



Mason Lake Annual Meeting

WDNR

COLTON HUTCHINSON

SCOTT PROVOST

JENNIFER BERGMAN

LAKE MASON DISTRICT COMMITTEE

Outline

- ▶ Need for a *Mason Lake Management Plan*
- ▶ Survey of Property Owners
- ▶ Fisheries
- ▶ Water Quality

Need for a Lake Management Plan

- ▶ Lake Management Plans have goals for a lake's water quality, habitat, fishery and other important needs and values that users have of the resource.
- ▶ An approved DNR Lake Management Plan allows Lake Districts to be eligible to apply for DNR Surface Water Protection Grants to implement recommended actions in the plan to implement identified recommended actions to achieve goals and objectives.
- ▶ Mason Lake needs a plan.

Survey of Property Owners

- ▶ Required of DNR approved Lake Management Plans.
- ▶ Understand what is important, what are concerns, preferences and understanding of different lake management topics by users of the resource.
- ▶ Survey results help steer the development of the Lake Management Plan.
- ▶ DNR Social Scientist is involved to ensure questions asked are not misleading or biased, must give approval of questions.
- ▶ List of common questions asked by Lake Districts with room to add questions.
- ▶ Typical that Lake District members are only surveyed, yet Mason Lake reached out to property owners in the watershed that may use and value Mason Lake.

Lake District's Survey of Property Owners

Lake District

- ▶ 154 addresses
- ▶ 154 surveys sent
- ▶ 94 responses
- ▶ 61% response rate

Watershed

- ▶ 1553 addresses
- ▶ 1000 surveys sent
- ▶ 206 responses
- ▶ 20.6% response rate

Property Information

Length of Ownership

Answer	Lake District Property Owners	Watershed Property Owners
0-5 Years	28%	20%
6-10 Years	17%	17.5%
11-25 Years	28%	24.5%
Over 25 Years	27%	38%

Property Information

Property Utilization

Answer	Lake District Property Owners	Watershed Property Owners
Year-Round Residence	31%	63%
Seasonal Residence	9%	3%
Weekend or Vacation	43%	16.5%
Resort Property	0%	0%
Rental Property	1%	0.5%
Undeveloped	11%	11%
Other	5%	6%

How Often the Property is Used

Answer	Lake District Property Owners	Watershed Property Owners
0-30 days	27%	18%
31-90 days	23%	9%
91-120 days	12%	5%
121-210 days	12%	4%
211-300 days	2%	2%
301-365 days	24%	62%

Top 3 Activities Most Important

Answer	Lake District Property Owners	Watershed Property Owners
Fishing – open water	71%	55%
Relaxing/Entertaining	53%	30%
Motor boating	37%	9%
Canoeing/Kayaking/Paddleboard	27%	16%
Nature Viewing	22%	37%
Swimming	22%	8%
Ice fishing	21%	30%
Water skiing/Tubing	18%	2%
Other	7%	10%
Hunting	6%	23%
Jet skiing	3%	1%
Snowmobiling/ATV	2%	6%
None of the above	1%	12%
Sailing	0%	0%

Fishing

Types of Fish Caught (last 5 years)

Preferred Fish to Catch

Answer	Lake District Property Owners	Watershed Property Owners
Bluegill/Sunfish	82%	86%
Largemouth Bass	72%	68%
Yellow Perch	57%	51%
Crappie	38%	52%
Northern Pike	32%	25%
Other	19%	11%

Answer	Lake District Property Owners	Watershed Property Owners
Largemouth Bass	73%	58%
Bluegill/Sunfish	64%	72%
Crappie	44%	46%
Yellow Perch	44%	30%
Northern Pike	33%	23%
Other	3%	3%

Fishing

Current Quality of Fishing

Answer	Lake District Property Owners	Watershed Property Owners
Very Poor	18%	21%
Poor	37%	22%
Fair	29%	36%
Good	10%	12%
Excellent	0%	3%
Unsure	6%	6%

How Has Fishing Changed?

