

Creating a Web Application for Plaster Creek Watershed

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Introduction

The Plaster Creek Watershed is a watershed in Kent County, contains part of Grand Rapids and feeds directly into the Grand River. This watershed is 58 square miles and is extremely important because of its environmental impacts. Many organizations, most prominently the Plaster Creek Stewards, have come together to help rectify the manmade pollution.

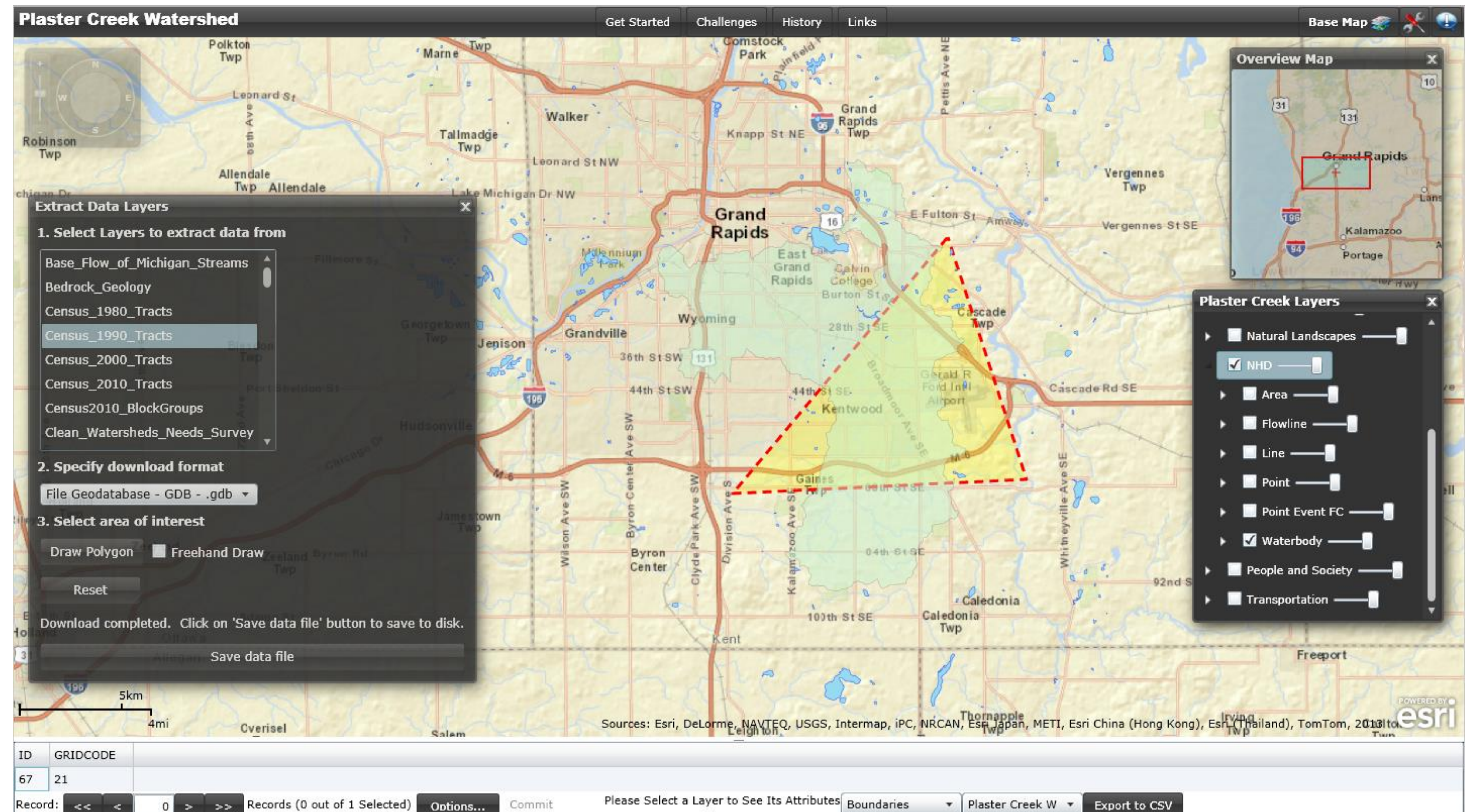
There are five main pollutants identified in the watershed¹:

- Excess sediment
- High E. coli levels
- Overload of nutrients
- Heat from runoff
- Toxic waste

Online GIS applications are effective tools for disseminating information. However, many are unsophisticated and difficult to use. Our application is intended to combine aesthetics, functionality and usability with an effective interactive experience for users of all skill levels.

Objectives

1. Help Plaster Creek Stewards determine the placement of four water monitoring stations.
2. Create an online GIS application as a model to aid future researchers and help educate the public.



Methodology

- Acquired data (e.g., hydrography, ecology, and geology)
- Georeferenced, mosaicked and redrew features .
- Used Microsoft Silverlight as the framework of development and ArcGIS API (Application Programming Interface) for Silverlight as our primary reference
- Implemented functionalities such as map navigation, map overview, measurement, attribute analysis/export, legend control, layer extraction/uploading, address locator, map export.

Conclusion

We created an aesthetically pleasing and user-friendly application for Plaster Creek Watershed. However, more functionalities such as statistical and spatial analysis tools will be added in the future.

References

1. Plaster Creek Stewards. "What's wrong with Plaster Creek?" Accessed July 26, 2013.
<http://www.calvin.edu/admin/provost/pcw/learn/status>.