



Taylor Pond

An Introduction to the pond

Dana Little

“A lake is a landscape's most beautiful and expressive feature. It is Earth's eye; looking into which the beholder measures the depth of [their] own nature.”

Henry David Thoreau

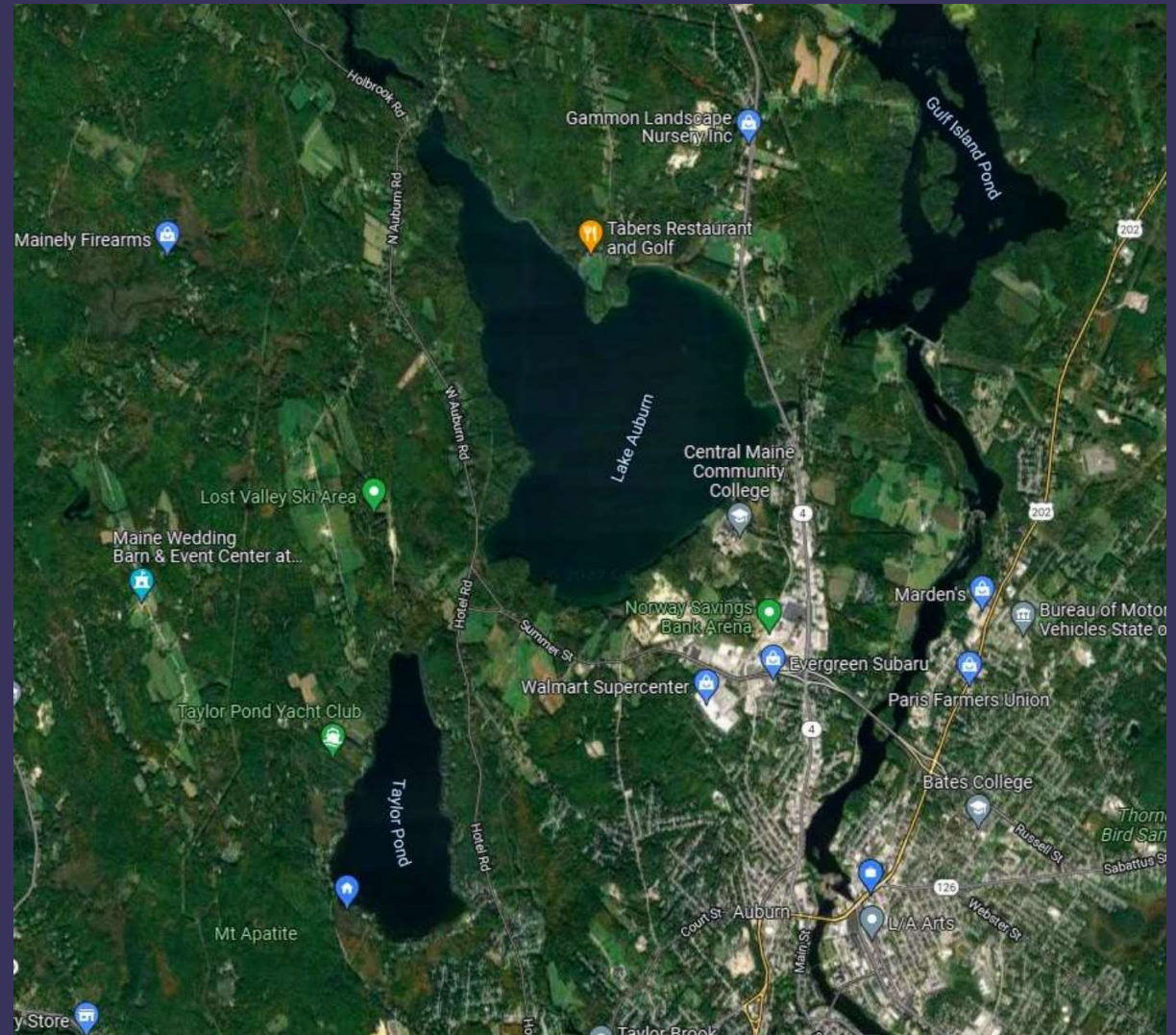


Lake vs. Pond

No precise definition.

Pond: shallow enough for light to reach the deepest part and support plants.

Lake: deep enough that plants do not grow on part of the bottom.



Taylor Pond

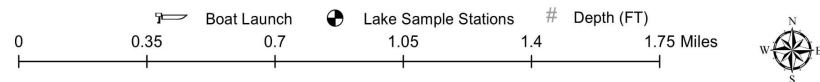
- Depth: greatest 44 feet, mean 17 feet, much is under 6 feet.
- Roughly 2 miles long and 1 mile wide
- 5.4 miles shoreline
- 625 acres



Taylor Pond

MIDAS # 3750

Auburn, Androscoggin Co. - Delorme Page 11 - 653 acres



Lake Auburn

- Depth: greatest depth 118 feet, mean depth is 36 feet.
- Roughly 3 miles long and 1.6 miles wide
- 12 miles shoreline
- 2,277 acres

