



# Linking Citizens to Science in the Interest of Faith

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# Science and Faith

- Importance of science literacy
- Setting the stage – *My Story*
- What is citizen science?
- Community-based natural resource management
  - Sugar Creek Method
  - Citizen Lake Awareness and Monitoring (CLAM)
- Integrating citizen science within congregations



# Science Literacy

- Science – depends on who is teaching
- Must be independent of religious ideas!!
- Poor US ranking science & technology (NSF, 2014)
- Experts no longer the experts = conspiracy theory
  - Opinions (beliefs), instead of facts
  - Bad information disseminated
  - Increase in anti-science legislation
- <http://www.newyorker.com/news/news-desk/the-mistrust-of-science>



NATIONAL  
CENTER *for*  
SCIENCE  
EDUCATION





**Science performed  
in the arena of  
public opinion is  
not science.**



**Flat Earth Society**



Dinosaurs with men



# 'God OR Evolution' and Bad Science

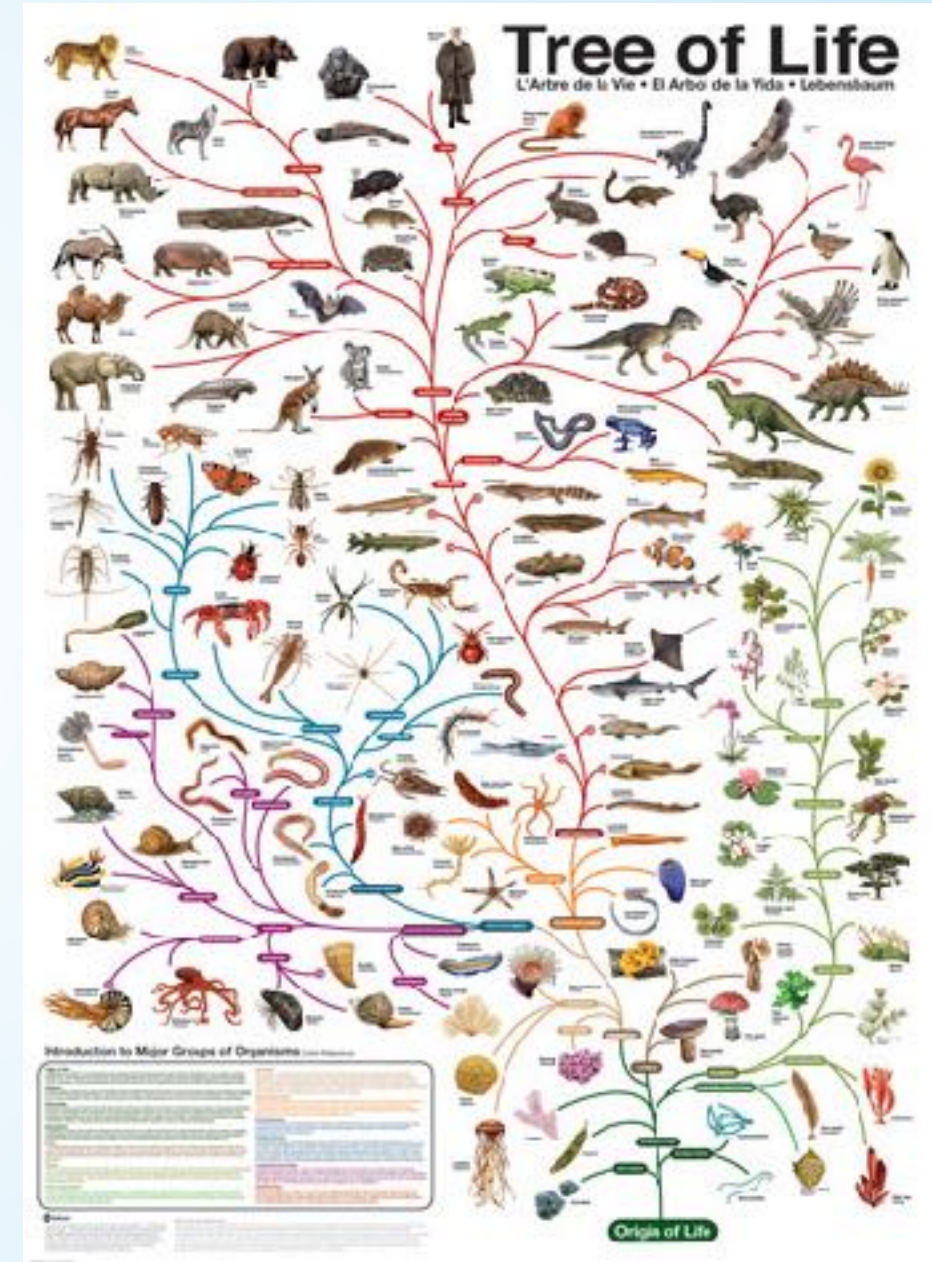
## Church Message



**CREATION MINISTRIES INTERNATIONAL**

**By definition, no apparent, perceived or claimed evidence in any field, including history and chronology, can be valid if it contradicts the Scriptural record.**

