

**HBMI Natural Resources Department
Natural Resources Department**

88 Bell Road
Littleton, ME 04730



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**Toqaaqiw 2020
(It is Autumn)**

*Clarissa Sabattis - Tribal Chief
Susan Young - Editor*

This newsletter is printed on
recycled paper



Inside This Issue

Where Has All the
Water Gone? 1

EPA Lifetime
Achievement Award . . . 2

NOAA Bins 2

Invasive Plants
Workshop 3

Science of Fall Color. . . 4

Word Search Puzzle . . . 5

How's My Waterway? . 6

Meduxnekeag Instream
Restoration 2020 7

Puzzle Answers 8

Stay Safe with COVID. . 8

LET'S REMEMBER

- ▶ **STAY IN PLACE (HOME)**
- ▶ **MAINTAIN YOUR SPACE**
- ▶ **AND COVER YOUR FACE**

← 6FT →

**Help Prevent COVID-19
in Indian Country**

National Congress of American Indians

Word Search Answers

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| W | S | M | A | L | I | S | E | L | T | W | A | B | A | N | A | K | I | R |
| P | E | P | A | R | T | R | I | D | C | E | H | U | N | T | I | N | G | O |
| Q | N | T | I | N | G | O | J | M | I | K | O | L | M | E | H | S | E | |
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| R | N | G | B | Y | H | E | N | P | O | G | O | H | S | E | S | E | | |
| H | R | O | K | S | D | C | K | R | F | V | O | T | H | E | S | W | | |
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TELEPHONE LISTING
(207) 532-4273
1-800-564-8524 (ME)
1-800-545-8524

ENVIRONMENTAL PLANNING
Sharri Venno - ext. 215

NATURAL RESOURCES
Matthew Edberg - ext. 220

WATER RESOURCES
Rhonda Smart - ext. 212
Angie Reed - ext. 212
Sam St. John - ext. 216

**NATURAL RESOURCES -
REAL ESTATE DIRECTOR**
Sue Young - ext. 202

**TRIBAL HISTORIC
PRESERVATION OFFICE**
Isaac St. John ext. 216





EPA Lifetime Achievement Award 2020

Please join us in extending congratulations to our own Sharri Venno, who is a 2020 Recipient of the EPA Lifetime Achievement Award, part of EPA Region 1's 2020 Environmental Merit Award program! Please check out the award brochure found at : <https://www.epa.gov/sites/production/files/2020-09/documents/2020-ema-program.pdf> as well as the video presentation <https://www.youtube.com/watch?reload=9&v=7MEFhVWnh-0> Sharri's section begins at time marker 5:31.

Congratulations again Sharri, we are so lucky to have you as part of our Natural Resources team!

From the EPA brochure: Venno of the Houlton Band of Maliseet Indians came to the tribe in 1993 and was assigned to establish and develop the tribe's environmental program. One of the Band's environmental priorities, a goal set by the Houlton Band of Maliseet Indians Tribal Council, was to re-establish Atlantic salmon to the Meduxnekeag River watershed. Nearly three decades later, Venno has not only advanced the Band's environmental program and watershed restoration, but also has represented her tribe and region in policy and collaborative problem-solving at all levels of government. For more than 20 years, Venno has represented the 10 federally recognized tribes in New England on the National Tribal Operations Committee.

In 1991, Venno published "Integrating Wildlife Habitat into Local Planning: A Handbook for Local Communities." She also has represented the Houlton Band and other New England tribes in the Gulf of Maine Council; the National Ocean Council —Regional Planning Body; the North Atlantic Landscape Conservation Cooperative Steering Committee; and the Northeast Regional Ocean Council—Ocean Planning Committee. She is a founding member of the Meduxnekeag Watershed Coalition, and over the years has worked with others to develop a Meduxnekeag Watershed Management Plan. Perhaps Venno's most impactful initiative has been her effort to establish a collaboration to restore the Wolastoq/St. John River watershed, which extends into Canada. In 2015, her efforts resulted in U.S. and Canadian agencies convening, along with six Maliseet First Nations, to identify watershed restoration priorities, address fish passage concerns with Atlantic salmon as the keystone species and develop a relationship among partners.

NOAA Bins



In partnership with NOAA's (National Oceanographic & Atmospheric Administration) Marine Debris Program, the water resources crew installed 6 tackle bins throughout the watershed. These bins are designed to help people enjoy fishing and protect fish & wildlife simultaneously.



Discarded fishing line and tackle is a major cause of injury and even death to fish, birds and other wildlife.