Answer	Lake District Property Owners	Watershed Property Owners
Much Worse	38%	33%
Somewhat Worse	39%	24%
Remained the Same	11%	17%
Somewhat Better	1%	11%
Much Better	0%	1%
Unsure	11%	14%

Top 3 Concerns

Answer	Lake District Property Owners	Watershed Property Owners
Water quality degradation	67%	52%
Excessive aquatic plant growth	33%	24%
Aquatic invasive species	31%	38%
Loss of aquatic habitat	27%	27%
Shoreline erosion	26%	12%
Septic system discharge	24%	23%
Algae blooms	19%	18%
Unsafe watercraft practices	14%	13%
Excessive fishing pressure	13%	12%
Other	9%	12%
Shoreline development	7%	15%
Excessive watercraft traffic	5%	10%
Noise/light pollution	3%	5%

Water Quality

Current Water Quality

How Has Water Quality Changed?

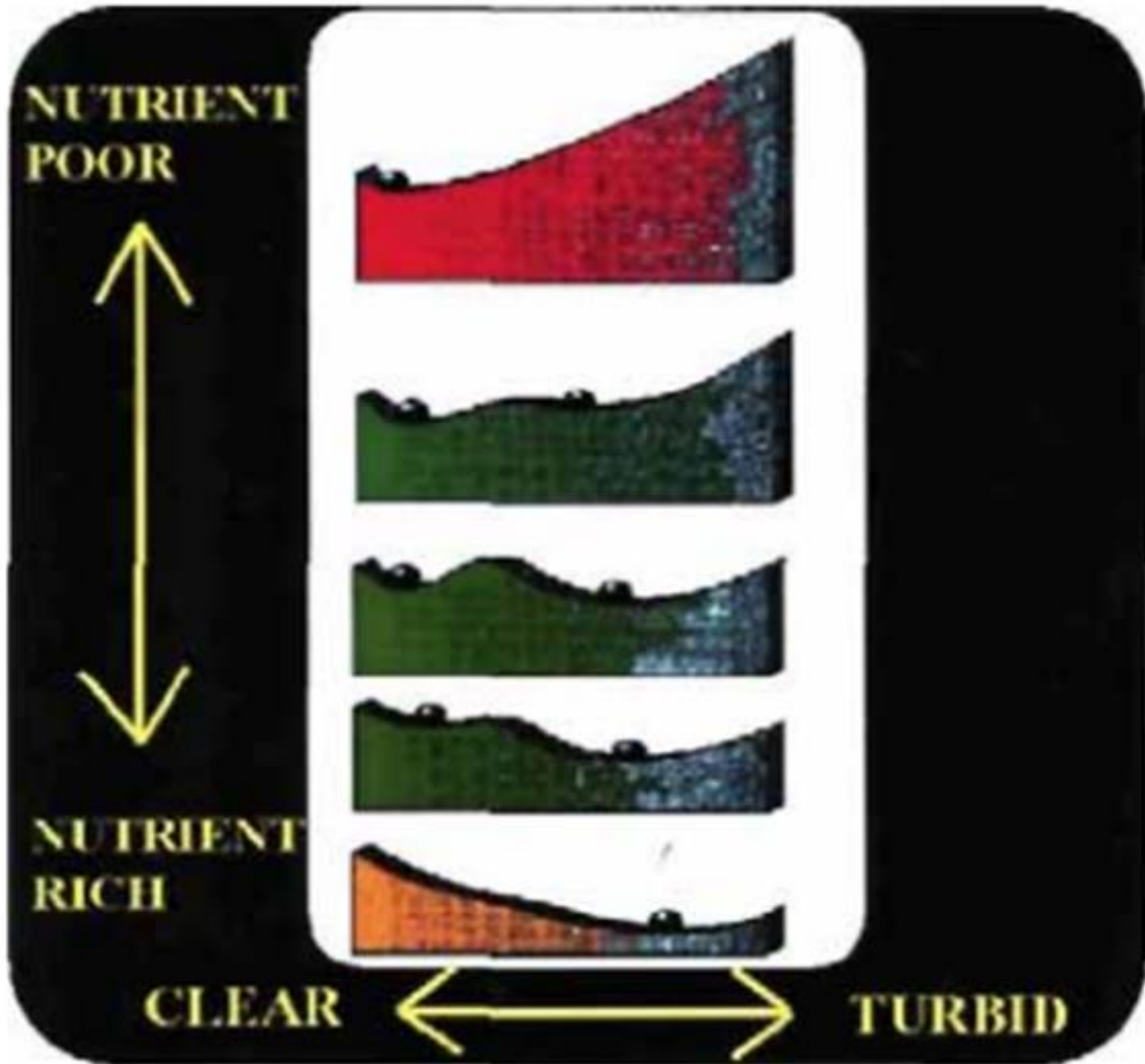
Answer	Lake District Property Owners	Watershed Property Owners
Very Poor	16%	4%
Poor	30%	14%
Fair	41%	33%
Good	9%	12%
Excellent	0%	1%
Unsure	4%	36%

