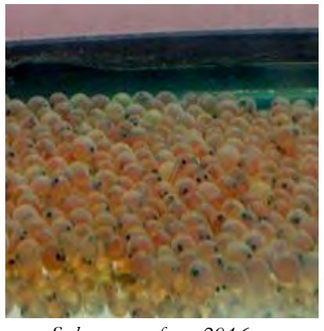
Houlton Band of Maliseet Indians
Natural Resources Department
88 Bell Road
Littleton, ME 04730

Salmon Eggs are Back!



Salmon eggs from 2016

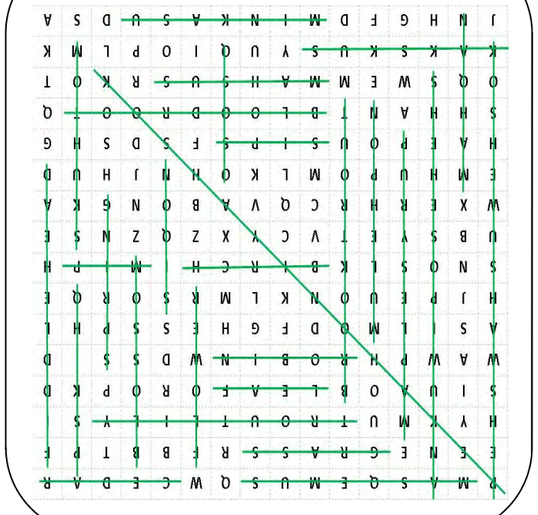
For the second year, HBMI's Natural Resources Department is taking part in a salmon egg project sponsored by the Chiputneticook Lakes International Conservancy, Inc.

We are incubating salmon eggs to the "fry" stage and will be releasing them at East Grand Lake Thoroughfare with other participating local school groups, sometime in May.

Next time you're visiting the HBMI Administration offices, be sure to stop in downstairs and see the Salmon!

Salmon fry

Word Search Puzzle Answers



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HBMI Natural Resources

Let us know if you like what you see - we'd love to hear from you!

Siqon - March 2017

Brenda Commander – Tribal Chief
Susan Young - Editor

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In this issue

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Do You Know Your Wild Neighbors?

Common myths still confuse many people

The Humane Society of the United States

Like the famous urban legend about alligators living in New York City's sewer system, some animal tales seem to take on lives of their own in the public imagination. As we pass on the falsehoods from generation to generation, it can become difficult to separate fact from fiction.

In the interests of setting the record straight, here are 10 popular myths - and facts - about our wild neighbors. Rather than repeat myths that are best forgotten, let's go straight to the facts you need and want to know about wildlife!

1. Feeding bread to geese and ducks

The Facts: Bread offers no nutritional value whatsoever. Severe health problems, including a debilitating condition called "Angel Wing," can be caused by a diet heavy on bread.

Hand-feeding leads to dependency on people for food. Ducklings and goslings will become panhandlers, and some birds may become aggressive about being fed. Fed ducks and geese can become full-time residents in local parks, where their presence may cause such conflicts that people call for their being rounded up and killed, an unnecessary and avoidable human-wildlife conflict.

2. "Orphaned" fawns

The Facts: Mother deer often "park" their babies in one place and only visit two to three times a day to avoid attracting predators. Until the fawn is four weeks old, you will rarely see the mother. Instead, the fawn relies on camouflage and lying still for protection during this vulnerable period.

3. Touching a baby bird

The Facts: Birds do have a limited sense of smell, but they're too strongly bonded to their chicks for them to abandon them if handled by humans. The best thing you can do if a baby bird falls from its nest is to put him right back. The parents will return. Watch carefully: they will come back and forth to feed their chicks several times an hour, from dawn till dusk.

(continued page 2)

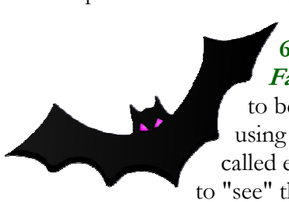
Myths continued

4. Seeing a raccoon during the day

The Facts: Raccoons will appear whenever food is around. Although they're normally nocturnal, it's not uncommon to see raccoons during the day, especially in spring and summer when mom raccoons are expending a lot of energy nursing their young cubs. But if the raccoon is acting disoriented or sick - circling, staggering, or screeching - contact an animal control officer.

