Life in the Waters of the Finger Lakes

January 29 - November 15, 2020
Cumming Nature Center
6472 Gulick Road – Naples, New York

An exhibit by the Finger Lakes Chapter of the Guild of Natural Science Illustrators
Introduction

Just about everyone has gazed out over our local Finger Lake’s waters to admire the birds and sunsets, but what is the life like under the surface? This exhibition of science illustrations will illuminate some of the mysteries beneath the Finger Lakes’ surface, shining a light upon a selection of the 50 species of fish, thousands of invertebrates, and numerous plants that inhabit them—as well as interactions between the flora and fauna above and below the surface. With maximum depths that range from 40 to 618 feet, the Finger Lakes may have had common geological origins, yet today each has unique ecological attributes and life. Let’s learn about the secrets from the great murky depths!

Cover illustration:
Section of “Common Diatoms of the Finger Lakes” ©2020 Amy Maltzan (full illustration on page twenty)
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©2020 GNSI-FL. — Each artwork is copyrighted separately by its artist.
Title: Eastern Painted Turtle (*Chrysemys picta picta*)
Artist: ©2020 Lynn Bertoia
Medium: Watercolor
Frame size: 16 x 20 — Mat opening: 8 x 12
Price: $250

The Eastern Painted Turtle is found in permanent freshwater habitats such as ponds, lakes, marshes, sloughs, and creeks. It has an average length of 4.5 to 6 inches. Painted turtles are omnivores—they eat fish, insects, aquatic plants, fruit and carrion. This turtle was found in the Cayuga Lake inlet and is about to eat a common waterweed called *Elodea*.

*Art sizes throughout the catalog are in inches high x inches wide*
This Freshwater Jellyfish reaches a maximum of 25 mm (50-cent piece). Believed to have originated from the Yangtze River valley in China and traveled with stocked fish and/or aquatic plants, this organism has invaded many bodies of freshwater worldwide. They are recorded in Seneca, Skaneateles, and Owasco Lakes since 2003 and feed on zooplankton, including brine shrimp. Predators include crayfish.

Crayfish feed on the rocks along the shores and in the feeder streams of the Finger Lakes. They are members of the crustacean order of Decapoda, referring to the fact that they have five pairs of leg-like appendages coming from their thoraxes. They are omnivores, feeding on algae and rotting dead animals among the rocks. This “craw daddys” was lurking in the water in the shallow, rocky waters near Frontenac Point in Cayuga Lake.
Title: Rusty Crayfish and White River Crayfish  
Artist: ©2019 Carla Elizabeth DeMello  
Medium: Gouache on Sculpted Paper  
Frame size: 12 x 15 — Mat opening: 12 x 15  
Price: $400

The Rusty Crayfish is invasive to the Finger Lakes. Juveniles stay with the female for several weeks after hatching, feeding on invertebrates such as mayflies, while adults consume snails, aquatic plants, and detritus.

The White River Crayfish, native to the Finger Lakes, lays as many as 500 eggs, burrowing for most of the summer to protect their eggs. Hatchlings quickly disperse once hatched. This crayfish is an opportunistic feeder from hatchling to adult.

Title: Lake Trout (Salvelinus namaycush)  
Artist: ©2020 Stephen Mutsugoroh DiCerbo  
Medium: Kansetu-ho (Indirect) Gyotaku on Habotai silk  
Frame size: 18 x 36 — Mat opening: 18 x 36  
Price: $1,000

Lake Trout is a very well known and popular game fish species, living in the cold waters of the deepest Finger Lakes (Skaneateles, Owasco, Cayuga, Seneca, Keuka, Canandaigua, Canadice and Hemlock Lakes). Skaneateles and Keuka Lakes host natural reproducing Lake Trout. Seneca Lake is touted as the Lake Trout Capital of the World and hosts an annual National Lake Trout Derby.
This non-venomous, two to four foot long snake is a common inhabitant of rivers, streams, and lakes throughout the Eastern and Midwestern United States. It feeds on insects and small vertebrates, including many species of fish. The Northern Water Snake can often be seen basking on sunny rocks, or swimming along the surface of calm water with its head held just above the waterline.

