Michigan Water Use Regulations

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Michigan State University

NRCS Irrigation Training
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2006 Water Use Laws

- PA 33 - Water Use Reporting
- PA 34 – Groundwater Conservation Advisory Council – continues and moves to DNR – develops an Assessment Tool
- SB 35 – Registration
- SB 36 – Water User Committees
- SB 37 - Adds requirements to the Safe Drinking Water Act

PA 33 0f 2006 - Index Flow

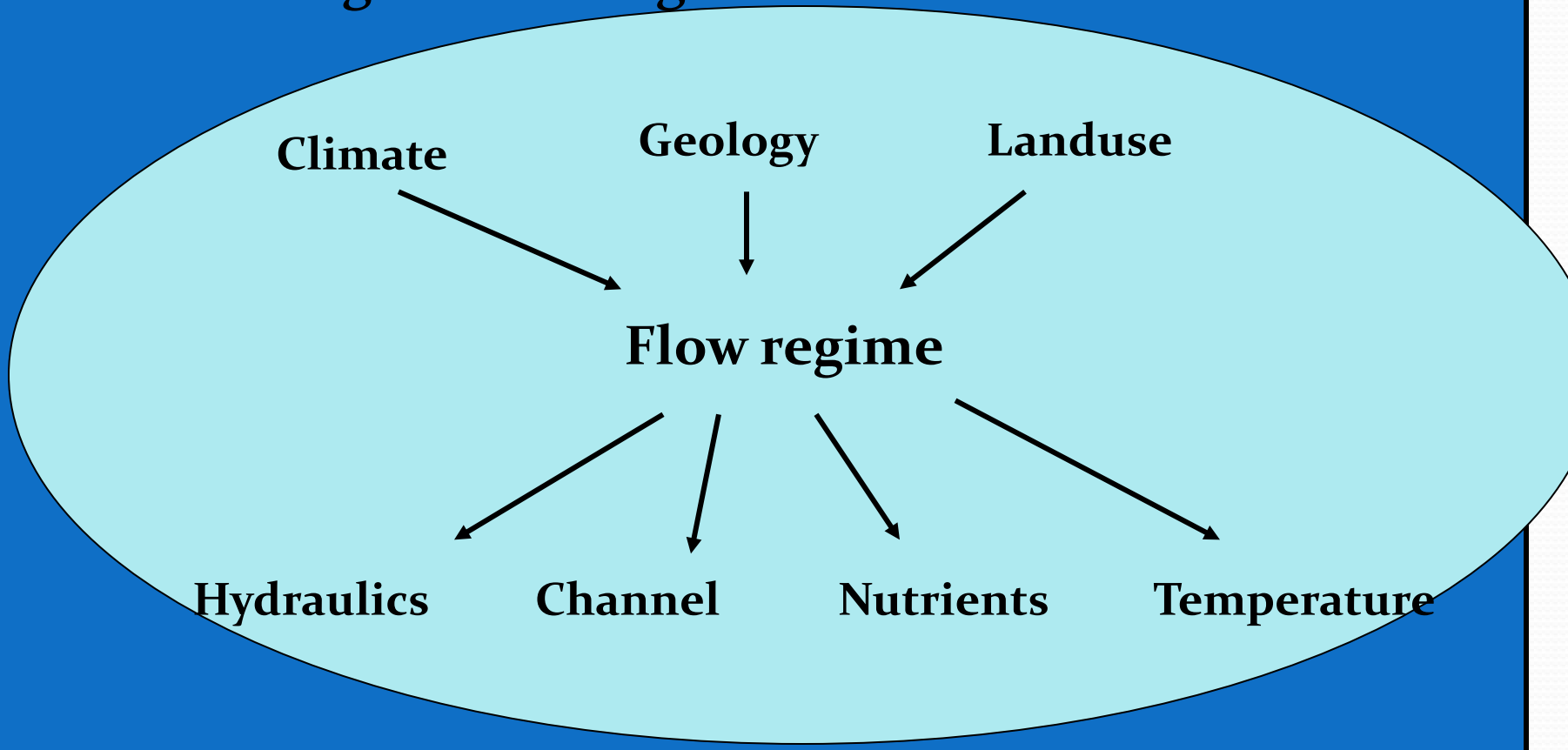
- 50% exceedance flow
- Lowest month
- From period of record of stream gages
- Extrapolated from stream flows

Large Quantity Withdrawal

- Cumulative total over 100,000 gals/day
- Averaged over 30 days
- That supply a common distribution system
- From “waters of the State” including groundwater, lakes, streams …
- Permits for withdrawals over 2,000,000 gals/day – consistent with “Great Lakes – St Lawrence River Basin Water Resources Compact

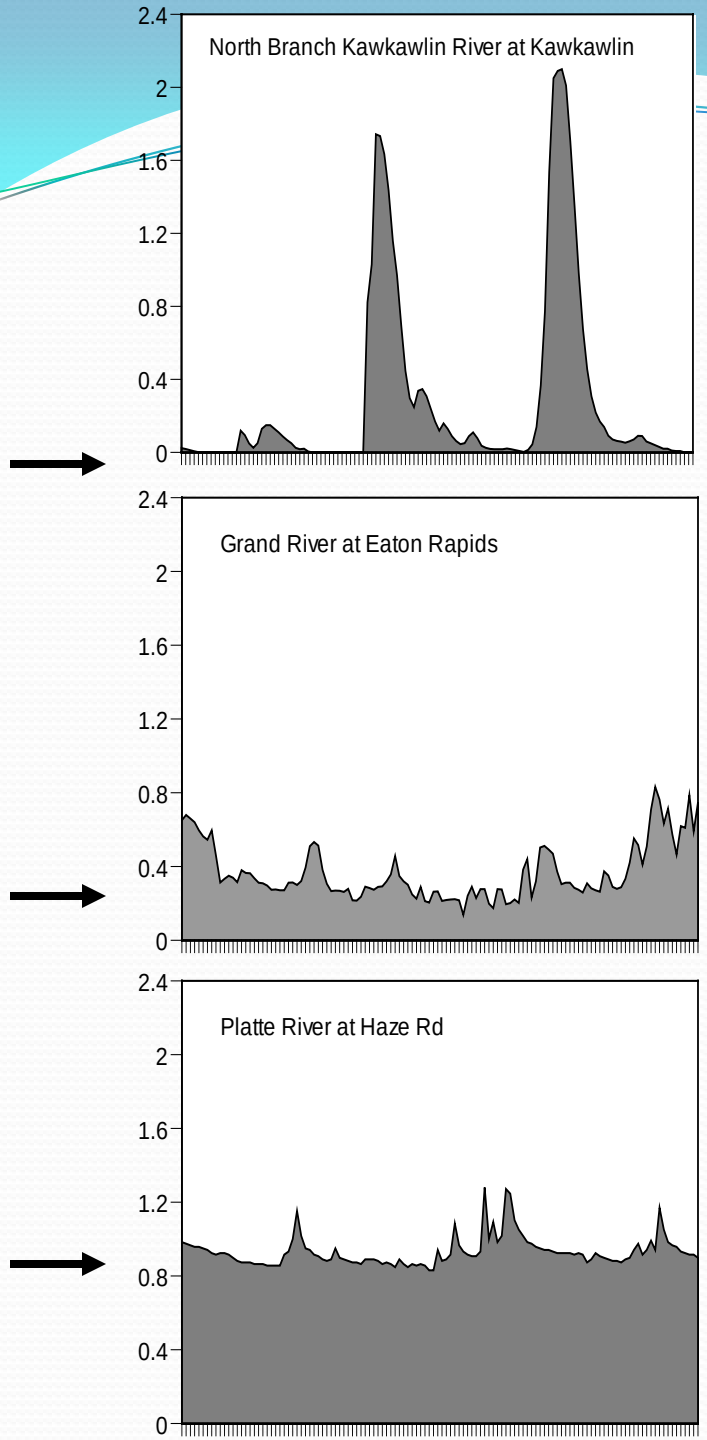
From Paul Seelbach, MDNR

The Flow Regime Paradigm



-- There is a geography of flow regimes

-- Fish species are adapted to habitats controlled by certain quantities of, and variability in, river flows



From Paul Seelbach, MDNR

Michigan rivers naturally have different flow regimes, and thus different habitat conditions, biological communities, sensitivity to disturbance, and potential for fishery management

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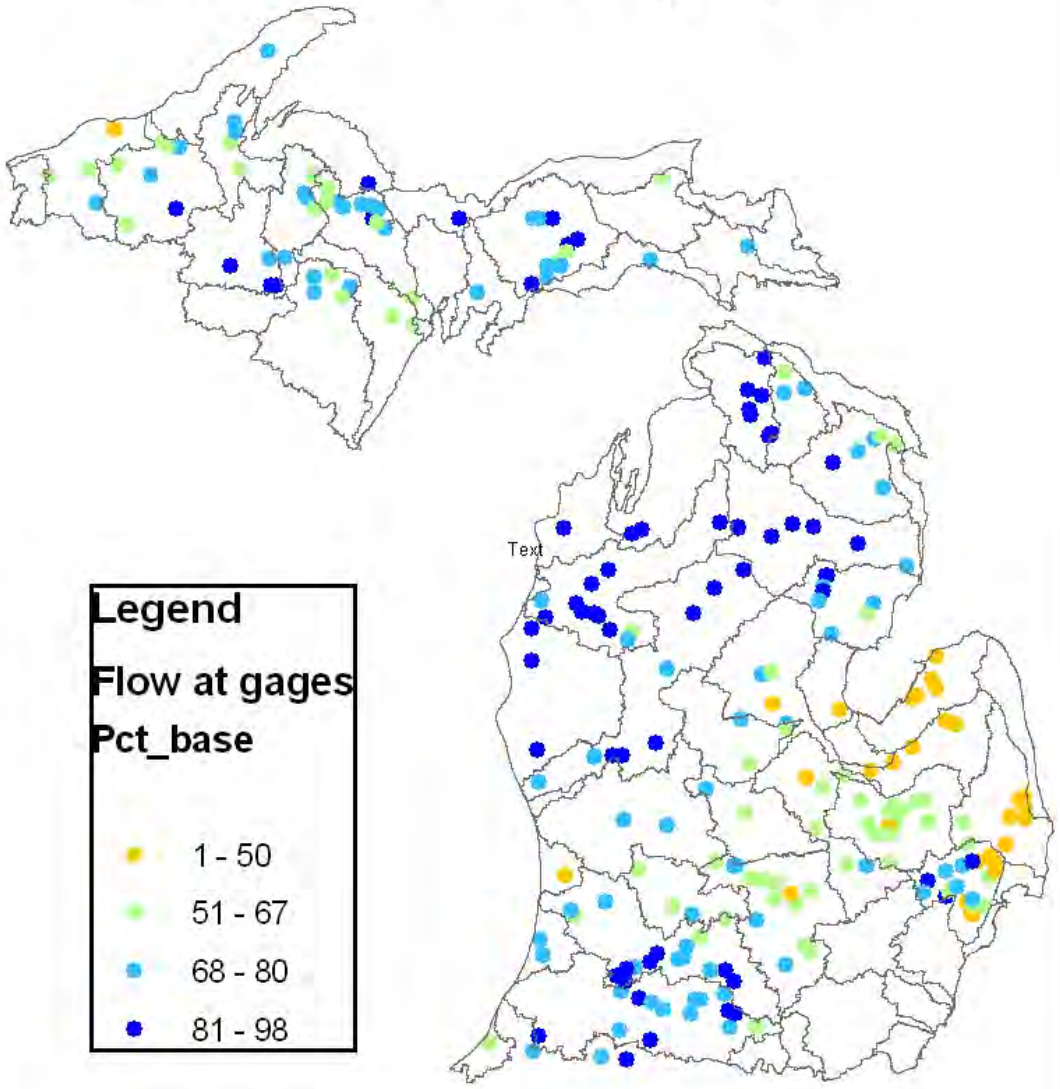
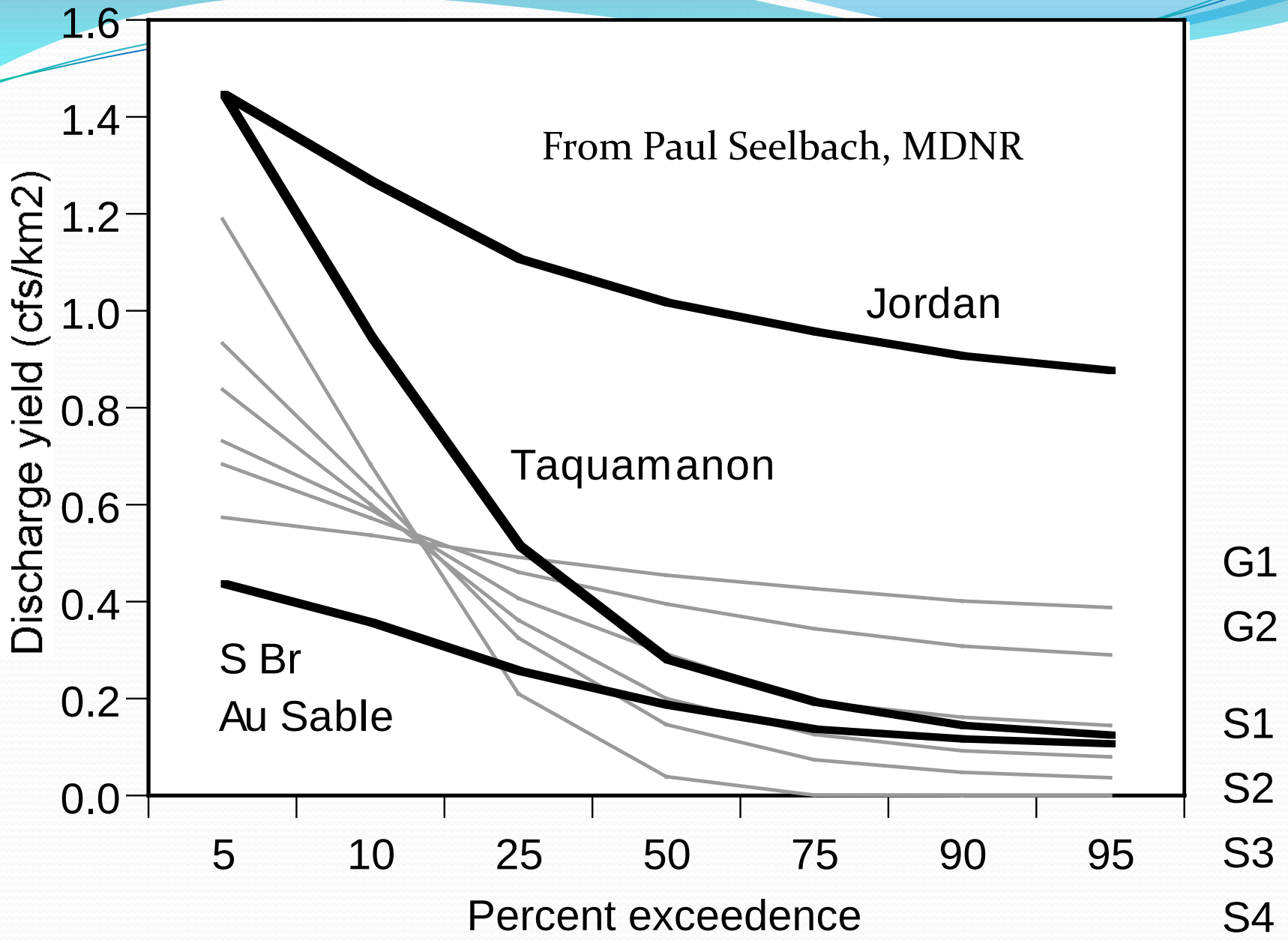
Streamflow at gages




