complied, but then borrowed an old glass plate studio camera from a local and returned to capture the searing image of the tortured body chained to a tree.

Top panoramic:

In the winter of 2004, Ted captured this panoramic image of a rig drilling a water-monitoring well not far from the future site of Eagle Mine on the Yellow Dog Plains. Ted had hitched his snow cat (the orange machine to the left) to a drag and hauled water to lubricate the rig's drill bits, a 2-hour one-way trip from operation headquarters in Big Bay.

Lower right: Black Rocks in Marquette during a winter storm, 2012.







Portrait of A.K. McCready, a "hardhat diver" who worked on the oil rigs off of Santa Barbara, California, 1965. This image resulted from an editorial portrait assignment at Brooks Institute. His dad had done this sort of diving when Ted was a kid, and he was fascinated by the gear and the process of a man descending into the watery depths. "It made it (the assignment) more interesting for me than getting some CEO in an office," Ted recalls. Note that McCready is smoking a cigarette in his diving suit, despite the incredible demands the job placed on his pulmonary system.

YDWP PREMIERS MODEL FOR WATERSHED EDUCATION

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Drip and Drop, our watershed stewardship mascots.

Drawings by Sarah Heuer.

We provided a final reinforcement of the concepts illustrated in the two classroom activities by sending home with each child our newly minted watershed brochure. Sarah Heuer displayed her artistic talents once again in the creation of the brochure's main characters, cartoon water droplets aptly named Drip and Drop, whose encounters with runoff and erosion help deliver our messages about the importance of watershed stewardship. Our thanks go out to The Community Foundation of Marquette County, whose grant, in addition to funding the watershed model, also underwrote the production of the brochure, which we are now distributing at public events along with our other literature.

The salutary outcome of our presentations at Powell Township School more than compensated for challenges faced in bringing the project to fruition. Building an accurate, hands-on instructional model of the Yellow Dog Watershed is no easy feat. Fitting such a large geographical area onto a 3'x 3' surface required the landscape to be very small. Sarah and Les made all the topographical and architectural landmarks painstakingly by hand, spending hours creating centimeters-long reproductions of Cram's General Store, the two Big Bay churches, the old Ford Factory, Lighthouse point, Thomas Rock, Powell Township School, Eagle Mine, cell phone towers, etc.



Les Milligan painting an ore carrier he whittled by hand from cedar kindling. Photo by Sarah Heuer.

Waterproofing the model required some online research. Sarah and Les ended up replicating YouTuber Jonni Good's paper mache clay recipe for the clay base: wet toilet paper (soaked in hot water and shredded), drywall joint compound, Elmer's Glue-All or PVA glue, and portland cement. Good came up with this recipe in order to produce outdoor clay sculptures that would withstand the elements in residential homes and gardens.

Ensuring the model was leak-proof presented further challenges. The original design called for a drainage tube in each of the two lakes, so that water could easily be removed. However, the clay would not set properly around the vinyl tubing, and water soaked the foam core underneath, necessitating removal of the tubes and sealing of the basins. Sarah and Les also had problems with clay cracking on certain parts of the landscape, which required repeated reapplication and redrying. Similarly, making the clay impermeable demanded multiple coatings of diluted sodium silicate solution (water glass) and lengthy drying out periods.

Once the clay base was properly sealed and dried, Sarah, Les, new board member Kathy Binoniemi. and her mother, Sandie Pierce, applied base paints to the clay. Next a dyed epoxy resin was poured into the tributaries of the Yellow Dog River, as well as in the Salmon Trout watershed, simulating water effects. The final touch was to add trees to the landscape. Sarah and Les purchased artificial foliage from a manufacturer specializing in scenery for model railroads, architectural layouts, dioramas, gaming, military models, and miniatures.

The journey from creation to presentation of our new watershed model was marked by experimentation and learning, both on the part of the design-

er/builders and the students, who were, to our delight, charmed and drawn in by it. Although we have not yet had a chance to present the model to other audiences, and we will have to adjust our program for different age-groups and communities, our trial run at Powell Township School proved that our new model of the Yellow Dog Watershed is a dynamic tool with which to illustrate the functioning of water systems and their vulnerability to human activities.





Jan Zender (above) and Brian Noell (below) working with kids at Powell Township School. Photos by John Gillette.

