



664 Database Application Design Final Project

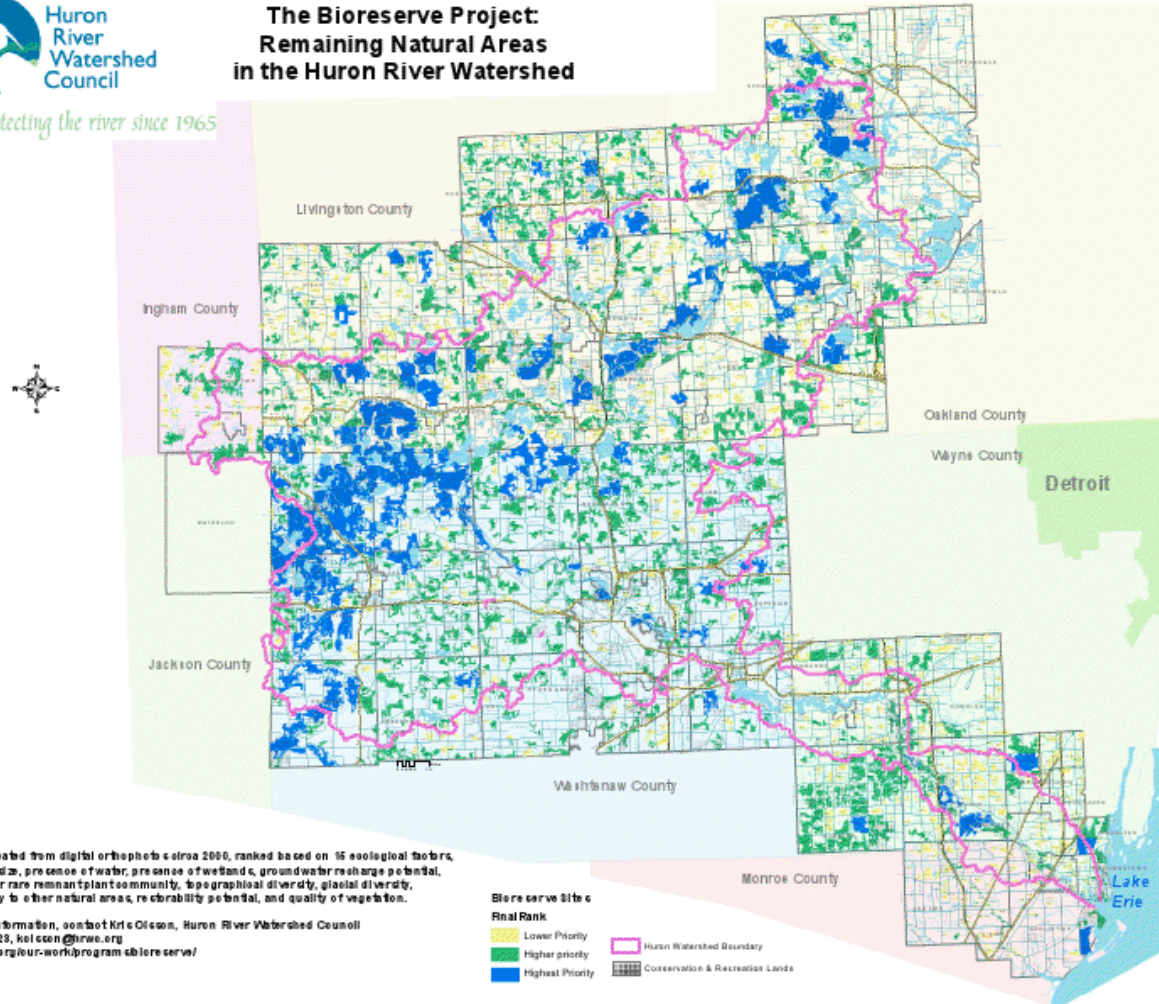
# HRWC Bioreserve Project



Huron River Watershed Council

Protecting the river since 1965

## The Bioreserve Project: Remaining Natural Areas in the Huron River Watershed



Sites delineated from digital orthophotocolors 2000, ranked based on 16 ecological factors, including: size, presence of water, presence of wetlands, groundwater recharge potential, potential for rare remnant plant community, topographical diversity, glacial diversity, connectivity to other natural areas, restorability potential, and quality of vegetation.