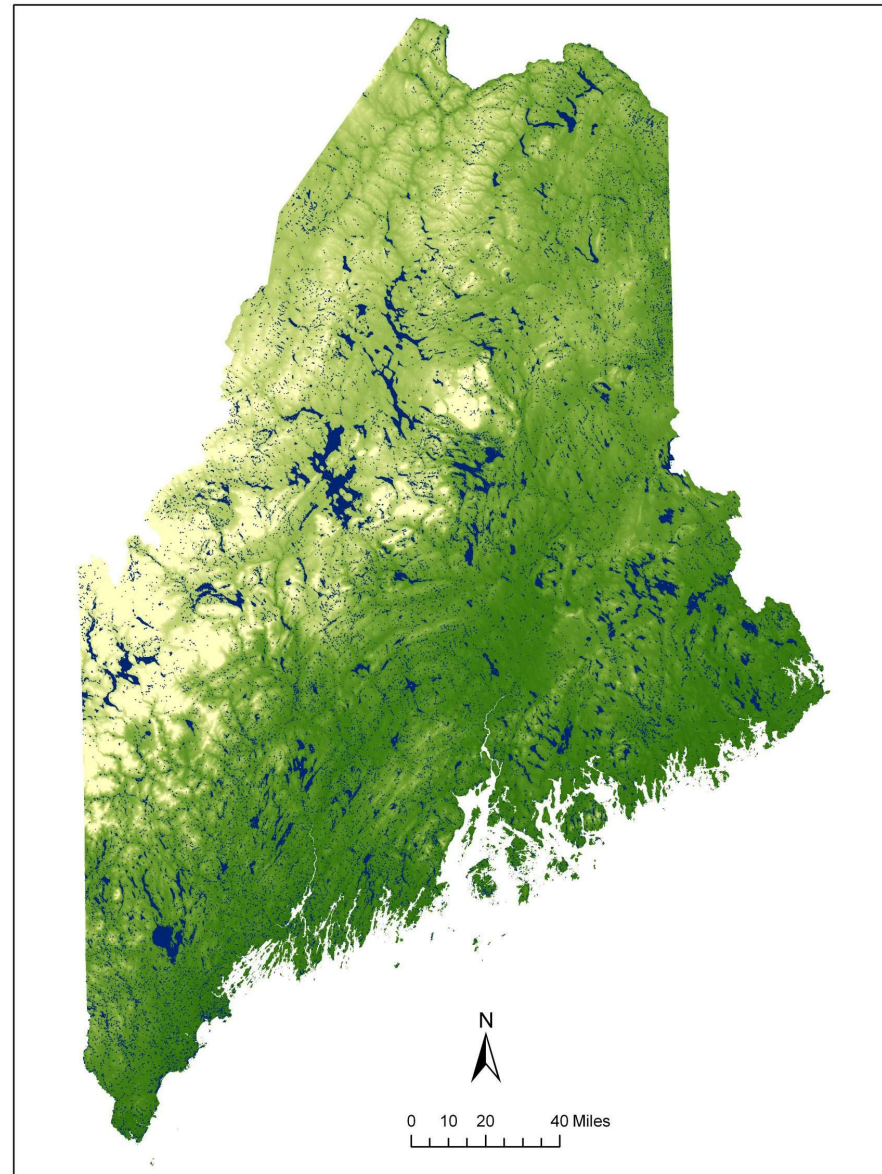


Lake Country

Maine has 5,785 lakes.

1 million acres of fresh water.

5% of the state is open water.



Value

\$11 billion dollars

- Recreation
- Lake-front property
- Tax revenue
- Drinking water
- Commercial use
- Aesthetic



Drinking Water

(Lake Auburn photo)

