Steering Committee Update

The Steering Committee has formed four subcommittees to better facilitate the development of the Sugar Creek Watershed Management Plan. Each subcommittee along with their designated task is listed below.

Education and Outreach Subcommittee
- Volunteer Coordination
- Recreation
- Education (Watershed Improvement)
- Local Advocacy

Field Subcommittee
- Monitoring
- Urban and Agricultural BMPs

Marketing Subcommittee
- Marketing (Community Outreach)
- Media Coordination
- Website Design

Funding and Research Subcommittee
- Grant Writing
- General Research

If you are interested in joining a subcommittee and joining the effort to help improve our watershed, please contact the Hancock County SWCD at 317-462-2283 (Ext 3), or come to the next Steering Committee Meeting!

Upcoming Sugar Creek Meeting Dates

Stakeholder meetings are held monthly and periodic public meetings are held to update the stakeholders on the progress of the Sugar Creek Watershed Management Plan. Upcoming meetings for the watershed planning groups are listed below.

January 10, 2007: Steering Committee Meeting – Hancock County Soil and Water Conservation District, 1101 West Main St. Ste N, Greenfield, 6:30 pm

February 13, 2007: Public Input Meeting – Hancock County Public Library, 900 West McKenzie, Greenfield, 6:00 pm

Hancock County Soil & Water Conservation District
1101 W Main St Ste N
Greenfield, IN 46140
www.hancockswcd.org

Questions? Contact:
Ed Belmonte, V3 Companies, (630) 724-9200
Hancock County SWCD, (317) 462-2283 Ext 3

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SUGAR CREEK SCOOP

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www.hancockswcd.org/SugarCreek.htm (317) 462-2283 Ext 3

Identifying Watershed Problems and Causes

The first step in developing a Watershed Management Plan is to "Introduce the Watershed". In this first step, the watershed is described in detail including the physical setting, natural history, endangered species, soils, topography, hydrology, land use, and land ownership. This step was completed to provide the Steering Committee and watershed Stakeholders with an understanding of the current conditions in the Sugar Creek Watershed.

The second step in developing a Watershed Management Plan is to "Identify Problems and Causes". In order to begin the process of identifying concerns among stakeholders in the Sugar Creek watershed, the Steering Committee met and determined who the major stakeholder groups in the watershed were.

Inside This Issue

From this list representatives from each of the stakeholder groups were invited to multiple stakeholder meetings to discuss their concerns, update them on the watershed planning process, and to begin focusing on priority resource concerns that need to be addressed in the Sugar Creek Watershed.

The priority resource concerns that were identified by the stakeholders will be addressed within the Watershed Management Plan. See Priority Resource Concerns on page 2 for the concerns identified to date.

Back to Basics – What is Non-Point Source Pollution?

Pollution of ground and surface water results from the variety of ways that people use the land. Unlike pollution from factories or sewage treatment plants (point sources), non-point source pollution comes from many widespread sources.

The pollutants are transported over the landscape by storm runoff, snow melt, and wind. Eventually, these pollutants enter streams, wetlands, and lakes, where they damage aquatic habitat and reduce the capacity of water resources to be used for drinking water and recreation. Because non-point source pollution doesn't come from specific locations, it has to be managed differently than facilities with site-specific permits. That's why so many measures directed at controlling non-point source pollution are voluntary, and why so many people need to be involved.

Examples of non-point source pollutants include:
- Soil particles,
- fertilizers,
- animal manure,
- pesticides,
- fats, oils, and greases
- road salt,
- fecal material from failing septic systems, and
- debris from paved surfaces.

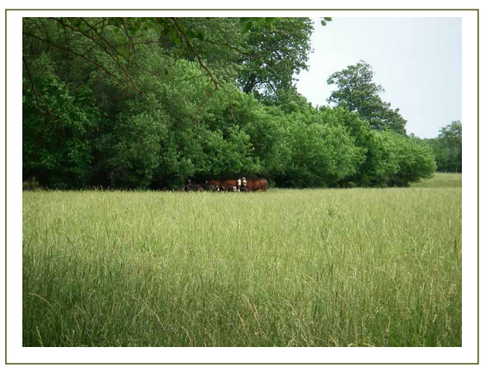
Priority Resource Concerns

The priority resource concerns that were identified by the stakeholders are listed below. Specific concerns were recorded from the stakeholders, summarized using text they approved of, and later listed in categories by Steering Committee members to aid in understanding of the issues.