From Paul Seelbach, MDNR
Jordan
Taquamanon
S Br
Au Sable
G1
G2
S1
S2
S3
S4
Discharge yield (cfs/km2)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5
10
25
50
75
90
95
Percent exceedence

Landscape-based modeling and applications for Michigan rivers

An introduction to rivers

Wiley and Seelbach
MDNR Fisheries Special Report 20

Rivers must be viewed and understood as systems

- landscape-scale
- hydrologic
- geomorphic
- biologic

ArcView GIS Version 3.1

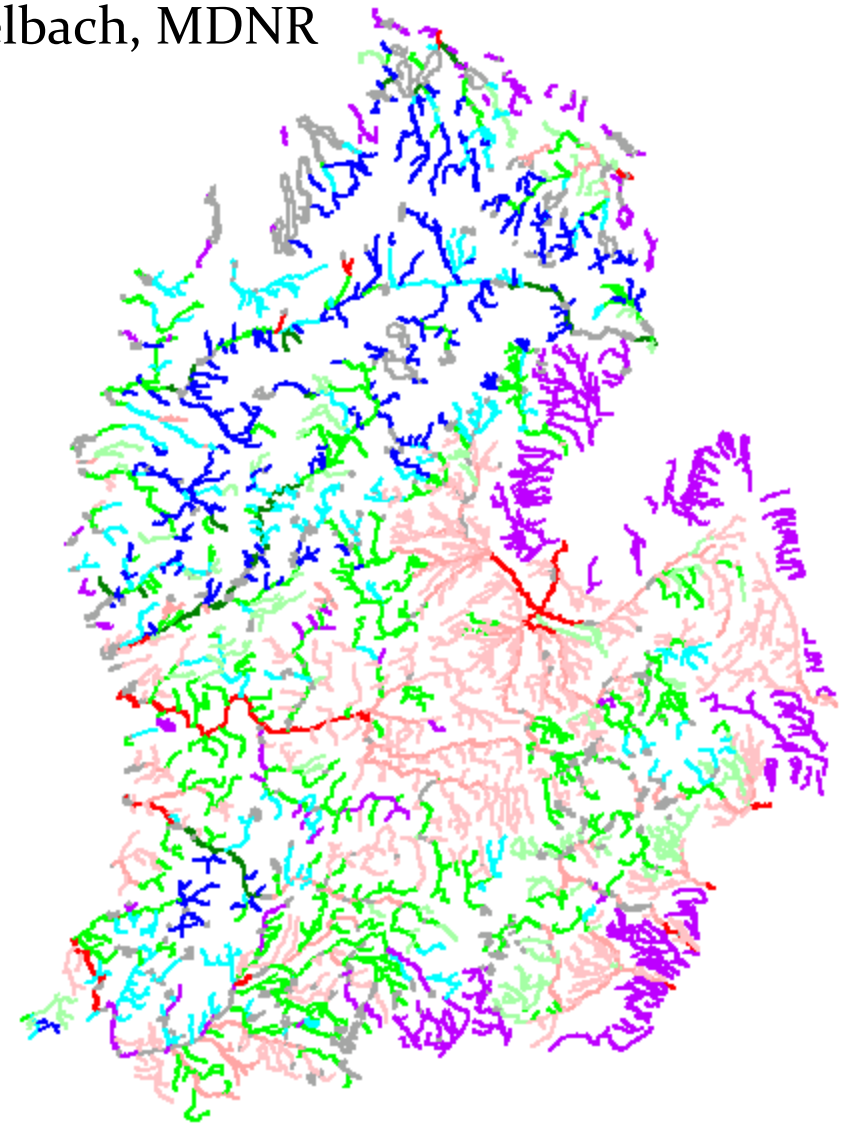
File Edit View Theme Graphics Window Help

Scale 1:

View1

- Lakeerie.shp
- Solakemichigan.shp
- Solakehuron.shp
- Nolakehuron.shp
- Nolakemichigan.shp
  - Cold mean, low variation
  - Cold mean, mod variation
  - Cool mean, low variation
  - Cool mean, mod variation
  - Cool mean, high variation
  - Warm mean, low variation
  - Warm mean, mod variatio
  - Warm mean, high variatio
  - Lakes, ponds, etc.
  - Missing data

From Paul Seelbach, MDNR



Prior Appropriation

West of Mississippi

- first in use, first in right
- allows transfer of water rights

Riparian Doctrine

East of Mississippi

- based on Common Law
- handed down from British law
- legal "doctrines"
- interpreted by the courts
  - sets precedents
- may be modified by legislative action

Riparian Doctrine

- From ancient public trust doctrine
- Tidelands held by the king for the benefit of all English subjects
- Navigable lakes and streams held in trust for benefit of the people of the state
- Riparian rights subservient to state's public trust authority

Water in the news

Humans need H2O, but lawns can wait

Nestle sues over restrictive water-use permit

Environmentalists make new push for water protection

Great Lakes water could flow west

Is water a resource or a commodity?

Appeals judges wade into water use case

Granholm shoves after Legislature refuses to push for water laws

Annex 2001

- States and provinces will manage their own in-basin withdrawals
- Basin-wide, resource-based standard
  - flexible application
- Each jurisdiction will commit to establishing a program, including thresholds, to manage or regulate new or increased withdrawals consistent with the standard.

New packet of Water Use Regulation for Michigan

- P.A 148 - Water Use Reporting - 2004
- P.A. 177 – Water use conflict resolution - 2004

P.A. 33-36 of February 2006

- Large Quantity withdraw requirements and meeting Great Lakes Annex expectations.

PA 177

Act 177 allows owner of a "small quantity well" to file a complaint with MDEQ (or MDA) if well:

- Fails to furnish normal water supply
- Fails to provide potable water

Complainant must have a credible reason to believe that the problem is caused by a HIGH CAPACITY WELL

PA 177

In 2007 there where

- 13 complaints filed under Act 177, involving 6 wells in four locations
- 11 complaints required large volume user to pay for improvement to affected small well
- 1 complaint solved by farmer moving large well
- 1 complaint was solved by homeowner paid solution

FULL EXTENT | PREV ZOOM | SELECT BOX | SELECT LINE | SELECT BUFFER | QUERY FEATURE | MAP LEGEND | DISPLAY OPTIONS

ZOOM IN | ZOOM OUT | FIND FEATURE | FIND ADDRESS | LAT/LON ID | LAT/LON SEARCH | TOPO LEGEND | TOOL HELP

MOVE MAP | IDENTIFY | MEASURE | CLEAR | OBSERV. WELLS | FLOW GAGES | PRINT MAP | EXTRACT LAYERS

RS&GIS

ACTIVE:

COUNTY

VISIBILITY:

- Base Map
- Environmental
- Ground Water Inventory
- Image Backdrops
  - AERIAL
  - SATELLITE
  - TOPO MAP
  - LANDUSE
- Secondary Map Features

LAYER HELP:

- Click to open/close group.
- Click to show group/layer.
- Click to hide layer.
- Scale-dependent layer.
- Click to show entire group.
- Click for layer information.
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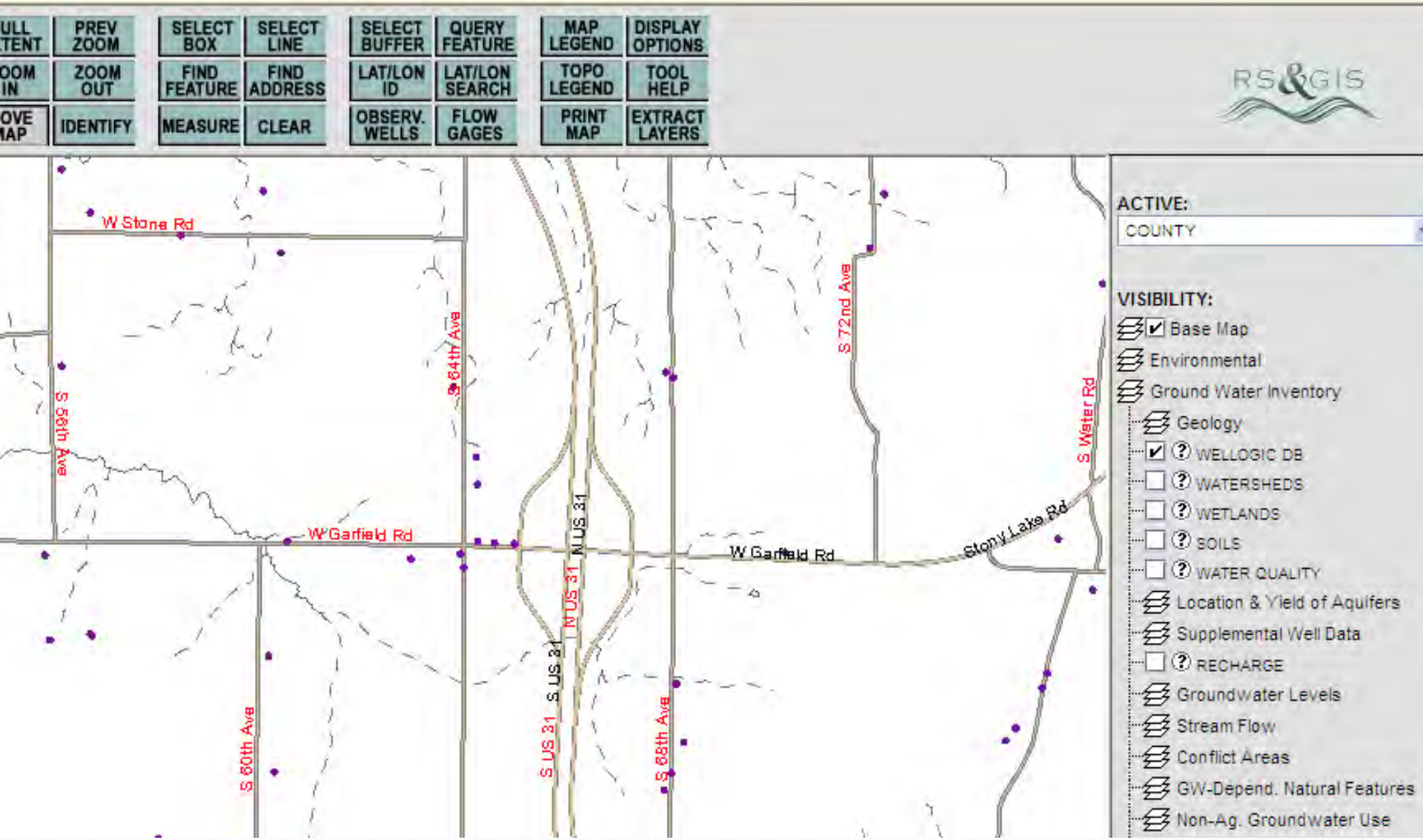
- Click for raster identify.

