Pəskehtəkʷok

Joining of the Branches

Photo: Martin Neptune

Summer 2004 ~ Issue 3b

Penobscot Indian Nation
Department of Natural Resources

Phone Extensions	
Air Technician	*7340*
David Almenas, *Forest Technician*	*7335*
Ron Bear, *Forest Technician*	*7335*
John Banks, *DNR Director*	*7330*
Rhonda Daigle, *Water Quality Monitoring Program Coordinator*	*7326*
Clem Fay, *Fisheries Manager*	*7362*
Yvonne "Cookie" Francis, *Administrative Assistant*	*7331*
Tim Gould, *Game Warden Supervisor*	*7395*
Dan Kusnierz, *Water Resources Program Manager*	*7361*
Frank Loring, *Game Warden*	*7392*
Josh Loring, *Game Warden*	*7392*
Jason Mitchell, *Water Resources Field Coordinator*	*7381*
Eric Nicolar, *Air Quality Manager*	*7336*
Jim Pardilla, *Game Warden*	*7392*
Ed Paul, *Game Warden*	*7392*
Jan Paul, *Water Resources Field and Lab Technician*	*7382*
Angie Reed, *Water Resources Planner*	*7360*
Russ Roy, *Forest Manager*	*7339*
Dennis Stevens, *Forester*	*7337*
Binke Wang, *GIS Specialist*	*7341*
Water Resources Trainees	*7363*

The bloom seems to be dying ... for now

For a variety of reasons that are still being monitored and discussed, the bloom of cyanobacteria seems to be dying off. It is still present in Dolby Pond but doesn't extend as far down river. Tests for one of the two toxins possibly present showed none detected, so we no longer think that the bacteria are an immediate threat. We are waiting to hear about the other toxin. We will continue to keep you posted on our progress, current understanding of the health of the river, and any potential impacts on people.

You may have seen the article in the Bangor Daily News on August 20th (www.bangornews.com/editorialnews/article.cfm?ID=428692) describing the status of the bloom and what our staff and those at the Department of Environmental Protection are working on. As the article discussed, it seems that the most probable source of nutrients (food) for this cyanobacteria bloom was coming from Katahdin Paper Company's mill in Millinocket. We have been told by DEP staff that the mill was discharging "way more than they ever had in the past." We are still waiting to hear specifics on this increased discharge and John Banks has been trying to get involved in the conversations happening between DEP and Katahdin Paper Company.

PIN Water Resources staff were responsible for collecting almost all of the early samples on this bloom, including an aerial survey that generated the first photos of the problem. We have also been working with both the DEP and the US Geological Survey (USGS - www.usgs.gov) in Maine to understand the conditions causing this bloom. Future plans include meeting with USGS to discuss how their staff and the connections they have with Bigelow Laboratory for Ocean Sciences (www.bigelow.org) can help us to get more and better data on any other blooms in the river.

Unfortunately, cyanobacteria blooms are not uncommon. They occur elsewhere in Maine and have become a serious problem every year in Maryland. If you have access to the web and want more information on blooms, the Maryland Department of Natural Resources has a great web page - www.dnr.state.md.us/bay/hab/index.html. And as always, if you have ANY questions please feel free to call our staff.

REMINDER

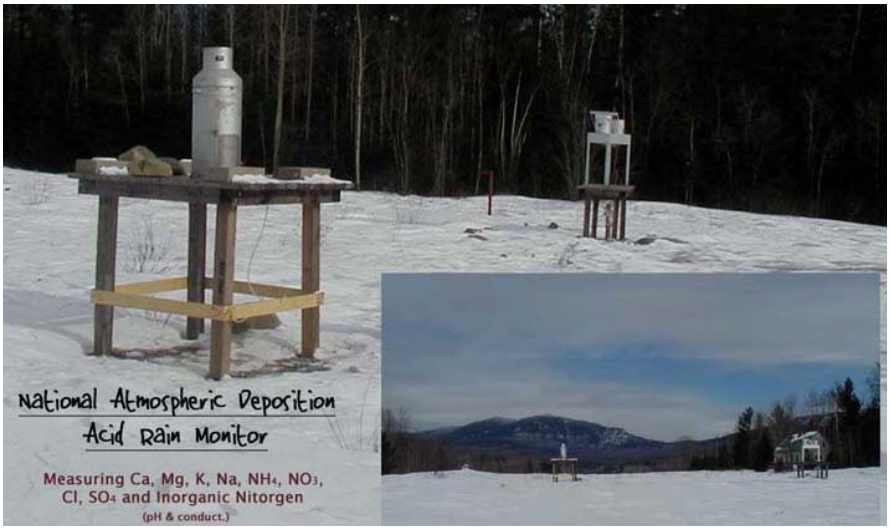
The bridge over Mattamiscontis Stream on Trust Land should be done soon! This work was necessary for getting to the Mountain Brook bridge ~ which we hope to have repaired by the middle of September. So, for now, the bridge will continue to be closed and signs will still be posted.

Monitoring The Air We Breathe ~ By Eric Nicolar

The Penobscot Nation Air Quality monitoring network includes an Interagency Monitoring of Protected Visual Environments (IMPROVE) monitor, a National Atmospheric Deposition Monitor (NADP) Acid Rain monitor, a MET One weather station, two Air-Metrics Portable Minivolä (MiniVol) Samplers, a Thermo-Environmental (TECO) 49C Ozone (O_3) and a TECO SO_2 monitor.

