Poly-species Living Environments

Around the world, humans are fracturing vast forests. Human population growth reached exponential rates in the twentieth century, as humans converted increasing proportions of temperate and tropical landscapes to agriculture and animal husbandry. Today, 40% of all terrestrial landscapes have been converted for human use.
New York State Animal Maps

Species Distribution

This map depicts the results of 279 species distribution models. For each site, species' inner locations were used to predict suitable habitat throughout the state. Locations where suitability was above 0.5 were used to draw isolines in 0.1 increments, marking areas where the species are present. The maximum number of overlapping isolines at any location is 32.

Bat Distribution

This map depicts the predicted richness (number) of up to 3 species of bats that occur in New York during the summer. The probability of suitable habitat for each species was modeled and converted to the predicted species richness (number of species per 0.1 km2) at each location. These maps were then summed across all species to produce a map showing the total estimated species richness. Areas with higher values are likely to be more suitable for bats, and values below 1 may be less suitable. This map does not account for the presence of bats outside the models' range, which is limited to New York. No further analysis has been conducted to assess whether the species are actually present in the state.

EPT Richness

This map depicts the predicted number of species (Epithemiidae, Hydropsychidae, and Psychidae) for regions in New York, based on the NYSC BioMap Rickett's Unit database. The number of species was calculated at 0.1 km2 resolution. Values below 1 may be less suitable, while values above 10 may be more suitable. The map does not account for the presence of EPT species outside the models' range, which is limited to New York. No further analysis has been conducted to assess whether the species are actually present in the state.

Percentage of Forest

This map depicts the percentage of forested land in New York. The area is based on the National Land Cover Database and shows, for all locations, the percent of forested land that is 50% or more. This provides insights into forest composition and connectivity.

Bird Migration Stop Points - Spring

This map depicts the results of a model predicting suitable habitats for bird migration stop points. For each species, several different models were developed, and the results were combined to provide the probability of migration stop points. The values for each species were added together. The higher the number, the more likely the species is to stop over during spring migration. Migration stop points above 0.9 are likely to be important for bird migration stop points in New York. No further analysis has been conducted to assess whether the species are actually present in the state.

Bird Migration Stop Points - Fall

This map depicts the results of a model predicting suitable habitats for bird migration stop points. For each species, several different models were developed, and the results were combined to provide the probability of migration stop points. The values for each species were added together. The higher the number, the more likely the species is to stop over during fall migration. Migration stop points above 0.9 are likely to be important for bird migration stop points in New York. No further analysis has been conducted to assess whether the species are actually present in the state.
Columbia County Animal Maps

Columbia County Natural Community

This map reflects the distribution of the species in the area. It highlights the diversity and density of wildlife in the region. The data is based on county-wide surveys, expert analysis, and community input. It categorizes species into terrestrial and aquatic environments, illustrating their distribution across the county.

Invasive Species

Invasive species are non-native species that cause harm to the environment, the economy, or human health. They are generally introduced accidentally or intentionally by humans. The map identifies key invasive species and their impact on the local ecosystem.

Aquatic Invasive Species

- Dine
- Zebra Mussels
- Quagga Mussels
- Eurasian Watermilfoil
- Eurasian Watermilfoil

Terrestrial Invasive Species

- Giant Hogweed
- Japanese Knotweed
- Garlic Mustard
- Sycamore Ladies
- European Grass
- Black Cherry

Plants And Animal Distribution Map

- AQUATIC
- DIADROMOUS FISHES
- TERRESTRIAL
- WETLAND
- RARE PLANTS
- SITE
- WATER

Columbia Graduate School of Architecture, Planning and Preservation | Adv IV Studio | Indigenous Futurisms | Spring 2021 | Instructor: Vanessa Keith

Poly-species Living Environments | Student Names: Cohaul Guohao Chen
Animal Study
Animal Study

NORTHERN LONGEARE BAT

During the summer, northern long-eared bats may roost in colonies under ledges, in crevices of bridges, or in tree cavities. Other times they may roost in dark places like caves or mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost types based on availability of roosts that can be found. Some bats may also be found roosting in the tops of buildings, trees, or other structures. This bat has also been found rarely roosting in stately homes and other buildings.
Animal Study

ATLANTIC COAST LEOPARD FROG

Metamorphosis
During metamorphosis, the tadpole with developing back legs first, then front legs. Around 6 weeks of age, the mouth starts to open. Somewhere around 10 weeks, the frog's skin, as it is now called, eyes start to bulge out and the tail begins to shorten and eventually disappear. When the lungs finish developing, the frog makes its way onto the land and becomes a frog!
Vision of the Site

**Past**
Most of the land was covered by trees, without artificial impacts on the environment.

**Current**
Due to the man-made infrastructure and construction, ecosystems were been fragmented.

**Future**
By applying sustainable strategies during the design, planning and construction of projects, to pursue a more diversified ecosystem.
Vision of the Site
Site Section 1

- Bullfrogs
- Northern Cricket Frogs
- White-tailed Deer
- Moose
- Gray Squirrel
- Red-headed Woodpecker
- Raccoon
- Woodcock

Environments:
- Wetland
- Rock
- Chestnut Tree
- Fruit Tree
- Main House
- Mulberry Tree
Site Section 2

- Weasel
- Eastern Mud Turtle
- Eastern Tiger Salamander
- Northern Cricket Frog
- Pike
- Catfish
- Bullfrog
- Striped Skunk
- Timber Rattlesnake
- Woodchuck
- Gray Squirrel
- Black Bear
- Sedge Wren
Site Section 3
Plan - Gateway House
Section - Gateway House
Exterior - Gateway House
Exterior - Main House
Exterior - Main House
Plan - Main House
Section - Main House
Exterior - Main House
Exterior - Main House
Interior - Main House
Bat House
Bat House
Bat House
In the Eyes of Animals
Audio Visualization
Audio Visualization

Calm Forest

By the River

Rainy

High Way

Construction