5. Smelly skunk encounters

The Facts: It is actually difficult for a person to get sprayed by a skunk. Skunks only spray when they feel they need to defend themselves, such as when a dog runs up and grabs them. But because they cannot "reload" very quickly, skunks don't waste their odiferous weapon. Instead, they will stamp their front feet as a warning to get you to back off.



6. Bats and hair

Facts: The last place a bat wants to be is in your hair! They navigate using a complex sonar-like system called echolocation, which allows them to "see" their world with fine precision. The misconception about bats flying toward hair is based on a bat's swooping flight patterns when they get trapped in confined spaces, such as houses. In such confinement, bats fly in an arch whose lowest point is in the middle of the room. This makes it seems that they are flying at you, but they are simply trying to stay airborne.

7. Letting cats roam outdoors

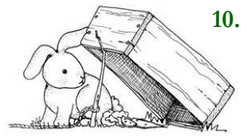
The Facts: When you open the door and let your cat out, you are subjecting her to many perils, particularly being hit by a car. Indoor cats live a healthier and longer life. Outdoor cats, even well-fed ones, spend time hunting wildlife such as ground-nesting baby rabbits, chipmunks, and baby birds who have not yet learned to fly. Wildlife and cats are both at risk when people let their cats out.

8. Opossums' bluff

The Facts: Opossums are resistant to rabies, probably owing to their low body temperature. When an opossum hisses, bares his teeth, or drools, he isn't showing signs of rabies; he's trying to scare off potential predators. And if the "I'm scary" act doesn't work, this nearly defenseless creature will play dead.

9. Forgetful Canada geese

The Facts: Canada geese who live in one place year-round haven't forgotten to migrate - they're descendants of captive-bred geese introduced by wildlife agencies over the last 50 years to create hunting opportunities. Some of them were released because people thought they'd look nice on their ponds. These transplanted geese never learned to migrate from their parents, and now they thrive in our suburban landscapes.



10. Trapping and releasing

The Facts: Relocating a wild animal is far from kind. In a strange place, the relocated animals will try to find their home, and may be killed by cars or have to fight resident animals along the way. In spring and summer, often it's a mother animal who is trapped and relocated, leaving her babies behind to starve. A far better solution is to solve the problem at its source by removing whatever is attracting the animal, such as food and denning .

THE HUMANE SOCIETY OF THE UNITED STATES

http://www.humanesociety.org/animals/resources/facts/know_wild_neighbors.html

Dendrology Corner

Dendr = tree ology = study of

Prepared by: Matthew P. Edberg, HBMI Natural Resources Specialist

Red Spruce (*Picea rubens*): is one of three native spruce species found in Maine. Formerly the "King of Trees" in Maine, the range of red spruce coincides with the range of the Acadian forest ecoregion.

Native Range: Red spruce is found growing in forests from Nova Scotia, Canada west to northern Minnesota and small isolated stands in the southern US. (see range map above right)

Habitat: Red spruce (*P. rubens*) may be found growing on well drained, rocky, upland sites. It particularly favors north facing slopes.

Natural History: Red spruce (*P. rubens*) is classed as shade tolerant and is capable of becoming established in the understory of mixed forest stands. It reaches heights of 60-80 feet and common dbh (diameter at breast height = 4.5' from ground level) of 2 feet. A record tree measured 4.5 feet dbh and 110 feet in height. These trees commonly reach 200 years of age with a maximum life span of about 400 years.

Its leaves are needle-like (4 sided and about a ½ inch long) with cones 1.5 - 2 inches long. This spruce has reddish brown inner bark, with reddish hairs present on twigs. The cones are medium sized when compared to other native spruce species.

Special Uses: Historically, red spruce has been a very important timber species with the wood being suitable for use in a wide range of products such as dimensional lumber and boat & cooperage (barrels) stock. The wood of slow-grown old-growth red spruce is highly valued by luthiers (a maker of stringed instruments such as guitars & violins). As a tone wood, it is used for the sounding boards in a variety of musical instruments (pianos, violins, guitars). Red spruce resin or pitch was used in a small cottage industry to produce "spruce gum" chewing gum.

Ecology: Red spruce (*P.rubens*) is important to a wide range of mammals, birds, insects, fungi etc., providing food and cover.

Medicinal Uses: Tea used for colds, rheumatism, relief of congestion etc. The pitch is used on wounds as a "band-aid".

