Fruitland Township E-News

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www.fruitlandtwp.org

April 19, 2016

FRUITLAND TOWNSHIP CEMETERY

Please take notice that all winter decorations from grave sites within the Fruitland Township Cemetery, located at the intersection of Bard and Lorenson Roads, must be removed no later than April 15, 2016 for spring maintenance, according to Fruitland Township Regulatory Ordinance R7 Section 7.05.

Decorations and plants that are not removed will be properly disposed of by the Fruitland Township maintenance personnel. Summer decorations of burial spaces shall be placed after May 15, 2016 and be removed no later than October 1, 2016 for fall maintenance.

FRUITLAND TOWNSHIP DISCOUNT DUMP DAYS

$5.00 FOR ONE TRIP - ANY SIZE LOAD

June 1, 2016 - June 29, 2016

Fruitland Township residents/property owners may pick up and pay for their $5.00 discount dump card at the Fruitland Township Hall ***beginning May 2, 2016.***
Office hours are:
Monday-Thursday 8:00 a.m. – 4:00 p.m.
and Friday 8:00 a.m. – Noon

The card entitles you to one trip to the Fruitland Township Sustainability Center with any size load for $5.00 during the month of June 2016. You must bring the discount dump card with you to get the $5.00 deal.

NOT ACCEPTED:
Appliances with Freon, stumps, paint, cement, aerosol cans,
propane tanks, hazardous waste, medicine bottles.
Charges will apply for tires.

FRUITLAND TOWNSHIP RESIDENTS ONLY

WHITE RIVER LIGHT STATION

The White River Light Station opens for the season on May 27th at 10:00 a.m. Hours are Tuesday-Sunday from 10:00 a.m. – 5:00 p.m., closed on Monday. Prices to tour the museum and climb the tower are $5 for adults and $2 for children 12 and under. There are many events scheduled for the summer of 2016:

Friday, June 17, 2016: Yoga on the Lawn at the White River Light Station starting at 9:30 a.m. The session will be conducted by White River Yoga. Bring your yoga mats or large towels and water to drink and join SPLKA for Yoga. Rain date: Friday, June 24, 2016.

Friday, July 8, 2016: Yoga on the Lawn at the White River Light Station starting at 9:30 a.m. The session will be conducted by White River Yoga. Bring your yoga mats or large towels and water to drink and join SPLKA for Yoga. Rain date: Friday, July 15, 2016.

Thursday, July 14, 2016: Bring your chairs for an evening concert featuring Sweet Wednesday beginning at 7:00 p.m. Sweet Wednesday's songs spin tales that allow the listener to peek into the human soul in its most intimate and musical moments. Singer song writer Dave Falk and Lisa Housman met in 2001 and immediately knew there was a songwriting, performing chemistry at work. Since then, the duo has released three albums to critical acclaim, toured extensively and been featured on radio and television programs throughout the U.S. and abroad. The light station will be open additional hours July 14th from 6:00-8:00 p.m. Rain location: Fruitland Township Hall, 4545 Nestrom Road.

Saturday, July 23, 2016: Bring your chairs for an afternoon concert featuring W.M. I Dulcimer Friends beginning at 2:00 p.m. They are a group of acoustic musicians that between them have decades of experience playing folk music, the music of our ancestors handed down through time. This is the music played in grange halls for square dances. The musicians will be playing dulcimers, guitars, and fiddles to mention a few. They play for the love of music. Bring the family, your blankets or lawn chairs and enjoy an afternoon of folk inspired music while visiting and exploring the White River Light Station. The museum and tower will also be open for the standard admission charge. Rain location: Fruitland Township Hall, 4545 Nestrom Road.

Thursday, July 28, 2016: The WRLS will hold an evening concert featuring Wyatt and Shari Knapp beginning at 7:00 p.m. Known for their sparkling vocals, lush harmonies, and tasteful blend that sets them apart, this personable and engaging husband-wife duo has warmed the hearts of audiences throughout Michigan and beyond. While remaining true to their traditional and Americana roots, their music reaches into genres as rich and diverse as bluesy folk, "high lonesome" bluegrass, and timeless classics of the 1940's. Shari's rhythm guitar provides a pleasing foundation for Wyatt's finger-style and flat-picking guitar leads, as the two serve up fresh arrangements of obscure covers, time-tested favorites and original tunes for audiences of all ages. Remember to bring your lawn chairs. The light station will be open additional hours July 28th from 6:00-8:00 p.m. Rain location: Fruitland Township Hall, 4545 Nestrom Road.