Agricultural Issues:
- Drainage – the need to maintain proper drainage for farming
- Log Jams – issues related to proper drainage
- Beavers – damming up drainage ways
- Flooding Impacts

Pollution Issues:
- Wildlife Effects on Water Quality
- Streambank Erosion – sediment and associated nutrients
- Trash/Illegal Dumping
- Water Clarity
- Health Issues with bacteria – primary contact levels to safely swim and fish in Sugar Creek
- Fish Consumption Advisories
- Cattle in the stream – health issues (E. coli)

Development/Urban Issues:
- Landuse Changes – increased urbanization
- Stormwater Management
- Flooding Impacts



Cattle grazing near Sugar Creek – June 2007

Sandbars and erosion within Sugar Creek – June 2007

Recreational Issues:
- Log Jams – issues related to canoeing
- Beavers – desired for wildlife viewing
- Canoeing, fishing, and swimming – primary contact levels with bacterial problems
- Identify hunter friendly farms

Wildlife/Habitat Issues:
- Proper Wildlife Management – balance of diversity
- Sandbars (erosion and hydrologic modification)
- Habitat and Wildlife preservation, conservation
- Cattle in the stream – destruction of habitat

Other Concerns:
- Streams are more wide and shallow – what is the cause?
- Changes in weather patterns – what are the effects on the watershed?
- Landuse Changes – Large farms being converted to mini farms
- Greenways along the river – the desire to create parks and work through private property issues
- Finances – how do we pay for the changes that need to be made?
- Preservation – acquiring land along streams from willing sellers

Key Water Quality Parameters

Adapted from the Indiana Watershed Planning Guide

Several parameters are evaluated when looking at the overall water quality of a watershed. The following is a brief description of the major factors that determine or affect water quality. These are some of the parameters that were evaluated within the Sugar Creek Watershed. Specific sampling and evaluation procedures will be described in subsequent issues of the Sugar Creek Scoop.

Habitat

Habitat encompasses all the physical characteristics of the stream bed, stream banks, vegetation in the stream, vegetation and land use in the area along the banks, and the way the stream moves across the landscape. Vegetation along the bank of a water body filters nutrients and sediment out of the runoff that enters the water. Trees and large shrubs at the waterline shade the water body, lowering the temperature and reducing algal growth. Tree roots, fallen logs, and large rocks in shallow areas provide cover and spawning sites for fish and aquatic benthic macroinvertebrates.

Pollutants and Stressful Conditions

Sediment can cause a cascade of negative effects in water. Soil particles absorb heat, increasing water temperature. Poor water clarity interferes with feeding in predators that hunt by sight, can cause hybridization of species that select mates by site, clogs gills during breathing and feeding, smothers nests and eggs, and fills crevices in gravel beds. Soil particles can also carry nutrients and attached toxic chemicals into the water. Erosion also carries dead plant and animal matter into water increasing nutrient load and using up dissolved oxygen during decomposition.

The pH of the water measures relative amounts of dissolved acids and bases. Normal pH in Indiana waters ranges from 7 to 9. When algae or plants consume carbon dioxide and produce oxygen, chemical reaction may increase pH up to 10. Decay of plant or animal matter also can decrease the pH to 6. Most Indiana waters are naturally hard with a large capacity to buffer changes in the pH.

Dissolved Oxygen is critical to sustaining life for plants and animals. Plants produce oxygen during the day but consume oxygen at night or in the absence of light. Low oxygen can disrupt an organism's development; kill eggs and embryos; increase the toxicity of some chemicals; and reduce energy available to find food, fight disease, and reproduce. Low dissolved oxygen levels break the chemical bond between clay particles and phosphorus. This results in high levels of soluble reactive phosphorus in the water column readily available for use by algae blooms.

Nutrients include any chemical that is required to increase the growth of plant or animal communities. On land, most plants are limited by the availability of nitrogen. In water, most plant populations are limited by phosphorus.

Phosphorus is not directly toxic to plants or animals, but can kill fish or other oxygen-breathing animals through the indirect effect of increasing plant populations, such as algae blooms.

Nitrogen occurs in water in four different chemical forms:
- Ammonia is the form of nitrogen that is associated with dead organic material and fecal matter. It can be toxic to fish, especially at high pH and high temperature levels. Ammonia decomposes into Nitrate.
- Nitrate can interfere with the ability of the blood to carry oxygen, causing young animals to chemically suffocate.
- Nitrite is highly toxic but usually is found in small amounts and is rapidly converted into other forms.
- Organic Nitrogen is present in carbon-based molecules and byproducts of plant or animal decay.

Natural sources of nutrients in water include human sewage, livestock waste, and fertilizer. Eroding soil can carry phosphorus and ammonia associated with decaying organic matter and animal waste. Drain tiles carry nitrates dissolved in water. Decay of organic matter from leaves, grass clippings, wood, dead plants and animals, and landfills can contribute organic nitrogen and phosphorus.

Pathogens are small, difficult to sample and identify, and dangerous to maintain for testing in the laboratory. Coliforms and fecal streptococci are two groups of bacteria found in the waste of all warm blooded animals. Their presence in the water is an indicator of fecal contamination, and perhaps, other disease causing organisms.