For more information, contact Eric Olson, Huron River Watershed Council  
734-768-6123, [kcolcen@hrwc.org](mailto:kcolcen@hrwc.org)  
[www.hrwc.org/our-work/program/cbioreserve/](http://www.hrwc.org/our-work/program/cbioreserve/)

### Bioreserve Site Final Rank

- Lower Priority
- Higher priority
- Highest Priority

Huron Watershed Boundary

Conservation & Recreation Lands

# Goal

- Design a simple web form for volunteers to enter data from worksheets
- Create an advanced search function for HRWC employees to quickly and easily find information in the database
- Optimize database design and remove duplication and unnecessary fields

# Intended Users

- HRWC Volunteers
- HRWC Employees

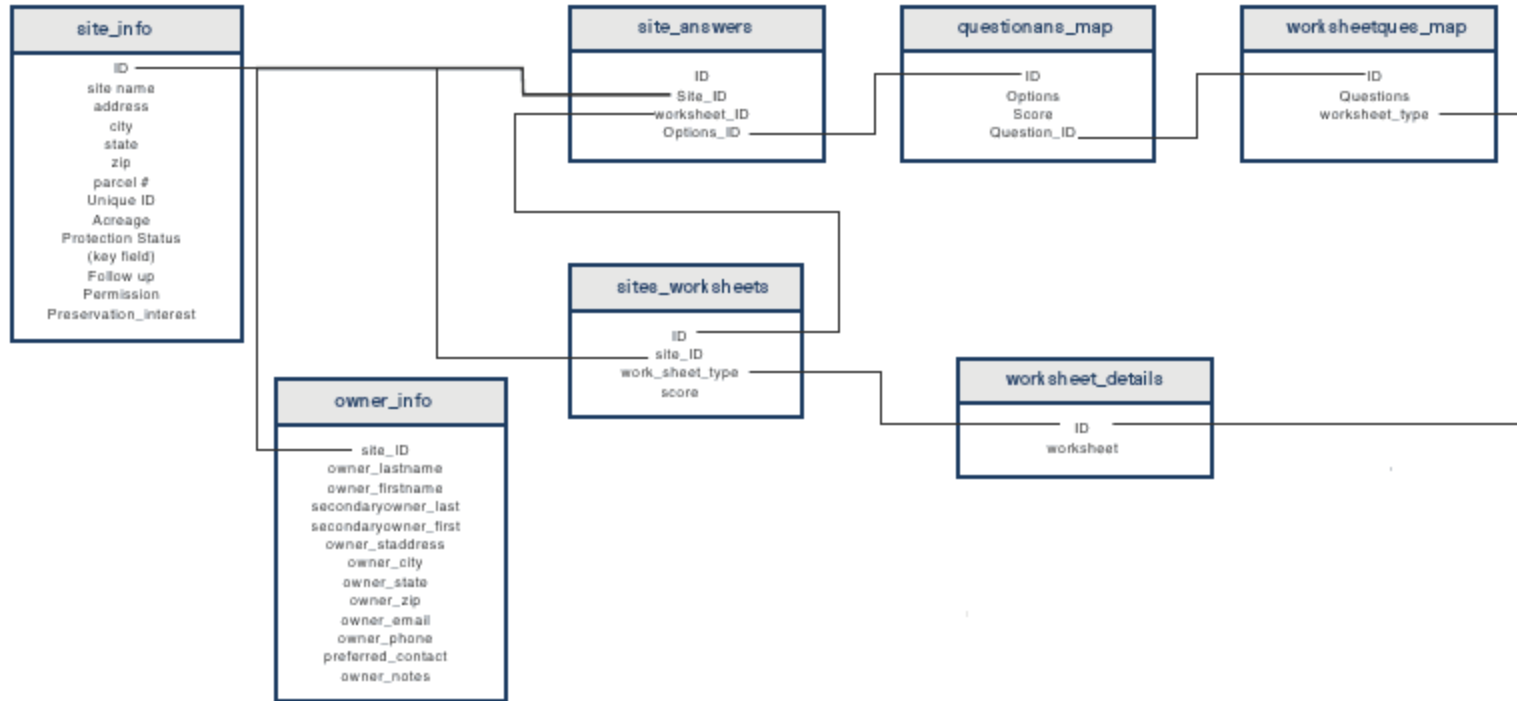
# Requirements

- Front end needs to be designed for volunteers of different computer skill levels
- All fields from the paper worksheets must be included on the web form
- All fields need to be searchable by HRWC employees
- Users must have an account and must log in before entering data on the website
- The application must support entering multiple worksheets for a single site

# Process

1. Map current database and worksheet fields
2. Design MySQL database based on required interactions and frequent search queries
3. Create wireframes for front end site design and interactions
4. Build database
5. Create list of MySQL queries for pulling information from the database to the website
6. Create PHP forms for data entry, log in, and search
7. Create Bootstrap templates
8. Incorporate PHP into HTML/Bootstrap

DATABASE SCHEMA



# Add A New Site

## Site Information

Site Name:

Parcel Number:

Acreage:

Address:

City:

State:

Zip:

[Cancel](#)

Worksheet Added

## Site Details

Site Name:  
Webster232Fisher

Site ID:13

### Worksheets Added for the Site

21	13	SiteOverview	1	<a href="#">Enter Details / View Worksheet</a>
22	13	Wetland A	2	<a href="#">Enter Details / View Worksheet</a>
23	13	Wetland B		<a href="#">Enter Details / View Worksheet</a>
24	13	Grassland A	3	<a href="#">Enter Details / View Worksheet</a>

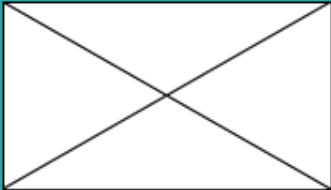
