March 2021

- VRITWC - Currents





Meet one of the Alaska Executive Council members!



Meet Patricia Salmon from Chalkyitsik, Alaska. She has an associate's degree in Tribal Administration from the University of Alaska-Fairbanks. She has 2 children and 2 grandchildren. She works for Chalkyitsik Village Council since 2011 where she manages the environmental program. Salmon serves on the Tanana Chief's Conference Health board, the Yukon River Inter-tribal Watershed Council (Yukon Flats alternate) and the R10 Regional Tribal Operations Committee.

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From the Alaska Executive Director

THERESA CLARK

As spring is just around the corner, the Watershed Council staff are looking into getting back to Yukon River and tributaries communities to complete work that we were not able to do in 2020 and work to be completed for the 2021 season. Covid-19 is still affecting our ability to do so, but we are doing our best to get back to the villages. The Executive Council was able to hold two teleconference meetings this past winter. With covid-19 affecting travel to our sister communities in Canada, the executive council determined that it will not be able to attend a Bi-Annual Summit this year as 2021 was the year for one to be held. As vaccinations are being provided and may reduce the chances of being affected by the coronavirus, this may change, but likely not to. We hope to be planning for a summit in early 2021, only time will tell.

As residents gear up for the spring and summer subsistence seasons, we wish all good luck in their gatherings of subsistence foods and needs.



Upcoming News & Events from TAT

40-hr HAZWOPER Training, Bethel April 12 to April 16 Biohazard Management, April 27th and 28th (2 separate 4-hr sessions) Biohazard Management, May 18th and 19th (2 separate 4-hour sessions) Fort Yukon Community Workshop First Week in May Nulato Community Workshop Third Week in June

Upcoming News & Events from the Brownfield Department

Brownfield Webinar Series! (Page 10) Qualified Environmental Sampler Training in Fairbanks! (Page 11)

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Harnessing the Power of Unmanned Aerial Systems (UASs)

BY MARYANN FIDEL

Earlier this month YRITWC hosted a UAS (or drone) Pilot training. The training provided Tribal Environmental Professionals the information needed to take, and pass, the FAA Part 107 UAS exam and obtain a Commercial UAS Pilot's license. The EPA, and other State and Federal agencies require this license in order to use drones under their programs (e.g. IGAP). In fact, it is required if you are flying a drone for anything other than recreational purposes.

YRITWC will be using drones to complete hydrological vulnerability assessments in a few Yukon River communities this summer. This means we will fly areas around drinking water intakes and traditional drinking water supplies. The images captured by a drone will be uploaded into mapping software that will tell us which way the water is flowing. We will also test out the use of a multispectral camera that detects vegetation stress as an indication of underground leachate flow from landfills. Together these images will provide information about upstream threats to drinking water. Aerial imagery will also be taken of eroding riverbanks, permafrost slumps, and other large landscape changes, in addition to contaminated sites for use in Brownfield assessments and grant applications. Partner Tribes in this effort will be able to continue collecting aerial imagery for monitoring, and/or assessment, under our recently EPA-approved UAS Quality Assurance Project Plan (QAPP), and by putting their newly acquired UAS Pilot's license to work. The YRITWC will continue to provide UAS support, by hosting UAS Pilot training annually, and by working to secure grant funding to expand the effort. If you are interested in harnessing the power of drones for your environmental work please contact me! mfidel@yritwc.org, 258-3337



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Update from YRITWC's IGAP BY KARI YOUNG

Happy Spring/ Extended Winter to everyone! IGAP has been ramping up as we draw nearer to the summer season, as I'm sure many of you have been as well. Make sure you have April 22nd marked in your calendars for Earth Day! Earth Day is a great avenue to share and inspire others to help out Mother Nature. Check out the activity page later in the newsletter that is all about Earth Day! I will be sending out some Earth Day activity ideas soon to fellow IGAP personnel within the watershed and that are a part of the IGAP Listserv. If you are interested in being added to YRITWC IGAP Update Listserv please let me know by emailing me at kyoung@yritwc.org. The YRITWC IGAP Update Listserv sends email messages once or twice a month that include opportunities with our organization as well as other information and opportunities from other organizations that may be helpful to IGAP staff within Alaska.