Answer	Lake District Property Owners	Watershed Property Owners
Severely degraded	11%	6%
Somewhat degraded	35%	23%
Remained the same	32%	19%
Somewhat improved	5%	5%
Greatly improved	1%	1%
Unsure	16%	46%

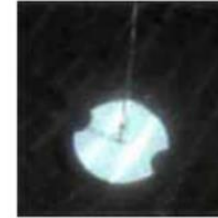
Top Concern with Water Quality

Answer	Lake District Property Owners	Watershed Property Owners
Overabundance of Aquatic Plants	33%	18%
Water Clarity	25%	40%
Not Enough Aquatic Plants	12%	6%
Other	10%	9%
Water Levels	9%	4%
Algae Blooms	6%	9%
Water Color	2%	1%
Fish Kills	2%	7%
Smell	0%	5%

Shallow Lakes' States



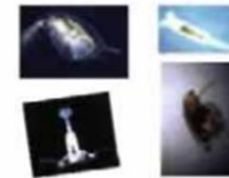
Plant-Dominated State



Clear Water



Plants Proliferate

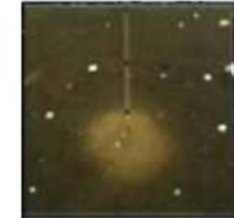


More Zooplankton



Balanced Fishery with good numbers of Top Predators

Algal-Dominated State



Turbid Water



Algae Proliferates



More Phytoplankton (Algae)



Unbalanced Fishery dominated by small fish and Carp

In-Lake Restoration

Fisheries Management

VALUE STATEMENT: A self-sustaining fishery restored, monitored, and protected by protecting high quality aquatic plant communities and managing angler harvests.

GOAL: Restore and protect a healthy self-sustaining bluegill, largemouth bass, crappie, yellow perch, and northern pike fishery.



In-Lake Restoration

CARP POPULATION ESTIMATE: In late-fall 2022, conduct a mark-recapture carp survey to get a carp population estimate (PE).

DEVELOP A ROUGH FISH/FISHERIES MANAGEMENT PLAN:
A separate planning effort.

ROUGH FISH SUPPRESSION & ERADICATION:
All options/actions mentioned for rough fish suppression and eradication (chemical treatment) in the Lake Management Plan. Actions will require DNR Surface Water Grants and Lake District Funds.



In-Lake Restoration

FISH STOCKING: Stocking as needed for the fishery and biomanipulation purposes. Lake District funds and DNR Grants will be needed for fish stocking and any fish restocking (chemical treatment). DNR hatcheries can provide some northern pike, but do not raise other fish species and must buy fish from private producers. Restocking likely require wild fish transfer, which could be costly.

FISHING REGULATIONS: Fishing regulations to promote a balanced fishery and for biomanipulation purposes on carp and gizzard shad. Signage at launches.



Lake Mason Water Quality

WDNR

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Previous Reports:



Lake Mason Folks



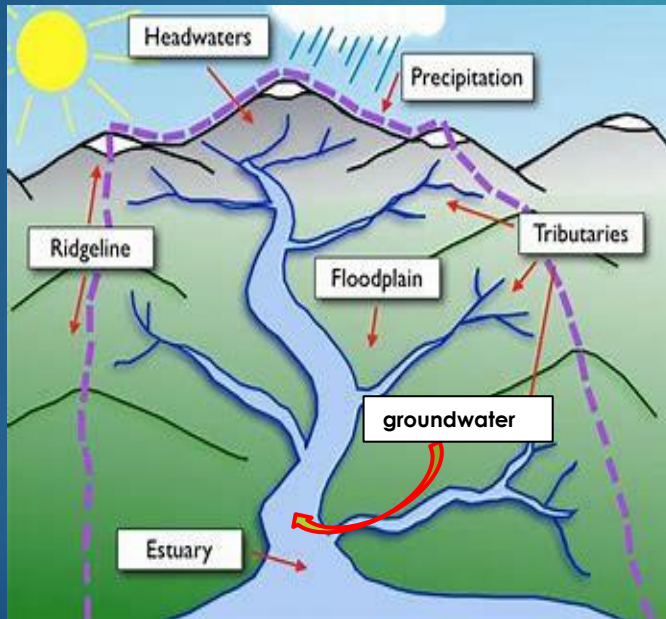
Water quality starts on land



Watershed Management!

