# Pəskehtəkʷok
## Joining of the Branches

Photo: Martin Neptune

Summer 2005 ~ Issue 3

Penobscot Indian Nation
Department of Natural Resources

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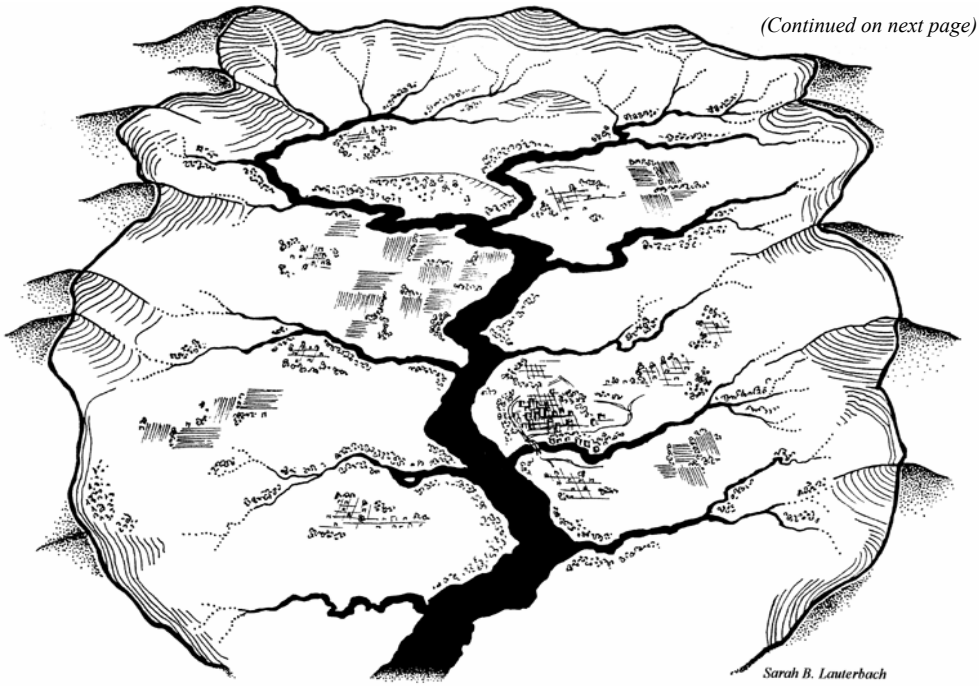
# Why Worry About Watersheds

Why does it matter that many paper mills put toxins in the Penobscot River miles north of Indian Island? Would it matter if farmers up on the Piscataquis River were using excessive amounts of fertilizer on their fields and did not adequately prevent runoff? What if the HoltraChem plant had been in Passadumkeag and all of the mercury contamination was in the sediments there?

The answer to all of these questions, and many other similar ones you might come up with, is that these issues matter because they all occur in the Penobscot River watershed. But what is a watershed, you ask? That is a great question - the answer to which we hear VERY LITTLE about in our education and daily experience. When was the last time you saw watershed boundaries on a Delorme map? How often does the news talk about the watershed in which an event took place? The general public rarely even talks about rivers, say nothing about their watersheds. We hope this article will help you to better understand what a watershed is and their importance.

**A watershed is like a bowl with its edges defined by the high points on the land - hills! The sides of the bowl are made up of all of the land from which water is shed and flows downhill collecting in a low point. These low points eventually collect enough water to form wetlands, lakes, streams, or rivers and eventually flow into the ocean!** The image below is a good visual representation of a generic watershed. The topographic lines in groups around the edges indicate the hills that make up the boundary of the watershed - highlighted by the

*(Continued on next page)*



dark line that connects the tops of each of the hills and showing the shape of the watershed. Any water that falls inside of the edges of this bowl-like area of land will eventually collect in the river depicted in the center. Water falling outside of these edges will be in a different watershed. Both land and water contribute to the shape of a watershed and the many connections that get formed. When water falls, its flow is directed by the shape of the land around it. But as we all know, when water flows over a certain area long enough it can change the land - allowing future water to move in different directions. So, just like everything else, watersheds are constantly changing shape - even if it isn't always noticeable in a short amount of time.

**IT ALL ADDS UP!**
While you may think that your contribution of pollution is minor, when added to the other sources accumulated throughout the watershed it can cause a bigger problem.

Watersheds start in the higher elevations on the land, where water comes down and begins to collect in small feeder streams. At that point the amount of land that collects the water for a stream, its own site-specific watershed, is pretty small. Obviously, as these high elevation streams flow downhill and join with other streams they combine to form an even bigger stream - and, eventually, a river. Once a stream becomes the size of the main stem of the Penobscot River there is a great deal of land collecting that water - a much larger watershed area.