In the meantime, I wanted to let our readers know that our IGAP program supports technical assistance work with our amazing signatory tribes. If you would like assistance, have questions, or would like to bounce some ideas off related to grant writing, water quality sampling, integrated solid waste management plans, or more related topics, please reach out to us and we'd be happy to work with you.

From the TAT Program

BY KATHERINE BROWER AND ELIZA PERKINS

Eliza is grateful to have rejoined YRITWC this quarter, this time in the technical assistance and training (TAT) department, temporarily as the Environmental Coordinator. She's excited to deliver, together with Solid Waste Management Coordinator Katherine, several trainings and workshops that focus on safety as well as operations and management aspects of waste, wastewater, and solid waste. She looks forward to the possibility of

providing these trainings and workshops in-person around the Yukon River Watershed in the near spring and summer. However, if COVID-19 continues to restrict such in-person gatherings while the vaccine rollout continues, she wants those whom the TAT program will be training and workshopping with to know that she is equally excited about the prospect of meeting those who she has not yet met online.



This quarter, staff in the TAT Department have delivered a 40 hour HAZWOPER training, received FAA Drone Pilot Training, and developed training materials for the upcoming Biohazard Management workshops, among others. These trainings and workshops are incredibly important, whether it's because staff are enhancing their own professional knowledge and skills or delivering training so that others can do the same. HAZWOPER training, for example, is a high priority for northern and remote communities because households and communities as a whole all generate products and material that contain harmful substances that can impact the health of our bodies and surrounding environment. Because hazardous waste can represent a long-term liability for rural communities if not properly managed, TAT has been giving trainings and creating workshops to ensure their appropriate handling, storage, treatment, and transport.

The 40 Hour HAZWOPER virtual zoom training in February included 9 people from the watershed communities. Despite some technical difficulties, the training was a success. The villages that attended the training were: Kotlik, Mt. Village, Pitka's Point, Evansville, and Hooper Bay. The rest of the year we plan on having additional trainings including community workshops, biohazard training and another 40 Hour HAZWOPER training, pending to be held in Bethel in the week of April 12 –16 if COVID–19 mandates are lifted.

We have Eliza Perkins who is temporarily working as the Environmental Coordinator until June. Note these upcoming events in our Technical Assistance & Training Department. Please contact Eliza Perkins, eperkins@yritwc.org, or Katherine Brower, kbrower@yritwc.org, if you are interested in or have any questions about our upcoming events.



Happy Spring Indigenous Observation Network Partners!

BY EDDA MUTTER

Finally, the days are getting longer and spring is around the corner, which means the Indigenous Observation team is on the move. Edda and Kari already went out for their first field season trip to collect water samples, take ice thickness, snow depth, and snow-water equivalent measurements around the Fairbanks area, Yukon River Bridge, Delta Junction, Nenana, and Circle. Even though we were welcomed with some cold air and deep snow it was great fun to be out in the field.

In addition to our sampling effort, we received winter water samples from our partners in Pilot Station, Fort Yukon, St. Mary's, and the Yukon Territory Southern Lakes, which gives us deeper insight into water quality conditions across the watershed all year around. Thanks to Robert Myers, Eric Alstrom, Robert Solomon, and Coralee Johns for their support in the Indigenous Observation Network and taking on the challenge to sample in the winter.

As the days are getting warm, it is time to start planning for the next open water season, hence we are offering our annual water quality monitoring trainings. Training sessions are scheduled as webinars at the following dates: March 30 –31, April 13 – 14, and May 11 – 13. However if Covid–19 travel restrictions and safety procedures allow, we will change to an in-person training session in May, please stay tuned for further updates.

In addition, please watch out as we are sending out updated community reports summarizing your collected data over the years. The community reports will give you insight into your local water quality conditions. We would like to discuss with you any questions you may have about the reports either during the training sessions or we can schedule a separate meeting.

We are also starting to reach out to you about participating in the upcoming water quality monitoring season as well as interest in establishing an active layer site in your community. Kari will be in contact with you about equipment and supplies shipment in the next couple of weeks, as we are planning to get everything ready by May, in order to start water sampling as soon as possible. The science team is here to assist you so, please do not hesitate to contact us!