<http://www.creationministries.org>



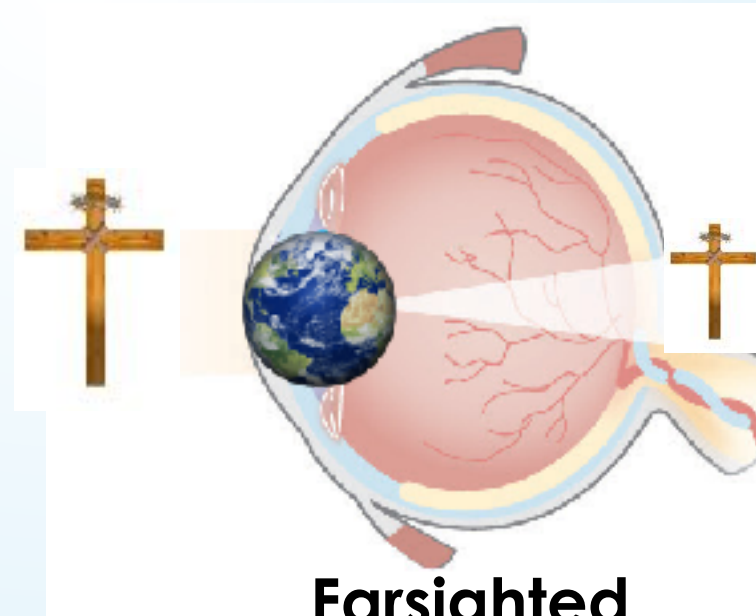
# Seeking TRUTH – Culture Wars / Scientism



**Shortsighted**

- ▶ Creation Science
- ▶ Young Earth Creationism
- ▶ Lens = Scripture (Word)
- ▶ God creates, evolution false

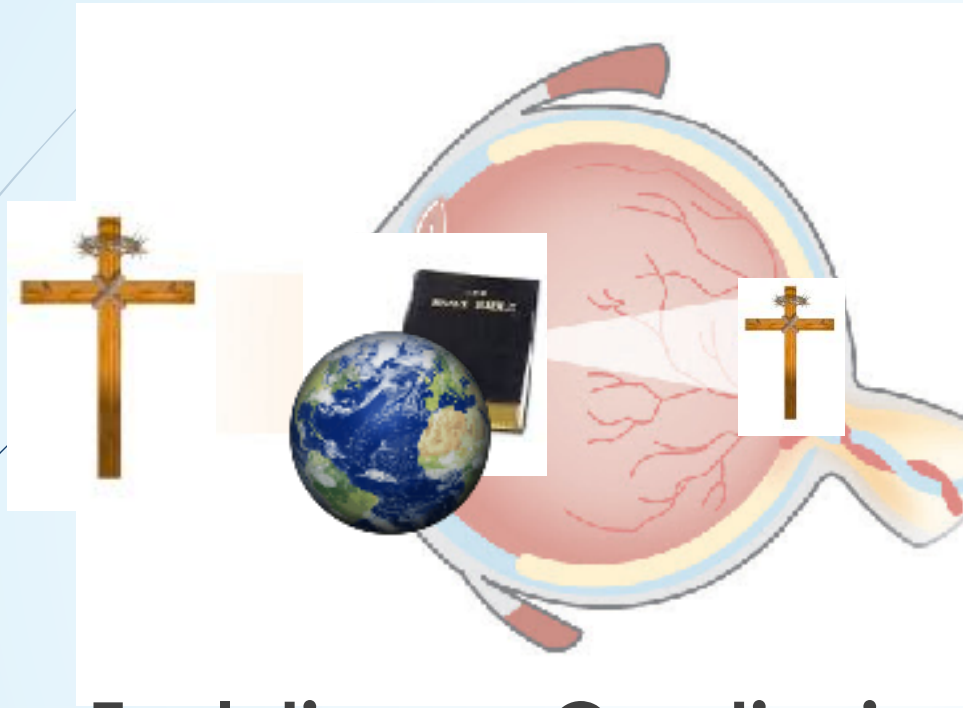
- ▶ Atheistic Naturalism
- ▶ Lens = Nature (Works)
- ▶ Evolution creates, God false



