Shaping Enduring Relationships
Lessons from Native Plants and their Pollinators

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The Ancestors of the Keweenaw Bay Indian Community

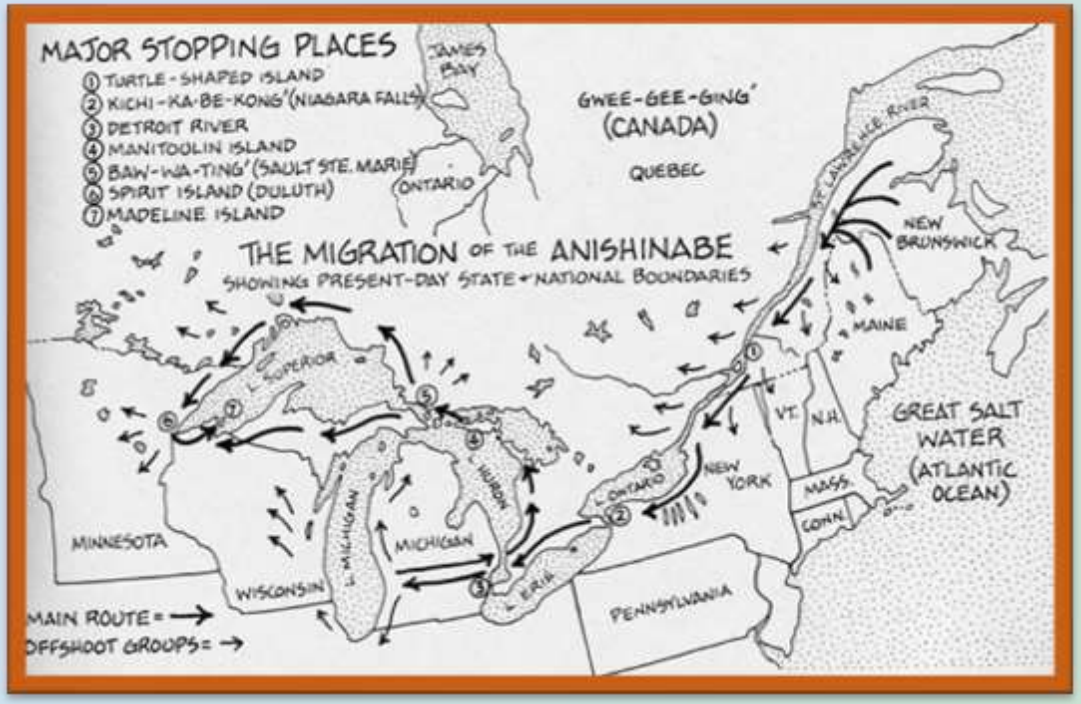



Photo courtesy of American Indian National Archives

- The Ojibwa, one of the three fires (Ottawa and Pottawatomi are the other two).
- Algonquin ancestry from the east coast.
- Seasonal movement of camps within region, woodlands lifestyle.

Medicinal Site:
Forest Recovery Project

Japanese barberry is a highly invasive forest species that has been identified on tribal lands. KBIC is removing this invasive and planting native species which have been requested from our Traditional Clinic in the past and will do well here. There are also pollinator friendly species that have been recommended by our USFS partnership that have been included to help local pollinators. Our hope is to provide biodiversity to this site and make it an easily accessed area for future gathering.

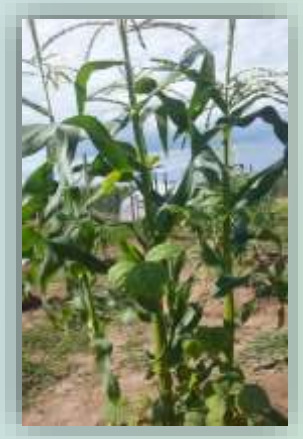
Seed Orchard and Pollinator Plots:
Local Seed Source/Habitat Project

There are many land disturbing projects ongoing on our reservation such as roads, buildings, landscaping, and restoration. KBIC recognizes the importance of having a local seed supply for plants that do well in disturbed areas, are pollinator-friendly, and provide competition to invasive species. As part of our Zaagkii partnership, several grass and wildflower species were suggested that would do well in these types of projects. An added benefit is the pollinator habitat the seed orchard provides which assists the community garden. There are also cultural significant plants requested by our Traditional Clinic that are included for gathering purposes.

The People's Garden, Hoophouse, Small and Fruit Orchard, and Beehives:

Food Sovereignty Project

Food sovereignty is that state of being in which our community is able to have a safe, culturally acceptable, nutritional adequate diet through a sustainable food system that promotes community self-reliance and social justice. In 2012 the Tribal Council approved the beginning of a community and demonstration garden off Brewery Road as part of an Ojibwa Permaculture Project. The Natural Resources Department has been working with other tribal departments, MSU extension service, KBOCC, and the Community to facilitate the establishment of individual garden plots, community plots, small fruit crops, fruit orchard, perennial vegetables, and a demonstration hoophouse. Our goal is to provide assistance to enable the community to grow and preserve nutritional organic foods for themselves, to share, and for local marketing. Tribal Youth Conservation Crews assist our Plants Program in the seasonal care of this area and the Communal Projects. The People's Garden has 20 individual plots for families to utilize and the potential for more fenced in areas if needed. The fruit orchard contains 23 apple, 14 pear, 10 plum, 12 cherry, and 7 chokecherry trees as well as 4 serviceberry. The small fruit orchard contains a strawberry, blackberry, and raspberry patch in a larger fenced area and smaller numbers within the hoophouse. There are also grapes and a small patch of asparagus and rhubarb. There are two beehives set up nearby for pollinator educational purposes and as a source of honey.