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The Arctic Rivers Project is a collaboration with the YRITWC to address the questions:



BY NICOLE HERMAN-MERCER, USGS

"How will fish habitat and river-ice transportation corridors along Arctic rivers be impacted by changes in water resources due to climate change including permafrost thaw, changes in groundwater and streamflow, and changes in river temperatures?"

One of the ways the research team is working to answer this question is with climate modeling. Models are a representation of something, for example a toy car can be considered a model of a real car. Climate models are digital representations of actual climate based on mathematical equations that describe how energy and matter interact in different parts of the ocean, atmosphere, and land. The Arctic Rivers Project will use a climate model to estimate possible future scenarios covering the state of Alaska and neighboring Canadian provinces. A lot of decisions go into developing estimates of future climate scenarios. The modelers must decide which timeframe should be modeled, which climate model they should use, and which potential greenhouse gas future should be considered. To develop future climate scenarios that are most useful to the communities of the Yukon River Basin and the project's broader study area we will be surveying Tribal and Traditional Councils, First Nation Governments, city governments, and Indigenous organizations like the Yukon River Inter-Tribal Council. Stay tuned for updates as we receive survey responses used to produce climate data that will be widely available to all interested parties!

The Arctic Rivers Project is sponsored by the National Science Foundation Navigating the New Arctic Program.

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Mercury Concentrations in Yukon River Fish Could Surpass EPA Criterion by 2050 BY PAUL SCHUSTER, USGS

The Yukon River is the fourth largest drainage basin in North America and home to one of the world's longest salmon runs serving as an essential subsistence fishery for the communities of the Yukon River Basin.

In September 2020, the esteemed scientific journal, Nature Communications released a publication titled "Potential impacts of mercury released from thawing permafrost". The authors included several USGS scientists who have a legacy working very closely with the YRITWC for decades. The YRITWC has played an important and critical role in mercury research in the Yukon River Basin.

The paper characterizes the release of mercury from thawing permafrost for two climatechange scenarios based on Representative Concentration Pathways (RCPs) from the Intergovernmental Panel on Climate Change's Fifth Assessment Report. The high emissions scenario (RCP 8.5) assumes unconstrained emissions, while the low emissions scenario (RCP 4.5) assumes emissions consistent with the Paris Agreement global target of less than two degrees Celsius of warming above pre-industrial levels. The high emissions scenario shows mercury releases to the atmosphere comparable to current anthropogenic emissions, with large increases to mercury concentrations in fish and water in the Yukon River. The low emissions scenario shows minimal releases to the atmosphere and small changes to mercury concentrations in fish and water.

According to Kevin Schaefer, the lead author from the National Snow and Ice Data-Center (NSIDC), the concentration of mercury in fish in Alaska's Yukon River may exceed EPA mercury criterion by 2050 if greenhouse gas emissions are not constrained. The paper predicts that by 2200, the mercury emitted into the atmosphere annually by thawing permafrost will compare with current global anthropogenic emissions.

"If we can hit the Paris Accord target, we expect minimal impacts to mercury concentrations in fish and water. If we continue with unconstrained emissions, however, it is likely that we will see large increases in mercury concentrations," said Schaefer. Emissions of these magnitudes could have a global impact. "What happens in the Arctic does not stay in the Arctic," said Schaefer, "The mercury emissions from thawing permafrost could persist for centuries, impacting the environment both locally and globally."

This paper follows a 2018 study by Schuster et. al., that found permafrost soils store nearly twice as much mercury as all other soils, the ocean, and the atmosphere combined.

ONLINE FREE WORKSHOP APRIL 27, 8AM-12PM APRIL 28, 8AM-12PM

BIOHAZARD MANAGEMENT WORKSHOP



This four hour zoom workshop provides an overview of biohazard management. Topics cover types of biohazardous waste, bloodborne pathogens, chain of infection, biohazard spill response protocols, and additional procedures to ensure workplace safety. This is critical safety knowledge and is useful for Water, Solid Waste and Wastewater technicians.

If you are interested in attending, please email eperkins@yritwc.org or kbrower@yritwc.org to secure a spot and let us know which session you would like to attend so we can send you the registration form and zoom link. Classes are capped at 25/day. We will be offering two more sessions in May.