BIOBLITZ II AT THE YELLOW DOG RIVER COMMUNITY FOREST

The Yellow Dog Watershed Preserve is holding a BioBlitz at the Yellow Dog River Community Forest on Saturday and Sunday, June 17 and 18. A BioBlitz is a rapid survey of an area's biological features conducted by citizen scientists. Volunteers in the inaugural survey in 2017 identified 27 species of birds, 120 species of plants, 7 species of mammals, and 5 species of reptiles, amphibians and fish. This follow-up will take place exactly 6 years after the first Community Forest BioBlitz and will revisit most of the same sites. The results will help answer important questions about biodiversity in our area. Which species are thriving, and which are struggling? Are we experiencing a decline in native plant and animal populations as are so many places on Earth, or is there evidence of stability or even enhanced biodiversity in our pristine corner of the world?

Activities will commence on Saturday 6/17 at 2pm, at which time volunteers will receive instructions and equipment and divide into 4 groups (plants, mammals, birds, and amphibians/reptiles/fish). Each group will evaluate 3 sites between Saturday afternoon and Sunday morning, and the mammal group will have an evening foray to find nocturnal creatures. The event is free, and camping along the Deer Creek, a Yellow Dog tributary, will be available for those who wish to participate on both days. Snacks and dinner will be served to Saturday's volunteers, and breakfast and snacks will be provided on Sunday morning.

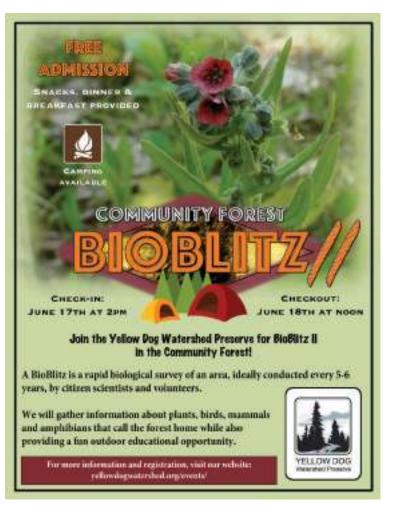
Directions to the event staging area from Marquette: Take County Road 550 toward Big Bay for roughly 22 miles. Turn left onto County Road 510 and continue for 2.6 miles. At the junction with the AAA Road, turn left to stay on County Road 510 (gravel), and continue for another 4 miles. Cross the bridge across the Yellow Dog River and look for the first driveway on the right. Turn there to park and sign in.

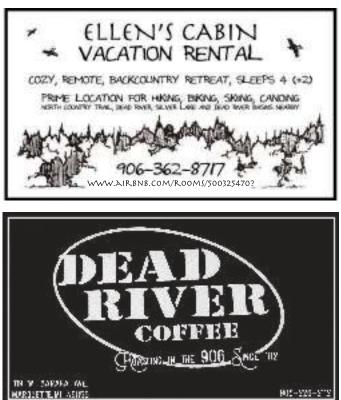
If you have questions, please contact the Yellow Dog Watershed Preserve office at (906)435-9223, or email us at ydwp@yellowdogwatershed.org.

Admission is free, but please register online at https://yellowdogwatershed. org/events/



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SPRING CONCERT AND TREE PLANTING IN CELEBRATION OF THE EARTH

By Sarah Heuer

In honor of Earth Day this year YDWP collaborated with the Marguette Choral Society and the Cedar Tree Institute to plant 1000 trees along the Yellow Dog River.

The Marquette Choral Society led the way with back-to-back concerts held on April 29 and 30 at the Kaufman Auditorium in Marquette. The repertoire included Paul Winter's "Missa Gaia - Earth Mass", a large-scale contemporary work for mixed choir, instrumentalists, vocal soloists, and soprano saxophone, incorporating animal and nature sounds as well. It takes a traditional liturgical form and contemporizes it by recognizing the sacredness of the natural world and offering a message of hope for the future.

Both concerts were well-attended, and a suprise announcement was made during the intermission that the Cedar Tree Institute of Marquette and the Yellow Dog Watershed Preserve would be planting 1,000 northern white cedar trees over the course of six weeks near the YDWP Community Forest. Volunteers handed out pamphlets introducing the project and encouraged concert goers to support the planting events.