All of this water flowing down hill, over and through the landscape, has the ability to carry anything with which it comes into contact. This is important because when paper mills, wastewater treatment plants, or any other "discharger" dumps something into any river or stream it will eventually have impacts down stream. The same is true for anything, and I do mean anything, that happens on the land - it all has the potential for reaching a water body and having down stream impacts too! This includes things like fertilizing your lawn, spraying pesticides on crops, changing your oil and spilling it, or covering the land with pavement so that all of the pollution from that area goes directly to a river. Because watersheds accumulate all of these sources of pollution, big or small, <u>everything</u> that we all do can have an impact on the rivers and people that are both close to us and long distances away - including preventing pollution!

**So ask yourself these questions:**
**Is there anywhere on land that isn't in a watershed?**
**What type of action would be completely isolated from everything else?**
**Does it matter what choices we make in our every day lives?**

If your answers were no, nothing and yes, respectively, you have begun to grasp the importance of watersheds. Using watersheds as a symbol reminds us that we are all connected to the land, water and each other. As is also reflected in the Penobscot language and culture, people are an integral component of ecosystems and the health of a watershed is intimately connected to the health of its people.

So the next time you are looking at a beautiful vista of rolling hills or the high peaks of mountains, think of what they tell you about the landscape. Maybe invent a new car game to play with the kids - guess which watershed we are in! You could vary the size of the watershed you guess about so that you could almost never run out of options. And if you want more information, and maybe some maps to help you better understand this concept and the locations of watershed boundaries, come see us in the Water Resources Program. We can help you work with our GIS Specialist, Binke Wang, to create a customized map of the Penobscot River watershed.

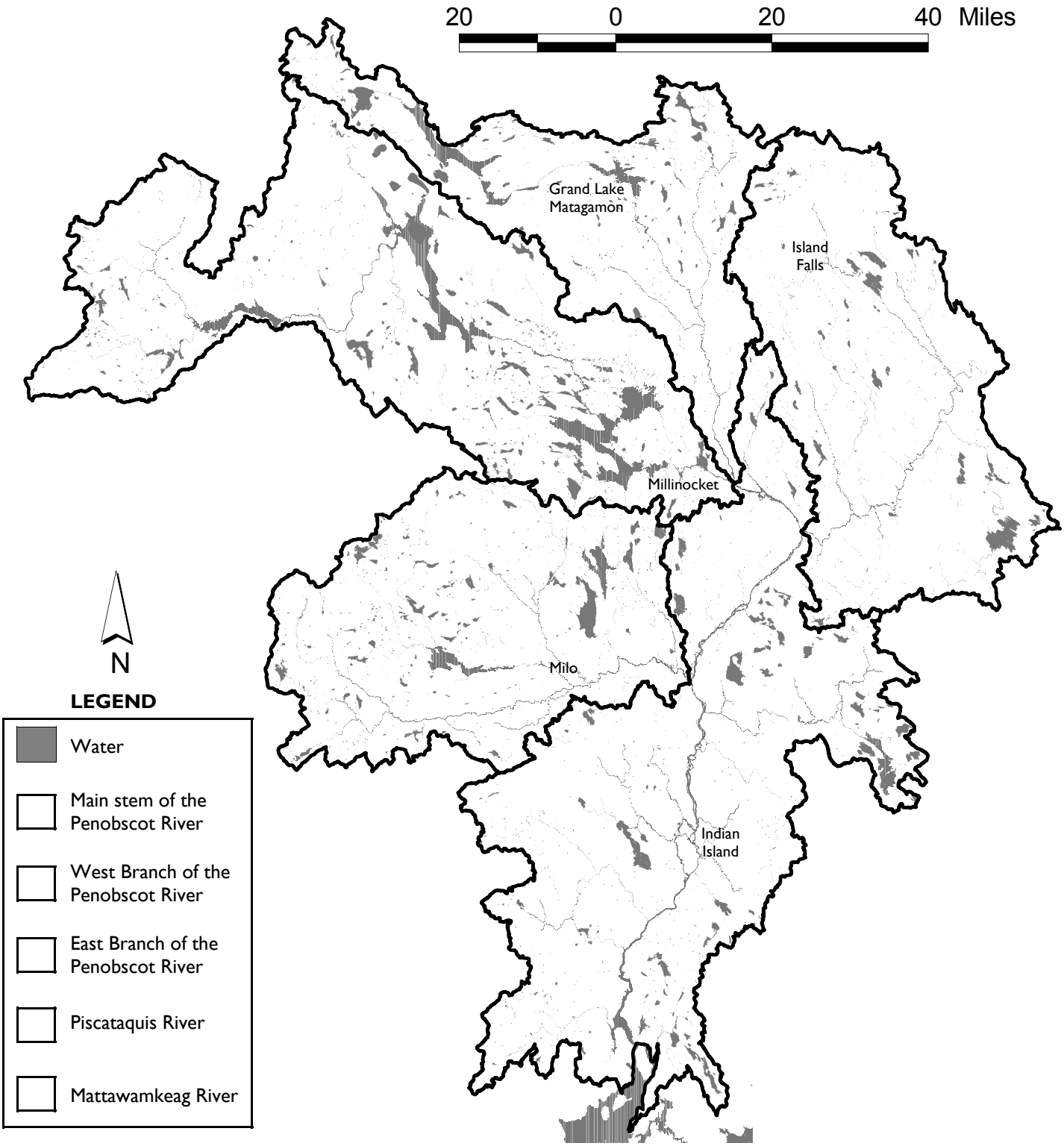
## TEST YOUR NEW KNOWLEDGE - IN COLOR!