Note: Due to the transition from in-person to online workshops, a reliable internet connection is needed for participation.









GET YOUR 40-HR HAZWOPER TRAINING

This training ensures each student has a thorough understanding of the potential hazards to health and safety associated with site cleanup and emergency response.

Please bring vaccination card upon arrival, wear a face mask at all times during training, and social distance. Students are responsible for transportation to and from the training site and lodging. Training cost is free!

APRIL 12 - 16, 8AM-5PM, M-F YUPIIT PICIRYARAIT CULTURAL CENTER 420 CHIEF EDDIE HOFFMAN HWY BETHEL, AK 99559

Call 907-258-3337 or email kbrower@yritwc.org to register.

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YRITWC BROWNFIELD WEBINAR SERIES

Like last year The YRITWC Brownfields Team prepared a 4-session webinar series to help communities understand the Brownfield process. The webinars can be followed via computer-zoom or toll-free phone calls. A discussion and Q&A will follow each webinar.

Mark your calendar we are looking forward to seeing/hearing from you then!

IF YOU WANT TO LEARN MORE ON BROWNFIELD REFRESH SIGN UP TO OUR WEBINAR SERIES COMING UP:

March 25 | Brownfield Road Map

https://zoom.us/j/98934944834 **April 6 | Preparing for a Successful Community Meeting** https://zoom.us/j/95054794107

April 20 | What is included in Phase I and Phase II Assessments https://zoom.us/j/95054794107

May 4 | Creating a QAPP

https://zoom.us/j/95054794107

WHAT YOU NEED TO DO:

Sign in and we send you the presentation Dial in and you can listen to our presentation Ask questions and we can address them

Be an active participant and we will help you clean up contaminated sites in YOUR Village!

Contact Birgit at bhagedorn@yritwc.org for the presentations or if you have any questions!

The dial-in number is 1-866-866-2244 PIN Number is 52266341

Join us for a

QUALIFIED ENVIRONMENTAL SAMPLER TRAINING

Fairbanks June 1 - 4, 2021

hosted by the Brownfield Department

We have 10 stipends for this training on a first come first serve basis. This includes travel and lodging in Fairbanks. To register please contact Tasha Mockta at tmockta@yritwc.org or over the phone at (907)258-3337. When reserving a spot please provide flight details that would accommodate the training dates listed above.

Gain practical marketable skills as Alaska Qualified Environmental Sampler with a focus on the Arctic.

Learn environmental data collection and sampling methods for soil and water following federal and state regulations. Packing and shipping of samples, chain of custody forms, and more. Course instructions are relevant to compliance, environmental assessments and cleanup, and permafrost engineering with a strong emphasis on hands-on exercises.

The workshop will cover:

- Groundwater, surface water, and soil sampling;
- Water quality laboratory analytical methods;
- · Field screening methods (PID, YSI);
- Physical and chemical soil properties;
- QA/QC samples and documentations;

For more information please contact Birgit Hagedorn at bhagedorn@yritwc.org or Tasha Mockta at tmockta@yritwc.org They can also be reached over the phone at (907)-258-3337







Did you know?

That most Traditional Values of First Alaskans encompass respecting the environment. For example, Athabascan Values include 'Respect for the Land' and 'Respect for Nature.'

Earth Day BINGO

Get five in a row horizontally, vertically, or diagonally by marking squares that you already do in your green life or squares that you will complete in honor of Earth Day to help our beautiful home!



2. WHAT IS EARTH DAY KNOWN AS INTERNATIONALLY?

- A) EARTH DAY
- **B) HONOR THY PLANET DAY**
- C) INTERNATIONAL MOTHER EARTH DAY
- **D) GLOBAL NATURE APPRECIATION DAY**



I WANT TO BREATHE IT ALL IN, AS LONG AS IT TAKES.

By Marcia Skinna

Trivia:

Test your knowledge about Earth Day. Answers can be found at the bottom of the page.

- 1. WHAT YEAR WAS EARTH DAY FIRST CELEBRATED?
 - A) 1970
 - B) 1968
 - C) 1978
 - D) 1972