The IMPROVE monitor at Marsh Island apartments

The IMPROVE monitor, located on top of the Marsh Island Apartments in Old Town, has run successfully for three years. The monitor is at one of the highest accessible points in the area. The Air Manager completes weekly filter media changes, and periodic equipment maintenance, throughout the year. This IMPROVE protocol site runs three $PM_{2.5}$ and one PM_{10} modules. Along with PM mass though, the IMPROVE tracks visibility influencing "particulate" air tracers, such as nitrates and sulfates (SO_2). As you know NO_x and SO_x are criteria pollutants. One module takes some chloride measures. Organic and elemental carbons are measured as well, but for visibility purposes as well. Two modules extract Particle Induced X-Ray Emission (PIXE) XRF: X-Ray Fluorescence, including Na, Mg, Al, Si, P, S, Cl, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Br, Rb, Sr, Zr, Mo, Pb. Our site, #OLTO01, went through a successful audit by the folks at the Crocker Nuclear Lab / UC-Davis in July. Successful data capture was at 92%. OLTO01 was an "outstanding site," meaning 100% data collection, for three of the four quarters of the year. The Air Manager finalized a Tribal QAPP for the IMPROVE at the end of the year as well.



The NADP Acid Rain monitor in Carrabassett Valley has been fully operational for two years. This collects weekly precipitation samples and tests for hydrogen (acidity as pH), sulfate, nitrate, ammonium, chloride, and base cations (such as calcium, magnesium, potassium and sodium). The NADP covers an important monitoring gap for the state and national trends network. The Air Manager travels on average of twice a week to maintain monitor success and sample collection. All weekly samples have been successfully completed for the past 18 months with some schedule deviations due to Air Manager travel. We are planning to follow Ammonia and Sulfate trends from this monitor for our Alder Stream Trust lands. We also plan to acquire other NADP site data around other Penobscot lands and evaluate the impact of acid rain and its associated compounds on Penobscot natural resources. A long term goal is to install another NADP for the reservation islands. We have planned to add the Mercury Deposition component to the site this year.

The MET One weather station is located on top of the Marsh Island Apartments as well. Data was still being manually downloaded this past year. Plans are in the works to tap into the station through an existing external modem port at the site and

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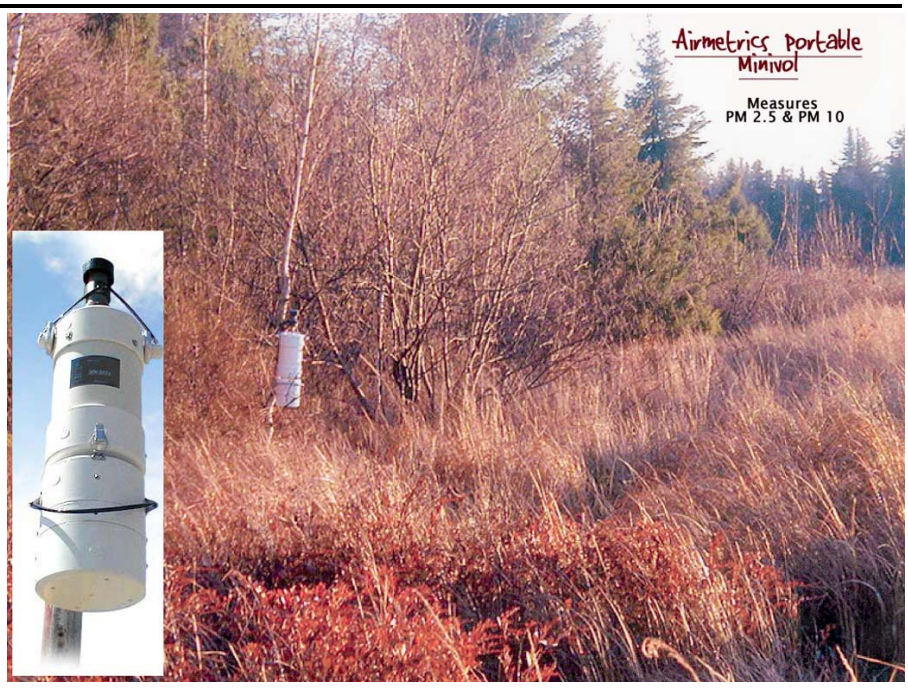
eventually make this monitor real time with an analog line to our PAP Tribal Air website.



The Minivols were used again this year to identify PM_{10} problem areas on Penobscot lands. The focus of the PM_{10} saturation study was specifically on fugitive dust from tribal trust land roads. The program is working to identify local $PM_{2.5}$ sources through a similar study using a PM fine. Sampling with these portable monitors is done 2-3 times a week around all our trust lands. Filters are pre-weighed, post-weighed after sampling, and run through formula calculations to record *u*g/M^3 levels. Time management and constraints requires the AQM to run these monitors periodically and over parts of weekends. This data is important to evaluate and respond to the $PM_{2.5}$ attainment designations made by Region 1 EPA and will be incorporated into our comments due in November of this year.

We added a new TECO 49C & Calibrator O_3 monitor to the network in August 2003. The O_3 is located in the DNR building. This addition was a result of the program's concerns about rising O_3 numbers these past three O_3 seasons. The Air Manager submitted comments to Region's "attainment" recommendation stressing that recent trends showed a potential rising number of O_3 violations. It was stressed that the available data was insufficient to make a proper analysis and thus region came through with the TECO monitor. This past summer was mild, and contrary to recent patterns, but we're ready to collect necessary data for next year, and respond appropriately to O_3 related issues.

A TECO 43A Sulfur Dioxide monitor has just been added to our network. This will be co-located with the O_3 monitor, because it requires similar climate control conditions. We should have it up in running in the near future. If you have any questions please feel free to contact me at 817-7336 or cleanair@penobscotnation.org.