Medicinal Uses: Note: When collecting any wild plant species for medicinal or edible use be absolutely sure you have identified the species correctly. Furthermore, be respectful of nature and use a hunter gather ethic; leave something for the future and for others.

Edibility: The new shoots, inner bark and pitch are all edible and very nutritious in times of need.

Utilitarian Uses: The roots were used for lashing and for fine basket making.

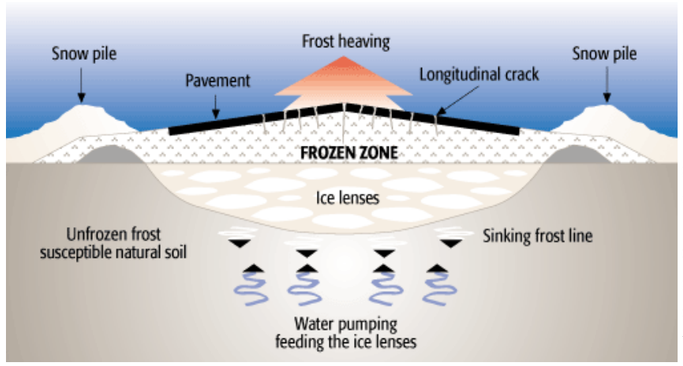
Literature Cited

Silvics of North America Vol. I Conifers, USDA, Handbook 654
Forest Trees of Maine, 2011, Maine Forest Service.
Foster, 1990, Medicinal Plants, Peterson Field Guides.
Peterson, 1977, Edible Wild Plants, Peterson Field Guides.

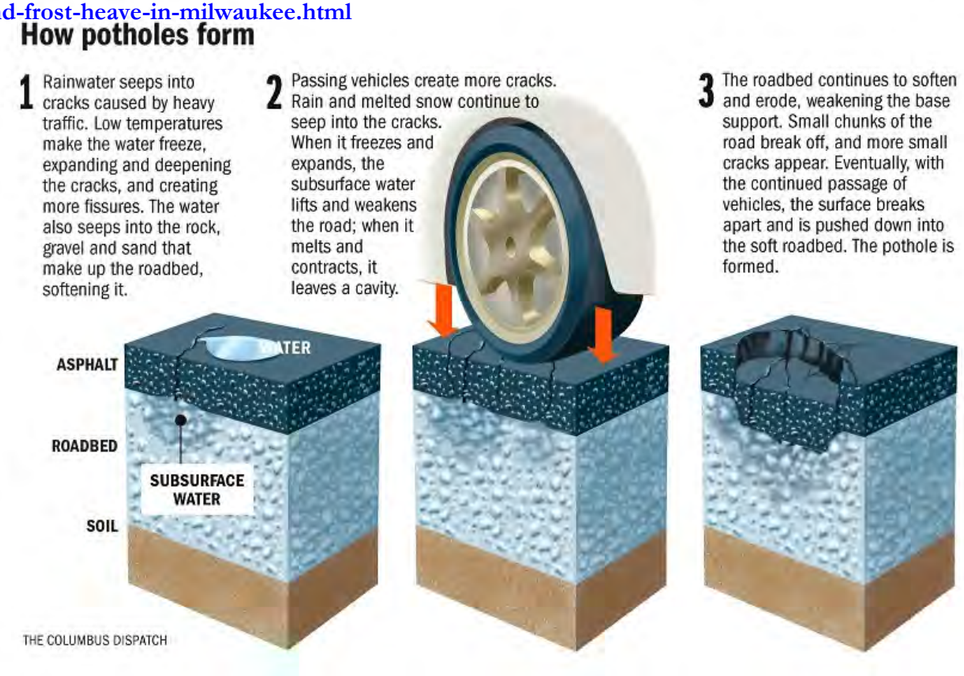
Signs of Spring - Potholes and Frost Heaves

Potholes, generally get worse in the winter due to freeze/thaw conditions. They are caused by water penetrating the pavement through cracks, pooling in existing potholes or other depressions and then freezing. The expansion from the ice causes the asphalt to push and break apart, especially through repeated cycles of freeze and thaw. It is then accelerated with vehicular traffic constantly pounding on the frozen and fragile pavement.

This situation also causes frost heaves. Water below the pavement in the stone base (and soil as well) freezes. The pressure created by the expansion pushes upward and causes the pavement to heave. This is mainly noticed at large cracks, areas around catch basins (which are below the frost line) and at entry ways where asphalt meets concrete. Most people feel that their catch basins and storm drains are sinking when in fact the pavement surrounding it has risen. It's not just asphalt either.