Auto Refresh

Refresh Map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FLOW GAGES
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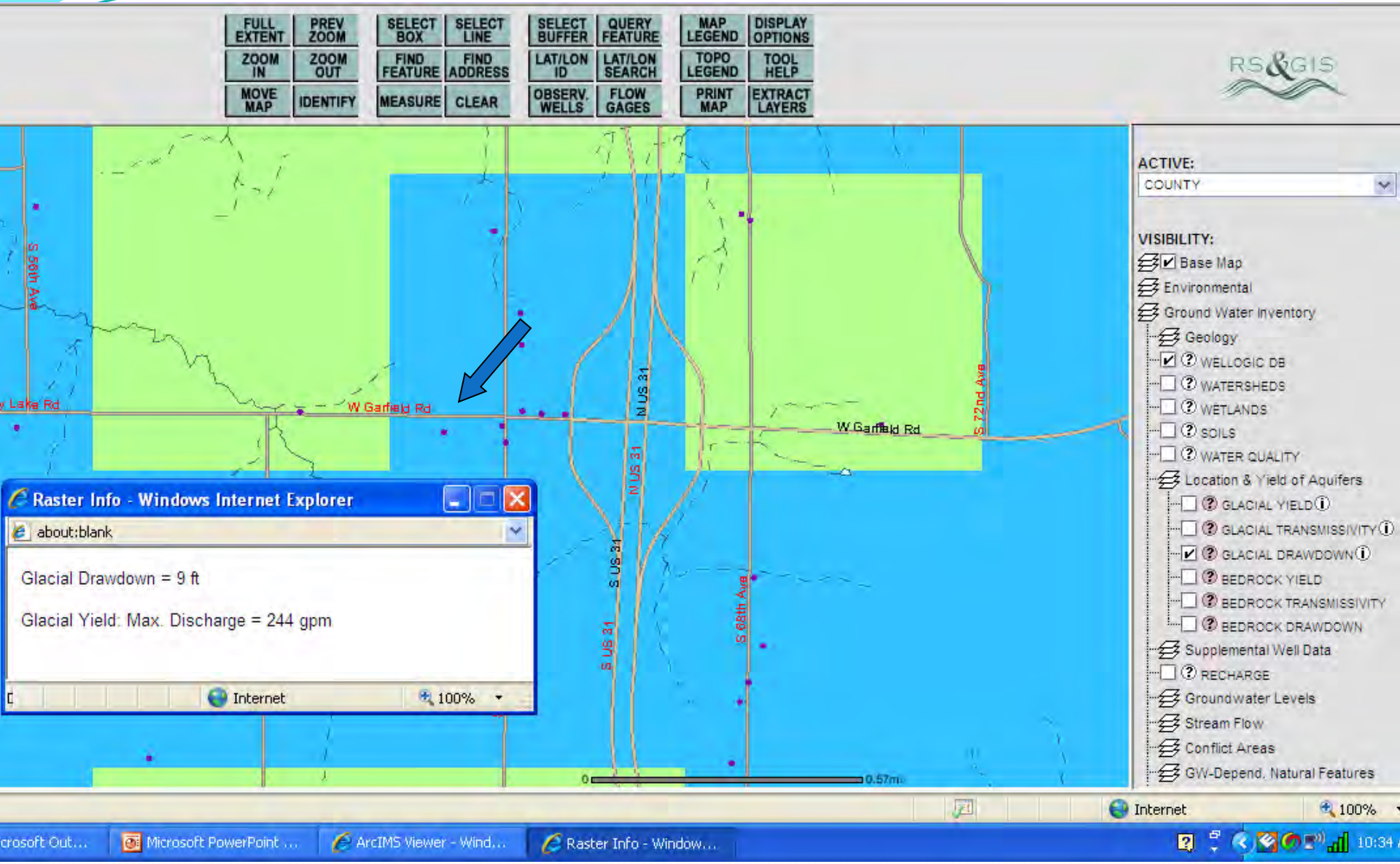
EXTRACT LAYERS
RS&GIS
W Stone Rd
S 56th Ave
S 64th Ave
S 72nd Ave
S Water Rd
W Garfield Rd
W Garfield Rd
Stony Lake Rd
N US 31
N US 31
S US 31
S US 31
S 60th Ave
S 68th Ave
ACTIVE:
COUNTY
VISIBILITY:
Base Map
Environmental
Ground Water Inventory
Geology
WELLOGIC DB
WATERSHEDS
WETLANDS
SOILS
WATER QUALITY
Location & Yield of Aquifers
Supplemental Well Data
RECHARGE
Groundwater Levels
Stream Flow
Conflict Areas
GW-Depend. Natural Features
Non-Ag. Groundwater Use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Location & Yield of Aquifers
GLACIAL YIELD
GLACIAL TRANSMISSIVITY
GLACIAL DRAWDOWN
BEDROCK YIELD
BEDROCK TRANSMISSIVITY
BEDROCK DRAWDOWN
Supplemental Well Data
RECHARGE
Groundwater Levels
Stream Flow
Conflict Areas
GW-Depend. Natural Features
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S 68th Ave
N US 31
S US 31
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Glacial Yield: Max. Discharge = 244 gpm
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100%
Internet
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Microsoft PowerPoint ...
ArcIMS Viewer - Wind...
Raster Info - Window...
10:34

Water Use Reporting- 2004 +2006

- All water withdrawals with over 100,000 gallon/day *capacity* (70 gallons/minute) Much the same format as 2004 and 2005 report .
- Addition of GPS location of Groundwater withdrawal. (latitude/longitude) within 25'

- **One time option to establish a baseline capacity – 2006 only option**

Baseline Capacity – 2006 one time opportunity

- "**Baseline Capacity**" - Rated capacity of the system as of February 28, 2006, reported as pump capacity in gal/min.

- Water withdrawal prior to February 2006 are granted a rebuttable presumption of no "adverse resource impact."

Baseline Capacity – did you miss this one ???

Increasing a water withdrawal by more than 70 gal./min. beyond the baseline, constitutes a new water withdrawal, loosing the rebuttable presumption of no "adverse resource impact”

If no “Baseline Capacity” volume was record in 2006, your 2004-2005 records will be used to determine a baseline.

Most farmers rated pump capacity is far greater than their water use in 2004 or 2005.

New vs. Old Water Withdrawals

Old water withdrawal have a rebuttable presumption of no "adverse resource impact”

- withdrawal must be established prior to February 28th of 2006
- Properly registered and have reported
- Not expanded by > 70 gpm

New water withdrawals;

- must meet the no "adverse resource impact” standard
- Compete for the water available after old withdrawal, fire, municipal and clean-up water uses.

The Philosophy behind the Approach

- Integrated, science-based approach
- Develop new thinking in integrating the pieces
- Use a National Scientific Peer Review Panel
- Base the approach on Michigan data and State modeled relationships
  - Science team: USGS, MDEQ, MDNR, UM, MSU
- Run an open shop - inclusive, seek participation, communication:
  - Council & guests (across all sectors)
    - Technical and Legal and Mitigation Subcommittees
  - MDA, MDEQ & MDNR on Council

The Water Withdrawal Assessment Process

- Oversee the design and development of a "water withdrawal assessment tool"

science

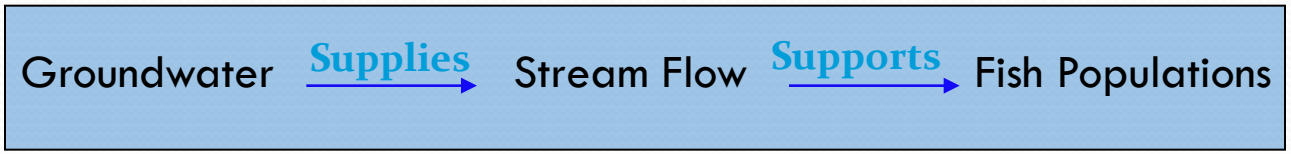
  - Develop methods, criteria, and definitions for establishing 'adverse resource impacts' for streams and lakes.

policy

  - Make recommendations on the policy aspects of the model.

Adverse Resource Impact Means: Decreasing that part of the flow such that the streams ability to support *Characteristic Fish Populations* is *Functionally Impaired.*

The Water Withdrawal Assessment Process



- Three Models Interact within the impact assessment model

  Withdrawal Model - How much water is in the aquifer, is being withdrawn, and from where and how it will affect stream flow

  Streamflow Model - How much water is flowing in the stream during summer low flow periods

  Fish Impact Model - What fish are in the stream and what is the likely effect of removing water on those groups of fish

Michigan's Water Withdrawal Assessment Tool - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://35.9.116.207/wwat/address.asp Go Links

WATER WITHDRAWAL ASSESSMENT TOOL

Home | Quick Tour | Run WWAT

Related Articles

- New Regulations
- Advisory Council

Collaborators

Department of Environmental Quality

Department of Natural Resouces

United States Geologic Survey

Institute of Water Research

Finding the Location of Your Water Withdrawal

Please select one of the following options for locating the position of your water withdrawal.

Locate by Address

Enter the address and zipcode at or near the withdrawal location. Please spell street names correctly in order to ensure system accuracy.

Address:

Zip Code:

Find Address

Locate by Navigation

To select the county where the water withdrawal will occur, click the map or choose from the drop down menu.

Alcona

Find County

Internet

1. The Withdrawal Model

- Model needs to know how much water is in the local aquifer
- Automatically determines where the two nearest streams are.
  - Apportions the withdrawal effect between two streams
- Calculates the likely reduction in flow due to the proposed withdrawal

Characteristics of the Withdrawal Model

- Distance Matters
  - A well adjacent to a river will very quickly get water either from water that would have gone to the river or directly from the river
  - A well farther from a river will get more water from storage and require a longer time to affect the stream

  Depth matters

  - In Glacial Aquifers
  - In Bedrock
- Geology and Soil Matters
  - Clay soils are “tight” and water does not move easily
  - Sandy soils are “loose” and water flows quickly

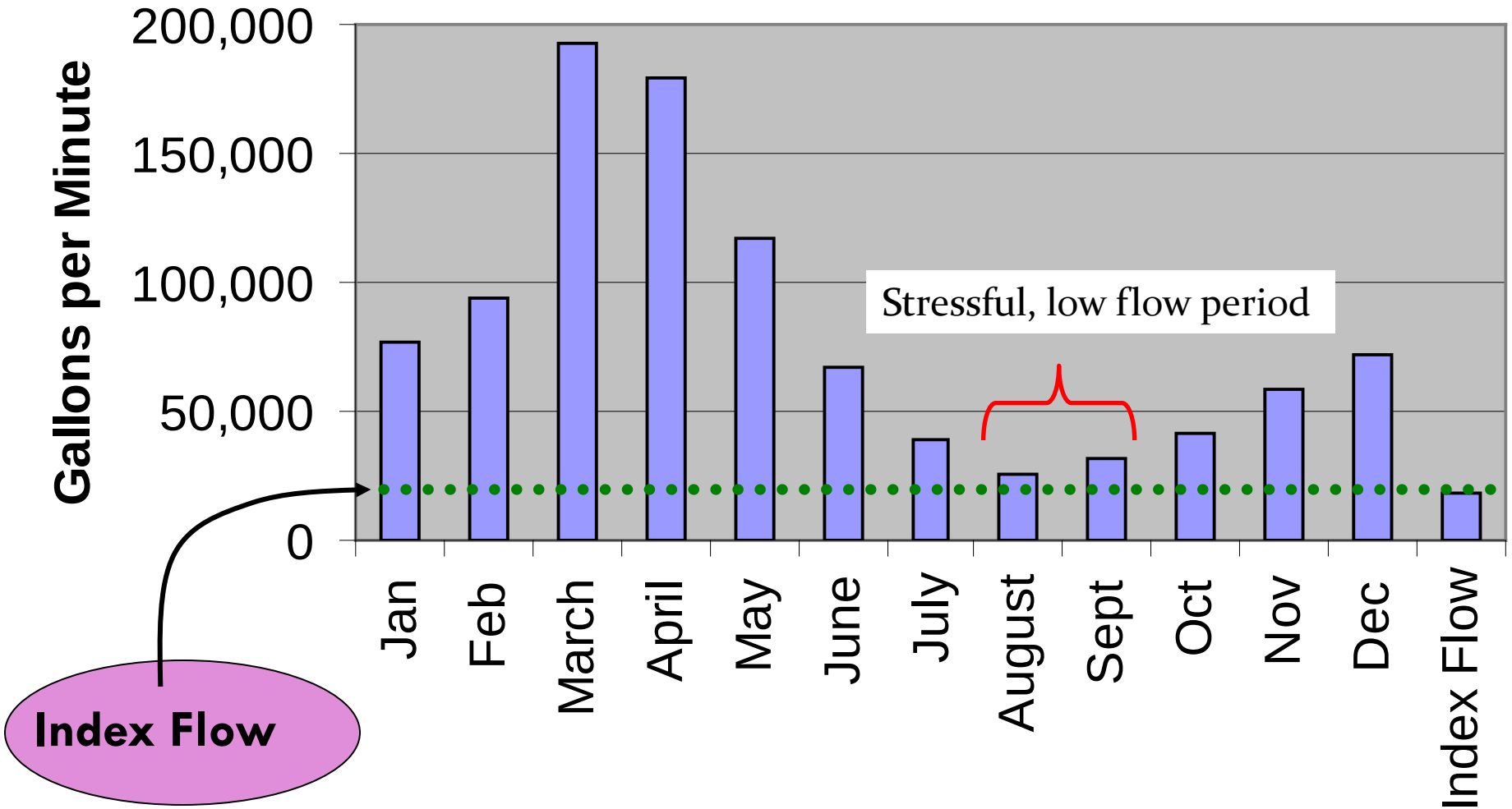
2. The Streamflow Model

- Need to Know How Much Flow is in **any** Stream Segment
- "Index flow"; low flow period in the year
- Look at the segments where you know about flow (135 stream gauges in the State) and extrapolate these to the streams you do not have monitored or gauged – regression statistics

