



# Boreal Owl Room

The Boreal Owl is a forest-dwelling owl that breeds in boreal and subalpine forests in North America and Eurasia.

Boreal Owls are relatively small, measuring approximately 10 in. (25 cm) in length with a wingspan of about 22 in. (56 cm), and have brown upper feathers with numerous white spots, light-colored under feathers heavily streaked with chestnut-colored markings, a paler-yellowish bill, and yellow eyes.

Boreal Owl presence in Minnesota, particularly in the one-million-acre Boundary Waters Canoe Area Wilderness, is most threatened by large-

scale fires and wind-throw events, when even healthy trees are knocked down at the root after storms, that disturb its habitat and disrupt its ability to thrive.

Boreal Owls are symbols of wisdom and fierce intelligence, as they are great thinkers and great hunters who strategize how to achieve their goals rather than use brute force.

Boreal Owls are also patient and symbolize endurance, discipline, and honor, embodying Fresh Energy's values of courage and determination in pursuing bold yet practical policy solutions to the climate crisis, approaching these solutions with

honesty and integrity, and doing the long-term work necessary to achieve solutions rooted in equity, justice, cooperation, and inclusion.

Fresh Energy's work promoting Minnesota's leadership as a national clean energy leader and fighting for clean air, water, and transportation options for Minnesotans help ensure that the Boreal Owl's preferred breeding habitat is maintained and nourished.

*Art by Amarilys Henderson. Learn more about Amarilys in Fresh Energy's lobby.*





# Canada Lynx Room

The fierce and persistent Canada Lynx make their homes in boreal forest habitats that include fire dependent forest and mesic hardwood forest characteristics and are often found in association with their primary prey, the Snowshoe Hare, large numbers of which reside in regenerating boreal forest patches with a coniferous component.

In Minnesota, Canada Lynx are primarily found in the Arrowhead region of the state, the seven-county swathe of northeastern Minnesota that stretches from the Boundary Waters Canoe Area Wilderness and Voyageurs National Park to the western edge of Lake

Superior and into counties in the heart of Minnesota's Northwoods.

As medium-sized felids, they are often confused with their relative the North American bobcat, but are distinguishable by their body shape and fur, as they have long legs, well-furred paws nearly double the size of bobcats that help them hunt in deep snow, a brown to grey coat with light spotting, black tufts on their ears, and a short, black-tipped tail.

Humans are the primary cause of mortality to Minnesota's small, threatened Canada Lynx population, with cause of mortality

disproportionately attributed to anthropogenic causes—environmental pollution and pollutants that come from human activity.

Fresh Energy's work to speed Minnesota's transition to a clean energy economy helps ensure that Canada Lynx habitats are maintained and that they are able to thrive in the North Star State as cold- and snow-loving forest-dwellers.

*Art by Amarilys Henderson. Learn more about Amarilys in Fresh Energy's lobby.*





# Rusty Patched Bumblebee Room

The endangered but resilient and hard-working Rusty Patched Bumblebee finds its home in the grasslands and tall prairies of the Upper Midwest and Northeast which provide nectar and pollen from a diverse supply of flowers, nesting sites such as underground and abandoned rodent cavities or clumps of grasses, and overwintering sites for hibernating queens comprised of undisturbed soil.

All Rusty Patched Bumblebees have entirely black heads and yellow bodies, but only workers and males have a rusty reddish patch centrally located on their backs. Rusty Patched Bumblebees live in colonies that include a single queen

and female workers, with males and new queens produced in late summer; queens are the largest bees in the colony, and workers are the smallest.

Climate change is a leading contributor to loss of Rusty Patched Bumblebees, as climate change-caused harms include increased temperature and precipitation extremes, increased drought, early snow melt, and late frost events that lead to more exposure to or susceptibility to disease, fewer flowering plants, fewer places for queens to hibernate and nest, less time for foraging due to high temps, and asynchronous flowering plant and bumblebee spring emergence.

Fresh Energy's work encouraging pollinator-friendly solar and other forms of natural lands protection encourages use of native plants and flowers that preserve Minnesota's natural landscapes that are home to the Rusty Patched Bumblebee and other critical pollinators who contribute to our food security, especially in an agricultural heartland state, and the healthy functioning of our ecosystems.