Concrete roadways can heave just as well as asphalt and there are many areas around town where one catch basin will be 2" lower than the pavement while one 10' away is still level with the roadway. http://munsoninc.blogspot.com/2014/03/potholes-and-frost-heave-in-milwaukee.html



Are you interested in pursuing a career in Water Resources?

The Bureau of Indian Affairs (BIA) is now accepting applications for their Water Resources Technician Training (WRRT) program. The goal of this program is to increase water resilience in Native American Communities by providing technical skills and internship opportunities to tribal members.

Tribal members between the age of 18 and 34 are encouraged to apply. The training will be held at the **University of Arizona in Tucson July 10 to August 4, 2017**. The program begins with an Intensive 4 week training program through the University of Arizona. This training provides academic and practical experience in water resources science. Upon completion, interns obtain foundational knowledge in practical hydrology and natural resources management.

Individuals who successfully complete this training will receive a 22 week employment voucher as an entry level water resources technician with a Tribal Government, a Federal or State Government Agency or a non-profit organization. In the past, individuals who completed this training came to work for HBMI. Additionally, upon successful completion of the internship, individuals receive a 900 hour AmeriCorps Education Award.

If you are a registered HBMI tribal member and would like to know more about this program, please contact **Cara O'Donnell at 207-532-4273 ext. 212** or via email **water@maliseets.com**.

Or download the information package and application at::

https://www.bia.gov/cs/groups/xots/documents/document/idc2-059230.pdf

Application deadline April 6, 2017

Spring is here!....early?

Spring flowers, trees taking on the beautiful fresh green of new leaves, melting snow in your front yard, and "ice out" in lakes and rivers: across the Northeast in the U.S., changes in the timing of these signs of spring in the past several decades suggest that spring is arriving sooner says the Union of Concerned Scientists, USA:

http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/The-Changing-Northeast-Climate.pdf.

For example:

Lilacs, honeysuckle, and other spring flowers are blooming four to eight days earlier than in the 1960s.

Lake ice is melting an average of nine days earlier

River ice is breaking up an average of 11 days sooner than the twentieth century average.

A study conducted by the National Park Service: https://necsc.umass.edu/northeast-climate estimated that in 2012, Acadia National Park experienced the onset of spring earlier than 105 of the last 111 years (using data collected since the year 1901). Another way to say it: Acadia experienced an "extreme" early spring that exceeded 95% of historical conditions.

What Happens When Snow Melts?

Snow melting relies heavily on air temperature and the intensity of the sun. Other factors are also important to a lesser extent, like the speed and temperature of the wind and whether it is raining. The terrain on which the snow has fallen and its angle to the sun is also fundamental.

When the temperature begins to rise and the heat from the sun reaches the snow, the melting process begins. Because the top layer of snow is the first to receive this energy from the sun, snow melts from top to bottom. The energy in the heat turns the snow into water by breaking down the snow crystals. When the bonds holding these crystals together get too weak, they cannot overcome the forces of gravity, and drops begin to trickle to the ground. These first warm water drops also contribute to raising the temperature of the snow and speeding up the melting process.

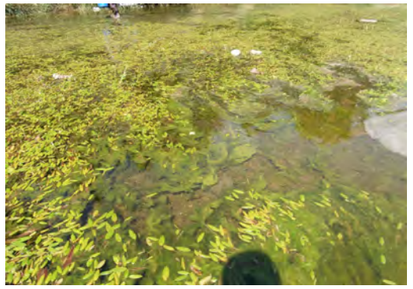
https://www.reference.com/science/happens-snow-melts-f513750a5940a6f#

Spring Word Search Puzzle

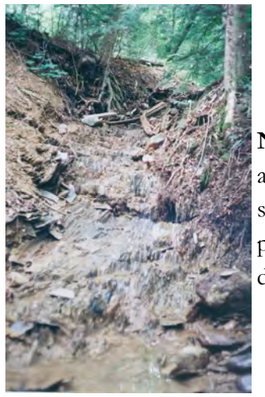
Find the **Maliseet** and **English** words in this Spring Themed Puzzle