- 64% of Maine's drinking water comes from lakes
- 58% is unfiltered

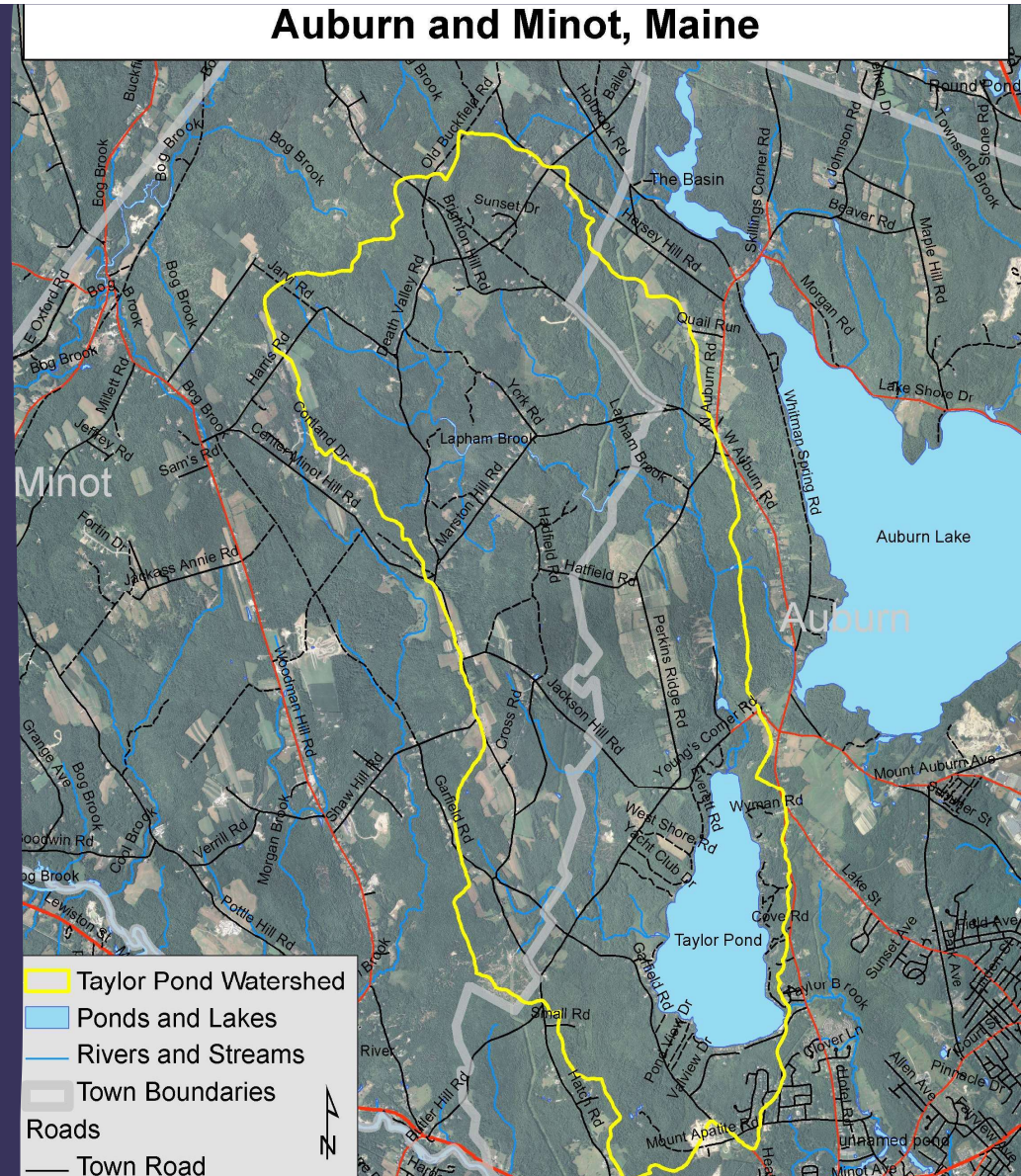


Taylor Pond Watershed

Watershed (the area of land draining into Taylor Pond):

- 13.58 square miles in Minot and Auburn.
- 76% is natural “undeveloped” vs. 69% for Lake Auburn

Auburn and Minot, Maine



Inlet: Lapham Brook & Hodgkin's Brook

Outlet: Taylor Brook

Summer Temperature

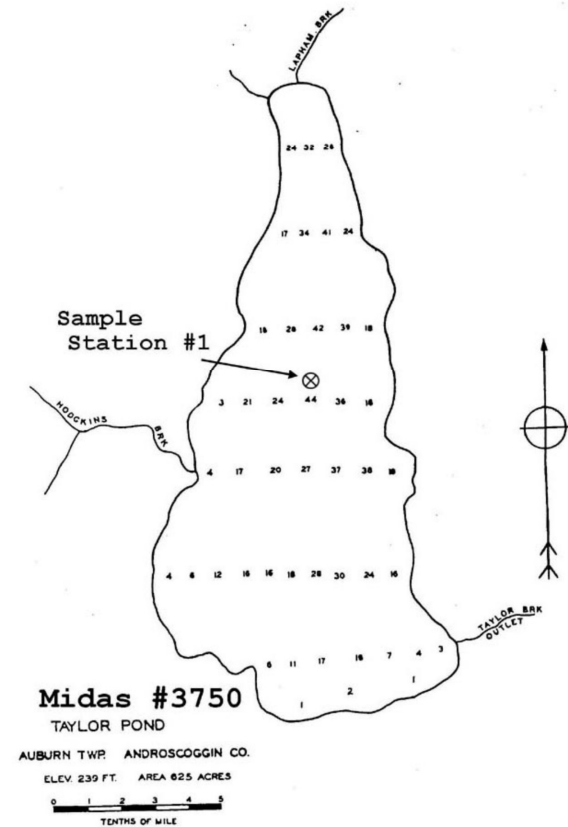
Surface: 72 degrees

40 feet depth: 54 degree

Flushes 1.34 years

Versus 4-7 years for Lake Auburn.

Sample Station: where water quality testing occurs.



Geology

- Glaciers covered the area from 25,000 to 13,000 years ago.
- Scratches can be seen on rocks on Mt. Apatite.
- Scraped out the basin that formed Taylor Pond.
- On retreat they left huge boulders called "erratics".



Wabanaki

Inhabited the area soon after glaciers melted 12,000 years ago.

The area was tundra then and had caribou herds.

L/A Airport has hunting sites dated at 10,000 years old.



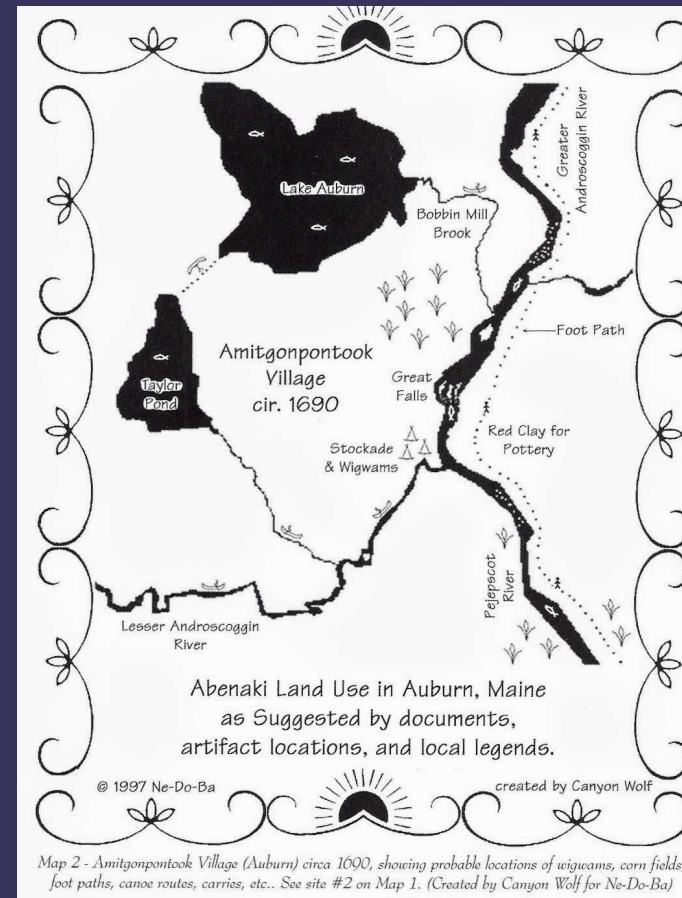
Ready For Departure, Passamaquoddy Indians.

Land Use in 1690

500 years ago, cultivated fields for corn, beans and squash along the Androscoggin in present day downtown Auburn.

Beginning in 1675, a series of wars occurred between the Wabanaki, and English settlers.

Wabanaki in the Auburn area were killed in 1690 by Benjamin Church leading a group of 200 troops.