First let's define "watershed"

A LAND MASS THAT DRAINS TO A WATERBODY DEFINED BY TOPOGRAPHICAL RIDGE. COULD BE SMALL OR LARGE TO THE POINT OF BEING REFERRED TO AS A BASIN THE WATER DRAINING THROUGH THE LAND, BECOMES THE WATER TO A LAKE OR RIVER.



Lake Mason's Watershed (29.74 mi²)

22



PHOSPHORUS

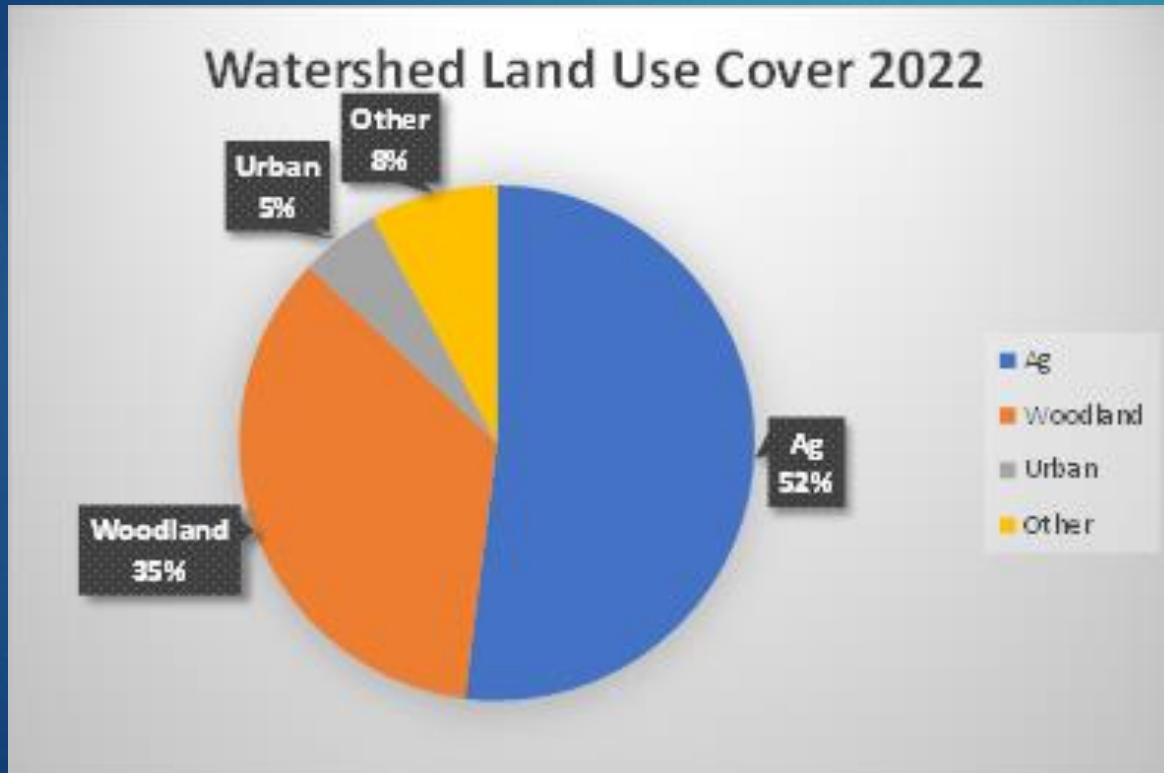
Model predictions: 2,443 pounds/year
(80% confidence interval)
(1174-5083 lbs/year)

UFRB/WRB TMDL:
no more than 1,312 pounds/year
~ < 2x

Standard 40 ug/l
Currently 108 ug/l
2.5x Why? Internal?