*Art by Amarilys Henderson. Learn more about Amarilys in Fresh Energy's lobby.*





# Mudpuppy Room

As Minnesota's only fully aquatic salamander species, the Mudpuppy lives in water during every stage of its life cycle, preferring rivers with rocky or gravelly substrates in eastern Minnesota and rivers and rocky lakes in western Minnesota, as rocky structures provide refuge and critical nesting habitat.

The Mudpuppy is Minnesota's largest salamander species, with adults reaching 13 inches or more. Mudpuppies are brown or grayish in color with spots peppered across their backs and sides and a light grey or buff-colored underside, small eyes, a paddle-like tail used for propelling during rapid swimming, and bushy, red gills on the sides of their heads.

Hardy and protective of their homes and eggs, Mudpuppies breed in fall and winter, with females attaching up to 100 eggs to the underside of rocks, logs, or other underwater structures in spring and early summer, and then guarding the nest from predators until eggs hatch.

The Mudpuppy is a species of special concern in Minnesota, with major threats including loss of habitat and damage to habitat from siltation, dredging, damming, and pollution of rivers, lakes, and other waterways; water quality is also important for Mudpuppy prey (crayfish, small fish, earthworms, and aquatic invertebrates).

Fishers and anglers often will kill Mudpuppies believing them to be venomous or poisonous when they are neither – although they are extremely slimy; if hooked, Mudpuppies can be safely removed from the hook and put back into the water as with fish.

Fresh Energy's work to protect and enhance local and natural landscapes and improve and protect the quality of our air, water, and other natural habitats is critical to helping Minnesota's Mudpuppy population continue to thrive.

*Art by Amarilys Henderson. Learn more about Amarilys in Fresh Energy's lobby.*





# Wild Rice Room

Wild rice, the only native grain of North America, is of great cultural and dietary significance to Indigenous Minnesotans, including Ojibwe and Dakota tribes.

Wild rice grows in shallow, slow-moving waters such as lakes and streams; the plant roots in soft sediment below the surface of the water and grows between three and ten feet high by early July. This nutrient-rich grain is also an important food source for migrating water birds.

Wild rice is highly sensitive to fluctuations in water depth, temperature, and pollution. Climate

change-caused effects such as warmer winters impact seed production, and changes in precipitation—especially flooding—uproot young plants and can prevent germination. Wild rice habitat has also declined by roughly one third over the last century.

Equity is a critical part of Fresh Energy's mission to achieve carbon-neutral economies, and we know that Indigenous communities in Minnesota, and globally, face out-sized challenges related to climate change, in part because Indigenous cultural identities and traditions are often tied directly to the natural environment.

Negative impacts on wild rice threatens Indigenous groups' right to harvest wild rice in Minnesota.

*Art by Amariyls Henderson. Learn more about Amariyls in Fresh Energy's lobby.*





# Quaking Aspen Room

Named for the distinctive way their leaves flutter in a breeze, the quaking aspen is one of the largest organisms on earth.

While some trees grow as individuals from seed, most aspens grow in a stand, connected by a vast, underground root system. Above ground, aspen trees in a grove appear to be separate, but in fact they are all part of one single organism. Individual trees in a grove usually don't live much longer than 100 years. But the organism itself, the interconnected root system, can persist for much longer.

The largest living organism by mass is a stand of aspen in Utah known as

Pando—it has been growing for at least 80,000 years.

Aspen are adaptable. They grow across much of North America in a wide range of conditions, from moist riverbanks to rocky ridges, and are among the first to grow after a fire.

Moose, black bear, ruffed grouse, migratory birds, and many other creatures benefit from the habitat that aspen provide. Humans have also benefited from the tree's medicinal properties, which include a substance in the bark called salicin—similar to the active ingredient in aspirin.

Though hearty, aspen root systems are shallow; climate impacts of heat and drought can negatively impact this tree's ability to grow.

Like the quaking aspen, Fresh Energy strives to be deeply interconnected as a member of the global climate movement because we know we can go farther together.

*Art by Amarilys Henderson. Learn more about Amarilys in Fresh Energy's lobby.*





# Northern Sunfish Room

The northern sunfish, which averages between four and four-and-a-half inches in length, can be found in clear, slow-moving bodies of water. They also live in warm, shallow lakes and reservoirs.

There were not any reports of northern sunfish in Minnesota until 1974, when a Department of Natural Resources biologist collected a specimen in the Boundary Waters Canoe Area Wilderness. Since then, biologists realized that northern sunfish specimens existed in the James Ford Bell Museum of Natural History fish collection, but had been misidentified. Other populations have since been found scattered in north central Minnesota.