Colonial History

Few Europeans in the area until the 1800s due to the difficulty navigating up the Androscoggin River.

First European settler log cabin built near West Pitch in 1797.

Clearing of forests and creation of stone walls in 1800s for farms.



Recent History

Larger Lake Auburn attracted the attention with a hotel, theater, dance pavilion and touring steamer boat.

Restrictions on Lake Auburn led people to build their summer cabins on Taylor Pond.

Prior to 1908 most of the surrounding land was farmed, by 1936 200 cottages were built.

The beach on the northeast shore became popular and featured bath houses and a dance pavilion in the early 1900s.



Year-round Homes

In recent decades many summer cabins have been converted to year-round homes.

Private homes now line the entire shore.

1979 sewer line completed around the pond.

Prior to that algae blooms and a polio scare.



Homes on Taylor Pond

A little over 200 residences.

Estimate: 160 of these are year-round.

Sales of cottages:
\$130,000-\$300,000.

Sales of homes:
\$150,000 - \$1.9 million.

Total value: almost \$100 million dollars.



Limnology

The study of freshwater

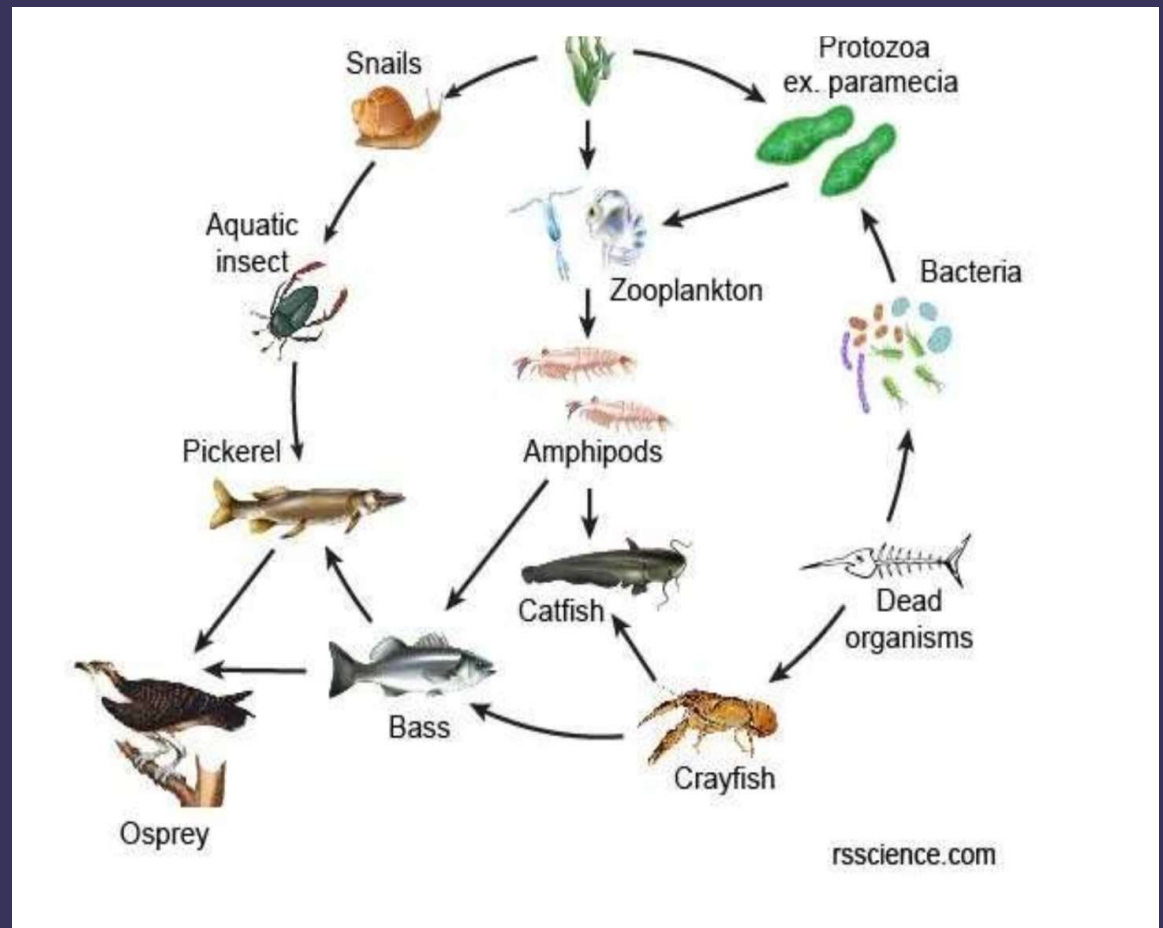
Food Web: algae convert sunlight into sugar.

Microscopic organisms called zooplankton eat the algae.

Fish feed upon the zooplankton.

Pike, pickerel and bass feed upon the smaller fish.

Osprey, mink and otter feed on the fish.



Seasonal Changes

Fall

Surface of the lake cools and winds pick up causing the lake to mix or "turnover".

The top warm layer mixes with the bottom cool layer and becomes a uniform temperature (too cold to swim)



Mixing

Waves form on the surface.

Ice floes accumulate in the cove.

Langmuir lines on the surface.

Cold water sinks.

Ice Floats.



Winter

When the temperature of the water falls to 32 degrees the surface freezes.

The ice will eventually be 12-18 inches thick, enough to support a truck.

Water underneath the ice is a uniform temperature just above freezing.



Spring

- The ice melts and the surface water heats up.
- The wind will mix the water keeping the temperature uniform from top to bottom.
- It will remain too cold for swimming for most of us until July.

