

# Keweenaw Bay Indian Community Rapid Watershed Assessment News

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In the fall of 2007, the Keweenaw Bay Indian Community, working in partnership with the Upper Peninsula Resource Conservation and Development Council, the USDA Natural Resources Conservation Service, the Baraga County Road Commission, the Baraga Conservation District, and the Western Upper Peninsula Planning and Development Region (WUPPDR) began a year-long project to assess the natural resource concerns of all the watersheds that originate and flow across the KBIC Reservation. The project is called the "Keweenaw Bay Rapid Watershed Assessment". Rapid Watershed Assessments (RWA) provide guidance of where conservation investments would best address the concerns of landowners, conservation districts, and other community organizations and stakeholders within a watershed. These assessments help landowners and local leaders set priorities and determine the best actions to achieve their goals. The project study area is approximately 313 square miles with 92 square miles being within the KBIC L'Anse Reservation boundary. During the first phase of the project, staff from WUPPDR are collecting information on land use, land cover types, soil conditions, climate, and socio-economic data. They are also working with staff from the Baraga County Road Commission to survey approximately 115 road crossings within the watershed area. Road crossings have the potential to significantly impact stream quality and fish passage due to erosion and perched culverts. Gathering input from the residents and stakeholders in the watershed regarding their views of priority natural resource concerns and opportunities is an important part of the process and a public meeting has been planned for this purpose (see page 6). The completed resource assessment will be a valuable tool for land owners, resource professionals, and community leaders.

## **An Ojibwa Poem**

***Anishinaabekwe, the Daughters,  
You are the keepers of the water.***

***I am Nibs...water..the sacred source,  
The blood of Aki, Mother Earth,  
The force filling dry seeds to great bursting.***

***I am the wombs cradle.***

***I purify.***

***Nibi, the lifegiver, forever the Circle's charge  
I have coursed through our Mother's veins.***

***Now hear my sorrow and my pain  
In the river's rush, the rain.***

***I am your grandchildren's drink.  
Listen, Daughters, always.***

***You are the keepers of the water.  
Hear my cry, for the springs flow darkly now  
Through the heart of Aki.***

## What is a watershed?

A watershed is all the land that drains to a common point; more specifically, the area of land from which runoff from rain, snow, and springs drain to a stream, river, or lake. Streams and rivers function as the “arteries” of the watershed. They drain water from the land as they flow from a higher to a lower elevation (see diagram on page 4).

## Watershed Management

Because storm and spring snowmelt runoff washes pollutants from the land’s higher elevations into the water below, almost every activity on the land has the potential to affect the quality of water in our lakes and streams. Watershed planning brings together people and their communities within the watershed to address those activities. By working together, individuals and communities within the watershed can design a coordinated plan to protect their water resources for this generation and generations in the future.

## Watershed Information

The Keweenaw Bay Indian Community Rapid Watershed Assessment area consists of all the streams and rivers that originate on or flow across the L’Anse Reservation. The total project area is 313 square miles (92 square miles being within the KBIC boundary) with 74 miles of Lake Superior coastline. The area can be divided into 9 sub-watersheds and contains 257 perennial rivers and 117 intermittent streams. All these water resources have significant impacts on the approximately 800 private wells located within the project area that residents depend on for their drinking water. Some of the better known Creeks within the area are the Little Carp, Zeba, Linden, Robillard, Daults, and Denomme. All these named as well as many unnamed watershed arterials ultimately outlet into Lake Superior’s Keweenaw and Huron Bays. This is a rural area with less than 8,000 residents. This number increases in summer as summer residents and tourists come to enjoy the natural resources the area has to offer. More watershed details can be found in the following tables:

Sub Watershed Name	Acres	Sq. Miles
East Branch Silver River-Silver River	20200.0	10.1
Falls River	30047.3	15.0
Little Carp River-Frontal Keweenaw Bay	37999.1	18.9
Little Silver Creek-Frontal Keweenaw Bay	34600.1	17.2
Peterson Creek-Frontal Lake Superior	4553.7	2.3
Ravine River	17302.6	8.6
Silver River	24926.6	12.4
Slate River	11911.1	5.9
Town of Pelkie-Sturgeon River	19370.2	9.6

The shoreline contains globally-rare natural communities (i.e. Great Lakes marsh, cobble beaches, dune/swale, and northern fen environments) that potentially provide habitat for Bald Eagles, Common Loons, Bigmouth Shiners, Douglas Hawthorn, the Eastern Box Turtle, Great Blue Herons, Lake Sturgeon and Ospreys of which some are federally listed threatened or endangered species as well as Species of Concern.

Land Use	Acres	Percent
Agricultural	12019.2	6.0
Barren Land	200.3	0.1
Forest Land	168268.8	84.0
Urban	1201.9	0.6
Water	1602.6	0.8
Wetland	17027.2	8.5



The stream crossing at Zeba Creek was remediated with a new arched culvert with a natural bottom designed for fish passage and rock armoring of the creek's outlet below the culvert which dramatically curtailed erosion.