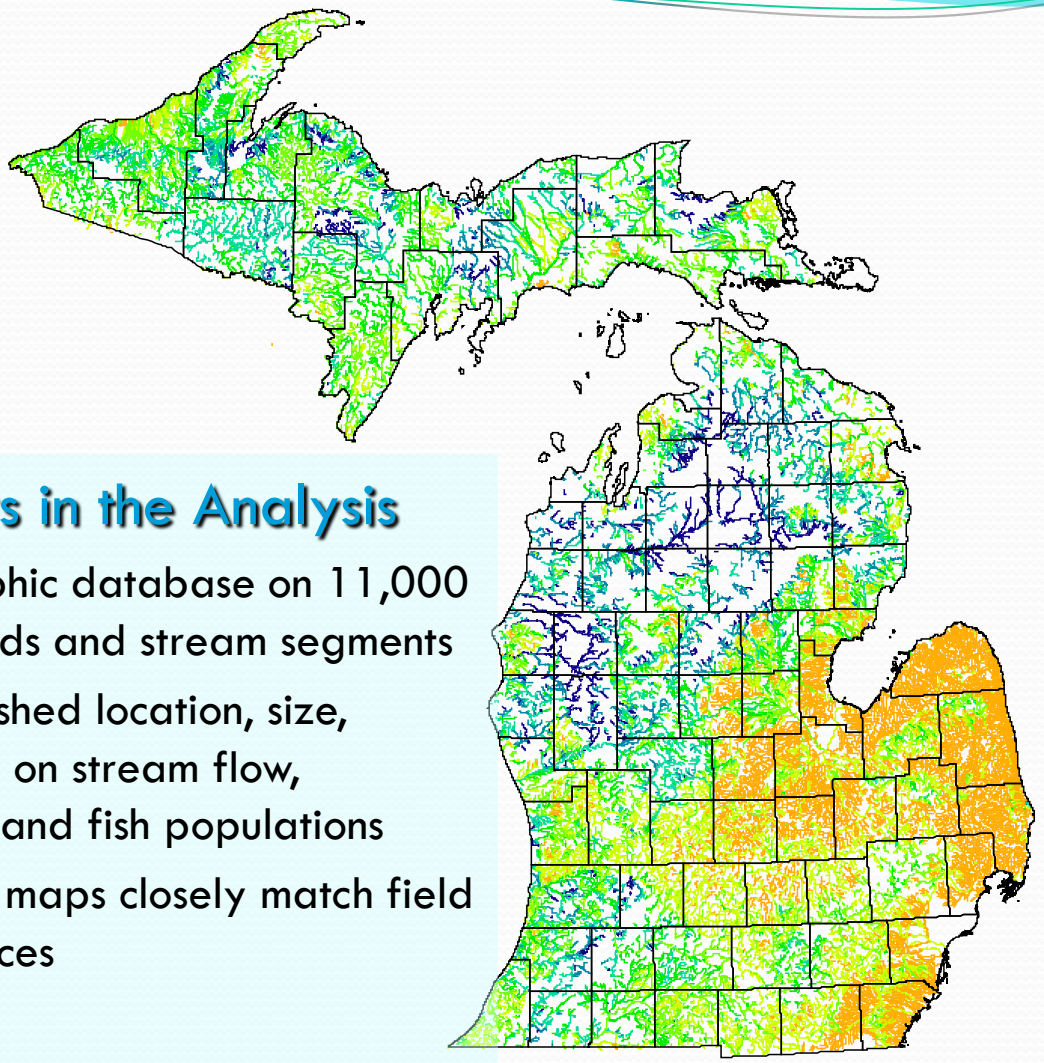
Major Factors Used

- Drainage Basin Size
- Forest Cover, Land Use
- Geology and Soils
- Region
- Uncertainty in statistics
  - Under or over estimate flow

Looking Glass River near Eagle
Mean Monthly Flows



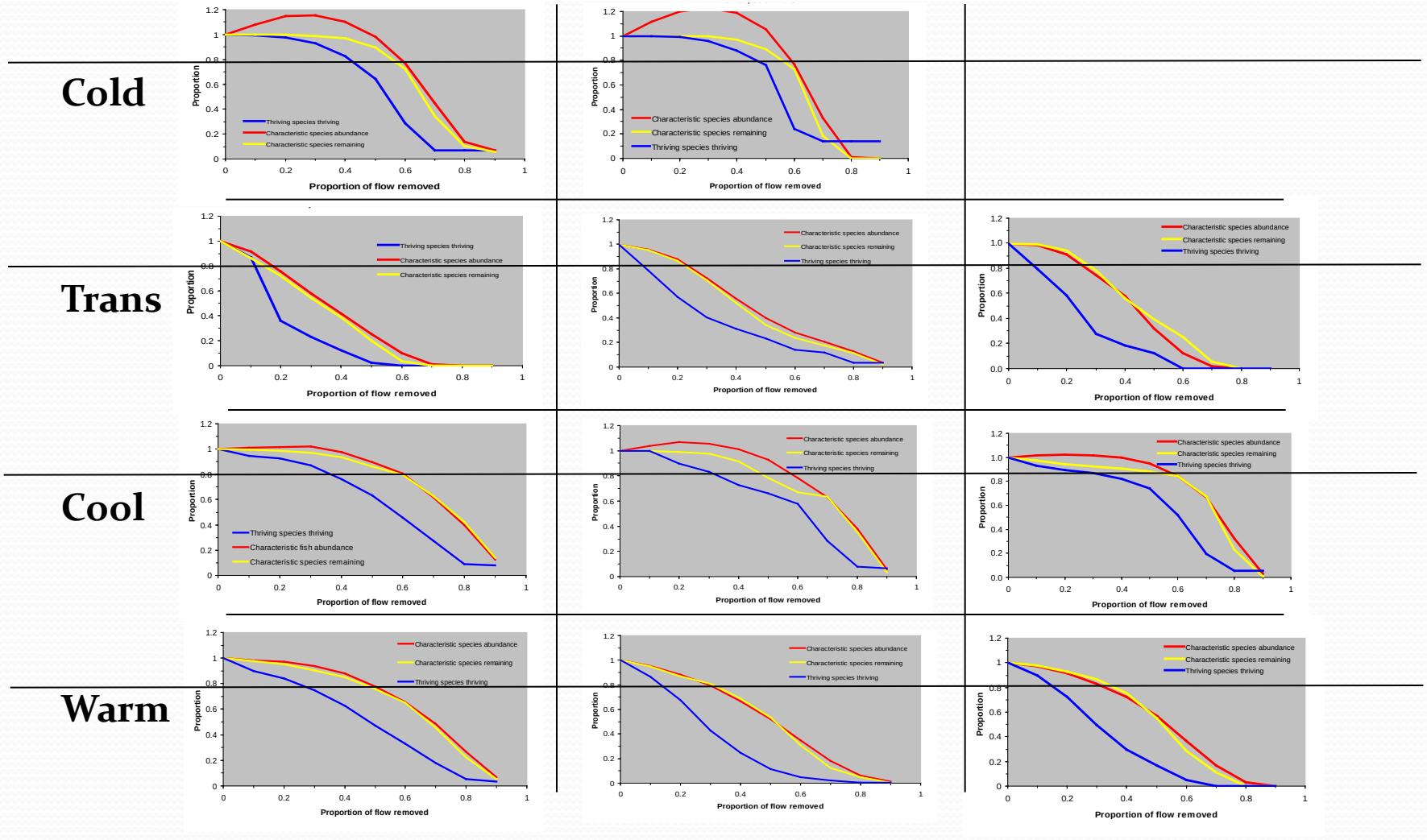
Yield at NHD+ Stream Reaches



Major Factors in the Analysis

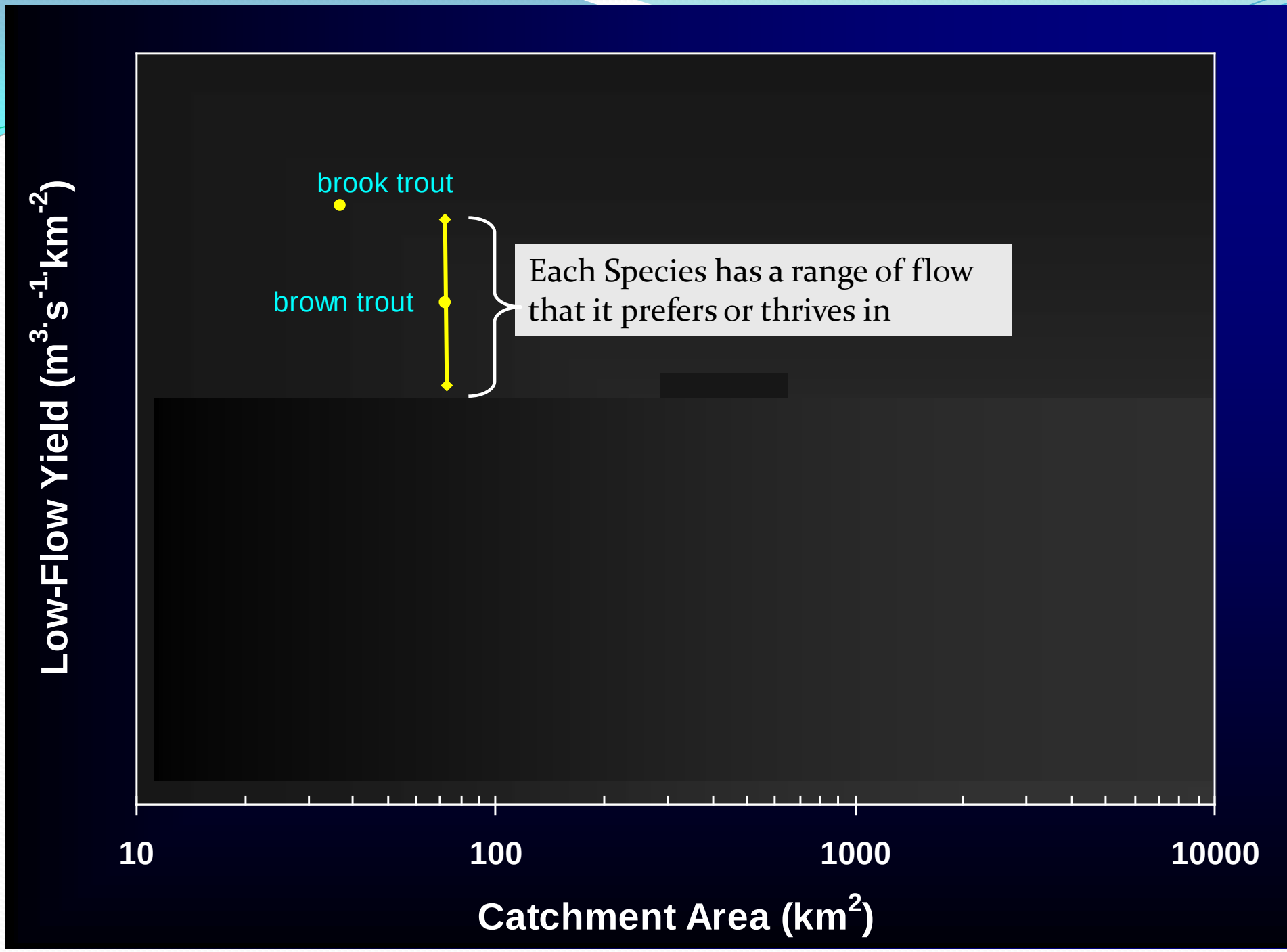
- Geographic database on 11,000 watersheds and stream segments
- Info on watershed location, size, geology; and on stream flow, temperature, and fish populations
- Resulting maps closely match field experiences

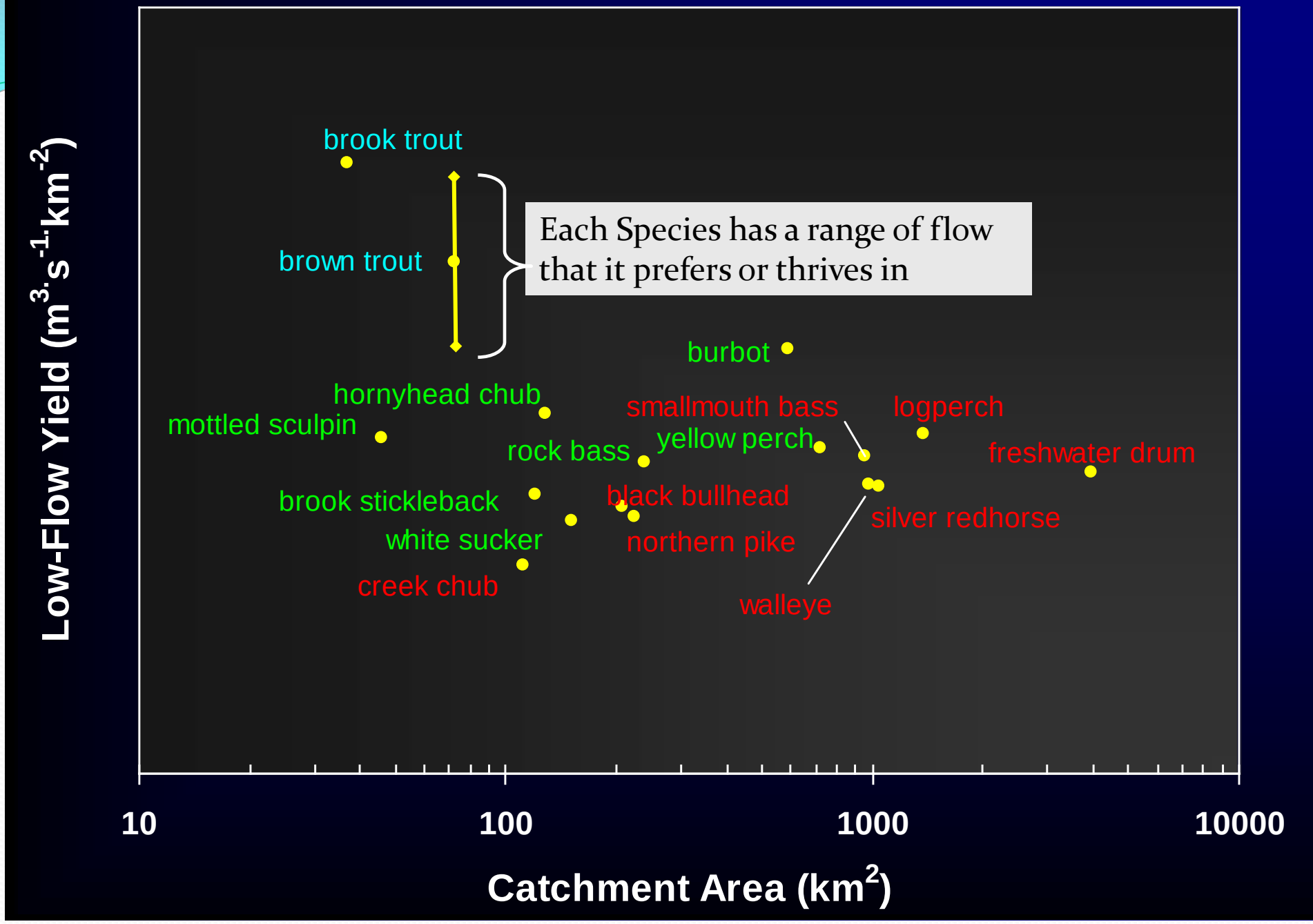
We grouped Michigan streams into types and developed response models using an average of ~ 20 specific segments per type