### Add Worksheets:

Select the type of worksheet you want to add and also enter an alphabet/unique identifier in the name field. The name is automatically generated - WetlandA/ WetlandB etc

Worksheet Name:



Title

http://www.example.com Q



# HRWC Wetlands Worksheet

## Data Entry Preview

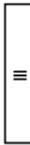
  
Volunteer 01   
[Log Out](#)

[Bioreserve Site Worksheets](#) > [Wetlands Worksheet 01](#) > [Preview](#)

Please review the information that you have filled out for this Site Worksheet. If you need to edit any information, click on the **"Edit Data"** button in that section, make any changes, and click "Save Changes". Once you have reviewed the information and confirmed that it is accurate, click on the **"Submit Worksheet Data"** button at the bottom of the page to complete this worksheet entry and save the data.


### Hydrological Conditions

- Condition 1
- Condition 2
- Condition 3


  
[Edit Data](#)

### Appearance of Soil

• Condition 1	• Condition 5	• Condition 9
• Condition 2	• Condition 6	• Condition 10
• Condition 3	• Condition 7	• Condition 11
• Condition 4	• Condition 8	

  
[Edit Data](#)

### Vegetation Structure





# Issues

- HRWC currently uses Access, which doesn't port into MySQL well - we created a sample set to use for the project, but the rest of their database is still in Access
- The organization uses different worksheets based on the type of land being surveyed, all of which contain the same sections, but which have different options within those sections based on the land type
- Volunteers will likely not be using computers or mobile devices to fill out worksheets in the field - information from the paper worksheets will need to be entered into the system after the fact
- Each site is assigned a score based on the worksheets, but because the scoring system is so complex, we were unable to automate score calculation

# The Site



Huron  
River  
Watershed  
Council

[Home](#)[Add New Site](#)[Link](#)[Link](#)

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## Add a New Site

### Site Information

Site Name:

Parcel Number:

Acreage:

Address:

City:

State:

Zip:

# Questions?

