

Watershed Investigations Summer Teacher Institute ~ June 20-25, 2004

(DRAFT 5/20/04)

Sunday, June 20 - Both Watershed Investigations & Community Land Use groups

- 3:00-5:00 pm Check-in at Wadsworth Hall (meals will be at McNair Hall, next door)
5:00 pm Dinner
6:00 *Introductions, Journals, Overview of Institute, Week-long Project Assignment*
7:30-9:00 *Community as a Context for Learning* - Jon Yoder, Northwest Center for Sustainable Resources

Monday, June 21 – Both Watershed Investigations & Community Land Use groups

- 8-noon *Involving Your Students in Natural Resource Projects in Your Community*
Jon Yoder, Northwest Center for Sustainable Resources
12-1 pm Lunch
1-5:00 pm *Planning Your Own Natural Resource Projects to Involve Students in the Community*
5:30 pm Dinner
7-9 pm *Measuring the Ecological Influence of Streams & Wetlands on Biodiversity Using Artificial Nests*
– Audra Bassett, School of Forest Resources & Env. Sciences

Tuesday, June 22 – Watershed Investigation group only

- 8-noon *Stream Monitoring with TI Graphing Calculators & Vernier Probes* – Lisa Parolini, Jeffers HS
12-1 pm Lunch
1-3:00 pm *Downloading Data & Classroom Uses of Calculators & Probes* – Lisa Parolini, Jeffers HS
3:00-5:00 *Conducting Bio-Assays to Assess Aquatic Species' Tolerance for Ecological Changes* – TBA
5:30 pm Dinner
7:00-9:00 *Watershed Modeling* – Dr. David Watkins, CEE

Wednesday, June 23 – Watershed Investigation group only

- 8-Noon *Designing Watershed Investigations: Ecological Influence of Streamside Management on In-Stream Aquatic Ecosystems* (leaf packs, macroinvertebrates, fish populations) – Dr. Casey Huckins
12-1 pm Lunch
1-3 pm *Analysis of Stream Data* – Dr. Casey Huckins, Dept. of Biological Sciences, MTU
3-5 pm *Microbiological Stream Studies* – Mike LaBeau, Dept. of Biological Sciences, MTU
5:30 pm Dinner
7:00-9:00 Groups work on projects

Thursday, June 24 – Both Watershed Investigations & Community Land Use group (Cheryl Poole, MDE)

- 8-10:00 *Introduction to Using GPS Units* – Corey Soumis, Science & Technology teacher, Calumet HS
10:00-noon *Geo-Caching and following a GPS Course* (at Tech Trails) – Corey Soumis, Calumet HS
12-1 pm Lunch
1:00-3:00 *How GIS Data Is Used in Watershed Planning* – Mike Hyslop, School of Forest Resources & Environmental Sciences TBA
3:00-5:00 *Microbiological Stream Studies* – Mike LaBeau, Dept. of Biological Sciences, MTU
5:30 pm Dinner
7:00-8:00 *Retrieval of Artificial Nests* – Joan Chadde
8:00-9:00 Groups work on projects

Friday, June 25 – Watershed Investigation group only

- 8-9 am Complete Watershed Management Plan
9-noon *Six Groups Present Watershed Management Plans to Panel*
12-1 pm Lunch
1-3 pm Journal Entries, Community Project Proposals, Course Evaluations

ASSIGNMENT: Development of a Watershed Management Plan

Working in groups of 3, you will select a stream in Houghton County for which your group will develop a watershed management plan. Your goal is to determine whether your selected stream is ecologically healthy and make management recommendations for the stream and watershed. You may use the internet, make phone calls, collect field data, and do whatever is necessary to conduct your assessment and make your recommendations. You will **prepare a report and make a presentation** of your findings to a panel of decision-makers and resource managers on Friday morning.

Each plan must include at least at least FIVE of the following:

1. Delineate the watershed on a topographic map.
2. Identify historic and present land uses in the watershed and whether any could potentially impact the stream.
3. Contact appropriate agencies, units of government, and/or local residents to gather historical and current information and data about the stream and its watershed (city, county, DEQ, NRCS, USGS, consulting firms).
4. Observe aerial photos to see if the stream has changed location over time.
5. Collect water chemistry data at two or more sites in the watershed.
6. Collect biological data at two or more sites in the watershed.
7. Collect streamside habitat assessment at two or more sites in the watershed.
8. Search websites to answer this question.

Each group will have 10 minutes to present their assessment, support it with data or other documentation, and make recommendations for management of the watershed to a panel of resource specialists and community representatives. The panel will critique each presentation and ask group members to justify their assessment and management recommendations.

Equipment/Materials Available:

Biological monitoring supplies

Water chemistry test kits

Physical measurement supplies

Habitat Assessment forms

Map of Houghton County

Aerial photos and GIS maps for streams in Houghton & Baraga counties available from NRCS office in Baraga (make requests early in the week)

Topographic maps of Huron Creek, Pike River, Traprock River, etc.

Overhead transparencies & markers

Dry erase board & markers

Team Members: (1) _____ (2) _____ (3) _____

Watershed Assessment Report *(this is an outline for reference only)*

1. Describe the topography of the watershed.
2. Identify historic and present land uses in the watershed. Could any of these land uses potentially impact the stream?
3. Describe information obtained from natural resource agencies, units of government, and/or local residents regarding historic and current status of the stream and its watershed.
4. What changes do you observe between aerial photos?
5. Compare water chemistry data at two or more sites on the river or between two rivers.
6. Compare biological data at two or more sites on the river or between two rivers.
7. Compare streamside habitat assessment at two or more sites along the river or between two rivers.
8. What other information or data did you obtain about your watershed? What other information would you still like to find out?
9. What management recommendations would you make for this stream/river?