YDWP board member Roy Sarosik provided a welcome and orientation for tree-planting volunteers at Powell Township Hall in Big Bay. Former wildland fire fighter and forester Jeff Noble provided technical counsel. Over forty volunteers, ages 6 to 87, lent a hand. Jon Magnuson, director of the Cedar Tree Institute and long-time friend of YDWP, said of the effort, "When we choose to heal and bring life to a forest, we become part of a sacred work."

During each of the 3 Saturday-morning plantings participants sung a lyrical refrain from Winter's "Earth Mass":

For the earth, forever turning For the skies, for every sea To the source, we sing, returning Home to the blue green hills of earth.

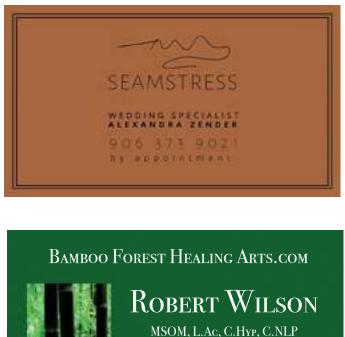
A big thanks to all volunteers and members of the aforementioned organizations who helped make these events a success.



Volunteers planting cedars along Lost Creek on May 13. Photo by Jon Magnuson.



Marquette Choral Society's Celebrate the Earth spring concert: foreground, saxophonist Patrick Booth mimicking the sounds of whales and wolves during the performance of Paul Winter's "Earth Mass". Photo by Jon Magnuson.



537 WEST WASHINGTON ST Marquette, MI 49855

906-373-9220



Freshwater Future, an environmental organization from the lower peninsula of Michigan that helps grassroots groups like ours protect water resources throughout the Great Lakes region, has been a long-time supporter of YDWP. In 2021, Freshwater Future funded our project to advocate for increased building setbacks along the Yellow Dog River in all the townships through which the river flows. We also sent letters to 587 landowners within the watershed to introduce them to our work, to make setback recommendations, and to address the need to maintain natural buffer zones.

Our visits to the townships in 2021 opened our eyes to the fact that township officials need more information about existing regulations and the extent of their authority to make changes without affecting the entire master plan. In short, officials were unsure about whether they could change the zoning for the Yellow Dog River without changing the zoning for every waterway in their jurisdiction. However, research conducted by YDWP confirms that they certainly can. So, with new funding from Freshwater Future for 2023, we will again return to the townships with fresh information. Also, during the meetings in 2021, the commission members suggested that we create printed material to be included in zoning packets that go out to landowners applying for building permits. This material would explain the benefits of buffer zones. suggest building setbacks from the river's edge that may exceed the actual township regulations, and in general, give guidelines for natural features and conditions to be aware of in their potential building site that could create problems in the future. Funding from the new Freshwater Future grant will go toward the creation of a "Before you Build" informational pamphlet that townships and YDWP can distribute to these potential homeowners.

This year's high snow levels and spring melt have caused significant erosion in many areas along the Yellow Dog. Zoning setbacks need to take the soil type, river velocity, and river configuration into consideration, or we are likely to encounter more problems with houses and suanas precariously perched on receding banks, resulting either in collapse or a major expense for the landowner.



FRESHWATER FUTURE FOLLOW-UP GRANT **Bv** Rochelle Dale



A cabin constructed too close to the Yellow Dog is now in danger of collapsing into the river. When it was built, this structure complied with Ishpeming's present setback regulation of 30 feet. Photo by Kristi Mills.

Current setback regulations vary from 30 feet in Ishpeming township, 50 feet in Michigamme and Powell to 75 feet in Champion. YDWP recommends a minimum of 100 feet for all types of buildings. If you are affiliated with any of the four townships and would like to help, please consider writing a letter to your township zoning board and letting them know that you support YDWP's recommendations.



LOCAL ARTIST AND NEW BOARD MEMBER, KATHY BINONIEMI INTRODUCES HERSELF

By Kathy Binoniemi

Hello! My name is Kathy Binoniemi, and I was born in Ishpeming, moving to Negaunee Township when I was five. We continue to live in Negaunee Township on the north side of the Dead River Basin in the "highlands" that are notorious for deep snow from those northeast winter winds. I am the proud mom of a menagerie of kids and grandkids. Together with Craig, my partner in crime, I enjoy building projects in the summer months, taking long rides on back roads, exploring local waterfalls, and spending time with the aforementioned kids and grandkids. We are currently in the process of building a sugar shack, moving our maple syrup hobby out of our crowded garage.