What is the land use? Glad you asked:

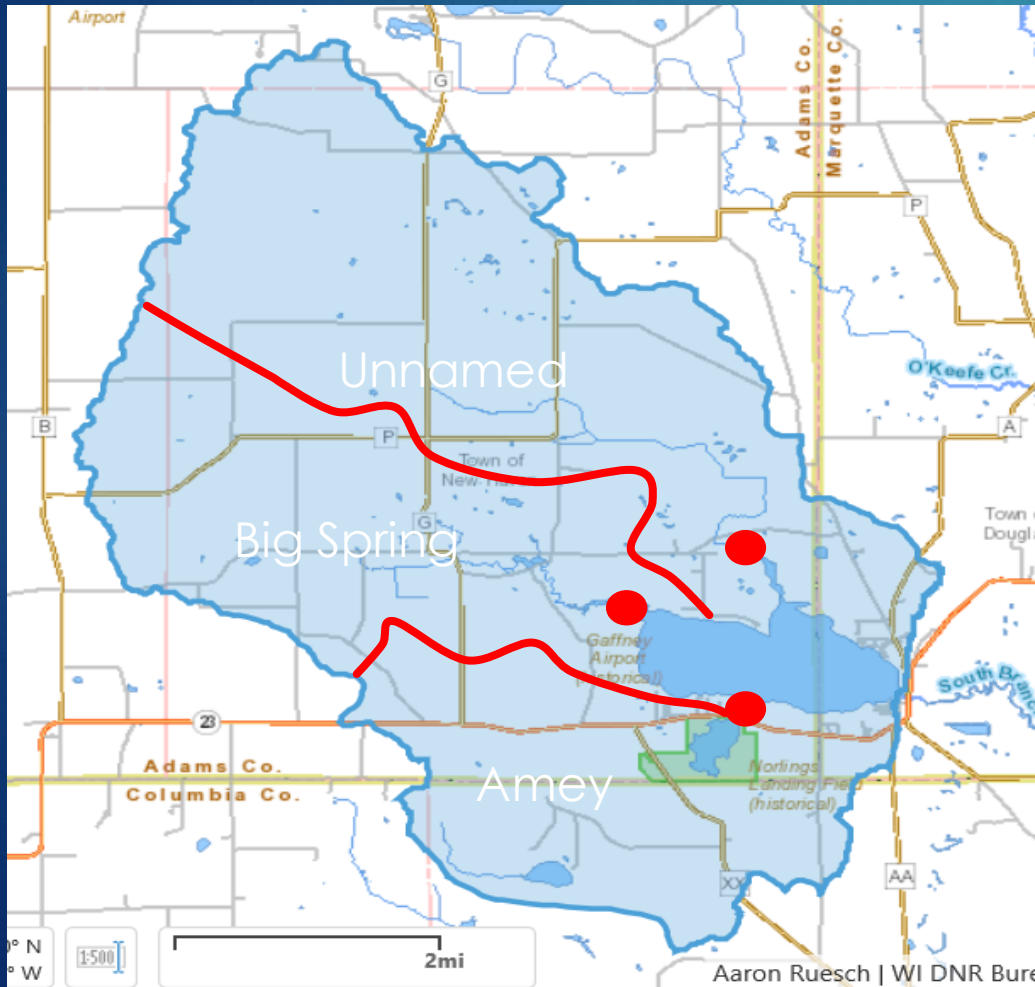


Urban and Rural NPS

- Stormwater
- Lawn
- POWTS
- Agriculture

NO Point Sources

Refine the Search: Breakdown to three sub-watersheds



Unnamed:
