

Water Quality Protection Program



Yellow Dog Watershed Preserve

- Programs
 - Land Protection
 - Water Quality Protection
 - Sulfide Mining
 - Education/Outreach



YELLOW DOG
Watershed Preserve

Threats

- Sedimentation
- Mining
 - Precious metals
 - Gravel
 - Acid Mine Drainage
 - Wastewater
- Logging
- Development
 - Road
 - Recreational Homes



Program Components

- Cooperative Lake Monitoring Program
- MiCorps Volunteer Stream Monitoring
 - Yellow Dog River
 - Salmon-Trout River
- Baseline Water Quality Survey
- Springs Survey
- Year of Intensive Monitoring
- USGS Partnerships

CLMP



CLMP

- MDEQ program
- Lake Independence
- Program Goal
- 5 Parameters sampled
- Equipment
 - Secchi Disk
 - YSI meter
 - Homemade composite sampler
- USGS/CLMP satellite project
- Data available online at micorps.net

MiCorps Volunteer Stream Monitoring

- 18 sites
- Yellow Dog River and tributaries
- Salmon-Trout River and tributaries
- MDEQ program
- Program Goal
- Parameters sampled
 - Water chemistry
 - Stream habitat
 - Macroinvertebrate surveys
- Data available at micorps.net

Macroinvertebrates



MiCorps



Baseline Water Quality Survey

- Program Overview
 - History of program
 - Goal
 - Number of sites
 - Third party
- Parameters Sampled
 - Field measurements
 - Metals
 - Anions
 - Ultra low level mercury
- Data Housed Internally with YDWP

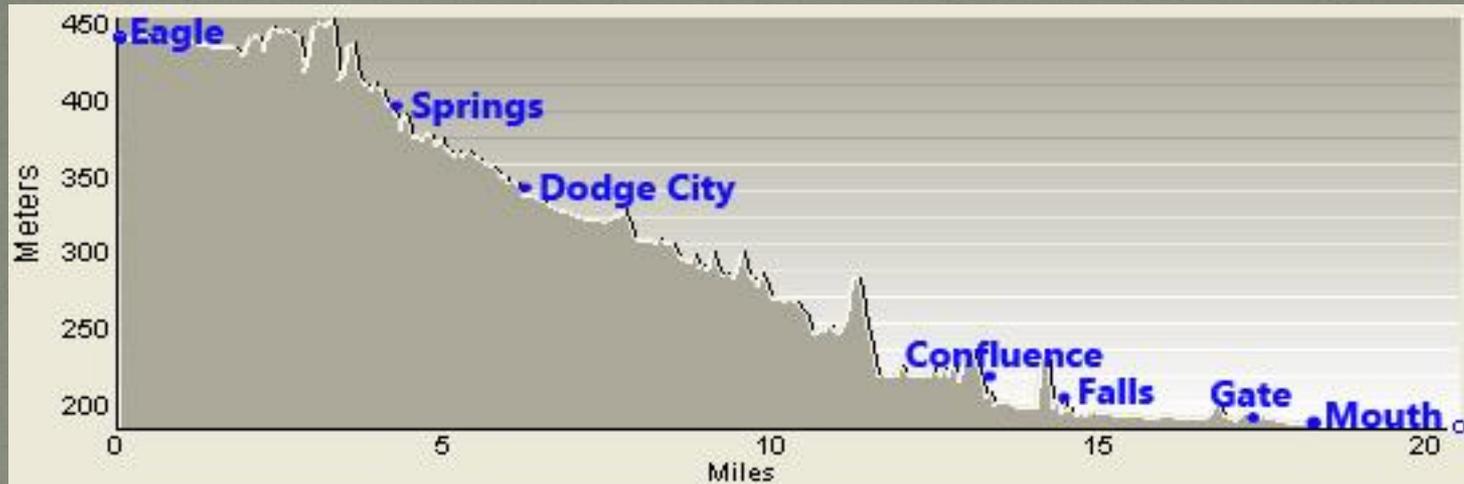
Baseline Survey



Springs Survey



Salmon-Trout Profile



Springs Survey

- Program overview
 - Significance
 - Goal
 - Number of sites
 - Third party
- Parameters sampled
 - Field measurements
 - Metals
 - Anions

Field Measurements



Year of Intensive Monitoring

- Program overview
 - Binational Forum
 - Lake Superior for 2011
 - Partnership with other Superior watersheds
- Parameters sampled
 - Water chemistry
 - Conductivity
 - Stream sediment
- Informally continuing today
- Data housed internally with YDWP and GLIFWC

USGS Partnerships

- 3 Stream Gauge Stations
- Partnerships
 - KBIC/USGS
- Locations
 - Bob Lake Crossing
 - East Branch Salmon-Trout
 - Middle Branch Salmon-Trout
- Data/parameters
 - Four real-time measurements
 - Waterdata.usgs.gov



USGS Partnerships

- Cooperative Water Agreement
 - KBIC/USGS
- 5 year study (2013-2017)
- Heavily designed on YDWP's Baseline Survey
 - Same sites
 - Same parameters
 - Different methodology
- Data available online USGS website

Partnerships

- KBIC
- GLIFWC
- SWP/CEMP
- HMC
- Waterkeeper Alliance
- Sierra Club

Quality Assurance

- Protocols furnished to third party consultants
- Documentation
 - Field notes
 - Photographs
- Calibration
- Certified labs used for water analysis
 - Internal quality assurance

What next?

- USGS and GLIFWC primary agents conducting water chemistry
- YDWP primary agent conducting volunteer stream and lake monitoring
- YDWP continues data analysis
 - Follow up on spikes and trends
 - Compare with other datasets (CEMP)
- Work with other watersheds on a cumulative basis

Thanks!

- Contact Information
 - Rochelle Dale
 - Programs Administrator
 - rochelle@yellowdogwatershed.org
- More Information
 - www.yellowdogwatershed.org
 - 906-345-9223