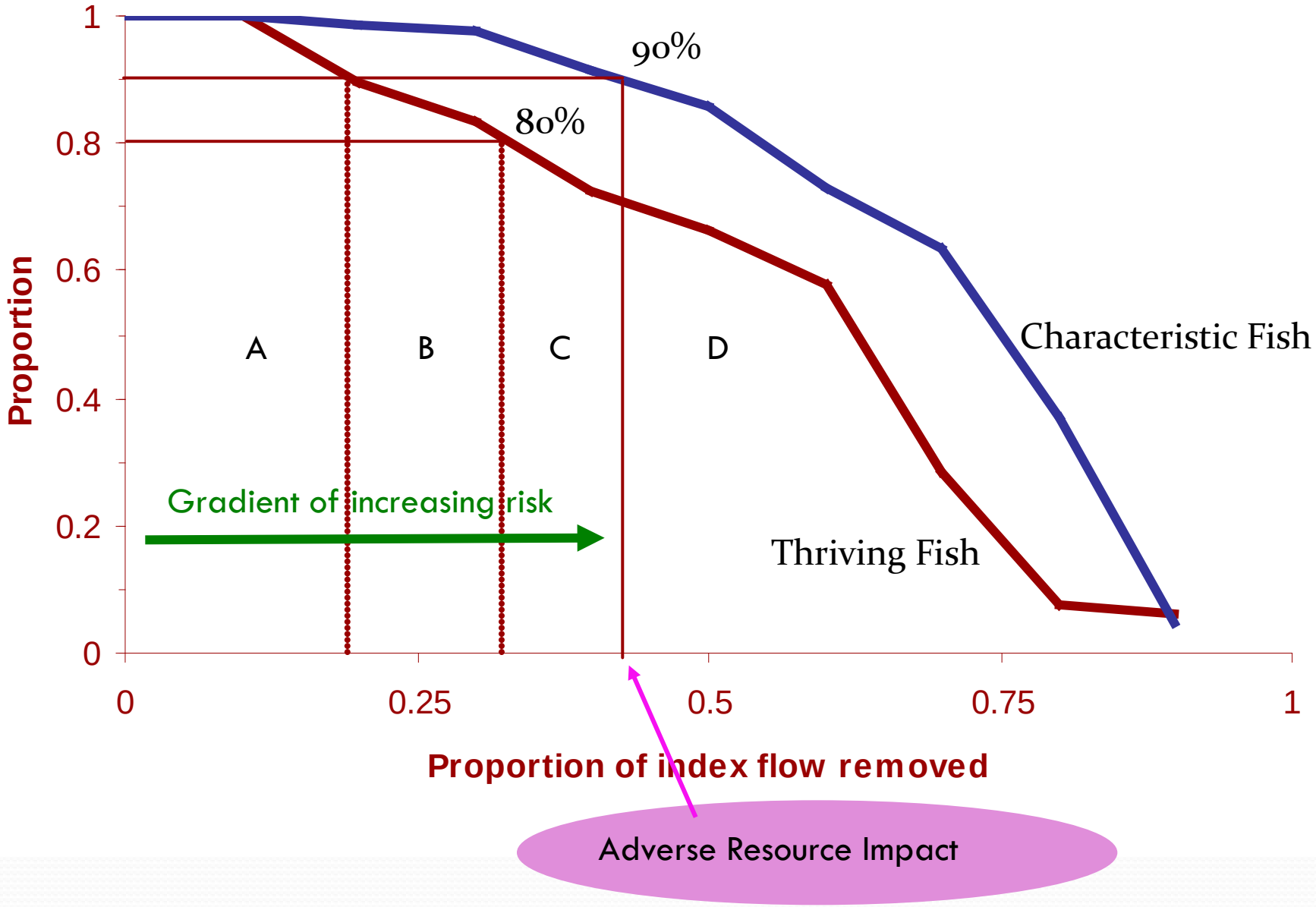
3. The Fish Response Model

- What fish populations live where in the streams and how do they respond to flow reductions in the summer (at low flow)
- Two Key Issues to Review
  - ✓ Define Stream Types and "Characteristic Fish Populations"
  - ✓ Define "Functional Impairment" to Characteristic Fish Populations due to water withdrawals
- We say fish .. But it is not really about fish … fish just represent for the neighborhood


brook trout
brown trout
Each Species has a range of flow that it prefers or thrives in
Low-Flow Yield ($m^3.s^{-1}.km^{-2}$)
10
100
1000
10000
Catchment Area (km^2)


brook trout
brown trout
Each Species has a range of flow that it prefers or thrives in
burbot
hornyhead chub
mottled sculpin
smallmouth bass
logperch
yellow perch
rock bass
freshwater drum
brook stickleback
black bullhead
silver redhorse
white sucker
northern pike
creek chub
walleye
Low-Flow Yield (m3.s-1.km-2)
10
100
1000
10000
Catchment Area (km2)

Interpreting the Fish Curves With an Eye to Policy



Major Policy Issues

- ✓ Major Issues are discussed in our report
  - ✓ Some are consensus and some are still in play
    - ✓ Consensus
      - ✓ Model Framework and Science Basis for Assessment Framework
      - ✓ Rule Basis for interpreting Fish Response Curves
      - ✓ Return Flow
      - ✓ Require the Use of the Screening Tool
      - ✓ Many Others …
    - ✓ Not full Consensus
      - ✓ The Safety Factor
      - ✓ Where and how Mitigation fits in the framework
      - ✓ How to value globally unique systems (Michigan's Blue Ribbon trout)
      - ✓ Role of water users groups within a community of water users

Water Withdrawal Legislation Updates
Senate Bill No. 212 (Proposed)

- The water resources conservation advisory council shall consist of all the following members:

- The person making the appointment under subsection (1) shall give consideration and deference to individuals who served on the former ground water conservation advisory council.

Water Withdrawal Legislation Updates
Senate Bill No. 212 (Proposed)

- The council shall appoint a technical advisory committee of individuals with specific technical and legal expertise relevant to the council's responsibilities.

- The council shall do all of the following:
  a) Study the sustainability of the state's water use
  b) Develop criteria and indicators to evaluate the sustainability of the state's water use
  c) Make recommendations regarding the implementation and effectiveness of the water withdrawal assessment tool as provided for in part 327

Water Withdrawal Legislation Policy Issues

Major Issue Areas to Solve

1. Mandatory or Voluntary,
2. Permanent or Renewable permit/approval/determination
3. Presumptions Afforded by the Use of the Tool
4. What happens in Zone B and Zone C
5. Mitigation – where and when – limited by what?
6. Safety/Protection Factor – Degree of Precaution
7. Permitting Applicability and Threshold(s) if any
8. Water User Responsibilities
9. The Role of Water Users Committees at the Local Level
10. Program Administration and Departmental Responsibilities

Water Withdrawal Legislation Policy Issues

10. Capacity versus Withdrawal
11. Return Flow – Included, how and when
12. New Interim Lake Standard and Future Process
13. Other Sensitive Areas (e.g. Fens, Bogs, etc)
14. Updates to the model
15. Other Issues from the House Democratic Package
    - The Role of Citizen Participation
    - Bottled Water

Collaborators

Department of Environmental Quality

Department of Natural Resouces

United States Geologic Survey

Institute of Water Research

WWAT Information

- Recent Updates

Locate by Address

Enter the address and zip code at or near the withdrawal location. Please spell street names correctly in order to ensure system accuracy.

Address:

Zip Code:

Find Address

Locate by Navigation

To select the county where the water withdrawal will occur, click the map or choose from the drop down menu.

Charlevoix

Find County

Locate by Latitute and Longitude

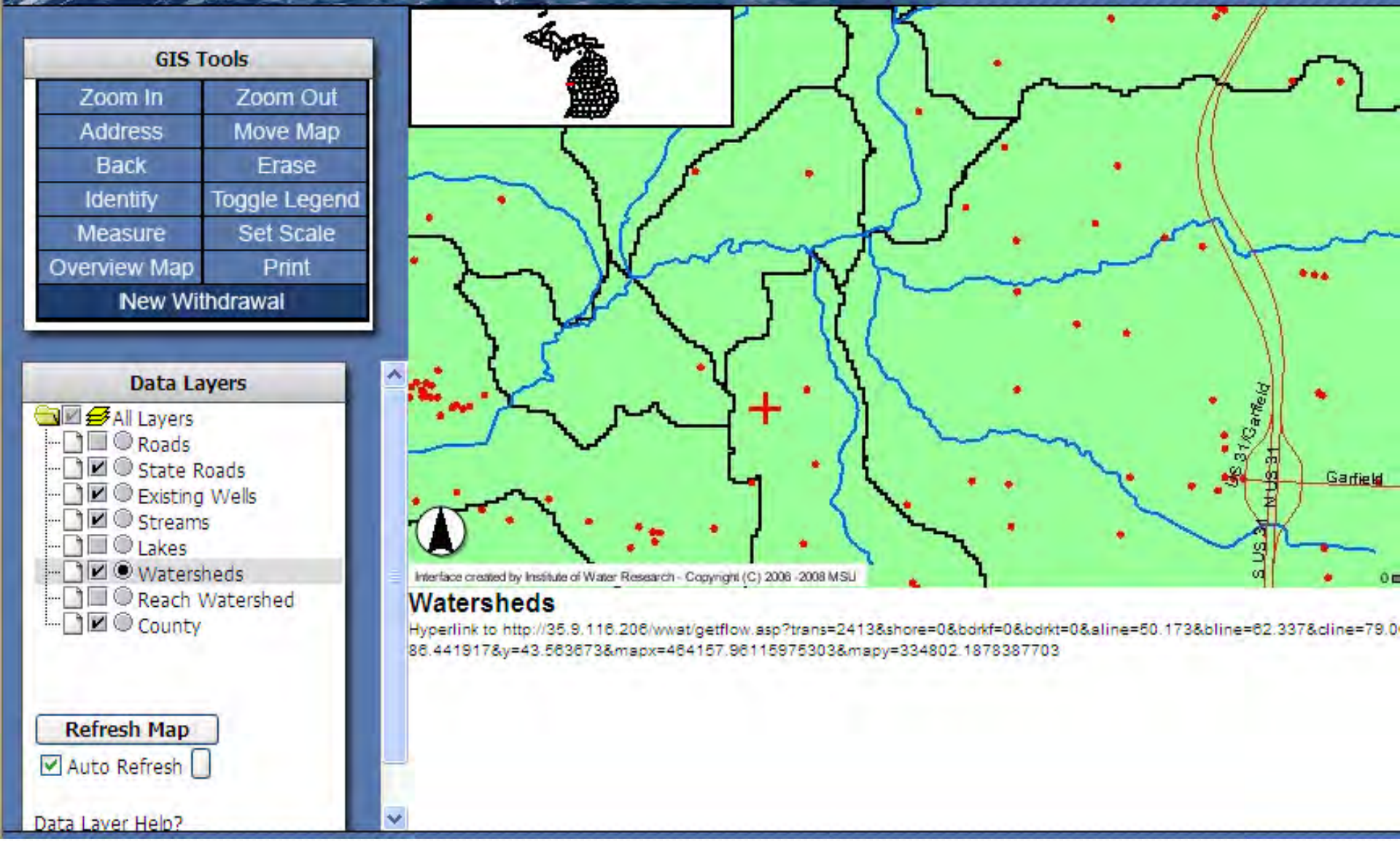
Enter the latitude and longitude coordinates at or near the withdrawal location. Please input data correctly in order to ensure system accuracy.

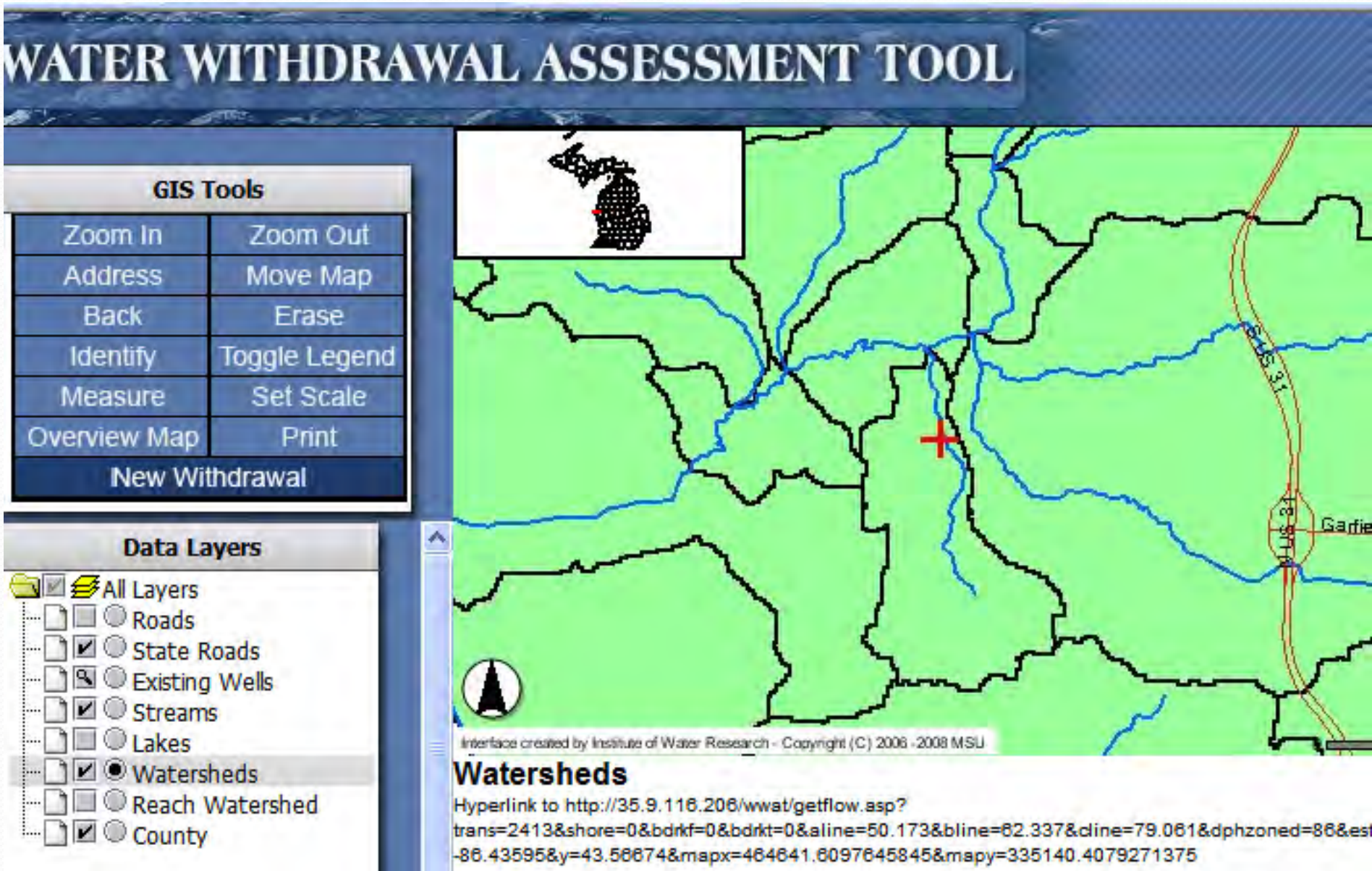
Latitude (Y):