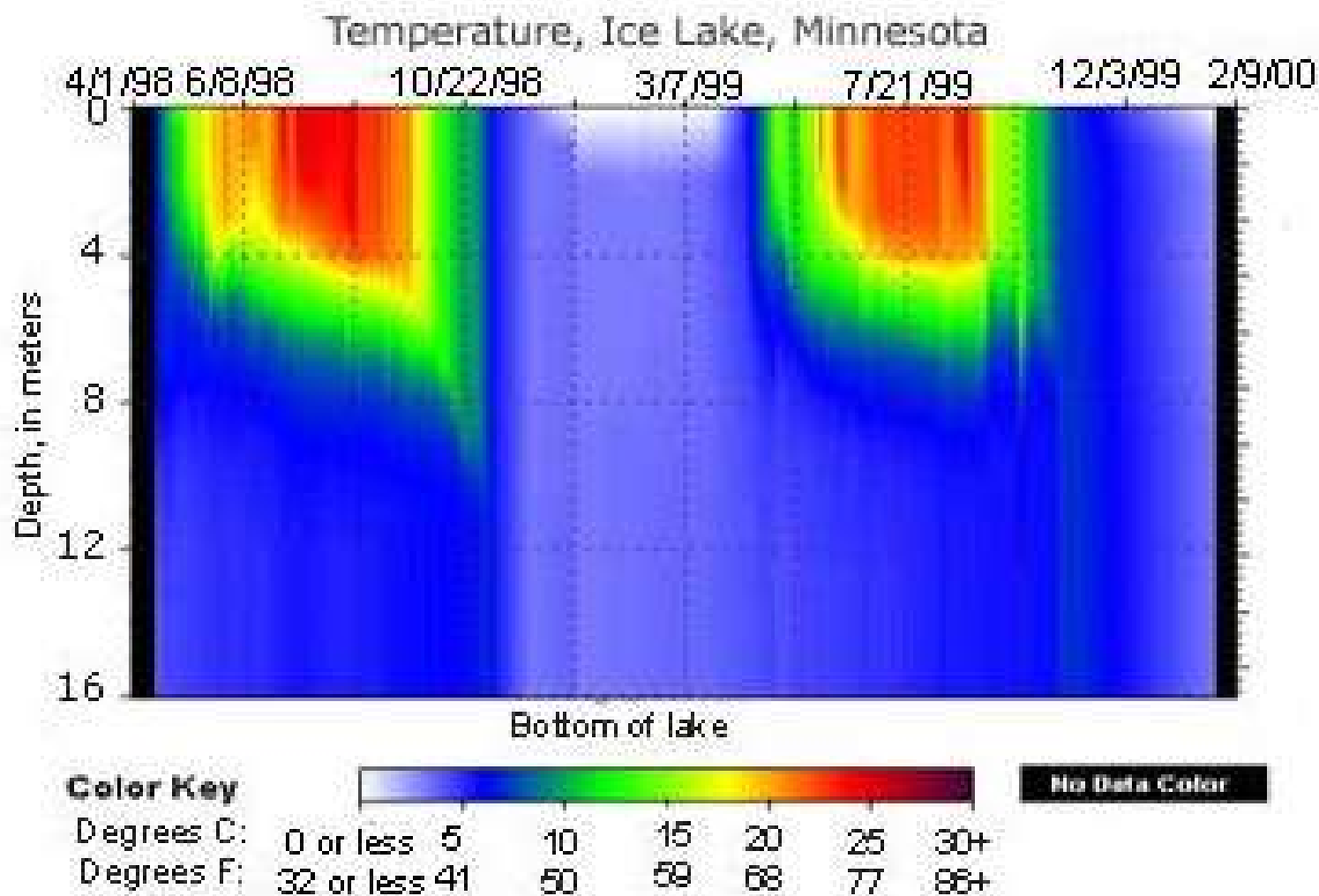


Summer

The surface waters heat up and the deep waters remain cold

Stratification: the temperature rapidly falls as you go deeper; this prevents the wind from mixing the water.





Source: "Water on the Web",
www.mathematik.uni-kassel.de/~didaktik/DataSharing/WOW/DataAnalysis.html

Littoral Zone

- The shallow water near the shore where light easily reaches the bottom.
- Where much of lake life lives, fish, frogs, turtles and aquatic insects and other invertebrates.



