A vision for a more resilient Iowa

The Iowa Watershed Approach

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Flood Resilience Goals and Current Products

The IWA Flood Resilience Team Seeks to:
- Measure, visualize, and communicate flood resilience resources
- Enhance flood resilience content in formal watershed plans
- Improve social resources for flood resilience

Our Current Products Include:
- Interactive Flood Damage Estimations
- Measurement and Visualization of Financial and Displacement Burdens
- Enhancement of Formal Watershed Plans
Interactive Flood Damage Estimations
Measurement and Visualization of Financial and Displacement Burdens

- Measure indirect burden for residents that do not flood
- Measure the disproportional burden for residents that do flood
- 5% of annual income to recover
- 50% of annual income to recover

Provide a flood resilience assessment and action plan at the “case study”, neighborhood scale
Enhance Formal Watershed Plans

Watershed Resiliency Plan
A 20 Year Strategic Plan to Increase the Hydrologic Function & Resiliency of the Turkey River Watershed
Developed for the TRWA by Northeast Iowa RACO Inc, with funding provided by HUD/COG and the Iowa Department of Natural Resources

Flood Risk Report
Middle Cedar Watershed (Iowa), 07080205
Report Number 001
8/28/2015
Draft

RiskMAP
Increasing Resilience Together

IHR
Innovations in Hydrologic Engineering
Iowa Flood Center
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IOWA BMP MAPPING PROJECT

Calvin Wolter
GIS Analyst
Iowa Department of Natural Resources
June 15, 2017
CONTRIBUTORS TO BMP MAPPING PROJECT

- Iowa Department of Natural Resources
- Iowa Department of Agriculture and Land Stewardship
- National Laboratory for Agriculture and the Environment
- Iowa Nutrient Research Center (ISU)
- Iowa Nutrient Research and Education Council
WHAT BMPS CAN BE MAPPED?

- Terraces
- Water and sediment control basin (WASCOB)
- Grassed waterways
- Contour strip cropping
- Contour buffer strips
- Pond dams
LiDAR derived products from 2007-2010 (DEM, Hillshade, Slope)

Color infrared (CIR) aerial photography from 2007-2010

National agriculture imagery program (NAIP) aerial photography (2006-2011)

Historic aerial photography (1930s, 1950s, 1960s, 1970s, 1980s, 1990s)

BMPs are mapped around the year of the LiDAR flight

DATA UTILIZED FOR BMP MAPPING
Hillshade showing narrow base terraces
Hillshade of a series of WASCOBs
Contour buffer strips with grassed waterways on CIR image
Contour strip cropping with grassed waterways on CIR image
BENEFITS TO MAPPING STRUCTURAL BMPS

- Establish a baseline to compare future progress to
- Estimate conservation investment
- Show historical progress over time
- Evaluate saturation level of BMPs in watershed
- Verify ACPF Tool results and streamline BMP implementation
Topography of Silver Creek Watershed
BMPs mapped in Silver Creek Watershed

Legend

- 80 WASCOBs
- 710,000 ft of Terraces
BMPs mapped in Silver Creek Watershed

Estimated total investment to install BMPs in current dollars = $4,420,000
Iowa BMP Mapping Project

The goal of the Iowa BMP (Best Management Practices) Mapping Project is to provide a complete baseline set of BMPs dating from the 2007-2010 timeframe for use in watershed modeling, historic occurrence, and future practice training. The BMPs being mapped are: Terraces, Water and Sediment Control Basins (WASCOB), Grazed Waterways, Pond Dams, Contour Strip Crop and Contour Buffer Strip. We cannot guarantee that mapped practices meet NRCS standards or that they are actually the intended practice since no ground truths are being performed. Data being utilized to digitize the BMPs include LiDAR derived products such as DEM, Hillshade and Slope grids. GIS aerial photography from the 2007-2010 timeframe, NAIP aerial photography and historic aerial photography. BMPs are being collected by 12-digit HUC and finished products can be downloaded from this site.

This project has been funded by the Iowa Department of Natural Resources, Iowa Department of Agriculture and Land Stewardship, Iowa Nutrient Research Center at ISU, National Laboratory for Agriculture and the Environment and Iowa Nutrient Research and Education Council.

To supplement this project, the ISU GISF has created a tool to download the BMPs by watershed for the state of Iowa. Click here to use the tool. In order to download, you will be asked for some identifying information.
BMP MAPPING STATUS MAP

Best Management Practices Inventory HUC 12 Watershed Status
Early Summer 2017 Focus HUC 8: Lower Iowa; Bear-Wyaconda; Lake Red Rock; Upper Iowa; Middle Iowa

2017 Lower Iowa
- Ready 0
- Processing 0
- Completed 30
- Metadata 0

2017 Bear-Wyaconda
- Ready 0
- Processing 0
- Completed 11
- Metadata 0

2017 Lake Red Rock
- Ready 0
- Processing 0
- Completed 63
- Metadata 0

2017 Upper Iowa
- Ready 0
- Processing 1
- Completed 31
- Metadata 0

2017 Mid Iowa
- Ready 27
- Processing 10
- Completed 12
- Metadata 0

Overall Status
- Ready 27
- Processing 11
- Completed 860
- Metadata 200

Digitized at Iowa State University GIS Facility, in cooperation with IA DNR GIS personnel

June 9, 2017
BMP MAPPING WEB PAGE

http://www.gis.iastate.edu/gisf/projects/conservation-practices
Iowa BMP Mapping Project
Download Iowa Conservation Practices by HUC12

Legend
- View & Download Instructions
- Navigate
- Download Geodatabase
- View PDF

To use this map:
- Use your mouse to Pan and mouse wheel to Zoom
- Zooming In will display watershed details and activate the ability to download watersheds if you select Download Geodatabase
  - "Downloads Active" note will appear
  - You will need to provide some identifying information to download.
- You can download up to 5 watersheds at one time. You can select watersheds in two ways:
  - Click on an individual watershed
  - Click and drag across multiple watersheds
- Once your watershed have been selected, click the download button above
- If you would like more than just a few watersheds, please contact the database manager and they can get you what you need.
  - Email Database Manager

Search by Street Address
- Search by HUC name or number
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QUESTIONS?
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Existing (ISU, DNR)

Potential (ACPF, IIHR)

<table>
<thead>
<tr>
<th>Grassed Waterways</th>
<th>Distance (mi)</th>
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<tbody>
<tr>
<td>Existing</td>
<td>44.9</td>
</tr>
<tr>
<td>ACPF</td>
<td>42.0</td>
</tr>
<tr>
<td>Potential</td>
<td>17.8</td>
</tr>
</tbody>
</table>

Ten Mile Creek
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Ten Mile Creek
Existing Ponds 18
ACPF Wetlands 47
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Drainage Area

Conservation Practices

Less than 40 acres 40-80 80-120 120-160 160-320 320-480 480-640 More than 640 acres

ACPF Wetlands  Existing Ponds
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Landuse Upstream of Bluffton

Landuse Upstream of Decorah

Landuse Upstream of Dorchester

- Row Crop
- Developed
- Grass/Pasture
- Forest
- Other
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Iowa Water Quality Information System

https://iwqis.iowawis.org/
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