In the Finger Lakes, landlocked Atlantic Salmon feed on non-native Alewife. Unfortunately, Alewife is rich in thiaminase, a compound that destroys Vitamin B1. This creates “Cayuga Syndrome,” a Vitamin B1 deficiency that results in 100% mortality of the salmon’s offspring. Because wild reproduction is impossible, stocking is the only way to maintain a salmon population in Cayuga Lake.
The larger Finger Lakes provide a winter haven for migrating Redhead, a medium sized diving duck specifically adapted to foraging underwater. This male duck is feasting on zebra mussels and also eats gastropods, insect larvae and submerged aquatic plants. The zebra mussel not only accumulates contaminants which can be harmful to the ducks that eat them, but the mussels grow densely, blocking water intake pipes.

Greater Scaup, a diving duck, forages on aquatic invertebrates, such as caddis fly larvae, and aquatic plants, such as Water Milfoil. The non-native zebra mussel disrupts the ecosystem of these organisms, and has become a preferred food source for many ducks. Zebra mussels accumulate contaminants, which have been found in high concentrations in Scaup tissue and eggs, a possible contribution to the slow decline of Scaup numbers worldwide.
Wetlands in the Finger Lakes area, such as the Montezuma Wetlands north of Cayuga Lake, are important breeding sites for the Pied-billed Grebe, a water bird that creates floating nests amongst the emergent vegetation. It dives for its food, mainly crayfish and aquatic insects, but are opportunistic feeders, so will also eat many other crustaceans and insects, frogs, tadpoles, leeches, fish and salamanders.

Title: Potamogeton, Myriophyllum, Elodia, and Vallisneria
Artist: ©2020 Gretchen Halpert
Medium: Watercolor
Frame size: 20 x 16 — Mat opening: 16 x 12
Price: NFS

Plants offer food, shade, and shelter for local wildlife. When vegetation breaks down, on its own or through the digestion of feeders, by-products enrich water and sediment. Invasive species such as Curly-leaved Pondweed (Potamogeton crispus) and Eurasian Milfoil (Myriophyllum spicatum) crowd out native plants, often creating a monoculture that is detrimental to the health of the waters and its inhabitants.
Cyanobacteria thrive in Finger Lake waters and are integral parts of lake ecosystems. Cyanobacteria invented photosynthesis shortly after life first emerged on Earth and everyday they replenish much of the oxygen in our current atmosphere. They’ve become notorious in recent years for the “harmful algal blooms” (HABs) that some genera sometimes form in summer through early autumn. HABs seem to be occurring at a frequency and geographic range that is increasing with climate change.
Diatoms are single-celled algae with beautifully intricate, transparent silica cell walls that are present in all Finger Lakes. The largest are only 0.5 millimeters, or half the width of a human hair. Though tiny, they are an instrumental food source for all other organisms in the lakes. Because of their sensitivity to environmental factors such as pH, sediment, and nutrient levels, their abundance and variety can indicate water quality.

Native to many areas of NYS, black Crappie are found in all watersheds of NY; in the Finger Lakes, some of the best spots to find them are Honeoye and Canandaigua Lakes. They prefer clear waters with rocks, sunken tree limbs, or weeds to help them hide from predators. Smaller crappie feed on plankton and larvae, and larger crappie feed on small fish.
Lake Sturgeon are prehistoric-looking creatures with a partly cartilaginous skeleton, and five rows of large bony plates covering their leatherlike skin. Toothless, sturgeons are bottom feeders. They can be 9 feet long and weight 300 pounds, living over 100 years. Endangered because of over-harvesting and loss of spawning grounds, restocking on Cayuga Lake is part of a larger effort to restore sturgeon populations.

The colorful Pumpkinseed is native to North America and is abundant in the Finger Lakes. The Pumpkinseed’s habitat includes ponds and shallow bays of larger lakes, and quiet pools in streams and small rivers, where they spawn and hide among aquatic vegetation. Usually growing 4–6 inches, their body shape resembles the seed of a pumpkin, hence the name. Pumpkinseeds eat a wide variety of insects, crustaceans, and small fishes.
Hydrilla is an invasive aquatic plant from Africa and poses a serious ecological threat. It grows so quickly and profusely that it can lead to depletion of oxygen in the water, causing die-offs of fish, and it can completely clog smaller bodies of water. The sea lamprey can impact populations of game fish in the Finger Lakes, but it is not invasive, having lived in several Finger Lakes and Lake Ontario since before humans settled the region.