Friday, August 5, 2016: Yoga on the Lawn at the White River Light Station starting at 9:30 a.m. The session will be conducted by White River Yoga. Bring your yoga mats or large towels and water to drink and join SPLKA for Yoga. Rain date: Friday, August 12, 2016.

Friday, August 5, 2016: Bring your chairs for an evening concert featuring Roadside Buskers beginning at 7:00 p.m. Roadside Buskers is an acoustic duo that speaks to the heart of Americana and folk music lovers. David Lytle and Ruthie Eilers deliver a high-energy musical experience that ranges from acoustic blues and ballads to songs of the heartland and the struggles of the human spirit. David's driving rhythm guitar and vocals combine with Ruthie's powerful voice and mandolin to bring a duo that is fiery and soulful. The light station will be open additional hours August 5th from 6:00-8:00 p.m. Rain location: Fruitland Township Hall, 4545 Nestrom Road.

Saturday, August 6, 2016: The WRLS will hold an evening concert featuring Bob Hauslar beginning at 7:00 p.m. Bob has had a fantastic career with the opportunity to work with some of the finest musicians in the world. He puts his heart in every performance, from the smallest house concert to the largest stage. He knows it's all about being in the moment. Most of all he wants to please his audience and let them experience the music in their own unique way. Bob is always open to new and exciting ways to share the music. Remember to bring your lawn chairs. The light station will be open additional hours August 6th from 6:00-8:00 p.m. Rain location: Fruitland Township Hall, 4545 Nestrom Road.

Township Meetings for May 2016

Monday, May 2, 2016 – Parks & Recreation Commission – 7:00 p.m.
Thursday, May 5, 2016 – Planning Commission – 6:30 p.m.
Monday, May 9, 2016 – Township Board Work Session – 10:00 a.m.
Monday, May 16, 2016 – Township Board – 5:00 p.m.

Fruitland Township Offices will be closed Monday, May 30, 2016 in observance of Memorial Day.

MUSKEGON COUNTY RECYCLING EVENT

Please see the flyer on the next page for more information on the Muskegon County Recycling Event taking place on Saturday, April 23, 2016 from 9:00 am to 1:00 pm.

MUSKEGON COUNTY
RECYCLING EVENT

SATURDAY • APRIL 23, 2016 • 9AM - 1PM

RAIN OR SHINE*

FREE TO COUNTY RESIDENTS ONLY

BUSINESS WASTE AND REGULAR TRASH NOT ACCEPTED**

SCRAP TIRES

No larger than 34" in diameter (car and truck tires only) and no more than 7 tires per household (with or without rims).

HAZARDOUS WASTE

Including mercury, petroleum products, antifreeze, pesticides, herbicides, acids, bases, CFL and fluorescent light bulbs, and oil based paint products. Must be in containers no greater than 6 gallons; NO drums of any kind. Latex paint will be accepted.

ELECTRONICS

Including computers, peripherals, TV's, and other electronic devices.
Visit: *www.valleycityer.com/equipment-accepted* for a full listing of accepted items.

SENSITIVE DOCUMENT SHREDDING

Bring up to 100 lbs of sensitive documents (paper clips and staples ok) to have shredded onsite.

*Severe weather may cause a halt or shut down of the event as determined by the event coordinator.

**Event staff reserve the right to limit any collected materials and refuse apparent business waste.

VISIT: WWW.CO.MUSKEGON.MI.US/HHW OR CALL: 231-724-6001

Funding for this event:
Muskegon County Solid Waste

DCWA Newsletter – Spring 2016

2015 CLMP Results

Water quality and trophic status

Figure 1 summarizes the data from last year's Cooperative Lakes Monitoring Program (CLMP). The results show that little change has occurred in the lake's trophic status (productivity, or degree of nutrient enrichment), whether measured by water clarity (Secchi disk), algal abundance (chlorophyll-a), or nutrient availability (total phosphorus). Water quality remains high, and biological productivity is sufficient to support diverse plant and animal communities.

Oxygen is depleted at depths below about 20 ft during the warmer months. This results when warming of surface waters divides the lake into zones of different densities: a warm, less dense upper layer underlain by a cold layer of higher density. The density difference inhibits vertical mixing and isolates deeper waters from contact with the atmosphere. Oxygen depletion occurs as dead plant cells and other detritus sink to the bottom and undergo bacterial decomposition. The nutrients that are released by this process remain in the depths until Fall cooling breaks down the layering and allows the lake to 'turn over'.

