



# Inklings

Bulletin of Interpretive Ideas

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## Current Project List

- Interpretive Sign Design, J.F. New and Associates, Crete, IL
- Interpretive Sign Design, Indiana Department of Natural Resources:
  1. Mansfield Roller Mill
  2. Prophetstown State Park
  3. Indiana Dunes State Park
  4. Pokagon State Park
  5. Civilian Conservation Corps
- Interpretive Exhibit Text, IDNR, Mansfield Mill
- Interpretive Sign Design, Valparaiso Water Works, Valparaiso, IN
- Interpretive Sign Design, B-line Trail, Bloomington (IN) Parks and Recreation

**Background Image:**  
Blanton Woods Trail Project, Danville Parks Department, Danville, IN

## Using GPS and GIS to Inventory Trails

Geographic Information Systems (GIS) and Global Positioning Systems (GPS) are two technologies that can be important tools for managing parks and trail systems. Because GPS and GIS both produce or utilize spatially referenced information, they complement each other nicely.

### GPS

GPS is a system of 24 satellites, five ground stations and GPS receivers. The ground stations keep the satellites in the proper orbit. The satellites transmit a signal to the GPS receivers marking their location. The user can see where they are at any given time, in Lat/Long coordinates. Most receivers also have a map that allows you to see where you are in relation to objects such as roads. GPS receivers record your position so you can return at a later time. You can also pre-program a location and navigate to the position.

### GIS

A GIS can be thought of as a database referenced to a coordinate system. A park feature in this database, such as a line representing a trail, can have many associated attributes. It can have an attribute for its length, its ADA accessibility, its surface type, permitted uses, etc. This means that any given segment of trail can be mapped by any of its attributes. It could be shown as part of an entire trail system, by a trail name, as a bicycle trail, or an ADA accessible trail, a paved trail, the year it was last surfaced, etc.

One of the most recognizable features of a GIS system is its ability to produce extremely accurate, high quality maps. Once you have your trails in a GIS format, it is a straightforward task to display the trails with other GIS information. One can use the same trail information to produce an aerial map or a topographic map.

### Applications

There are a number of reasons to GPS a trail system with the goal of creating a GIS dataset.

**1. Updating.** Once the initial work of marking the trail system is completed, it is relatively easy to update trail information. Instead of having to redraw and replace paper maps, a new map is created with the updated information. The maps can be printed or distributed electronically.

**2. Planning.** Another advantage of marking the trails is that it gives you a bird's eye view of your trail system. Getting the big picture view of your trail system allows you to see things such as the density of trails, their relationship each other, or their proximity to other features of interest.

**3. Maintenance.** Having your trail system in a GIS can facilitate trail maintenance. In a GIS, any trail segment can be attributed in many ways. The map you produce for the public could be coded by the name of the trail or the challenge level. The trail map hanging in your office, made from  
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### Interpretive Ideas GPS/GIS Trail Projects

- W. Lafayette (IN) Parks and Recreation Dept.
- Bloomington (IN) Parks and Recreation Dept.
- Danville (IN) Parks and Recreation Dept.



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the same dataset, can be coded by the year that the trail was last resurfaced.

**4. Coordination with Other Agencies.** Another advantage of having your trails in a GIS is the ability to integrate datasets with different jurisdictions. A city parks department could combine their trail data with that of a county system to produce a multi-jurisdictional trail map.

#### **Before You Start**

On the surface, mapping a trail system with GPS and incorporating it into a GIS is relatively straightforward. There are some factors, however, that should be considered before jumping into the process. Probably the most important consideration is how you wish to use the information. Simply recording trail locations to make a trail map is easier and less costly than collecting additional information such as trail condition. If more detailed information will be required in the future, however, one is better off collecting this information while initially mapping the trails.

*Ed Schools is the GIS Program Leader for the Michigan Natural Features Inventory, Michigan State University and a partner in Interpretive Ideas.*

#### **Indiana DNR**

##### **Interpretive Sign Project**

*Interpretive Ideas* has been hired to design new interpretive panels for the Indiana Department of Natural Resources. The project includes 22 State Parks and Reservoir properties and over 100 interpretive signs. Additionally, *Interpretive Ideas* is developing the text and layout for 15 exhibits and 16 equipment labels for the IDNR's Mansfield Roller Mill. The exhibits will explain the technology and innovations of the 1880s mill. *Interpretive Ideas* is pleased to be part of a project that will bring interpretation to so many visitors.