11.3 mi²
~1,251 lbs
110 lbs/mi²*

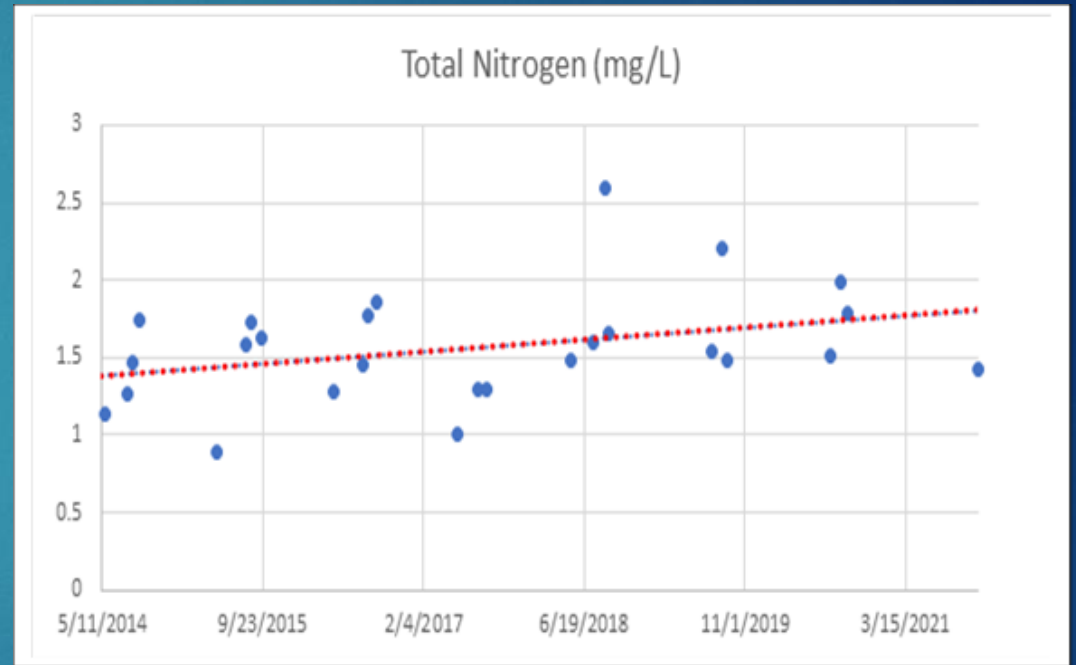
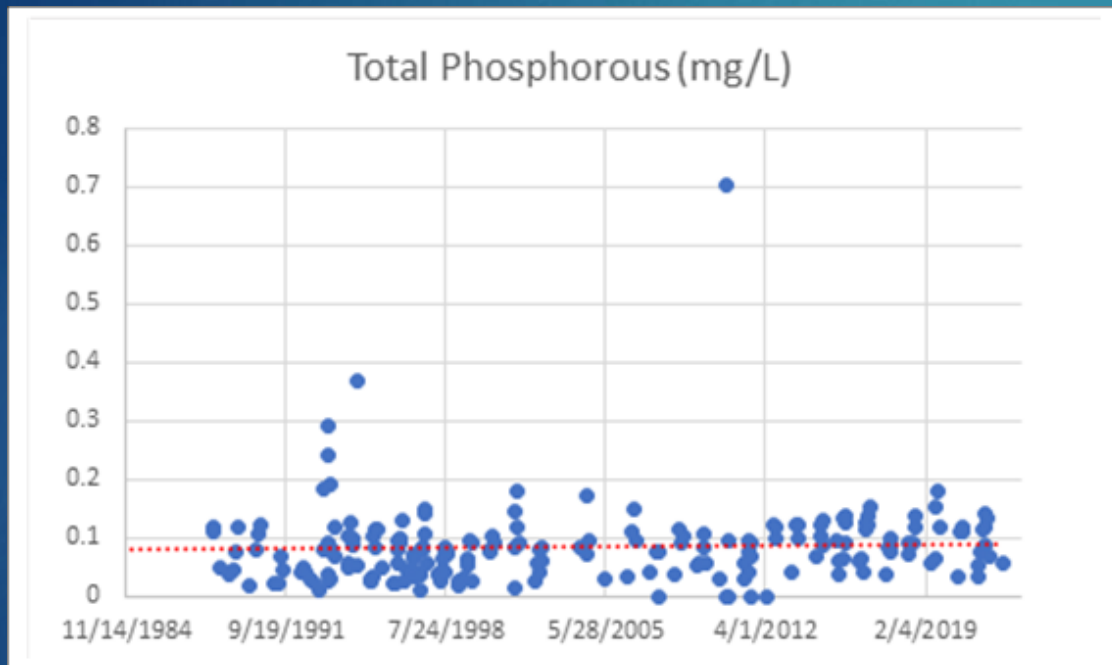
Identify site specific sources
Collaborate and participate
Lake improvement money
need not be on the lake