The Great Blue Heron is distinguished by its light grey plumage with white and black accents. Its svelte 6-8 pounds can be attributed in part to its hollow bones. A year round resident in the Finger Lakes area, this heron is frequently seen wading in shallow water, and feeds on a variety of organisms, including rodents, snakes, insects and small to medium sized fish like the Pumpkinseed Sunfish.
Title: Belted Kingfisher (*Megaceryle alcyon*)
Artist: ©2019 Louisa Sandvik
Medium: Watercolor
Frame size: 16 x 20 — Mat opening: 12 x 15 1/2
Price: $400

The Belted Kingfisher spends much of its time perched on branches along the lake’s edge searching for small fish, such as perch, sticklebacks, mummichogs and trout. Its prey also includes frogs, crayfish, aquatic insects and tadpoles. The Kingfisher plunges headfirst into the water, capturing its prey near the water’s surface with its long, pointed bill. It digs a long burrow into the banks near the water to lay its eggs.

Title: Common Loon (*Gavia immer*)
Artist: ©2020 Annie Zygarowicz
Medium: Digital, iclee print
Frame size: 16 x 20 — Mat opening: 11 1/2 x 15 1/2
Price: $125

Their eerie call and striking appearance are distinct characteristics of the mysterious water bird, the Common Loon. In the Finger Lakes, they are often seen on the lakes as they migrate south during the winter months. They are stealthy divers that seek out fish, crayfish, frogs and snails, fast flyers and live up to 25-30+ years. To learn more about saving the loon, visit www.loon.org.
Snapping turtles have been around for 90 million years. They live in lakes, ponds and slow moving streams. Their diet consists of plants, fish, and anything that floats by. They can grow to 18 inches long, weigh as much as 40 pounds, and live 100 years. Snapping Turtles are a protected species in New York State, and carry a fine up to $25,000 for harming one.
Exhibit Committee
Lucy Gagliardo
Amy Maltzan
Lynn Bertoia
Carla Elizabeth DeMello
Margy Nelson
Norm Frisch (poster, catalog)

Exhibit Venue
Cumming Nature Center (RMSC)
6472 Gulick Road, Naples, NY
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Kathryn Murano, Senior Director of Collections and Exhibitions
Lois R. Shaffer, Deputy Director, Design / Exhibits Services
History of the Finger Lakes Chapter of the Guild of Natural Science Illustrators, Inc.

The Guild of Natural Science Illustrators (GNSI) was created in 1968 as a way to network among the illustrators of the Smithsonian Museum in Washington, D.C. It has rallied thousands of otherwise isolated natural science artists around the nation and around the world, through the web and through the Guild’s famous week long summer conference. In 2003, out of this long and fruitful Guild collaboration, the Finger Lakes chapter was created. We meet several times a year, and enjoy our camaraderie in artistry! We “show and tell” our current work, and also share advice about art techniques and professional tips. We offer mini workshops from time to time, and, also, meet to paint at chosen locations. In recent years, we have worked with the Cornell Plantations to invite teachers of professional interest.

We strive to have group shows on a regular basis. Our shows often have themes, such as: “The Sweet-voiced Bird Has Flown: Portraits of Common Birds in Decline;” “Marsh Madness,” which was a show about wetlands of upstate N.Y.; and “Weeds: Untamed Wonders.” Our group has shown at various venues in New York State, including the RMSC Cumming Nature Center in Naples; the Cornell Lab of Ornithology, Ithaca; Mann Library at Cornell University, Ithaca; Rockefeller State Park Preserve in Pleasantville; New York Hall of Science in Queens, Upstate Medical Health and Science Library in Syracuse, the Montezuma National Wildlife Refuge Visitor Center, the Community School of Music and Art in Ithaca, and the Lime Hollow Nature Preserve in Cortland.

In 2008 we hosted the national GNSI conference in Ithaca, N.Y.

For more information about the national Guild, please visit the website:

www.gnsi.org

If you are interested in the Finger Lakes Chapter, please contact us at gnsi.fingerlakes@gmail.com, or visit our website at:

http://gnsifingerlakes.wix.com/gnsi-fingerlakes

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