**Partners**  
**U. P. Resource Conservation and Development Council**  
**Keweenaw Bay Indian Community**  
**USDA Natural Resources Conservation Service**  
**Western Upper Peninsula Planning and Development Region**  
**Baraga County Road Commission**  
**Baraga Conservation District**

Land Ownership	Acres	Percent
Tribal	58880	29.4
State	15488	7.7
Federal	10048	5.0
Private	115985	57.9

### KBIC Rapid Watershed Assessment Landowner Survey

What natural resource issues are most important to you? (Check as many as you like)

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Water quality                  | <input type="checkbox"/> Groundwater Protection         | <input type="checkbox"/> Lake Levels           |
| <input type="checkbox"/> Wetland Protection             | <input type="checkbox"/> Poor Land Use Practices        | <input type="checkbox"/> Shoreline Development |
| <input type="checkbox"/> Fish & Wildlife Habitat        | <input type="checkbox"/> Invasive Species Control/Mgmt. | <input type="checkbox"/> Erosion Control       |
| <input type="checkbox"/> Unregulated Development        | <input type="checkbox"/> Endangered/Threatened Species  | <input type="checkbox"/> Forest Pests/Diseases |
| <input type="checkbox"/> Forestry Management. Practices | <input type="checkbox"/> Other _____                    |  |

In your opinion, what are the top three needs/concerns in your community?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Please return your survey to: **U. P. Resource Conservation & Development Council**  
 780 Commerce Drive, Suite C  
 Marquette, Michigan 49855

## Land Development and its Effects on the Water Cycle

The water cycle is basically the movement of water through our environment. It is through this movement that water in our river systems is replenished. When rain or snow falls to an undeveloped watershed, 40 percent will return to the atmosphere by evaporation and transpiration

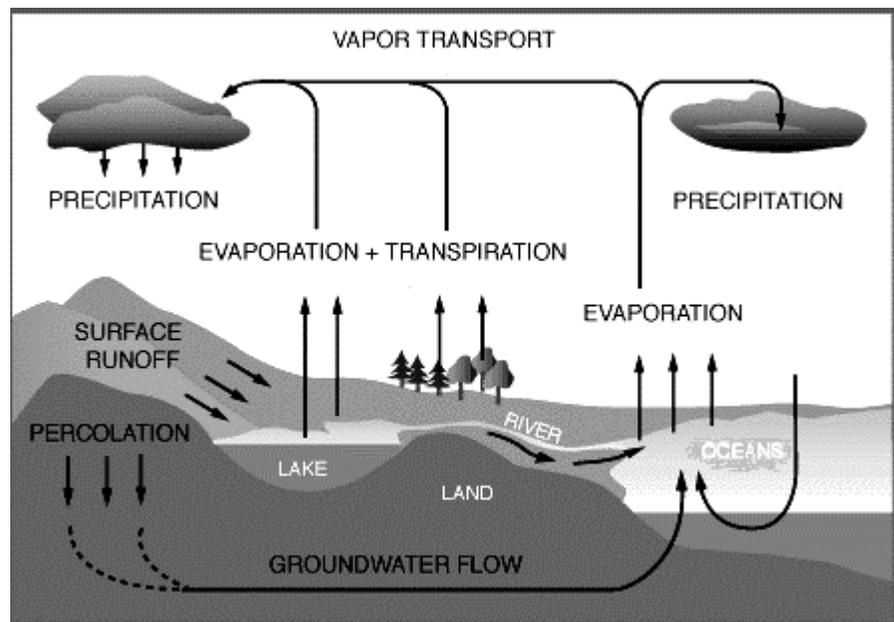
(loss of water vapor by plants). About 50 percent will percolate into the soil, and the remaining 10 percent moves across the land as runoff that drains into creeks, rivers, wetlands and other bodies of water.

The water that soaks into the ground is important for maintaining stream flow during dry weather. Percolating water slowly moves downward through

the soil eventually draining into a bedrock area where all the pores and cracks in the rock become saturated with water. The top of this saturated zone is known as the water table.

Water in this saturated zone moves laterally, largely due to gravity and/or water pressure from above. If the path of this moving ground water intercepts a stream channel, the ground water is discharged into the stream as a spring. At times when there is no surface water runoff, the entire flow of a stream might be totally comprised of this “base flow” from ground water.