Big Spring:
7.7 mi²
~956 lbs
124 lbs/mi²

Amey:
6.1 mi²
~1,518 lbs
248 lbs/mi²

* Not a typical management metric

Water Quality Records

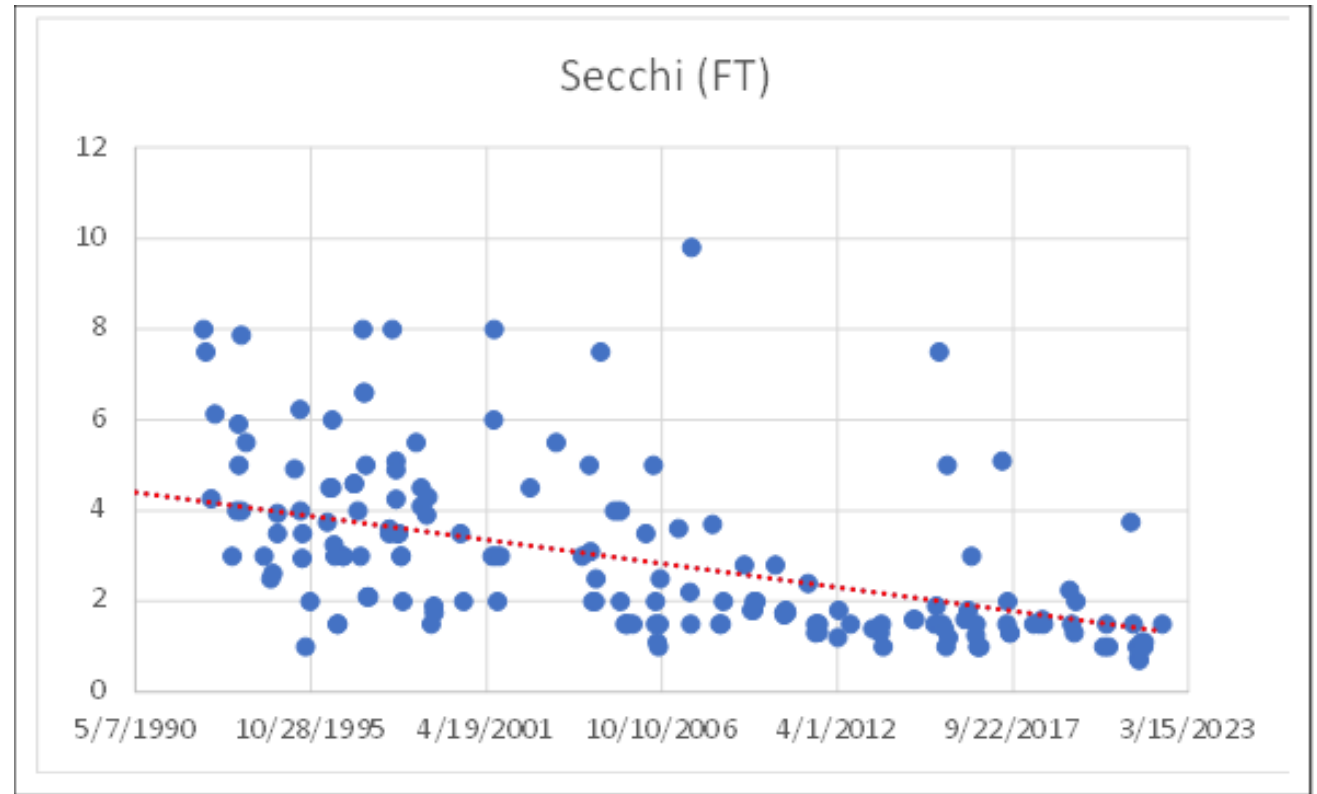


Something learned: Lake Mason becomes N limited during the growing season
So what!

N:P Ratios

- ▶ ~90% of WI lakes P limited
- ▶ Mason P limited cool months
- ▶ Mason N Limited growing season
- ▶ Why?
- ▶ Internal Loading? Probably

- ▶ REMEMBER External loading is just under twice according to model.
- ▶ Actual in lake is 2.5x



Something learned: Need a site specific N standard as a goal

Implementation: Time to do...

- COLLABORATE WITH COUNTY LWCD, DNR, DATCP
- PARTNER WITH PRODUCERS
- INVEST IN WATERSHED MANAGEMENT (money and human capital)
- INVEST IN FISH MANAGEMENT (carp and shad removal to reduce internal loading)
- ENCOURAGE AQUATIC PLANT GROWTH (nutrient attenuation)
- APM MUST INCLUDE REMOVAL (reduce internal loading)

Thank you, but before we go...

Sports Quiz!

- ▶ Where does water quality start?
- ▶ What's the best approach?
- ▶ How do we address NPS Challenges?