This program strives to put receptacles near where the fishers are and make it easier to reduce the amounts of tackle that ends up in our woods and waters.

More information at this program and hints as to how to reduce your impact on the environment while fishing can be found at:

<https://blog.marinedebris.noaa.gov/enjoy-fishing-responsibly>

Above: Summer Techs David Tucker (l) and John McNally (r) after installing bins.

Right: debris removed from bin mid summer



Meduxnekeag Inst

Believe it or not - there is an upside to boulder removal conditions - it has enabled the most successful restoration project to go off without a hitch.

In August, Bill Dunbar of Dunbar Construction, a former fluvial geomorphologist John Field completed the installation of boulders in the Meduxnekeag River upstream of the Maliseet Riverside Village. This project, funded by the US Fish & Wildlife Service, is part of a larger fish habitat restoration project in support of our goals of restoring Atlantic Salmon to the Medux and encouraging bald eagles to nest on tribal lands.

Throughout history many rivers in Maine were used for shipping lumber and trade corridors between the US and Canada. As a result, many of the



naturally occurring boulders were removed to ease travel down the river, negatively impacting the fish and wildlife. The restoration plan works to return the river to its natural life to flourish.

This year, with the assistance of Aroostook Southern Aroostook Soil and Water Conservation District, we were able to host a short on-site workshop as rivers move and change over time.

Dr. Field discussed the importance of the Dunbar Construction made to the river during construction. "You can design around the water and the habitat," said Field amongst them."

Angie Wotton, the district manager, said the river to its natural state prior to the project.

"You're recreating a more natural river," said Wotton. "The boulders create riffles."

How's My Waterway?

How's My Waterway was designed to provide the general public with information about the condition of their local waters based on data that states, federal, tribal, local agencies and others have provided to EPA.

Water quality information is displayed on 3 scales in How's My Waterway; community, state and national. More recent or more detailed water information may exist that is not yet available through EPA databases or other sources. Check out the [How's My Waterway Fact Sheet](#).

https://www.epa.gov/sites/production/files/2020-06/documents/hmw_factsheet_06_12_20.pdf

What will I find in How's My Waterway?

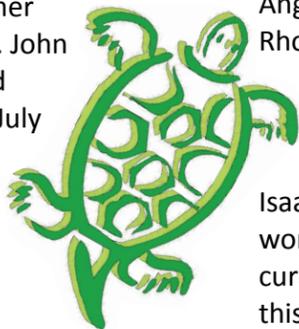
Community:

- Water quality in your local watershed.
- Information on swimming, eating fish and aquatic life.
- Restoration and protection efforts.
- Permitted discharger information.
- Identified Issues (impairments and discharge violations).
- Local drinking water information.

Staff Updates

This summer business as usual was anything but. We did finally manage to bring on two summer techs to work Rhonda Smart and Sam St. John in our water program. John McNally and tribal member David Tucker came on in July and had to hit the ground running. John has already left us to return to college while David is continuing to work with us on a part time basis.

Rhonda Smart joined as our new water resources specialist July. Rhonda previously worked with the department as a summer tech and later as water technician and brings a great deal of



knowledge and enthusiasm to the program.

Angie Reed has returned part time to work with Rhonda and Sam to expand data management capabilities and hopefully more.

We're also happy to welcome Isaac St. John as our new Tribal Historic Preservation Officer. Isaac brings with him a wealth of education and work experience in archaeology and museum curation. He also brings a tribal perspective to this position.

We're thrilled to have all these folks on board and hope that John and David will come back to join us next summer.



Above: Sample screen - How's My Waterbody for 04730

Water monitoring information.

State:

- Information about a states water program.
- Summaries of specific water assessments.
- A state-wide survey of water quality where available.

State drinking water metrics.

National:

- The quality of water resources nationwide and their main challenges.
- National drinking water information and metrics.

<https://mywaterway.epa.gov/>

Invasive Plants W

On September 17, we co-hosted a workshop for local landowners, local workshop was designed to teach control and remove invasive plants Aroostook County. The focus was impact forest regeneration and n

The workshop, originally designed to be expanded to two sessions to registered. This workshop was a Critical Areas Program, Southern Conservation District, Maine Fore Conserve Northeast Woodlands a

After meeting at Riverside Park in Houlton, Nancy Olmstead, Invasive Biologist from the Maine Natural program kicked off the session with short talk and walk along the river trail. The group then travelled to where Matthew Edberg discussed the tribe's approach to control invasive plants on our wetlands and riparian areas. We have been actively working control purple loosestrife and gar number of years.