**Farsighted**

**Two  
worldview  
paradigms  
at polar  
extremes**

# Seeking TRUTH – God AND Evolution



**Diverse  
worldviews!!**

- **Evolutionary Creationism**
- **Faith and science reconciled**
- **Lens = Word and Works (trust both!)**
- **God used evolution to create**

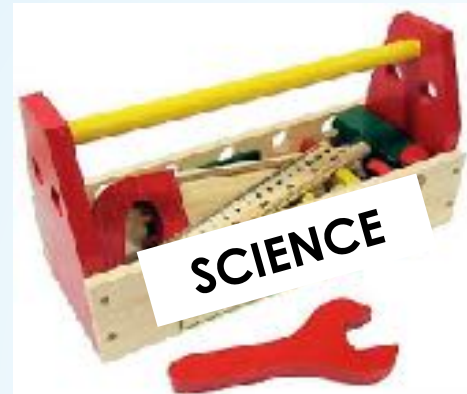
# Genesis: A Beacon or a Barrier to Belief?



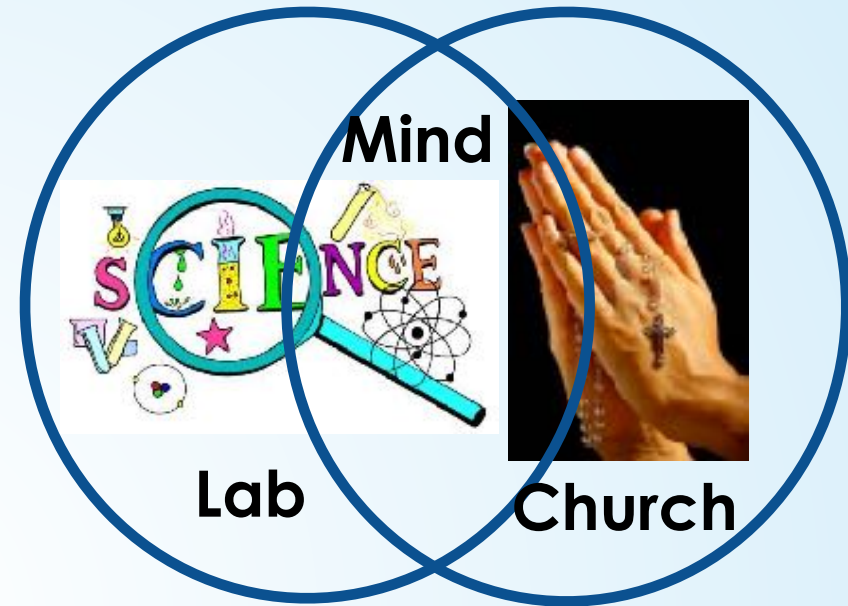
*“Jesus said to his disciples: “Things that cause people to stumble are bound to come, but woe to anyone through whom they come.”*

Luke 17:1 (NIV)

# Building Trust



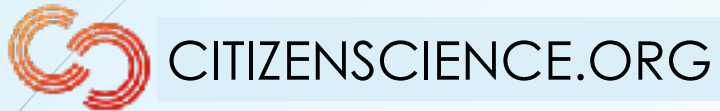
**Trust the Tool !**



- Poor science literacy; improper hermeneutics
- Respect the domains; very different doctrines
- To do is to understand is to trust
- Trust = Engaged.....Citizen Science



CITIZEN SCIENCE ALLIANCE



SCIENTIFIC AMERICAN

## Citizen Science

- ▶ Scientific research by nonprofessionals
- ▶ Simple data collection to full participation
- ▶ Expand capacity of community efforts
- ▶ Term coined in 1990s; practiced for centuries
- ▶ Significant increase in popularity and legitimacy