There is no evidence of a need to change management practices, as long as nutrient inputs from external sources remain near current levels. Duck Lake benefits enormously from its largely undeveloped northern shore, as well as from the absence of high-density development elsewhere. Other positive factors include low-density development upstream in the watershed and little agriculture; a wide, wooded buffer strip along Duck Creek below Simonelli Road; and the wetland through which the creek flows between Orshal and Nestrom Roads. All these factors act to limit nutrient inputs from Duck Creek.

The DCWA's monitoring efforts will continue in 2016, provided we can maintain the necessary level of volunteer participation. You can be a part of this effort, even if you can only spare a few hours. Please consider volunteering (email@dc-wa.com).

Exotic plant watch

We are pleased to report that last year's survey did not turn up any new introduced aquatic plants in Duck Lake (see Figure 2). However, the lake remains under constant threat of new introductions, mostly because boats and gear that see use in other water bodies are regularly launched from the State

Park. For example, curly leaf pondweed is present in nearby White Lake, albeit not at nuisance levels, and hydrilla occurs in northern Indiana lakes.

Efforts to combat the spread of aquatic invasive species, both plants and animals, is intensifying at the State level. Look for upcoming information on the DCWA website and Facebook page about what we can do locally to help protect our lake.

In 2016, DCWA will continue to undertake surveys of Duck Lake's plant community, using both rake sampling and SCUBA observations, in order to get early warning of any new introductions. Please let us know if you are interested in assisting with this effort (email@dc-wa.com).

Shoreline assessment

Last year saw the kick-off of shoreline assessments as part of MiCorps' program of volunteer lake monitoring. As Figure 3 shows, Duck Lake was one of the pioneer participants, scoring higher than other lakes taking part in the inaugural round. Lakes with higher scoring shorelines exhibit better water quality and healthier, more diverse plant and animal communities.

Higher scores in this type of assessment are associated with shorelines that are more natural, ones with native-plant buffer strips at the water's edge to limit run-off; rooted aquatic plants such as reeds and water lilies in the shallows to stabilize the bottom; and large woody debris to provide habitat for amphibians, small fish, shore birds, etc.

Lower scores are associated with 'hardened shorelines' such as sea walls, manicured lawns that extend to the water's edge, and eroding soils.

While some of Duck Lake's southern shore has desirable characteristics, it is the largely undeveloped northern shore that contributes most to the lake's favorable rating overall. To learn more about shoreline management practices and their impact, a good place to start is Michigan's Natural Shoreline Partnership (http://www.mishorelinepartnership.org/).

Central Michigan University students conduct research on Duck Lake

Site Id: 610778

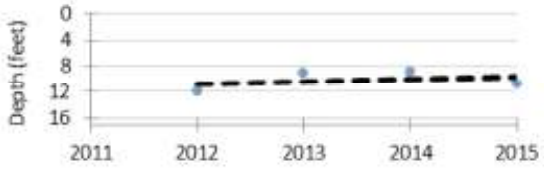
Duck Lake, Muskegon County

2015 CLMP Results

Cooperative Lakes Monitoring Program

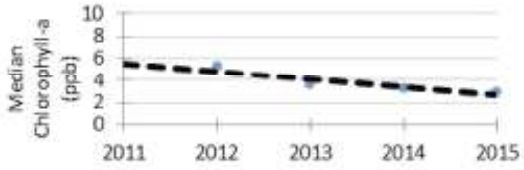
Secchi Disk Transparency (feet)

Year	# Readings	Min	Max	Average	Std. Dev	Carlson TSI
2015	15	8.5	14.0	10.7	1.6	43
2010-2014	47	6.0	14.5	9.9	1.3	44
2015 All CLMP Lakes	3018	1.5	42.0	12.6	6.1	42



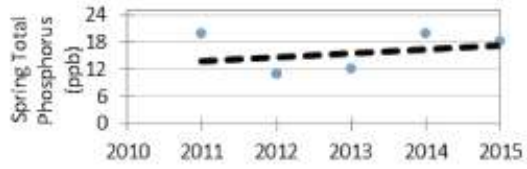
Chlorophyll-a (parts per billion)