Originally we used herbicides applied glyphosate also known as Roundup the safety of using glyphosate, M biological controls for combatting began successfully using *Galeruc* solely on purple loosestrife. Since distinct decrease in our loosestrife be able to use biological controls tribal lands.

Following Matt's presentation the active timber harvest in Littleton Wright from the Trust to Conserv Lands.



Science of Fall Colors - US Forest Service

For years, scientists have worked to understand the changes that occur in trees and shrubs during autumn. Although we don't know all the details, we do know enough to explain the basics to help you enjoy nature's multicolored display. Three factors influence autumn leaf color:

- leaf pigments - length of night - weather

The timing of color changes and the onset of falling leaves is primarily regulated by the calendar as nights become longer. None of the other environmental influences – such as temperature, rainfall, food supply – are as unvarying as the steadily increasing length of night during autumn. As days grow shorter, and nights grow longer and cooler, biochemical processes in the leaf begin to paint the landscape with Nature's autumn palette.

Leaf Pigments

A color palette needs pigments, and there are three types that are involved in autumn color:

- **Carotenoids:** Produces yellow, orange, and brown colors in such things as corn, carrots, and daffodils, as well as rutabagas, buttercups, and bananas.
- **Anthocyanin:** Gives color to such familiar things as cranberries, red apples, concord grapes, blueberries, cherries, strawberries, and plums. They are water soluble and appear in the watery liquid of leaf cells.
- **Chlorophyll:** Gives leaves a basic green color. It is necessary for photosynthesis, the chemical reaction that enables plants to use sunlight to manufacture sugars for food.

Trees in the temperate zones store these sugars for the winter dormant period.

Both chlorophyll and carotenoids are present in the chloroplasts of leaf cells throughout the growing season. Most anthocyanins are produced in the autumn, in response to bright light and excess plant sugars within leaf cells.

During the growing season, chlorophyll is continually being produced and broken down and leaves appear green. As night length increases in the autumn,

chlorophyll production slows down and then stops and eventually all the chlorophyll is destroyed. The carotenoids and anthocyanin that are present in the leaf are then unmasked and show their colors.



Aspen leaves: fall colors. Beaver Ranger District, Fishlake National Forest. (Forest Service Photo by Scott Bell)

Certain colors are characteristic of particular species:

- **Oaks:** red, brown, or russet
- **Hickories:** golden bronze
- **Aspen and yellow-poplar:** golden yellow
- **Dogwood:** purplish red
- **Beech:** light tan
- **Sourwood and black tupelo:** crimson

The color of maples leaves differ species by species:

- **Red maple:** brilliant scarlet
- **Sugar maple:** orange-red
- **Black maple:** glowing yellow
- **Striped maple:** almost colorless

Some leaves of some species, such as the elms simply shrivel up and fall, exhibiting little color other than drab brown.

The timing of the color change also varies by species. For example, sourwood in southern forests can become vividly colorful in late summer while all other species are still vigorously green. Oaks put on their colors long after other species have already shed their leaves.

These differences in timing among species seem to be genetically inherited, for a particular species at the same latitude will show the same coloration in the cool temperatures of high mountain elevations at about the same time as it does in warmer lowlands.

Length of Night

In early autumn, in response to the shortening days and declining intensity of sunlight, leaves begin the



processes leading up to their fall. They carry fluids into and out of the leaf and off as a layer of cells forms at the leaf edge. These clogged veins trap sugars in the leaf and promote production of anthocyanin. When the separation layer is complete and the leaf tissues are sealed off, the leaf is re-

How does weather affect autumn colors?

The amount and brilliance of the colors that develop in any particular autumn season are related to weather conditions that occur before and during the time that chlorophyll in the leaves is dwindling. Temperature and moisture are the primary influences.

A succession of warm, sunny days followed by but not freezing nights seems to be the most spectacular color displays. During these days lots of sugars are produced in the leaves. The warm nights and the gradual closing of veins in the leaf prevent these sugars from moving



| | |
|-----------|--------------|
| Autumn | Toqakiw |
| Berries | Keqsimins |
| Ceremony | Olotahkewako |
| Chief | Sakomawiw |
| Deer | Otuhk |
| Frost | Wastewoton |
| Full Moon | Posunhse |
| Hunting | Kotunke |
| Leaves | Nisipokahte |
| Maliseet | Wolastoqewi |
| Moose | Mus |
| Partridge | Mociyehs |
| Potatoes | Pocetes |
| Pumpkin | Sqoc |
| Rake | Maqekhikon |
| Wabanaki | Waponahkiyik |