See how well you know the Penobscot River watershed by helping some young and creative person color the map on the next page - or you could do it yourself!

The Penobscot River has a main stem and four major tributaries - each with their own watershed. The thick lines indicate the boundaries of these smaller watersheds that contribute to the whole. See if you can tell which one is which by giving each smaller watershed a different color. Then, in the legend boxes, put the corresponding color near the name of the watershed you think it represents. The correct answers will appear in the next issue of the DNR newsletter!

# Color the Penobscot River Watershed!

Give a different color to each of the small watersheds that make up the whole Penobscot River watershed.
In the legend boxes, put the corresponding color near the name of the watershed you think it represents.



# Japanese Beetles: Their Life and Yours

Adult stage

The Japanese beetle, *Popillia japonica*, is a scarab beetle about 3/8" long. The head and upper body are metallic green and the outer wing covers are copper-colored. Adult feeding damage appears as lacey leaves. The Japanese beetle feeds on over 400 plants including rose, raspberry, bean, grape and blueberry. The adults are good fliers and can move from one area to another in large swarms. When threatened, adults will feign death, dropping from the plant.

**Life Cycle**

Japanese beetles usually emerge in the beginning of July and can be found right through September. After mating, the females lay eggs in turf. The eggs hatch and the young white grubs feed from early August until the first hard frosts of fall drive them deeper into the soil. After hibernating through the winter, the grubs migrate into the turf root zone to feed again in May and June. Around mid-June, the grubs pupate, eventually emerging as adults in early July.

**Their Arrival and Destructive Nature**

The Japanese beetle is a highly destructive plant pest of foreign origin. It was first found in the United States in a nursery in southern New Jersey nearly 80 years ago. In its native Japan, where the beetle's natural enemies keep its populations in check, this insect is not a serious plant pest. In the United States, however, the beetle entered without its natural enemies and found a favorable climate and an abundant food supply. By 1972, beetle infestations had been reported in 22 States east of the Mississippi River and also in Iowa and Missouri. Since then, the pest has continued to disperse south and west. Isolated infestations have been found in Wisconsin, Oregon, and California. Without its natural checks and balances, the Japanese beetle, both as adults and as grubs (the larval stage) has become a serious plant pest and a threat to American agriculture.

Larval stage - grubs.

**Management Methods**

There are many suggested methods for controlling these pests. A common method is traps - some using chemical pheromones to attract the bugs and others that use more natural ingredients. If you decide to use traps, it is suggested that they are not placed right next to the plants as the traps might attract more beetles to your plants than before.

We found an interesting recipe that you can use to make your own trap. Try this one out!

**1 cup water**
**1/4 cup sugar**
**1 pkg dried yeast**
**1 mashed banana**

Place everything in a 1 gallon plastic milk jug. Shake well to mix. Place the milk jug near your lawn or garden. Beetles will be attracted, fly into the jug, but not be able to get out.

Some other suggested methods include (taken directly from the web site www.uaex.edu/Other_Areas/publications/HTML/FSA-7062.asp):

**Beneficial nematodes:** Late Spring and early Fall are the best times to apply these to your lawn. Water these wormy predators into your lawn in the evening and they will go to work destroying the grubs underground. And bonus - they also prey on the larval form of fleas! You'll find them for sale at large independent garden centers and via mail order. Use them right away or they'll go 'stale'!