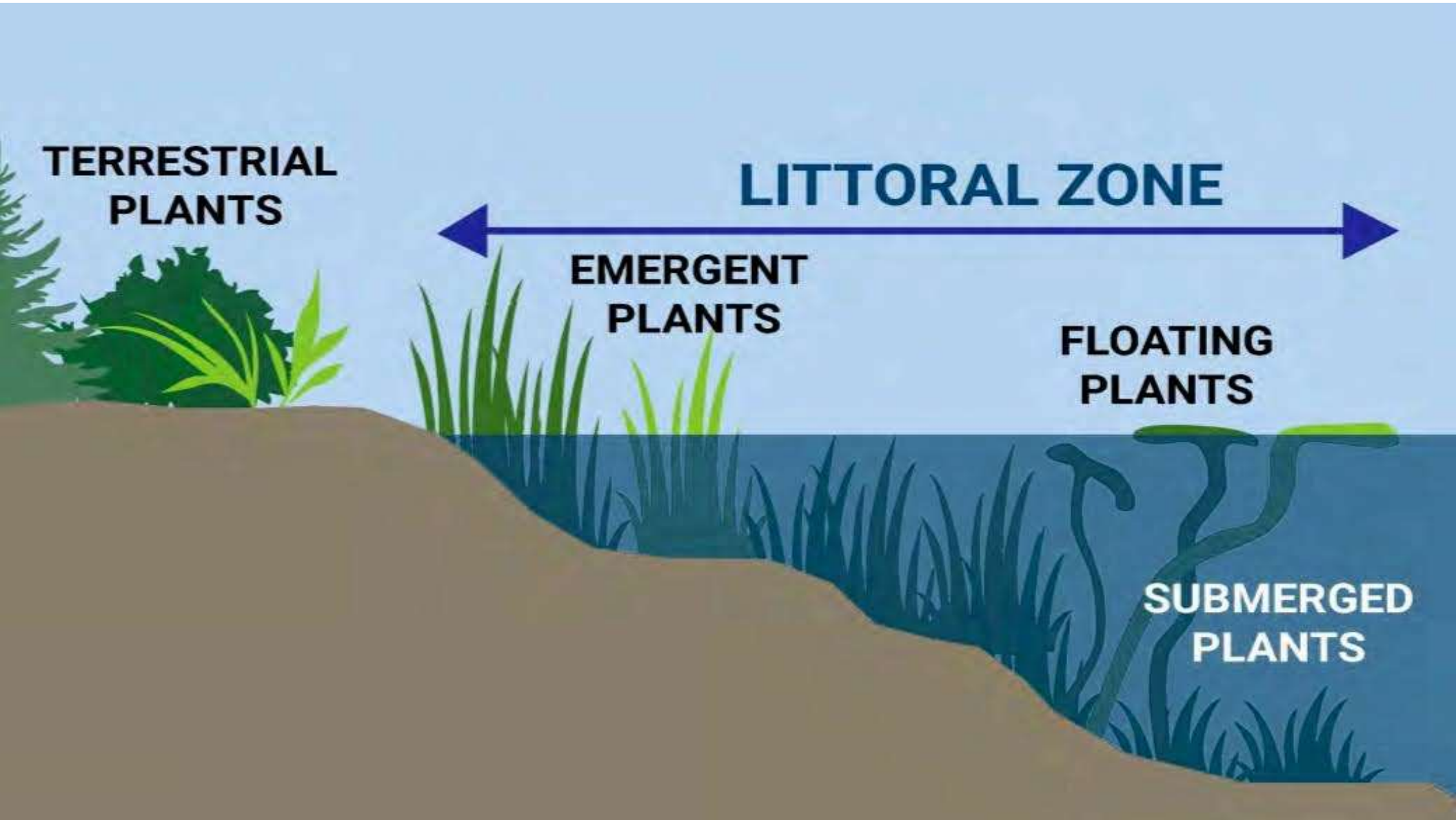
**TERRESTRIAL
PLANTS**

LITTORAL ZONE

**EMERGENT
PLANTS**

**FLOATING
PLANTS**

**SUBMERGED
PLANTS**



Water Level

- Fluctuates with the amount of rain received.
- No man-made dam.
- Beaver dams in Taylor Brook have the most effect on the water level.



Flooding

- Occurs during heavy rain events.
- Wetlands around the pond help to absorb the water and prevent flooding.



Spring flood events require flexibility of travel.



Taylor Pond Association

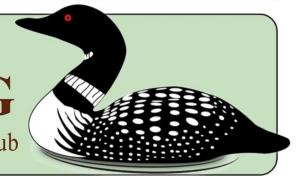
- Volunteer organization started in 1974.
- Committed to protecting the water quality.
- About 210 residents on the pond, 130 belong to TPA.
- Publish a yearly member newsletter.
- Website: www.taylorpond.org.
- LakeSmart Program.

Taylor Pond Association News

SUMMER 2022

TAYLOR POND ASSOCIATION ANNUAL MEETING

Sunday, August 28th | 7 pm | Taylor Pond Yacht Club



Returns and address corrections to: Edwin Gray, 153 Chicoine Ave., Auburn, ME 04210
Interested in volunteering to help with TPA programs? Please call Dana Little at 207.784.1908

Please visit the TPA website: www.taylorpond.org

Water Quality Monitoring

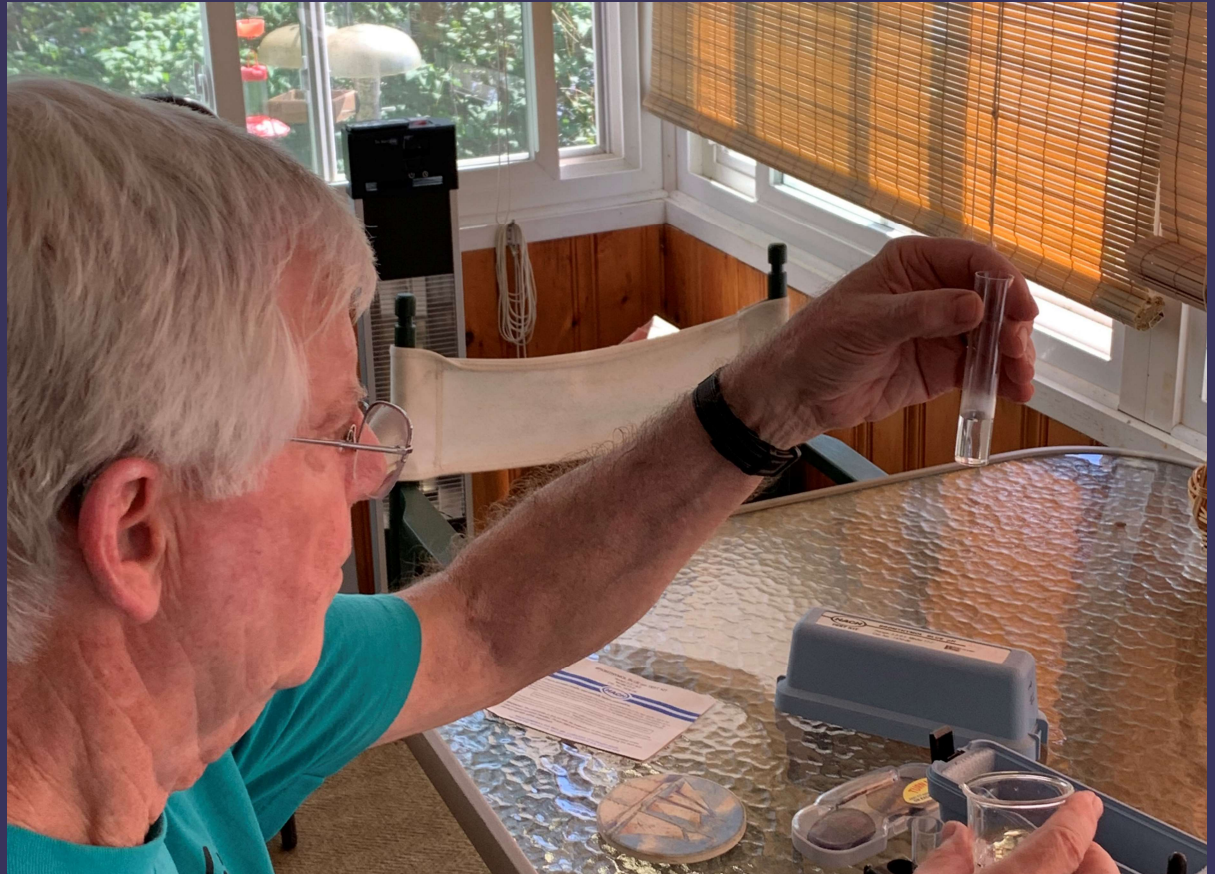
- Done by volunteers.
- Results sent to Lake Stewards of Maine which works with DEP.
- Secchi disk checks for clarity.



