

# Tuĥmaġatipi

## Indigenous Science

*Tuĥmaġatipi* - the Dakota word for beehive - is a sculptural habitat and water source for pollinators created using the Dakota morning star form built with sustainable materials: clay, natural composites and driftwood. Situated in the Wildflower Meadow - an undeveloped area of the Greenway that supports many bee species, butterflies and moths, the project honors Indigenous science as well as the key ecological roles of pollinators and plants, who are increasingly threatened by climate change. This sculptural constellation explores how both form and material can support habitat restoration. *Tuĥmaġatipi* seeks to build reciprocity with the meadow ecosystem by providing respite to native pollinators right in the city.

The artist, Erin Genia's Sisseton Wahpeton Dakota philosophy of *mitakuye oyasin* is at the heart of *Tuĥmaġatipi*. It is based upon the interrelatedness of all life. Animals, insects, plants and water are respected for their own essential contributions to the world.

### Climate Change Impacts on Pollinators

We cannot live without our plant and pollinator relatives. As urbanization alters the landscape, shrinking habitat risks pollinator survival, since they cannot thrive in areas with few nest sites and host plants.

This is particularly true for native species like: mason bees, leaf cutter bees, small and eastern carpenter bees, yellow-faced bees, and grass carrying wasps.

Changes in water and temperature associated with extreme weather reduces suitable habitat conditions decreasing chances of survival.

The city of Boston has densely populated buildings, asphalt and pavement that act as a heat sink, creating heat island effect on hot days - higher temperatures than in surrounding communities. This can make conditions too warm and results in fewer pollinators.



# What Can You Do to Help Pollinators?

*Enhancing and restoring habitat is crucial for improving climate resiliency of pollinators.*

## Plant a chemical-free pollinator garden

Planting a garden is a fantastic way to attract pollinators and provide food and shelter for other wildlife. Select native plant species to preserve and encourage biodiversity. Avoid pesticides and herbicides, as they can injure unintended species like pollinators and the plants they depend on. By choosing to avoid these chemicals, humans can ensure that ecosystems are safe and healthy.

Habitat that is abundant with pollinator-attracting plants and flowers blooming throughout the spring-fall season will sustain large, stable and diverse pollinator communities that can better withstand the extreme weather events that are more frequent with climate change.

## Make a bee watering station

An easy and fun way to support pollinators is to make a bee watering station. While bees and other insects get their water from food, they still need water available for a variety of reasons. They use it to regulate the temperature of the hive, feed young bees, dilute stored honey and receive mineral nutrients.

### You will need:

1. A wide, shallow container large enough to hold a few ounces of water, like a dish from your kitchen, a recycled container, or a frisbee.
2. Rocks, glass pebbles or marbles
3. Clean water

Add the rocks, glass pebbles or marbles to the shallow container and fill with water. If your water is too deep, simply add corks, sticks or anything else that floats to give bees somewhere to perch to keep from drowning. Place your watering station near flowers honeybees like. Keep your watering station regularly filled.