Longitude (X):

Find Point

WATER WITHDRAWAL ASSESSMENT TOOL




WATER WITHDRAWAL ASSESSMENT TOOL
GIS Tools
Zoom In
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Print
New Withdrawal
Data Layers
All Layers
Roads
State Roads
Existing Wells
Streams
Lakes
Watersheds
Reach Watershed
County
Interface created by Institute of Water Research - Copyright (C) 2006 - 2008 MSU
Watersheds
Hyperlink to http://35.9.116.206/wwat/getflow.asp?
trans=2413&shore=0&bdrkf=0&bdrkt=0&aline=50.173&bline=62.337&cline=79.061&dphzoned=86&est
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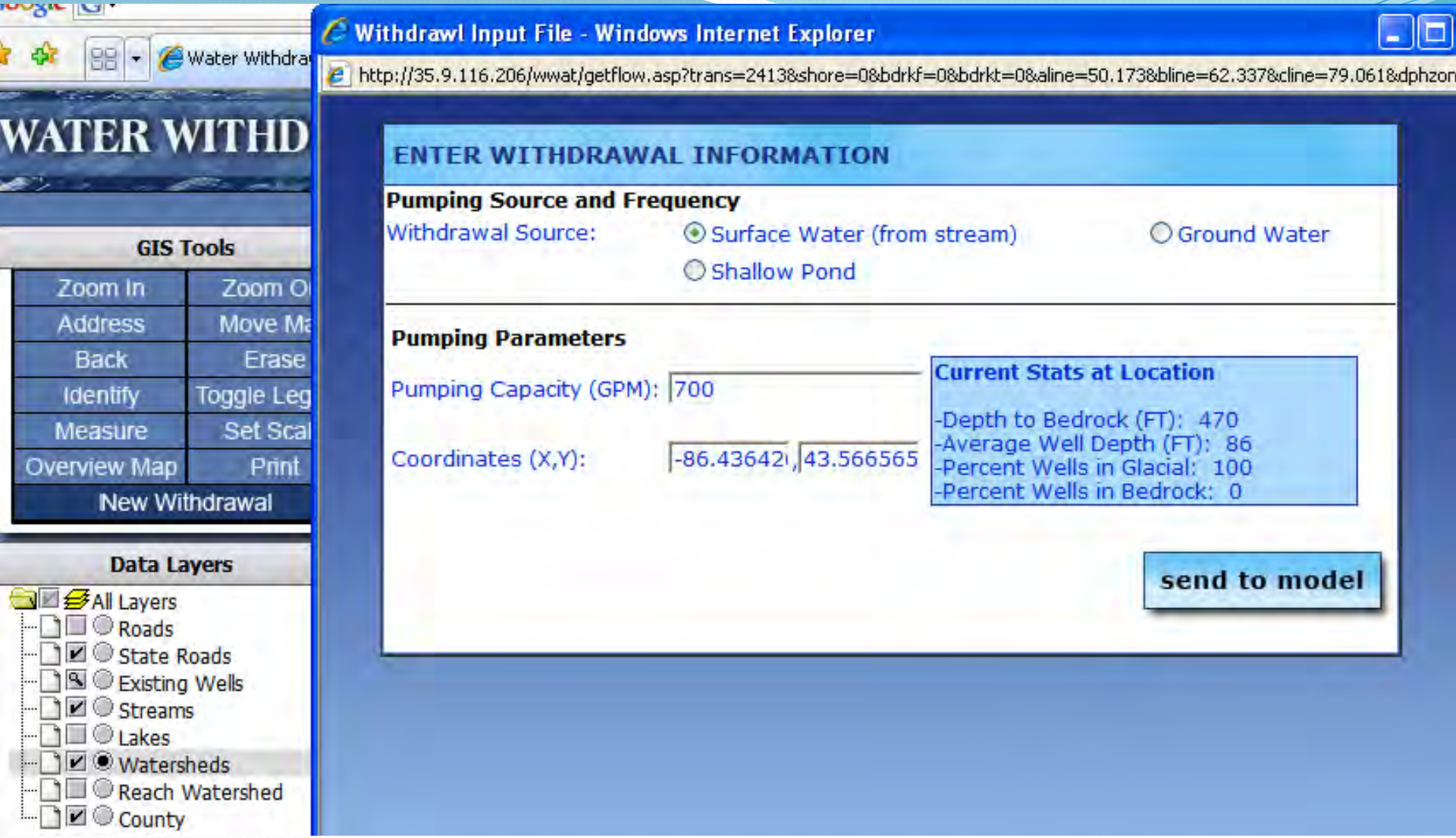
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Roads
State Roads
Existing Wells
Streams
Lakes
Watersheds
Reach Watershed
County
Withdrawl Input File - Windows Internet Explorer
http://35.9.116.206/wwat/getflow.asp?trans=2413&shore=0&bdrkf=0&bdrkt=0&aline=50.173&bline=62.337&cline=79.061&dphzon
ENTER WITHDRAWAL INFORMATION
Pumping Source and Frequency
Withdrawal Source:
Surface Water (from stream)
Ground Water
Shallow Pond
Pumping Parameters
Pumping Capacity (GPM): 700
Coordinates (X,Y): -86.43642 , 43.566565
Current Stats at Location
-Depth to Bedrock (FT): 470
-Average Well Depth (FT): 86
-Percent Wells in Glacial: 100
-Percent Wells in Bedrock: 0
send to model

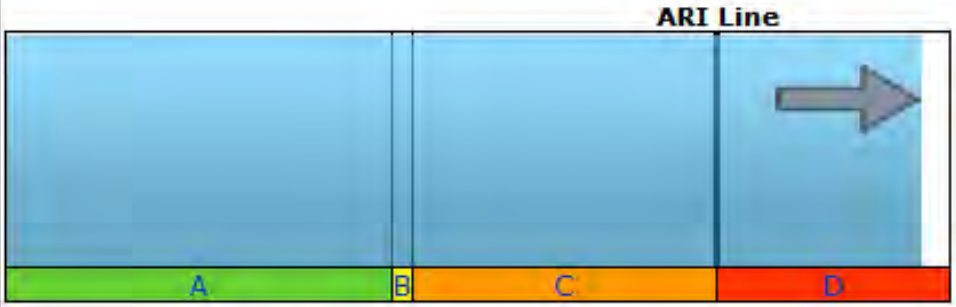
Screening Results - Windows Internet Explorer

http://35.9.116.206/wwat/response.asp?id=perem709&a=21.2857&b=21.3009&c=38.0101&welltype=Surface%20Water&rate=70

Water Withdrawal Screening Results

WARNING: For demonstration purpose only..

Adverse Resource Impact (ARI) Graph



The ARI graph above illustrates the estimated removal of water from a nearby stream and its potential for causing an adverse resource impact (ARI). Estimated 700 GPM

The proposed withdrawal has faild in Zone D, and is likely to have an adverse resource impact.

Screening Results - FAILED

Instructions:

The proposed withdrawal lies within 'Zone D' and is likely to cause an adverse resource impact. By reducing the flow taken from a nearby stream, you may be able to avoid these impacts and pass the screening process. Here are several examples of what you could do to help avoid adverse resource impacts:

- Increase Distance From Nearby Streams
- Increase Well Depth
- Reduce Pumping Rate

To modify withdrawal characteristics and rerun the screen press 'Rerun'.

Actions:

Help
Rerun
Register Now
Feedback
View Google Map
Print Report
Exit

WATER WITHD

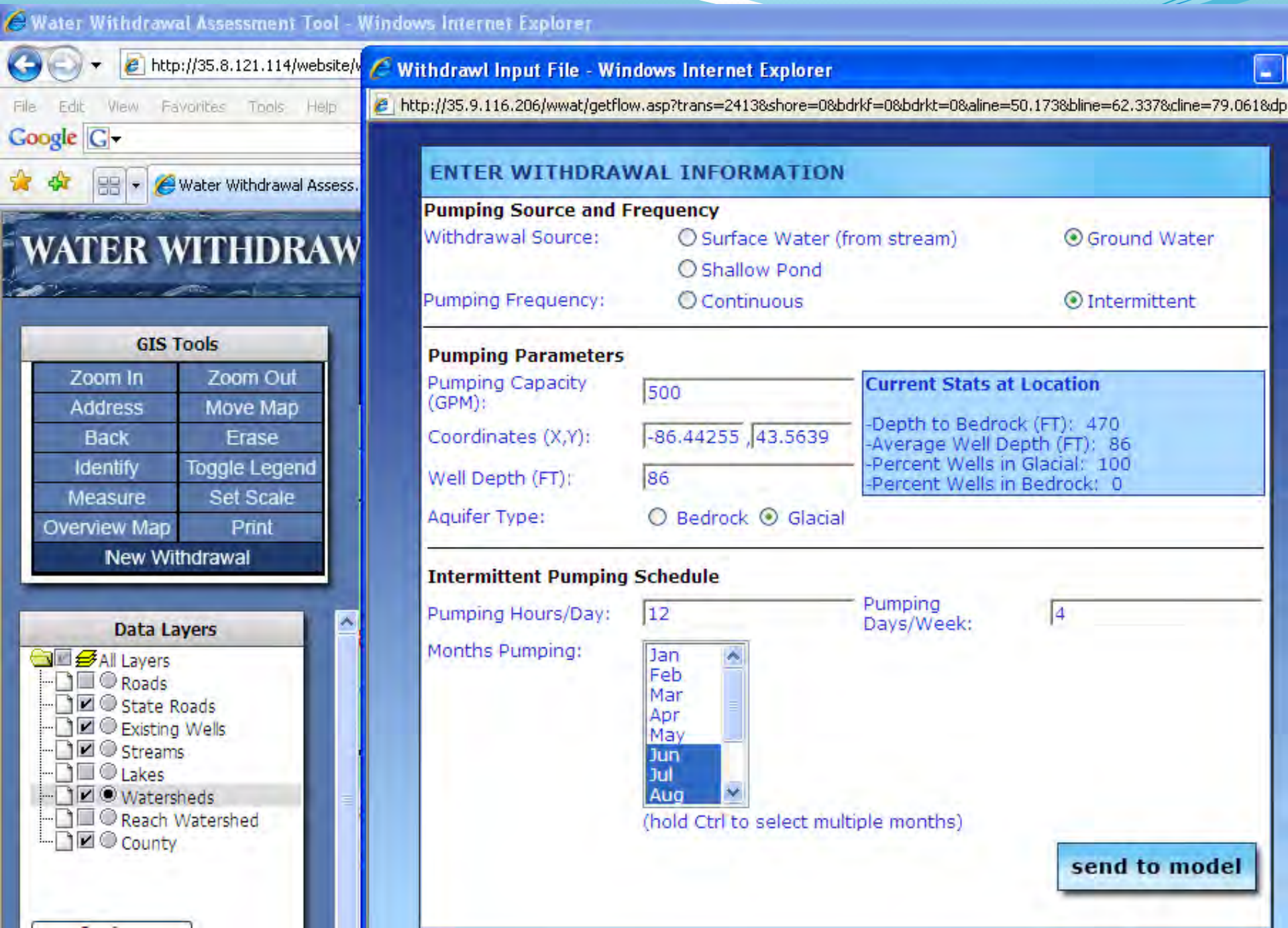
GIS Tools

Zoom In | Zoom O
Address | Move Ma
Back | Erase
Identify | Toggle Leg
Measure | Set Scal
Overview Map | Print
New Withdrawal

Data Layers

All Layers
Roads
State Roads
Existing Wells
Streams
Lakes
Watersheds
Reach Watershed
County

Refresh Map
Auto Refresh


Water Withdrawal Assessment Tool - Windows Internet Explorer
http://35.8.121.114/website/
File Edit View Favorites Tools Help
Google
Water Withdrawal Assess.
WATER WITHDRAW
GIS Tools
Zoom In
Zoom Out
Address
Move Map
Back
Erase
Identify
Toggle Legend
Measure
Set Scale
Overview Map
Print
New Withdrawal
Data Layers
All Layers
Roads
State Roads
Existing Wells
Streams
Lakes
Watersheds
Reach Watershed
County
Withdrawl Input File - Windows Internet Explorer
http://35.9.116.206/wwat/getflow.asp?trans=2413&shore=0&bdrkf=0&bdrkt=0&aline=50.173&bline=62.337&cline=79.061&dp
ENTER WITHDRAWAL INFORMATION
Pumping Source and Frequency
Withdrawal Source:
Surface Water (from stream)
Ground Water
Shallow Pond
Pumping Frequency:
Continuous
Intermittent
Pumping Parameters
Pumping Capacity (GPM):
500
Coordinates (X,Y):
-86.44255
43.5639
Well Depth (FT):
86
Aquifer Type:
Bedrock
Glacial
Current Stats at Location
-Depth to Bedrock (FT): 470
-Average Well Depth (FT): 86
-Percent Wells in Glacial: 100
-Percent Wells in Bedrock: 0
Intermittent Pumping Schedule
Pumping Hours/Day:
12
Pumping Days/Week:
4
Months Pumping:
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
(hold Ctrl to select multiple months)
send to model

http://35.8.121.114/website/

File Edit View Favorites Tools Help

Google

Water Withdrawal Assess...