Probe measures dissolved oxygen and temperature.



- We send water samples to the state lab for phosphorus levels.



- Seven different properties of water are measured.
- These describe the health of the pond.
- Ice out date: 53 years of data; one week earlier the last decade vs. the first decade of monitoring.

Parameter	2021	Mean for Taylor Pond since 1975	Historic Mean for all Maine Lakes
Color	21.25	21.04	28
pH	7.1	7.01	6.82
Alkalinity	18.75	17.14	11.9
Conductance, $\mu\text{S}/\text{cm}$	101	91.4	46
Total Phosphorous 5m core sample, $\mu\text{g}/\text{L}$	12.0 vs. 11 in 2020	10.25	12
Total Phosphorous bottom grab, $\mu\text{g}/\text{L}$	23 vs. 17.5 in 2020	24.55	(not published)
Secchi depth (meters) minimum	4.0 vs. 4.2 in 2020	1.7 (minimum ever recorded)	0.5 (0.9 in 2012)
Secchi depth mean (m)	5.14 vs. 5.35 in 2020	4.71	4.81 (5.2 in 2012)
Secchi depth max (m)	6.2 vs. 7.0 in 2020	7.0 (2019)	15.5 (13.4 in 2012)
Trophic State (by Secchi disk)	36.41	48.92	45
Trophic State (by core Total Phosphorus)	39.98	42.69	(not published)

Algae

- The most abundant green plant in ponds.
- Produce oxygen that sustains life in the water.
- Produce sugar from sunlight and CO₂ which feed all animals from insects to fish.



Metaphyton

- Wind blows algae into clumps that cluster near shore.
- Oxygen produced by the algae create gas bubbles that lift it to the surface.
- Not harmful and part of the nature of a lake.



Vascular Plants

- Maine has 190 species of freshwater flowering plants.
- Provide food for all other living creatures including copepods, insects, ducks, and turtles.
- Photo of *Potamogeton perfoliatus*.



Underwater photo of four species of Pondweeds.

Potamogeton amplifolius,
Potamogeton perfoliatus,
Potamogeton robinsii and
Elodea canadensis.



Healthy Littoral zone.

Water Celery, Water Lilies
and Pickerel Weed.



Emergent Plants

Plants that grown near the shoreline and emerge from the water.

Provide shelter and food for wildlife.

Create beauty for the beholder.



Wetlands

Surround the pond.

Important breeding places for many animals.

Provides for overflow when flooding occurs.

Removing wetlands reduces biodiversity and increases flooding to homes.



Wildlife Diversity

- Insects and other invertebrates number in the thousands of species.
- They provide food for fish, frogs, birds and small mammals.



A variety of dragonflies
patrol the perimeter.



Fish

Fish found in the pond include: Rainbow Smelt, Smallmouth Bass, Hornpout, White Perch, Pumpkinseed Sunfish, Yellow Perch, American Eel, Chain Pickerel, Alewife and Northern Pike.