Year	# Samples	Min	Max	Median	Std. Dev	Carlson TSI
2015	5	1.1	4.6	2.9	1.4	41
2010-2014	14	1.8	7.8	3.6	1.6	43
2015 All CLMP Lakes	628	< 1.0	14.0	2.5	2.1	39



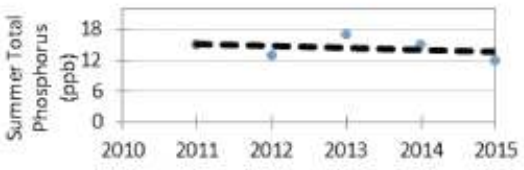
Spring Total Phosphorus (parts per billion)

Year	# Samples	Min	Max	Average	Std. Dev
2015	1	18	18	18.0	NA
2010-2014	5	11	20	14.8	4.8
2015 All CLMP Lakes	131	<= 3	70	11.5	13.7

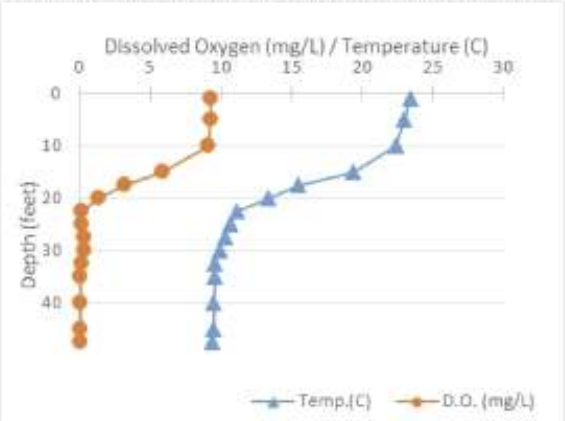


Summer Total Phosphorus (parts per billion)

Year	# Samples	Min	Max	Average	Std. Dev	Carlson TSI
2015	1	12	12	12.0	NA	40
2010-2014	4	13	17	15.0	1.6	43
2015 All CLMP Lakes	173	<= 3	68	13.2	8.1	39



Dissolved Oxygen and Water Temperature Profile: June 2015



Summary

Average TSI	2015	2010-2014	1974-2009
Duck Lake	41	43	NA
All CLMP Lakes	40	NA	NA

With an average TSI score of 41 based on Secchi transparency, chlorophyll-a, and summer total phosphorus, this lake is rated as a mesotrophic lake. The lake loses dissolved oxygen in the bottom waters in early summer.

There is too little data to assess long term trends. However, the trend from recent years shows a lake that is stable. It is possible that chlorophyll may be decreasing as the sample values have decreased consistently for 4 years.

*= No sample received W= Value is less than the detection limit (<3 ppb) T= Value reported is less than the reporting limit (5 ppb). Result is estimated.
<1 = Chlorophyll-a: Sample value is less than limit of quantification (<1 ppb).

Figure 1. Water quality and trophic status

Site Id: 610778

Duck Lake, Muskegon County

2015 Exotic Aquatic Plant Watch Results

Cooperative Lakes Monitoring Program

The Exotic Aquatic Plant Watch was conducted on Duck Lake in 2015.

This survey involves sampling at multiple locations around the lake to detect new invaders, and document the extent of known invaders. While notes on other plant species may be recorded during the survey, the effort focuses on four highly invasive species: Eurasian watermilfoil (*Myriophyllum spicatum*), starry stonewort (*Nitellopsis obtusa*), curly-leaf pondweed (*Potamogeton crispus*), and Hydrilla (*Hydrilla verticillata*).

The table below summarizes the results of the 2015 Exotic Aquatic Plant Watch on Duck Lake.

Duck Lake, Muskegon County

2015 Exotic Aquatic Plant Watch Results

Survey Dates: July 5

Species	Status	Comments
Eurasian watermilfoil	FOUND	At township park beach, State Park boat launch, and Marcus Park beach
Starry stonewort	Not found	
Curly-leaf pondweed	Not found	
Hydrilla	Not found	

Visit the MiCorps Data Exchange (www.micorps.net) or contact the lead volunteer on your lake for more details on the survey, including sampling locations, maps, and abundance information, and for information on past surveys.

Figure 2. Exotic plant watch

Site Id: 610778

Duck Lake, Muskegon County

2015 Score the Shore Results

Cooperative Lakes Monitoring Program

The Score the Shore Habitat Assessment was conducted on Duck Lake in 2015.