**Milky Spore disease:** For long term control, apply this while the soil is still warm. This decades-old natural grub killer is slow to start working - it'll take a couple of years to spread throughout your lawn completely. It's available at almost all garden centers, or online at www.milkyspore.com.

**Birds and wasps:** They LOVE to eat Japanese beetles, so attract them to your landscape with birdbaths, feeders and nesting boxes. And even though starlings are pesty, they feed on both the adults AND their grub-babies in your lawn! Another great natural enemy is the Spring Tiphia wasp, which was imported into our country from China to control the beetles. The female wasp goes into the soil and lays her eggs right on Japanese beetle grubs, killing up to 85 percent of the grubs in a lawn—better than nasty chemical insecticides! Plant forsythia, peonies, and firethorn to attract these great beetle-killers.

**"Bug Juice":** Capture a bunch of beetles and whiz 'em up with a pint of water in an old garage-sale blender, strain the resulting slurry and spray it on your plants. Old-time gardeners swear that the pests won't go near those leaves. ("Hey! This rose smells just like Uncle Louie!") If you're a wuss (or only have one blender), try two cloves of garlic and a hot pepper instead.

**Neem:** An ancient, non-toxic plant protector derived from trees native to India that kills pests already eating plants and repels new ones.

FOR MORE INFORMATION SEE THE WEBSITE SOURCE OF THIS INFORMATION CITED ABOVE.

# Chronic Wasting Disease (CWD) Moving Northeast

## *What is PIN DNR doing about it?*

Kristin Dilworth, Big Game Biologist

(some information for this article was taken from the CWD Alliance)

Chronic wasting disease is a TSE (transmissible spongiform encephalophy) of deer and elk. TSE's are a number of diseases grouped together because of how they act and the symptoms they produce. Several other well known TSE's are mad-cow disease, scrapie (domestic sheep), transmissible mink encephalopathy (farmed mink) and in humans, Creutzfeldt-Jakob disease. All of these diseases are believed to be caused by "prions" which are infectious proteins that affect the brain and nervous system.

JOIN DNR FOR A FREE CWD WORKSHOP!

**WHEN:**
Sunday, September 25, 1:00pm

**WHERE:**
Large conference room, Nick Sapiel Building

***Anyone is welcome, but hunters are strongly encouraged to attend!***

Chronic wasting disease (CWD) has been known to be a syndrome of mule deer for more than 30 years. To date, it has been found to naturally affect mule deer, white-tailed deer and Rocky Mountain elk, though it is likely that other animals are susceptible to CWD. The origin of CWD is not known, and it may never be possible to determine how or when CWD arose. Scrapie has been recognized in the United States since 1947, and it is possible that CWD was derived from scrapie. However, this is only one of several hypotheses and arguments can be made for either side.

Since the appearance of mad-cow disease in the mid-1980's, and especially since the 1996 announcement of an apparent relationship between mad-cow and variant Creutzfeldt-Jakob disease, there has been considerable interest in TSE's. Therefore, CWD is a disease that interests both wildlife managers and human health agencies across the nation.

**Clinical signs include the following symptoms:**

- **listlessness**
- **droopy ears**
- **lowered head**
- **excessive salivation**
- **teeth grinding and increased thirst**
- **extreme weight loss**

CWD affected deer show loss of body condition and changes in behavior. Once the outward symptoms are obvious, the animal may only have several days to several months to live.

Until recently, CWD has been a problem of the "western states." On April 27, 2005, the state of New York received a positive result for CWD in a wild deer sampled in Oneida County. This was a huge shock as the disease has not been found east of the Mississippi. The state of Maine has been sampling since 2001, but until now the Penobscot Nation territories have not had a sampling program of their own.

With the creation of the Big Game Biologist position, I will be opportunistically sampling both white-tailed deer and moose this hunting season. **Hunter participation will be integral to the success of this study.**

DNR will be hosting a free CWD workshop along with the Native American Fish and Wildlife Society on Sunday September 25, 2005 at 1:00pm in the large conference room of the Nick Sapiel Building. The workshop will consist of:

- a power point presentation by CWD biologist Carl Pocan
- dissection of deer and sheep heads to remove samples for testing

*Jim Pardilla learning to take samples for CWD analysis.*

**Lunch will be provided and door prizes from the Ski Rack and Old Town Trading Post will be raffled off.**

Anyone is welcome, but hunters are strongly encouraged to attend!

If you have any questions about CWD, the study I am conducting, or this workshop please feel free to contact me at the office.

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