Developed lands, which may be as simple as well-manicured lawns, parking lots, roofs or a driveway, are more impermeable (solid) than natural land. Rain hits these hard surfaces and runs off into storm drains instead of percolating into the ground. This occurrence drastically



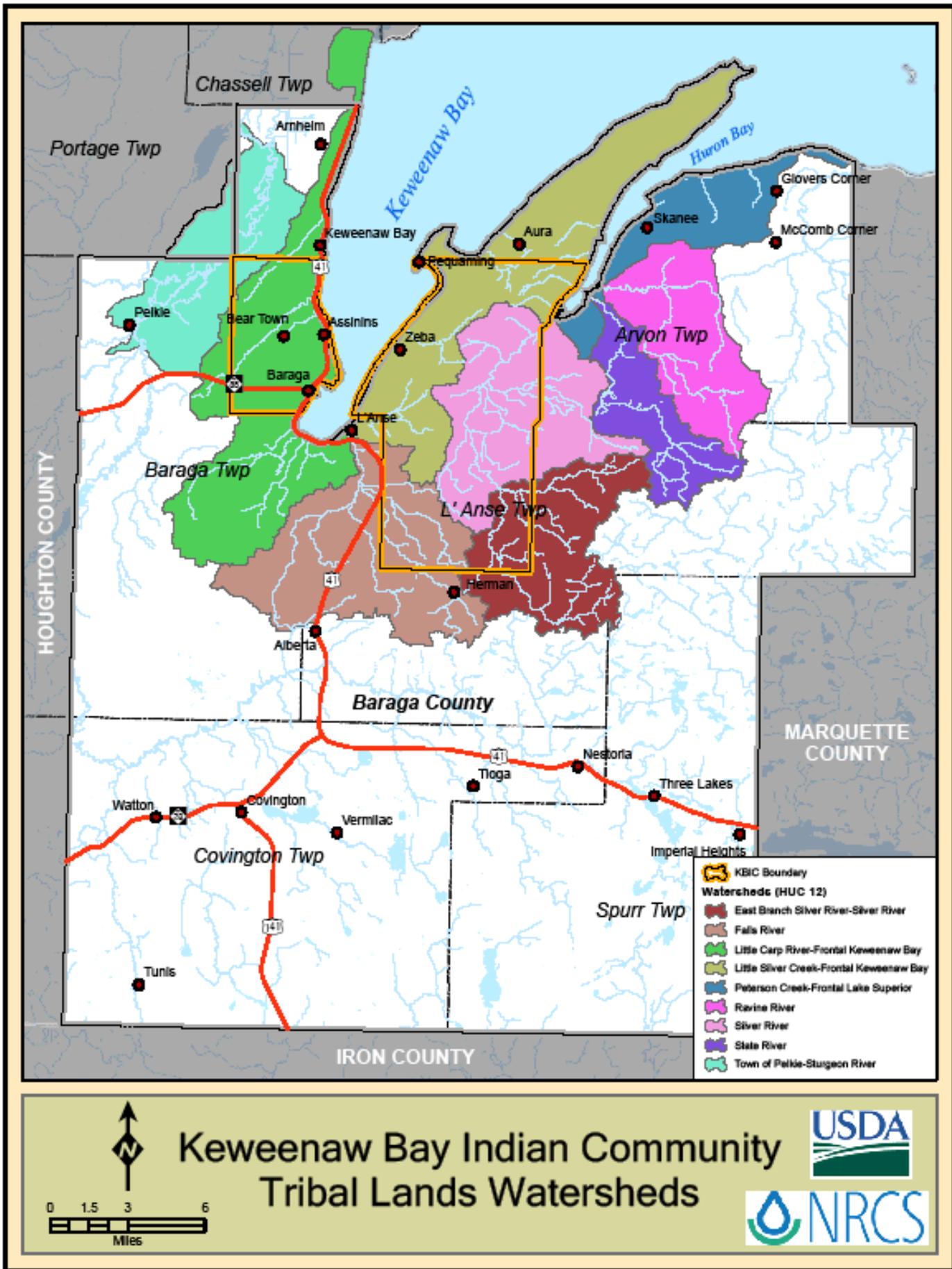
changes the fate of precipitation in the water cycle. Here are some things to think about:

- Less water soaking into the ground results in less aquifer recharge.

- Stream flow becomes more intense during and immediately after storms.

- Less precipitation is transpired back to the atmosphere from plants.

Could these factors be partially responsible for our current water levels?



# Keweenaw Bay Indian Community Tribal Lands Watersheds





780 Commerce Drive, Suite C  
Marquette, Michigan 49855

**Keweenaw Bay Indian Community Rapid Watershed  
Assessment Public Meeting  
August 12, 2008 - 7:00 pm  
At the Ojibwa Casino Hotel in Baraga**

This meeting will give the community an update on how the Rapid Watershed Assessment Study came about, a summary of the work done so far, and plans for the future direction the assessment will take.

All watershed residents are invited to attend and provide their input for the development of solutions to protect the natural resources of the area. Refreshments will be provided.

For further information on the meeting, or general questions, contact the Upper Peninsula Resource Conservation & Development Council at 906-226-7487, Ext. 101.