WATER WITHDRAW

GIS Tools

Zoom In	Zoom Out
Address	Move Map
Back	Erase
Identify	Toggle Legend
Measure	Set Scale
Overview Map	Print
New Withdrawal	

Data Layers

- All Layers
  - Roads
  - State Roads
  - Existing Wells
  - Streams
  - Lakes
  - Watersheds
  - Reach Watershed
  - County

Refresh Map

Auto Refresh

Data Layer Help?

Screening Results - Windows Internet Explorer

http://35.9.116.206/wwat/response.asp?count=6&id=7522,7517,9761,10775,11483,14601&estrm=29.9848495646157,10.004034

Water Withdrawal Screening Results

WARNING: For demonstration purpose only..

Adverse Resource Impact (ARI) Graph

The ARI graph above illustrates the estimated removal of water from a nearby stream and its potential for causing an adverse resource impact (ARI). Estimated 30 GPM

The proposed withdrawal has passed in Zone A.

Screening Results - PASSED

Instructions:

The proposed withdrawal has passed the screening process.

This withdrawal lies within 'Zone A' and is unlikely to have an adverse resource impact. Water withdrawals with a capacity of over 70 gpm are required to register with the Michigan Department of Environmental Quality before beginning the withdrawal, and report the actual water use every year.

Actions:

- Help
- Rerun
- Register Now
- Feedback
- View Google Map
- Print Report
- Exit

DISCLAIMER:

Done Internet 100%

Go Back

Registration Form

Welcome to the water withdrawal registration form. By completing and submitting this form, you will register your withdrawal with the Department of Environmental Quality.

Contact Information

First Name: Last Name:

Address:

City: State:

Zip:

Phone:

e-mail:

Well Information

Watershed ID: 7522

Pumping Rate (GPM): 500

Well Depth (FT): 86

Latitude: 43.5639

Longitude: -86.442551

Water Removal From Nearby Streams

Watershed	Removal (GPM)
7522	29
7517	10
9761	14
10775	16
11483	5
14601	20

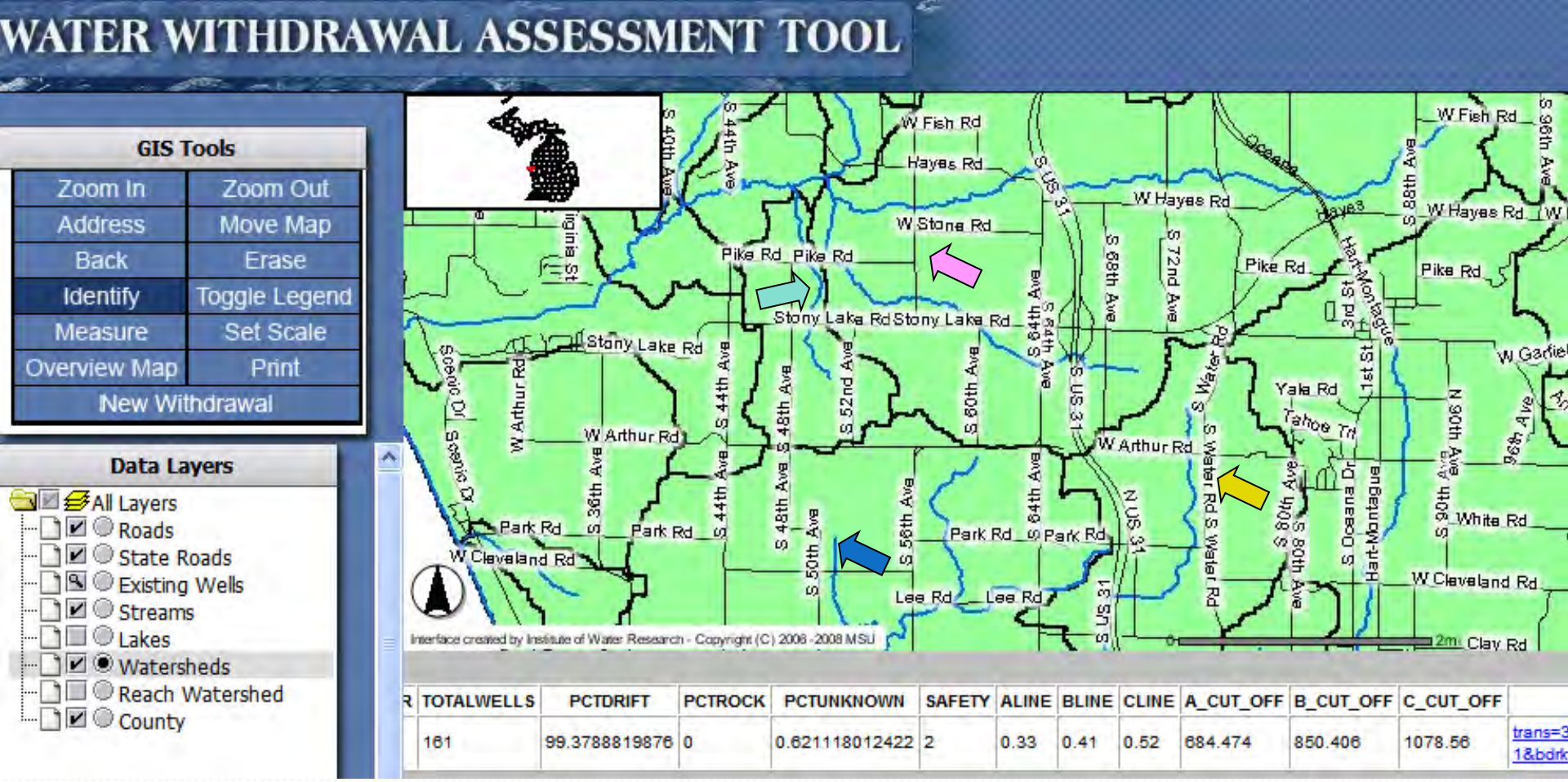
Register Withdrawal

Large Scale Water Use Assessment Tool

"Improvements in the works"

- Existing water withdrawals exist in the tool to the degree that they affect the average of stream of that size in the State. In water sheds with a lot of existing use the tools may show water available when existing use have used all that is available.

- Ability to trade a withdrawal for a new withdrawal with less potential to impact.



The tool can supply an estimate of the amount of water needs to remain in the stream to prevent causing a resource impact.

- C cut off - in gallon per minute:

1902 gpm

1078 gpm

109 gpm

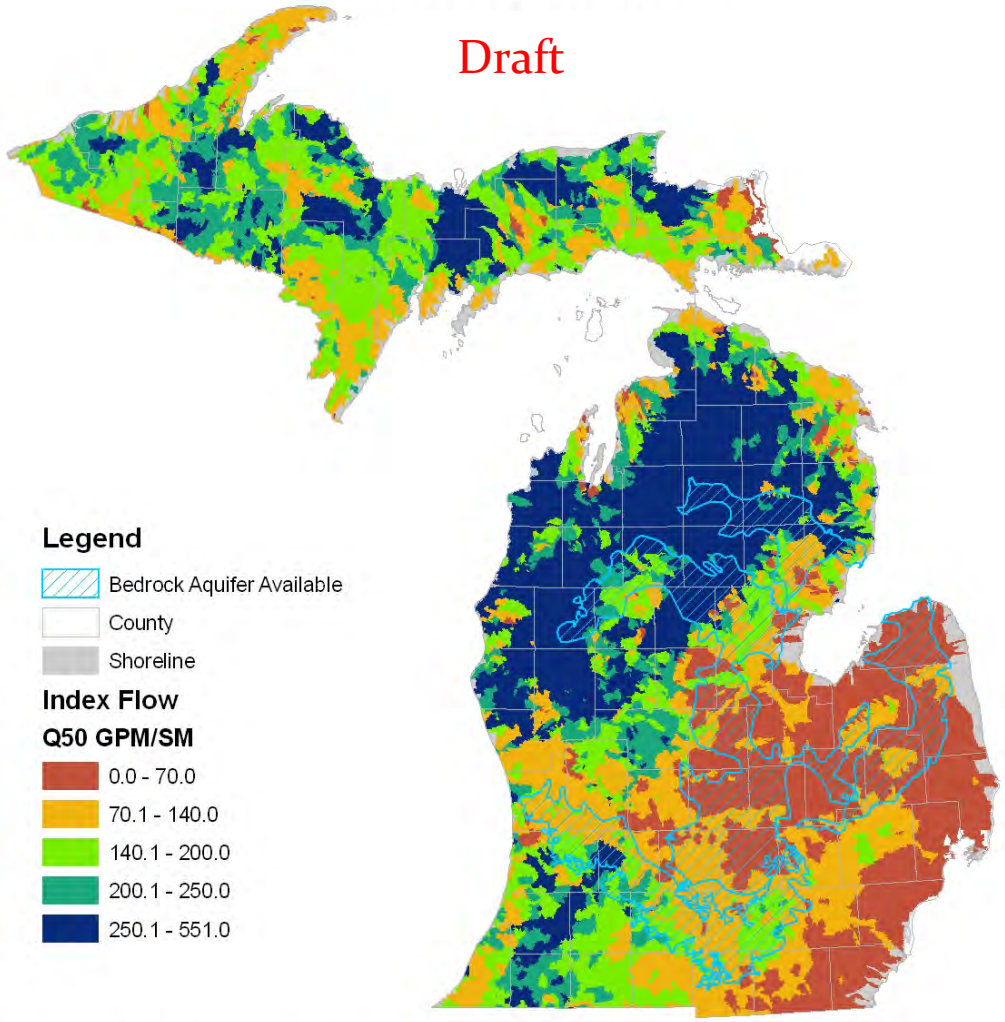
79 gpm

New Developments in 2009

Index Flow - Q 50 (GPM/SqMi)

Does not account for any new withdrawals since 2006
Also does not account
for WWAT registrations

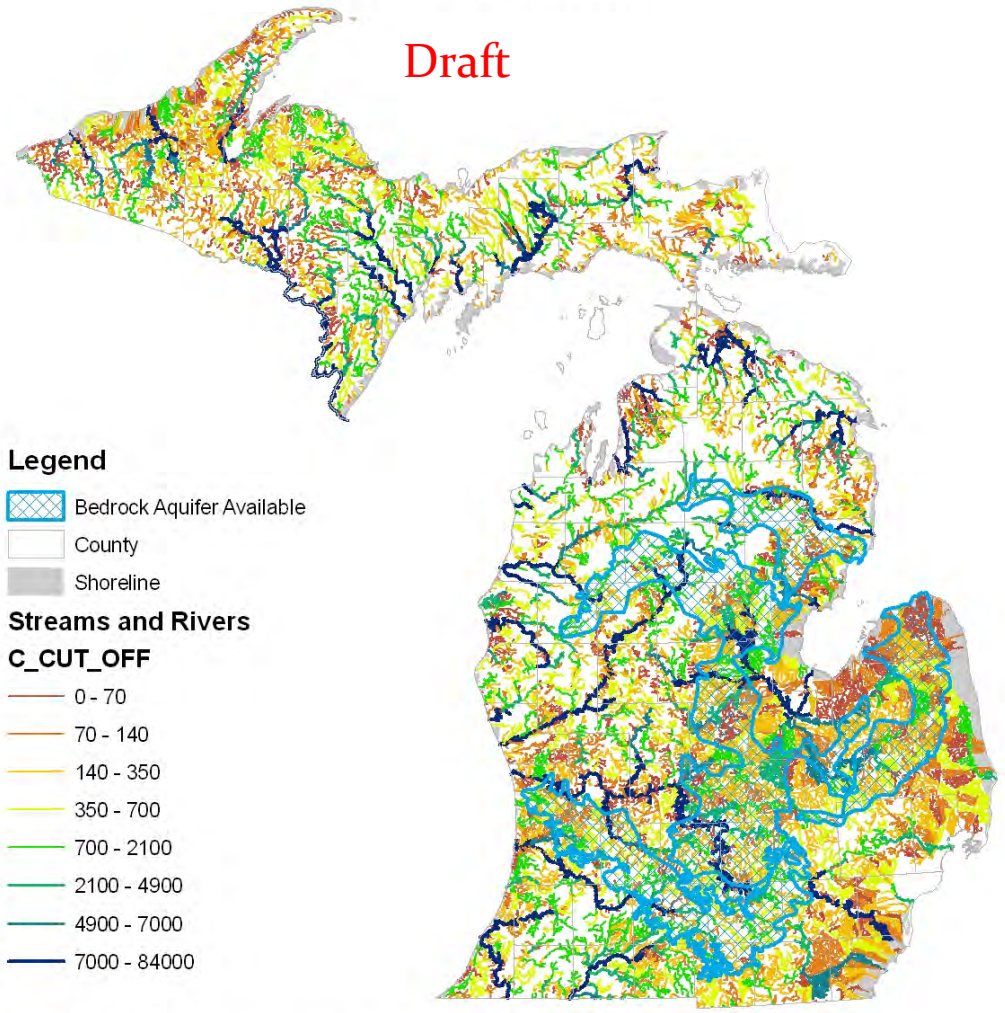
Draft



Note: Bedrock aquifers are present in some areas of the State - however some do not support large capacity wells. More detailed data can be found at gwmap.rsgis.msu.edu

WWAT water available from stream flow (GPM)
Does not account for any new withdrawals since 2006
Also does not account for
WWAT registrations

Draft



Note: Bedrock aquifers are present in some areas of the State - however some do not support large capacity wells. More detailed data can be found at gwmap.rsgis.msu.edu

Requirements that Large Capacity Withdrawals (LCW) not cause an Adverse Resource Impact (ARI)

Date	2/28/2006	2/28/2008	7/9/2008	2/1/2009	7/9/2009
ARI standard:	narrative	narrative	narrative	quantitative	quantitative
Presumed no ARI:	1320 feet away from Trout Stream > 150 feet deep	1320 feet away from Trout Stream > 150 feet deep	1320 feet away from all streams > 150 feet deep	1320 feet away from all streams > 150 feet deep	Zone A or B in WWAT DEQ site specific review
Applies to:	Trout Streams	all streams	all streams	all streams	all streams

Narrative: Shall not functionally impair a stream's ability to support characteristic fish populations.