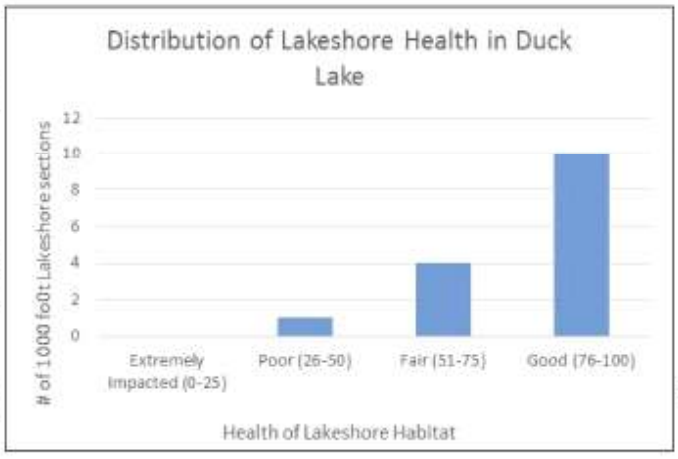
This assessment involves rating 1000 foot sections of shoreline for aquatic vegetation, shoreline vegetation, erosion, and erosion control practices (like sea walls). Each shoreline section is given three scores ranging from 0-100 for the categories of Littoral, Riparian, and Erosion Management. The three scores are averaged to produce a average section score. Then a total score is given to the entire lake by averaging all of the average section scores. A score of 0 indicates a shoreline that has been extremely disturbed by human impacts and no natural shoreline remains. A score of 100 indicates a shoreline that is nearly pristine.

**Note for 2015 volunteers: CLMP staff scaled all of your observations to a 0-100 scale to make interpretation easier. In the future, this will be a standard practice that volunteers do themselves.*

In 2015, seven lakes participated in the Score the Shore parameter. The following table shows a comparison of all of the lakes (sorted by total score, highest to lowest).

Lake	# of Lakeshore Sections	Houses/Docks per 1000 ft	Averages			
			Total Score	Littoral	Riparian	Erosion
Duck	15	5.9	79	67	82	87
Deer	13	11.0	74	80	65	77
Independence	36	8.2	71	64	70	79
Pleasant	15	13.2	58	50	52	73
Stony	20	15.7	55	55	44	65
Klinger	25	28.0	48	39	50	56
Eagle	7	67.1	42	45	27	56

Analysis specific to Duck Lake:



Duck Lake scored well in the riparian score, meaning that (in general) there were plentiful non-mowed areas. Duck Lake also scored well in erosion management, meaning that there was a low amount of sea walls and other shoreline erosion structures.

The weakest point of Duck Lake assessment was the littoral zone (shallow water near the shore). Increasing aquatic vegetation, allowing fallen trees to remain in the water, and reducing shoreline erosion would be the primary way to boost the this score. A score of 67 for the littoral zone is not bad, but if residents in Duck Lake want to improve the overall shoreline quality, this is the component to concentrate on.

There was one 1000 foot section that was particularly problematic in Duck Lake. The graph above shows that 14/15 of the 1000 foot sections score either a Fair (score of 51-75) or Good (score greater than 75), but one section scored as Poor (score of 26-50). This section was section 5, which had a total score of 41 (littoral score of 50, riparian score of 27, and shoreline management score of 44). The full score breakdown for each section can be obtained by requesting it of Paul Steen (psteen@hrwc.org).

Figure 3. Shoreline quality assessment

$460,000 Conservation Project to Protect Duck Creek

In a major step forward for watershed protection, the Land Conservancy of West Michigan (LCWM) recently announced an award of $325,000 in federal funds from the Michigan Department of Environmental Quality for the project "Duck Creek Protection, Information, and Outreach". Local match in the amount of $135,000 brings the total project funding to $460,000.

The LCWM will partner with the Muskegon Conservation District and the Duck Creek Watershed Assembly to implement the project's objectives.

The project will focus on three goals:

- protect priority natural land in the watershed by means of a permanent conservation easement
- increase public awareness and understanding of water quality issues in the watershed
- incorporate recommendations from the Watershed Management Plan into local master plans and zoning ordinances

The project will lead to one or more conservation easements written to protect water quality in Duck Creek through restrictions on incompatible uses and the preservation of natural vegetation and wetlands along the stream.