Like all sunfish, northern sunfish are native only to North America. They also are an important part of the ecosystem; they occupy an intermediate trophic level, meaning they are a link between the upper and lower levels of the ecosystem, since they are both predators and prey.

The fish rely on high water quality for their habitat; reduced water quality from runoff, pollution, shoreline development, and siltation threaten the habitat of this species. For this reason, the species has been on the Minnesota special concern list since 2013. The frequency of high-intensity rain events from climate change can increase runoff and siltation

and, in turn, their harmful effects on water quality.

Fresh Energy knows that, like the northern sunfish, all Minnesotans need clean water and healthy, livable habitats. We strive to move Minnesota towards an equitable, carbon neutral economy to do all we can to help protect landscapes throughout our state from the impacts of climate change.

*Art by Amarilys Henderson. Learn more about Amarilys in Fresh Energy's lobby.*





# Morel Mushroom Room

Morel mushrooms are found most commonly in moist hardwood forests and grow wild in many countries across Asia, Europe, and North America. These edible mushrooms typically emerge in the springtime after adequate rain, especially near decaying elm, ash, poplar, and apple trees; in Minnesota, they tend to grow from early May through June.

Like all fungi, morels sprout from a delicate and complex strand of fiber called hyphae. Hyphae grow through substrate—like soil—that is not too dense, dry, or contaminated with pollutants. A network of hyphae forms mycelium, which are essentially mushroom roots. When conditions are

just right, mycelium send up fruiting bodies in the form of mushrooms.

These underground networks also connect trees to each other, allowing them to communicate and exchange nutrients amongst themselves.

Fungi play a critical role in all ecosystems, maintaining a very close, symbiotic relationships with trees and plants. Mycelium secrete enzymes that help break down decaying organic matter, providing nutrients for plants and trees; mushrooms—which do not produce sugars through photosynthesis—rely on trees for the carbohydrates they need to grow.

Morels are sensitive to temperature and moisture conditions, which have to be just right in order for them to fruit. The impacts of climate change on weather and precipitation patterns can negatively affect morels.

Fresh Energy recognizes how deeply interconnected our world is; our organization works to share resources and find ways to creatively collaborate to help ensure all will benefit from a clean energy transition.

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THE MICHAEL NOBLE AND J. DRAKE HAMILTON

# Northern Pocket Gopher Room

Northern pocket gophers span much of the western half of North America, ranging from east of the Sierra Nevada range in the U.S. and Canada, eastward to the Dakotas, and as far south as parts of New Mexico.

Minnesota's farthest northwest corner is the very edge of this species' range. Within its range, the northern pocket gopher lives in many types of habitats; grasslands, meadows, partially wooded areas, and agriculture fields all provide above- and below-ground plants for sustenance for this herbivorous mammal.

Northern pocket gophers carry food in their external, fur-lined cheek pockets. They are listed as threatened by the Minnesota Department of Natural Resources, and have not been documented in Minnesota since 1991.

Since the edge of their range is in the upper corner of the state, habitat changes from climate change may impact their range in

Minnesota. Additionally, their more common counterpart, the plains pocket gopher, is considered a pest in agriculture settings, and the northern pocket gopher can be subject to the same type of treatment.

For a relatively small animal (weighing between 2.1 - 5.6 ounces and between 6.5 - 10.2 inches long), northern pocket gophers have a big impact. Using their teeth and front claws, they forge elaborate tunnels underground, and they are rarely seen aboveground.

A typical tunnel system may contain 148-197 feet of tunnels roughly 12-16 inches below the surface of the earth. Northern pocket gophers remain active throughout the entire year, surviving the winter on food they cached in their tunnels, as well as other available plants below ground.

The Fresh Energy Board of Directors chose to name the northern pocket gopher room in honor of Michael Noble and J. Drake

Hamilton, legacy Fresh Energy leaders, because they never lose track of the fundamentals or the big picture, even in the face of new and emerging concerns.

Michael has maintained focus on energy efficiency—where he first started in the energy field—while J. has maintained focus on global decarbonization while also driving local action.

Like the Pocket Gopher, Michael and J. have built and nourished a vast network of partners and collaborators to support their mission. Over Fresh Energy's history in clean energy and climate advocacy, they've played a crucial role in Fresh Energy's accomplishments, allowing us to have widespread impact.

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