I was first introduced to the Yellow Dog Watershed Preserve a few years ago when my daughter, Jacklyn Lenten, asked if I wanted to help her do stream monitoring. I had no idea what that was, so I said yes. It was outdoors, involved water and being with my daughter; that's all I needed to know. We met with Sarah Heuer and her German shepherd, Sergey, at the YDWP office in Big Bay, packed up some gear and off we went. It was a great day, filled with beautiful scenery and the opportunity to see places I would never otherwise have access to. I was amazed at the skill and knowledge of these two young women. I learned a lot about all the insects that call our streams home and how their presence, or lack thereof, lets us know how healthy these waterways are. When my schedule allows, I still accompany Sarah and Jacklyn to do stream monitoring and now am even able to identify some of those macroinvertebrates without having to ask!

When Jacklyn suggested I consider becoming a board member, I was a little hesitant; not knowing exactly what expertise I have to contribute other than a love of the outdoors and water. But the people that I've gotten the chance to meet and interact with in the organization are friendly, welcoming, and excited about teaching others about this beautiful area we call home, making sure the lands and waterways are preserved for future generations. I wanted to be a part of that.

On one of our stream monitoring sessions, I mentioned to Sarah that I am an artist. I showed her some of my work, and she later reached out to ask if I would be interested in putting an ad in The Howl and including some artwork. I was really excited about the opportunity. Because of this exposure, I sold a



Pinnacle Falls. November 2022

piece that I had done of "Chauncey's Rock" on the Yellow Dog River. Chauncey himself shared a picture that he had taken years ago of Pinnacle Falls, and that became the inspiration for one of the paintings included here. Another is of the shore of Lake Superior on a calm, beautiful evening.

I discovered pastels about 4 years ago after painting pretty exclusively in acrylics. I find working in pastel helps me better capture the "mood" of the scenery surrounding us in the UP. I love the water, streams, rivers, creeks, lakes, swamps, and wetlands. Exploring with Sarah and Jacklyn while stream monitoring has really supplied me with inspiration...now I need only to find the time to paint what inspires!



Superior Shore. November 2022.



The Thunder Bay Inn 400 Bensinger Street Located at the center of Big Bay 906.345.9220 Your local provider for delicious meals, catering, lodging, event hosting and more. Restaurant Hours: Wed. - Sun., Noon until 9:00pm

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Les Milligan

If we have accidentally omitted vour name, or if you find an error. we apologize. Please contact Brian at (906)345-9223 or email brian@yellowdogwatershed.org so we can make it right.

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Charles Norlin Janeen Rastall In memory of Judy Sarosik

Katherine Baldwin Tina Case Pamela Isham Clute Serin & William Decherd Anna Owens & Tom Cook Larry & Kathy Reimelt Katharine & Frances Washburne In memory of James H. Campbell

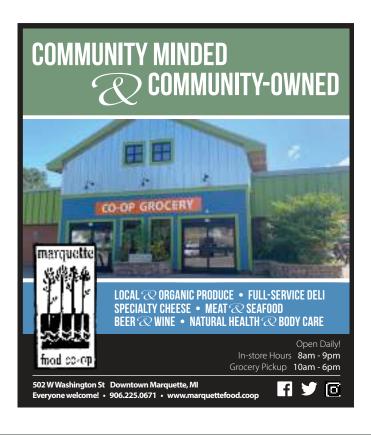
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Yellow Dog Watershed Preserve PO Box 5 Big Bay, MI 49808 (906)345-9223 ydwp@yellowdogwatershed.org www.yellowdogwatershed.org









Top photo: Emma Balliet (foreground) and Sarah Heuer wrapping up another successful day of sping VSMP on the Iron River. Photo by Emma Balliet. Bottom Photo: Five-year-old Indira Erdman smiles for the camera during her first VSMP outing, suprisingly content amidst the swarms of blackflies and mosquitos. What a Yooper trooper! Also pictured, are Emma Balliet and Atlas and Kristen Erdman, masked by their bug shirts. Photo by Sarah Heuer.