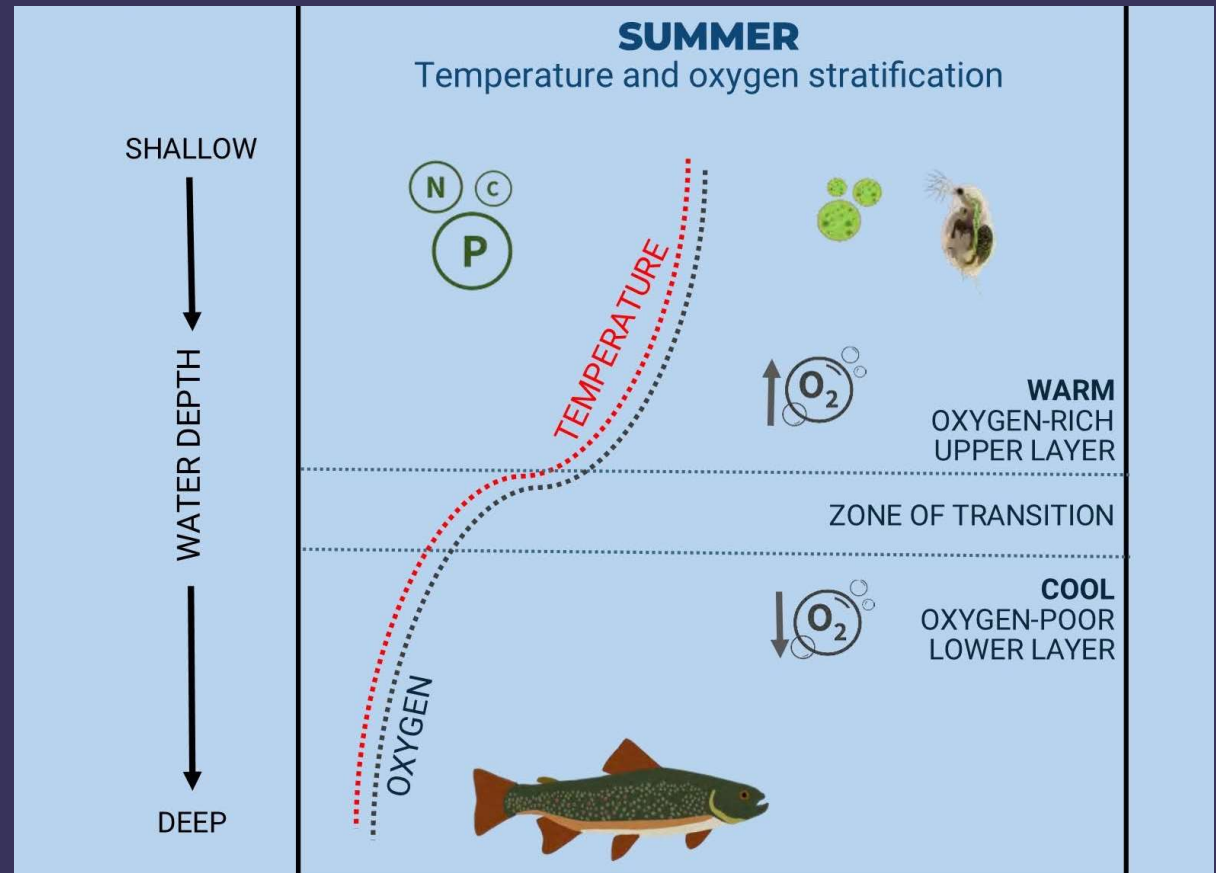
Trout and Salmon

Salmonids seek out cool water.

Below 20 feet it is cool enough for them.

However, below 20 feet, there is little oxygen so they do not survive.

IF&W quit stocking brown trout in 1989.



Alewives

Anadromous: a fish born in freshwater who spend time in saltwater and return to freshwater to lay eggs.

Travel down the Androscoggin to grow into adults in the ocean.

Try to return to lay eggs in the spring.

DMR catches them in Brunswick below the dam and deliver 3000 alewives every spring to Taylor Pond



Department of Marine
Resources stocking
alewives (Range Pond).



Fish Advisory

Most fishers catch and release.

Mercury is found in most freshwater fish in Maine.

Limit to two meals of fish per month for most.

Pregnant woman and children under 8 should not eat any freshwater fish.



Frogs

The pond is home to many species.

In spring you can hear successive choruses of frogs starting with Wood Frogs as soon as the ice melts in the wetlands.



Pickerel Frog with full
breeding colors.



Spring Peeper



Gray Tree Frog



Green Frog



Yellow-spotted
Salamander



Reptiles

Turtles are abundant.

Painted, Snapping and
Mud Turtles all live there.

Snapping Turtles and
Painted Turtles often
come up on lawns to lay
their eggs.



Snakes are not commonly
seen

Garter Snake.



Mammals

Mink and fox prowl along the shoreline frequently.

Both Red and gray fox as well as coyotes are frequent visitors.

Otter are uncommonly seen.



Muskrat can be seen daily
snacking on aquatic
plants.



Birds

For me, one of the most
attractive elements of
Taylor Pond.

Great Blue Heron



121 species that nest or
come to the pond to find
food.



Tree Swallows



Canada Geese



Baltimore Oriole



Black and White Warbler



Yellowthroat Warbler



Wood Duck



Bald Eagle



Valuable migration stop
for birds heading north or
south.

Male and two female
Hooded Mergansers.



Flock of Ring-necked
Ducks



Spotted Sandpiper



Cape May Warbler



Bohemian Waxwings



Recreation

Fishing for bass and
Northern Pike.



In the winter ice fishers will drag huts onto the ice.

Planes land on the ice or snow in the winter and on the water in the summer.



During the winter people enjoy skating, hockey, ice boat sailing, skiing and snowshoeing.



With open water people enjoy canoeing, kayaking and boating.



The Taylor Pond Yacht Club has a fleet of boats and provides sailing lessons.



Access

- Chicoine Beach: open when warm and sunny.
- Five dollars for adults and Three dollars for children.



Taylor Pond Yacht Club:
\$500 for a family
membership.

Sailing, Tennis and Swim
Lessons available.



Threats to the Pond's Health

Invasive Plants: Purple
Loosestrife.



Invasive Aquatic Plants

Variable-leaf Milfoil:

Found in most surrounding bodies of water (Lake Auburn, The Basin, Thompson Lake, Range Pond & Sebago.

Forms dense mats up to 8 feet deep, making any water activity unpleasant.



Clean, Drain & Dry

Clean your watercraft off when moving from one pond to another.

Drain all water from the watercraft.

Dry anything that was in contact with the water for 5 days.



**STOP AQUATIC
HITCHHIKERS!™**

Be A Good Steward.
Clean. Drain. Dry.

StopAquaticHitchhikers.org

Invasive Animals

Chinese Mystery Snail:
brought from Asia as a
food source and also
likely released from
aquariums.

Larger than native snails,
outcompete them and
carry disease (Swimmer's
itch).



Zebra Mussels

Spread from ballast water discharged from European ships.

Spread rapidly throughout the Great Lakes and have reached NH.

Not yet in Maine.



Phosphorus

A critical element that limits algal growth.

Addition of phosphorus to the water causes algae to bloom.

Erosion from developed land is the main source of excess phosphorus.

"Most at risk" from further development.

Prevention: plant buffers, riprap, leave nature alone.

LakeSmart: free educational program on how to save our lakes.



Blue-green Algae

Part of the natural environment in small amounts.

Rapidly grow and overwhelm a lake when provided too much phosphorus.

Produce toxins that can kill wildlife, pets and hurt people if drinking or swimming.