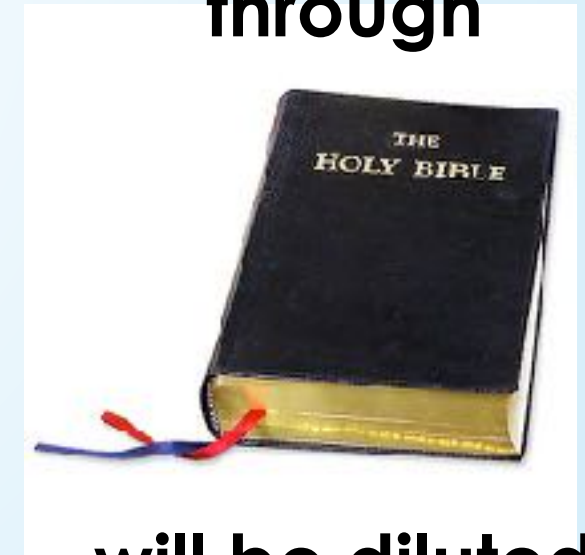


# Attributes of Good Science – Test Everything



*“but test them all; hold on to what is good,”*  
1 Thessalonians 5:21 (NIV)

**Science filtered through**



**will be diluted.**

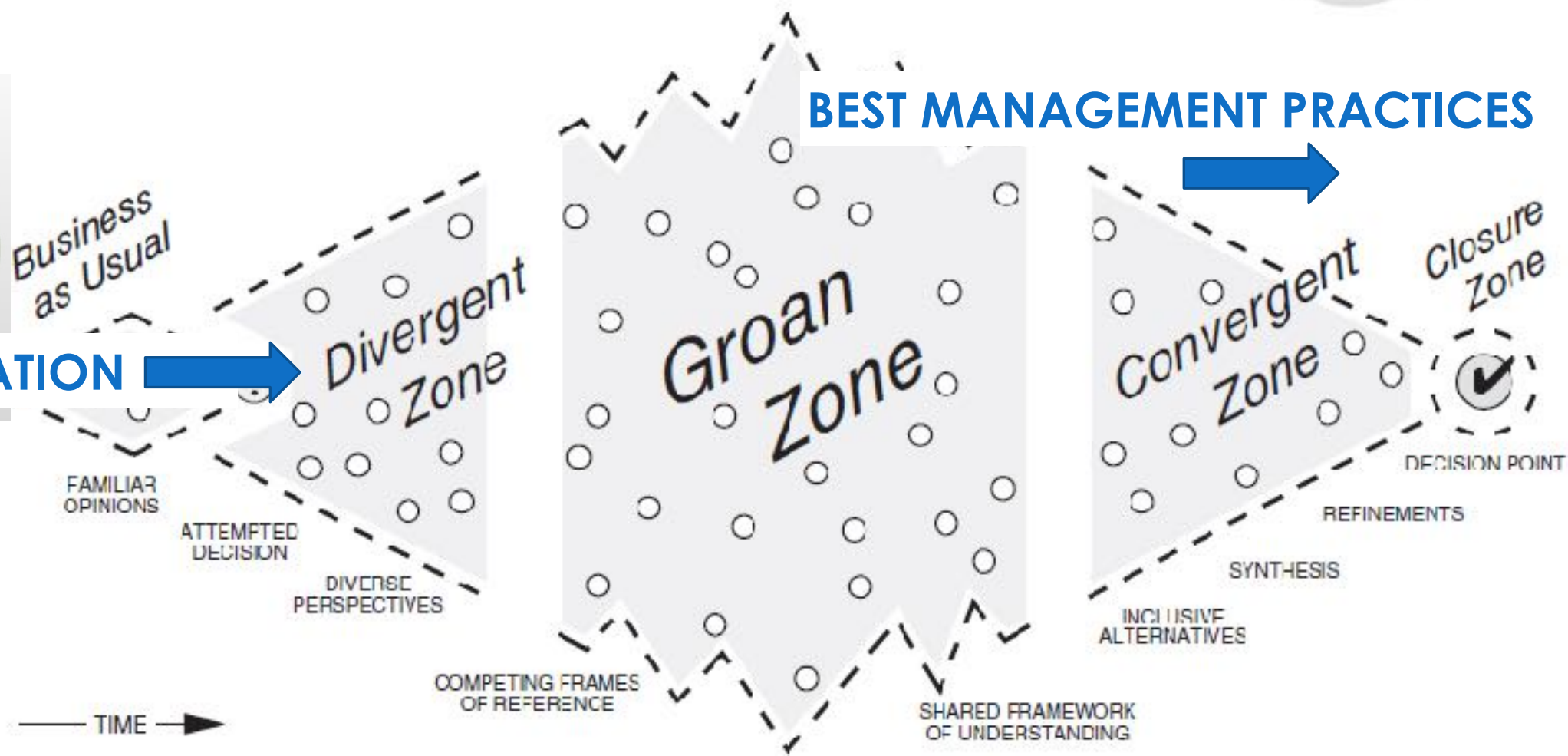
# FACILITATING SUSTAINABLE AGREEMENTS

## Community-Based Natural Resource Management

*Facilitator's Guide to Participatory Decision-Making* By Sam Kaner

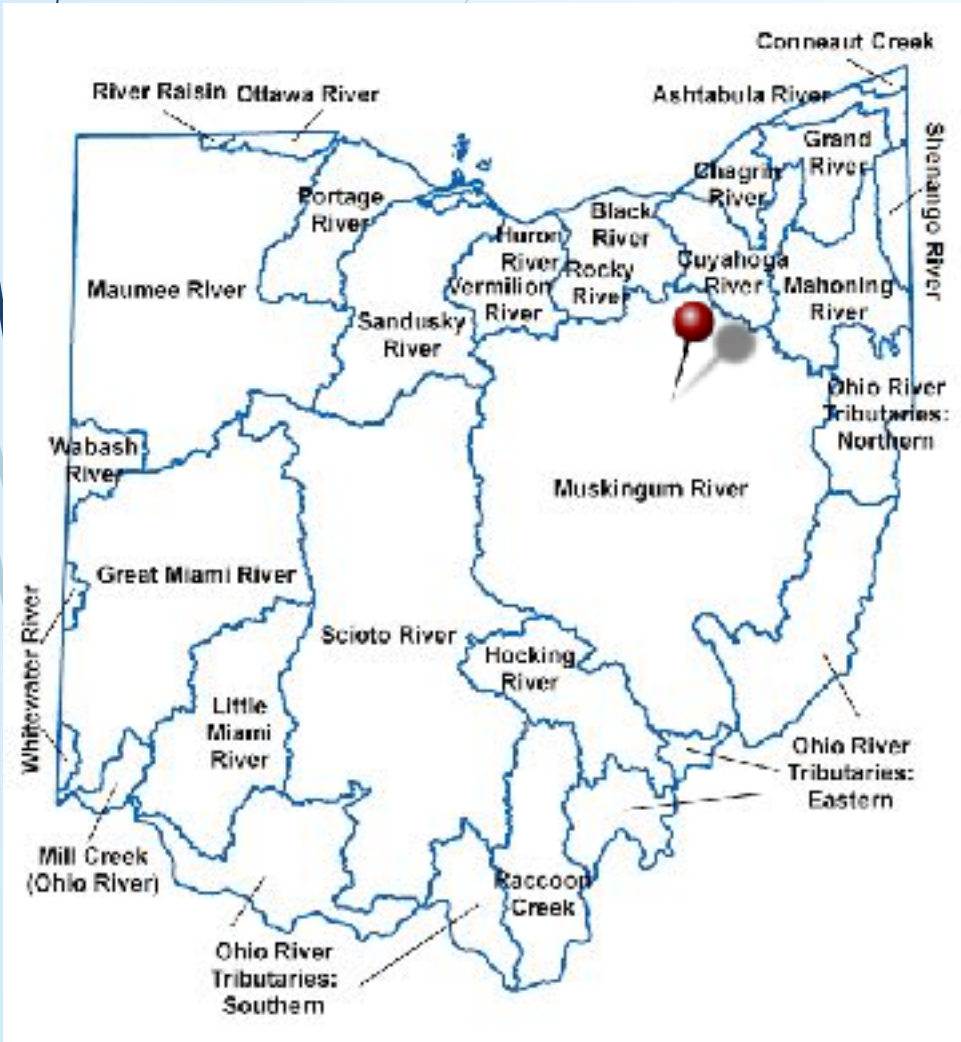


**INFORMATION** →



# Sugar Creek Method

[http://sugarcreekmethod.osu.edu/t08\\_pageview2/Overview.htm](http://sugarcreekmethod.osu.edu/t08_pageview2/Overview.htm)



## Sugar Creek Method

- Ohio EPA – 1998 worst water quality in Ohio
- Farming to blame; distrust of message
- Ohio State University to investigate in 2000
- Local action and decision-making based on scientific data collected by citizens
- Implemented Best Management Practices
- Building community capacity and trust
- Ohio EPA – Sugar Creek 2017 Study Plan



# Citizen Lake Awareness and Monitoring (CLAM)

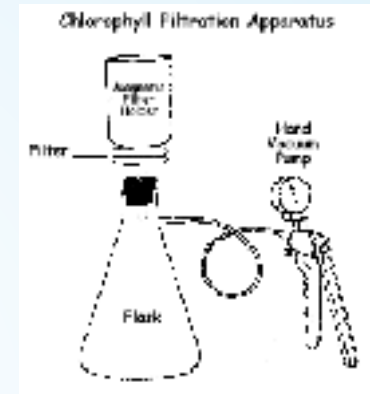
<http://olms.org/citizen-lake-awareness-and-monitoring/>