P	M	A	S	Q	E	M	U	S	Q	W	C	E	D	A	R
E	E	N	E	G	R	A	S	S	R	F	B	B	T	P	F
H	Y	K	M	U	T	R	O	U	T	L	I	L	Y	S	I
S	I	U	A	O	B	L	E	A	F	O	R	O	P	K	D
W	A	W	P	H	R	O	B	I	N	W	D	S	S	I	D
A	S	I	L	M	O	D	F	G	H	E	S	S	P	H	L
H	J	P	E	U	O	N	K	L	M	R	S	O	R	Q	E
S	N	O	S	L	K	B	I	R	C	H	I	M	I	P	H
U	B	S	Y	E	T	V	C	Y	X	Z	Q	Z	N	S	E
W	X	E	R	H	R	C	Q	V	A	B	O	N	G	K	A
E	M	H	U	P	O	M	L	K	O	H	N	J	H	U	D
H	A	E	P	O	U	S	I	P	S	F	S	D	S	H	G
S	H	H	A	N	T	B	L	O	O	D	R	O	O	T	Q
O	Q	S	W	E	M	M	A	H	S	U	S	R	K	O	T
K	A	K	S	K	U	S	Y	U	Q	I	O	P	L	M	K
J	N	H	G	F	D	M	I	N	K	A	S	U	D	S	A

Ankuwiposehehs	Robin
Kakskus	Cedar
Mahqan	Maple Syrup
Mahsus	Fiddlehead
Masqemus	Birch
Minkasu	Blossom
Mip	Leaf
Mulehpon	Trout Lily
Ososq	Mud
Pehsuwahsuwehsok	Flower
Pekahkoniyahsok	Blood Root
Pskihq	Grass
Sips	Birds
Siqon	Spring
Skuhtom	Brook Trout



Nutrient Sampling is conducted each year at 24 locations within the Meduxnekeag Watershed during low flows to understand nutrient levels in the Meduxnekeag. Excess nutrients on farm fields and other sources of nutrient pollution accumulate in the sediment and cause algae blooms in the river. Large algae blooms use up a lot of oxygen in the water and end up stressing fish and other aquatic life. We are seeing fewer algae issues in recent years thanks to changes in agricultural practices and better treatment at the wastewater treatment plant, changes advocated for by HBMI's Natural Resources staff.
(photos - algae in the Meduxnekeag)



Non-point source pollution is an issue all around us. The Natural Resources staff is always on the lookout for sites of potential contamination such as the dump sites or washouts shown here.

Did You Know?

With the coming of spring, people, birds and animals alike, celebrate the return of the sunshine and warmer temperatures. Some birds and animals take it a bit further and actually become tipsy. Yes, you read that right, each spring some birds and animals actually get drunk eating last year's fermented fruits and berries. Deer have been known to eat fermented apples and become very unsteady on their feet. Cedar Waxwings, the bird seen at right, are known for their drunken antics. The Waxwings gather in large numbers around fruit trees and berry bushes and eat their fill of the luscious fruits. So next time you're out and about, check out the fruit trees with rotted fruit all around, you might get treated to the lighter side of the animal world.

Sediment Oxygen Demand Study was done on the river in 2016 to try to determine if accumulations of organic materials in slow moving/mud deposit areas of the Meduxnekeag were leading to low dissolved oxygen levels. Initial results indicate Sediment Oxygen Demand is not an issue at this time.
(Photos left and right - sampling equipment)

Pharmaceutical Sampling - in 2016 we collected water samples for testing. Results showed small amounts of common medications, tobacco and antibacterial products in locations downstream of the wastewater treatment plant near Lowery Bridge, at a storm drain outfall and in a tributary.
(below - collecting water samples)

Storm Drain Stenciling is a great way to reach out to the community to let folks know that things they might think about dumping in the storm drain will find its way to the river and that it is yet another form of pollution.
(Above and right)

Purple Loosestrife Natural Resources staff has been working to control the invasive Purple Loosestrife for over a decade. We have evolved from the outdated practice of using pesticides which leaves contaminated residues in the soil, to using a biocontrol method which involves using the Galarucella beetle.
(Above - Kristin Hardy releasing beetles)
(Above right - close up of beetle)
(Right - effects of beetle on purple loosestrife)

Road Stream Crossings in the watershed have been surveyed to determine whether they present a barrier to fish passage. Fish need access to colder waters in the tributaries during hot and dry periods. The Nature Conservancy has compiled this data into a mapping tool that the water program would like to use to partner with towns on culvert replacements that will improve fish passage.
(Above - perched culvert)

Snapshots from the Water Resources Program

a look at our various projects through the years

Lake Sediment Sampling at Cary Lake and 12 others in the watershed to look for dioxins and PCBs (Polychlorinated biphenyl) that make their way into the food chain of a lake. Contaminant levels were detectable but low.