The Duck Creek Watershed Assembly is named as a Supporting Partner for several tasks in the project work plan. These include implementation of education activities; improvements to the DCWA website; enhancements of the DCWA newsletters; preparation of press releases; and development and distribution of informational packets for riparian landowners.

Contributed by April Scholtz, LCWM

Michigan's Adventure Update

Recent inquiries by several DCWA members to Michigan's Department of Environmental Quality (DEQ) found that the agency has yet to take action on Michigan's Adventure's (MA) application to increase its discharge of treated sewage severalfold. It is DCWA's position that the permit should be denied, given the following circumstances: 1) the discharges are being, and will be, made into highly permeable soils that overly a shallow groundwater aquifer at the headwaters of Duck Creek; and 2) the waste stream can instead easily be connected to the regional sewer line that passes within a few yards of MA's current treatment facility.

Representatives of DCWA intervened at a public hearing on the matter that DEQ convened in Autumn 2015. We will continue to follow up and report on the situation.

Duck Creek Watershed Assembly – Spring / Summer 2016

We are reaching out to neighbors adjacent to Duck Lake and Duck Creek for the purpose of getting assistance with Lake & Stream monitoring jobs. Our volunteer numbers are inadequate for the jobs that need to be done for water quality assurances.

We need people to assist with the following jobs:

1. Creek macro invertebrate sampling – once in the spring & once in the autumn. Creek wading & netting is involved.
2. Lake Dissolved Oxygen & Temperature monitoring – twice monthly, May thru September. Boating is involved.
3. Lake Chlorophyll-a sampling – mid-monthly, May thru September. Boating is involved.

If you are willing to spend some time to be trained to assist, we would appreciate it; otherwise, this important work may not be done because there are not enough volunteers to do the sampling / monitoring.

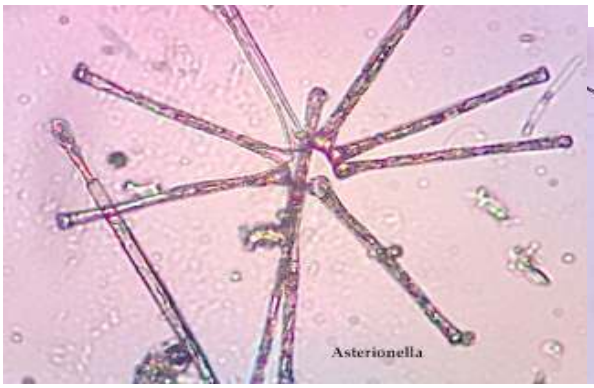
Monitoring activities follow protocols developed by the Michigan Clean Water corps (MiCorps) for use by volunteer groups statewide. These protocols include quality assurance provisions that help ensure the reliability and comparability of the data produced. Go to micorps.net if you would like more information.

No prior experience or scientific background is required. DCWA will provide you with the training and guidance needed.

Please contact Chris Deur 231-744-7775 or email me at janchrisdeur@yahoo.com THANKS!

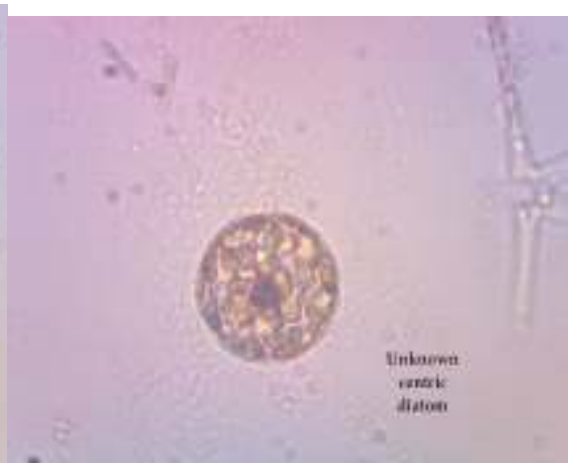
Spring phytoplankton

Collected in late February from the outlet channel at Duck Lake.


Asterionella


Fragillaria


Stephanodiscus (?)


Unknown
centric
diatom

These are microscopic green plants (algae) called diatoms that make "glass houses" for themselves from silica. They are at the base of the food chain and are critical food sources for zooplankton that in turn provide nutrition for larger animals such as fish. They tend to dominate the phytoplankton community in the early part of the year because of their tolerance for low light levels and cold temperatures.