# CLAM Parameters in QDC Program



Transparency  
Water temperature  
Water color  
Quality and lake use



Grand Lake St. Marys, 2010

Temp. / DO profiles  
Total nutrients  
Total suspended solids  
Chlorophyll a  
Cyanotoxins /  
Harmful Algal Blooms



**Ohio Lake Management Society**



11 November 2010

| Lake Summary |      |           | Charles Mill Reservoir |     |     | ID: 210          |             |             |
|--------------|------|-----------|------------------------|-----|-----|------------------|-------------|-------------|
| YEAR         | SITE | Volunteer | Samples                |     |     | Water Depth (FT) | Water Color | Water Temp. |
|              |      |           | Avg                    | Min | Max |                  |             |             |

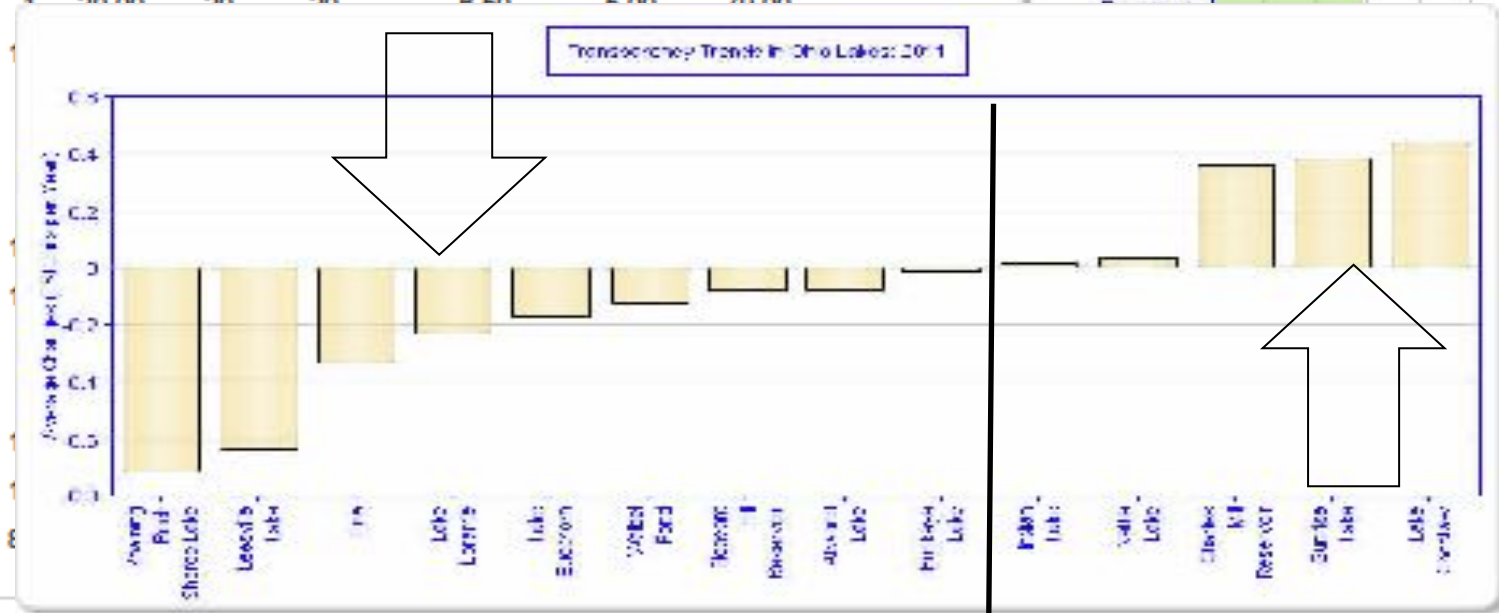
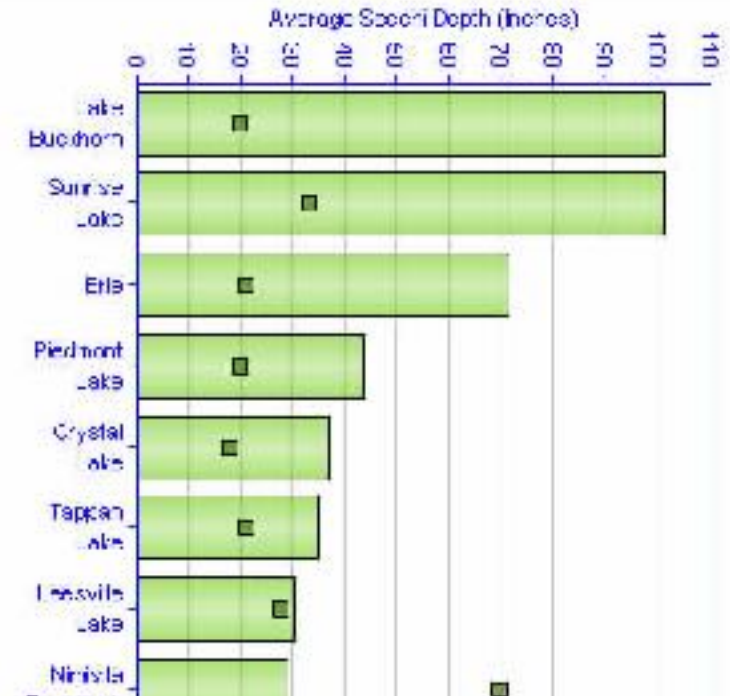
1995