(at left - Sampling with Linda Bacon of the Maine Department of Environmental Protection (DEP) Lakes Program.)

Sampling bottom sediments of Pearce Brook for gasoline with Maine DEP. Gasoline contamination found in the brook was traced back to locations along Military Street. Many old remnant spills were cleaned up by DEP in 2009 and subsequent sampling showed levels in the brook decreased after clean-up.

(right - Sampling with Brian Beneski (ME DEP) and Cara O'Donnell (HBMI)

Deploying water quality monitoring equipment. The primary goal of the Water Resources Program is to monitor the quality of the Meduxnekeag River and it's tributaries so that tribal members can safely use the river, and enjoy the fish, plants and medicines that grow along its banks. Water quality data is used to track changes in the system over time and space, to detect harmful conditions, to have a voice in state, national and international issues, and to understand the impacts of climate change on the fishery among others.
(above - Rhonda Smart & Matt Edberg deploying meters in the river)
(left - meters in the river)

Gage Station at Lowery Bridge records water quality data and flow data that is available on-line in real-time during the summer months. Low flows exacerbate other issues that are critical to a cold water fishery, such as the availability of dissolved oxygen and water temperature etc.

Check out the gage on-line at

https://waterdata.usgs.gov/me/nwis/uv?site_no=01018035

Fish Habitat Assessment in Canada on the Meduxnekeag River. Fish habitat from the Meduxnekeag all the way down to the Bay of Fundy is critical habitat for returning salmon. Data gathered from the survey will be used to create maps of locations where salmon spawning and rearing habitat exists and where habitat restoration is needed. This was a joint project with the World Wildlife Fund, Woodstock First Nation and the US Army Corps of Engineers.

(photos at left)

In-Stream Habitat Restoration Project was undertaken in 2014 to improve fish habitat in the Meduxnekeag River. Approximately 500 trees with root masses and 200 boulders were placed in the river to recreate habitat that was destroyed by historical log drives.

(above left - Meduxnekeag River before the project devoid of structures that create habitat)
(above - aerial showing installation of root masses and boulder clusters)
(left - John Field, Fluvial Geomorphologist and project designer overseeing installation of trees and boulder clusters)

An underwater GoPro camera was set inside a couple of the structures during the summer of 2016 to understand which species were using the structures how long they stayed in the area.

(left - trout near installed structure)

Skitkomiq - Culture and Science Camp 2015 and 2016 was a screaming success! The week long camp focused on teaching kids science concepts through cultural practices outdoors on tribal lands. Topics included growing medicinal plants and their use in ceremony, tree identification and ash basket making, water quality, fish ecology, canoeing safety, climate change, traditional crafts, meals with elders and much more. A 24 hour teen fast and naming ceremony fostered youth with a sense of community and culture and a deeper connection with our natural resources.

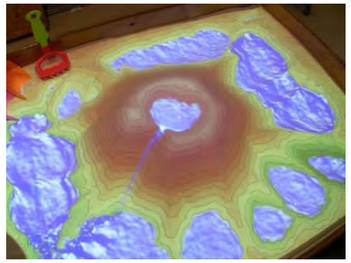
(left - Melanie Donahue learning to pound ash for basket making led by Gabe Frey)
(right Amy Joseph and Nalani Alvarez erecting shelter for fast)
(below left - archaeology section led by Caleb Ward of UMPI)

Salmon Fry Release with tribal youth at Grand Lake. Salmon eggs were reared in the Natural Resources Office to the "fry" stage and were released with other local school groups in May of 2016.

(left - salmon fry awaiting release

Kayla's Science Project - "Augmented Reality Sandbox", a 3-dimensional watershed model was created with the help of HBMI Systems Administrator Andrew Magnus and presented by Kayla Shrout at the Houlton High School Science Fair. It is a fantastic visual tool for learning concepts about watersheds.

(left - Kayla presenting project at science fair
Below left - close up of sandbox)



Non-point Source Assessments. Each spring Natural Resources field staff walk tribal lands during snowmelt and heavy rainfall to look for erosion/non-point source pollution impacts to the river.

(left - Matthew Edberg conducting spring assessment on trust lands)