Quantitative: Withdrawal limited to percent reduction of Index Flow as specified in legislation (max 25%).

Michigan's Water Withdrawal Assessment Process for Planning and Watershed Management

- **Water users committees**
  - All persons making LQWs within a watershed are encouraged to establish a water users committee to evaluate the status of current water resources, water use, and trends in water use within the watershed and to assist in long-term water resources planning.
  - A water users committee may be composed of all registrants, permit holders, and ***local government officials*** within the watershed.

Slide from Dr. Lusch

Michigan's Water Withdrawal Assessment Process for Planning and Watershed Management

- **Water users committees**
  - Upon establishment of a water users committee, a participating local government official may create an ***ad hoc* subcommittee of residents** of that local unit of government to provide that local government official with information and advice on water resources, water use, and trends in water use within the local unit of government.

Slide from Dr. Lusch

Michigan's Water Withdrawal Assessment Process for Planning and Watershed Management

- **Water resources assessment and education committees**

  - **The notified entities** may form a water resources assessment and education committee in order to:

    - assess trends in water use in the vicinity of the withdrawal
    - educate water users

  - The MDEQ ***shall*** assist in the formation of water resources assessment and education committees and ***may*** provide them with technical information regarding water use and capacity within their vicinity, aggregated at the stream reach level.

Slide from Dr. Lusch

Michigan's Water Withdrawal Assessment Process for Planning and Watershed Management

- **Water resources assessment and education committees**
  - Committee meetings shall be open to the general public.
  - Water resources assessment and education committees may provide educational materials and recommendations regarding any of the following:
    - Long-term water resources planning
    - Use of conservation measures
    - Drought management activities
    - Other topics related to water use as identified by the committee

Slide from Dr. Lusch

Michigan's Water Withdrawal Assessment Process for Planning and Watershed Management

- **Regulatory "teeth" - Civil Actions**
  - Effective Oct. 7, 2008, the MDEQ may request the AG to commence a civil action for a violation under this part, including **falsifying a record** submitted under this part.
  - The court of jurisdiction may restrain the violation and require compliance. It may also impose a civil fine:
    - For a person who **knowingly causes an ARI with a LQW**, a civil fine of not more than **$10,000.00 per day of violation**.
    - For all other violations of this part, a civil fine of not more than $1,000.00.
    - In addition, the AG may file suit to **recover the full value of the costs of surveillance and enforcement by the state** resulting from the violation.

Slide from Dr. Lusch

Michigan's Water Withdrawal Assessment Tool - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.miwwat.org/

Most Visited Getting Started Latest Headlines http://en-us.www.mo... http://www.google.c... http://www.google.c...

http://www.miwwat.org/

WATER WITHDRAWAL ASSESSMENT TOOL

Related Articles

- Education Material
- Tool Introduction

Collaborators

Department of Environmental Quality

Department of Natural Resources

United States Geological Survey

Institute of Water Research

Choosing a New or Existing Registration

I am Assessing a New Withdrawal

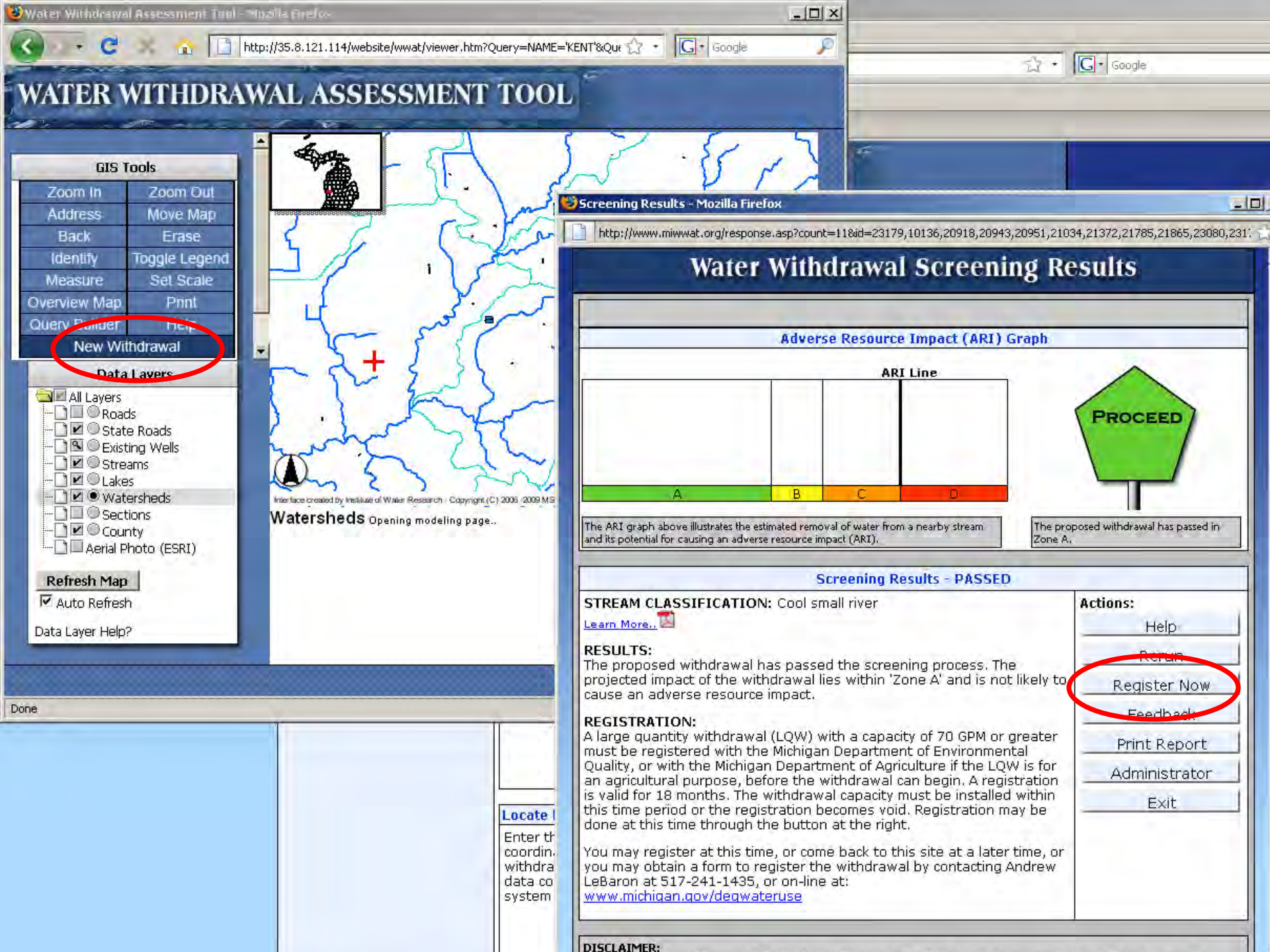
I am Modifying an Existing Registration

What should I choose?

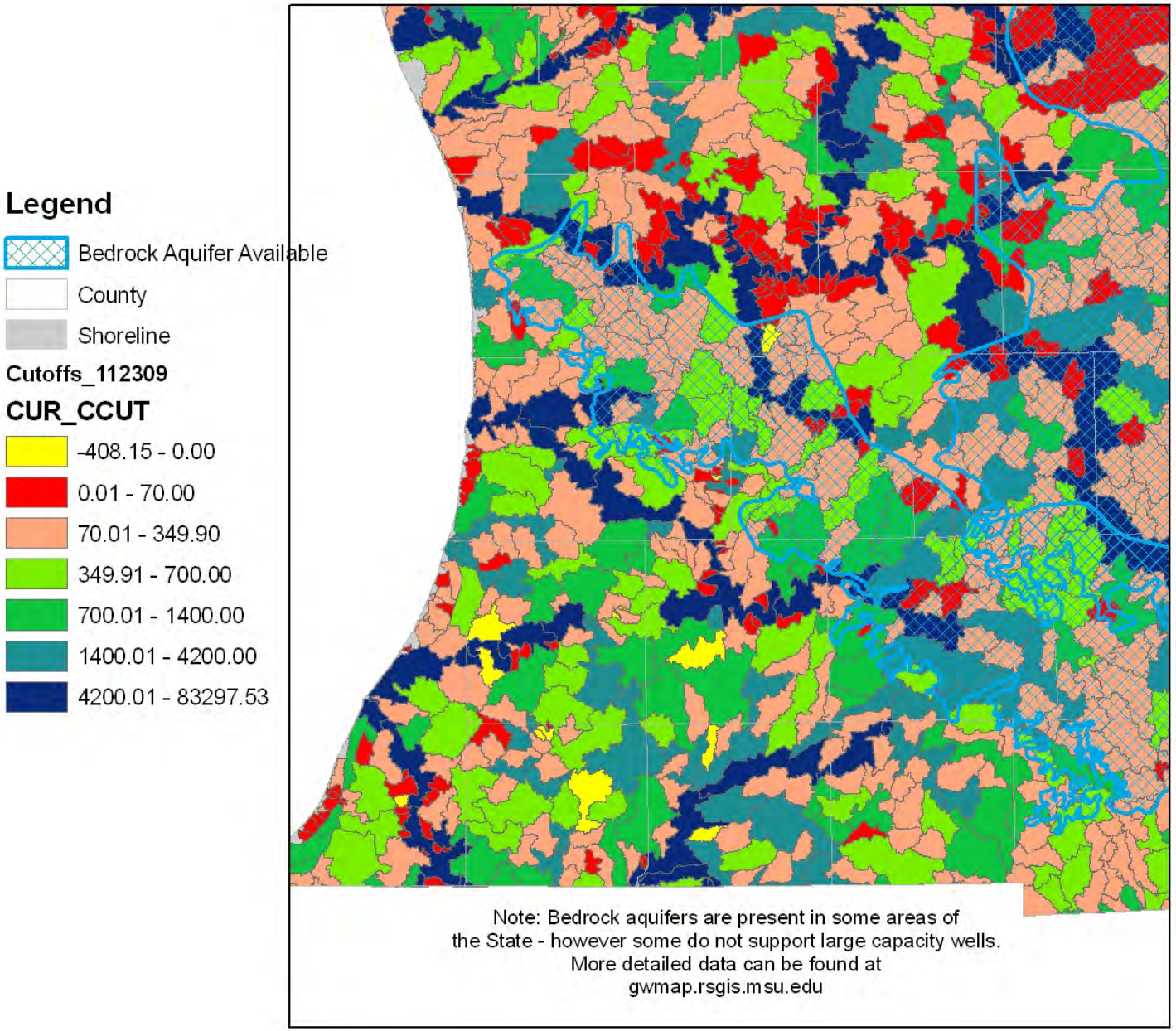
If you are assessing a new withdrawal or proposing to register a new withdrawal for the first time, choose "New Withdrawal" above.

If you are modifying an existing registration you have made through the water withdrawal assessment tool, choose "Modify Existing Registration" above.

Note: Modifying an existing registration is required when the actual withdrawal construction deviates from what was proposed during the initial registration. This includes modifications such as: changing your location, well depth, capacity, etc.


Water Withdrawal Assessment Tool - Mozilla Firefox
http://35.8.121.114/website/wwat/viewer.htm?Query=NAME='KENT'&Qu
Google
WATER WITHDRAWAL ASSESSMENT TOOL
GIS Tools
Zoom In
Zoom Out
Address
Move Map
Back
Erase
Identify
Toggle Legend
Measure
Set Scale
Overview Map
Print
Query Builder
Help
New Withdrawal
Data Layers
All Layers
Roads
State Roads
Existing Wells
Streams
Lakes
Watersheds
Sections
County
Aerial Photo (ESRI)
Refresh Map
Auto Refresh
Data Layer Help?
Interface created by Institute of Water Research - Copyright (C) 2006 - 2009 MSU
Watersheds Opening modeling page..
Done
Locate
Enter th
coordin
withdra
data co
system
Screening Results - Mozilla Firefox
http://www.miwwat.org/response.asp?count=11&id=23179,10136,20918,20943,20951,21034,21372,21785,21865,23080,231
Water Withdrawal Screening Results
Adverse Resource Impact (ARI) Graph
ARI Line
A
B
C
D
PROCEED
The ARI graph above illustrates the estimated removal of water from a nearby stream and its potential for causing an adverse resource impact (ARI).
The proposed withdrawal has passed in Zone A.
Screening Results - PASSED
STREAM CLASSIFICATION: Cool small river
Learn More..
RESULTS:
The proposed withdrawal has passed the screening process. The projected impact of the withdrawal lies within 'Zone A' and is not likely to cause an adverse resource impact.
REGISTRATION:
A large quantity withdrawal (LQW) with a capacity of 70 GPM or greater must be registered with the Michigan Department of Environmental Quality, or with the Michigan Department of Agriculture if the LQW is for an agricultural purpose, before the withdrawal can begin. A registration is valid for 18 months. The withdrawal capacity must be installed within this time period or the registration becomes void. Registration may be done at this time through the button at the right.
You may register at this time, or come back to this site at a later time, or you may obtain a form to register the withdrawal by contacting Andrew LeBaron at 517-241-1435, or on-line at:
www.michigan.gov/deqwateruse
Actions:
Help
Rerun
Register Now
Feedback
Print Report
Administrator
Exit
DISCLAIMER:

WWAT water available GPM
11-23-09



Irrigation GAAMPS Review

Questions?