|    |                        |   |       |    |    |      |      |       |
|----|------------------------|---|-------|----|----|------|------|-------|
| 0  | Marion Zaugg           | 5 | 15.20 | 11 | 20 | 7.20 | 6.20 | 79.80 |
| 1  | Roger Clay             | 4 | 20.00 | 20 | 20 | 8.50 | 5.00 | 70.00 |
| 10 | Jim and Bev Pelc       |   |       |    |    |      |      |       |
| 11 | Larry Giannetto        |   |       |    |    |      |      |       |
| 2  | Robert Ledvina         |   |       |    |    |      |      |       |
| 3  | Robert Ledvina         |   |       |    |    |      |      |       |
| 4  | Dick and Marlene Groff |   |       |    |    |      |      |       |
| 5  | Dick and Marlene Groff |   |       |    |    |      |      |       |
| 6  | Nelson Shogren         |   |       |    |    |      |      |       |
| 7  | Nelson Shogren         |   |       |    |    |      |      |       |
| 8  | Jim and Bev Pelc       |   |       |    |    |      |      |       |
| 9  | Jim and Bev Pelc       |   |       |    |    |      |      |       |

Averages for 1995

1996

|    |                  |   |      |   |   |      |      |       |
|----|------------------|---|------|---|---|------|------|-------|
| 10 | Jim and Bev Pelc | 8 | 6.75 | 6 | 8 | 3.63 | 4.38 | 79.13 |
|----|------------------|---|------|---|---|------|------|-------|





**The Christian Science Monitor**

4 hrs · 

An Australian mechanic turned astronomer is one of millions of citizen scientists helping researchers expand collective understanding.



Through citizen science projects, anyone can be a scientist

[CSMONITOR.COM](https://www.csmonitor.com)

# Tippecanoe Presbyterian Church

125 W. Saveland, Milwaukee (Bay View Area), WI  
tippechurch@gmail.com/ 414.481.4680  
Sunday Service: 9:25am - Tippe Cafe Follows!



[Home](#) | [Our Ministries](#) | [What's New and What's News!](#) | [Needing Inspiration?](#) | [Photos](#) | [Calendar](#) | [more...](#)



Tippe just.good.food Gardens: Come Grow With Us!

Including Milwaukee's first:  
**Church Semi-Intensive Vegetative Rooftop Pantry Garden!**



HOME ABOUT US OUR PROGRAMS RESOURCES TAKE ACTION JOIN US CONTACT US DIRECTORY

- Solar panels, Peach Lutheran Church, Bowling Green
  - Green infrastructure grant, St. Casimir Church, Cleveland
  - Certified Cool Congregation, First Unitarian Church, Cleveland
  - Energy Star National Building Competition, First Presbyterian Church, Athens
  - Green Team, Jerusalem Evangelical Lutheran Church, Seville
  - Earth Care Congregation, Common Ground Church, North Lima
  - LakeSide EcoEternity Forest, Lutheran Outdoor Ministries in Ohio, North Kingsville
- <https://ohipl.org/category/congregational-highlights/>

# Welcome to Grace United Methodist Church

245 West Pearl Street Belleville, WI 53508



[Home](#) [Who we are](#) [Worship with us](#) [Get involved](#) [Contact](#)

## Citizen science at Grace

Citizen Science Open House at Grace United Methodist Church April 17, 7-8 pm

More information about the event can be viewed [here](#). Interested in other Citizen Science Day events? Visit the [SciStarter Citizen Science Day page](#) to see other locations and events.

Interested in participating in the advancement of science, but don't have a science degree? Or, even if you have a science background, do you want to get more involved with science that benefits people in their everyday lives? Join Grace United Methodist Church as we delve into the field of citizen science.

This growing movement gives non-scientists an opportunity to get involved in scientific discoveries. The importance of this field is illustrated by the discovery of the water quality problem in Flint, Michigan, by a citizen scientist. Join us for our meetings on the first and third Mondays of each month at Grace United Methodist Church, 245 West Pearl

## SUNDAY WORSHIP AT GRACE UNITED METHODIST CHURCH

Worship Service Time: 9 a.m.

Refreshments served after the worship service

## CONNECT WITH GRACE



# Citizen Science in Our Churches

**A Win – Win – Win!**



- Build trust in science process
- Build bridges between denominations and faiths
- Build capacity for environmental protection

## HOW TO:

- Become aware of science integrity for literacy
- Partner with fellow Christians who are scientists
- Advocate for sound science from the pulpit
- Evaluate current efforts, internal and external
- Start a congregation monitoring program



# Select Literature

- ▶ Carlson, R.E. 2017. "Status and Trends of the Water Quality of Muskingum Watershed Conservancy District Reservoirs." Technical Report in collaboration with Ohio Lake Management Society. <http://olms.org/wp-content/uploads/2017/07/Status-and-Trends-of-the-Water-Quality-of-Muskingum-Watershed-Conservancy-District-Reservoirs-final-071317.pdf>.
- ▶ **Oleskiewicz, D.** 2013. Citizen Scientists Monitor for Harmful Algal Blooms to Protect Human Health, Garner Stewardship, and Strengthen Partnerships [Abstract]. 2013 National Nonpoint Source Monitoring Conference, October 28-30, 2013.
- ▶ **Oleskiewicz, D.** et. al. 2012. Citizen Science in the Muskingum River Watershed, Ohio [Abstract]. The Ohio Journal of Science, Vol. 112 (1). (pp. A-8).
- ▶ Parker, J., R.H. Moore, and M. Weaver. 2007. "Land Tenure as a Variable in Community Based Watershed Projects: Some Lessons from the Sugar Creek Watershed, Wayne & Holmes County, Ohio." *Society and Natural Resources*.
- ▶ Iles, J., McCall R., and **Oleskiewicz, D.** 2007. Things to Consider When Starting a Volunteer Water Monitoring Program. WS-5-08. The Ohio State University Extension Fact Sheet, Columbus, Ohio.
- ▶ Moore, R.H., B.R. Stinner, P.C. Goebel, J.S. Parker, D.M. Hudgins, D.A. McCartney, M. Weaver. 2002. "Social Creek Social Indicators: Tapping Subheadwater TMDL Potential in the Headwaters of the Ohio River." Presented in the proceedings of EMAP (Environmental Measurement and Assessment Program USEPA), at the Symposium 2002: The Condition of Our Nation's Streams and Rivers from the Mountains to the Coast, May 9, Kansas City, MO.
- ▶ Allaire, F., B. Stinner, D. Stinner, J. Hartzler, R.H. Moore, C. Hoy, J. Dorsey, F. Hitzhusen, and M. Weaver. 2001. "Learning Sustainable Development with a Farm Enterprise and Its Community." *Journal of Sustainable Agriculture* 19:65-84.
- ▶ Stinner, D., R.H. Moore, and F. Hitzhusen. 1998. Report of the USDA SARE grant: "Integrating Quality of Life, Economic, and Environmental Issues: Agroecosystem Analysis of Amish Farming". 110 pp.
- ▶ Carlson, R.E. and J. Simpson. 1996. A Coordinator's Guide to Volunteer Lake Monitoring Methods. North American Lake Management Society. 96 pp. [https://www.researchgate.net/publication/244954494\\_A\\_Co-Ordinator%27s\\_Guide\\_to\\_Volunteer\\_Lake\\_Monitoring\\_Methods](https://www.researchgate.net/publication/244954494_A_Co-Ordinator%27s_Guide_to_Volunteer_Lake_Monitoring_Methods).

# Linking Citizens to Science in the Interest of Faith

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*“...do not let wisdom and understanding out of your sight, preserve sound judgment and discretion;”  
Proverbs 3:21 (NIV)*