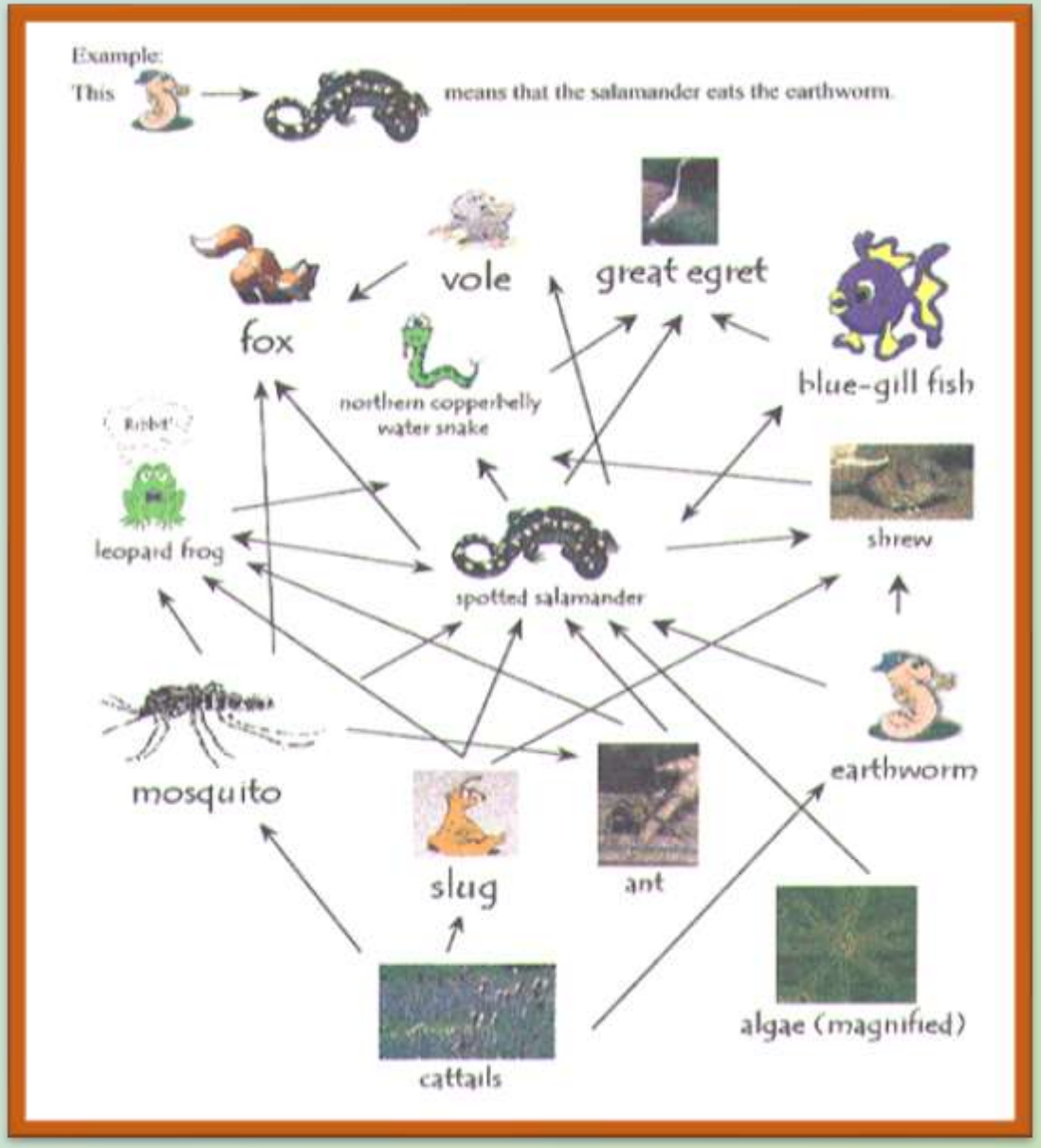
Sand Point Restoration Site:
Environmental Health Project

Mass Mill mining efforts from 1902-1919 unloaded over 6 billion pounds of stamp sands into Lake Superior north of the L'Anse Indian Reservation. Stamp sands have moved with currents, wind and wave action and along with the lake bottom, cover shoreline beaches south of the original mill site, including our tribal property at Sand Point. Without assistance, it is estimated that it would take over 850 years to naturally recover this area. Stamp sands are detrimental to health as they contain heavy metals and are toxic to plant life. In addition, the physical nature of stamp sands with their sharp edges and dark coloring combined with the wind and heat make it very difficult to establish any vegetation in this area to support a healthy ecosystem. This legacy pollution is a concern for our Community as it is part of a large property which is widely used by the public for recreation, is a wildlife conservation area, and a culturally significant place for our Tribe.

In 2010, with the Great Lakes Restoration Initiative, opportunities presented themselves to begin restoration at this site. Since this time, over 2.5 miles of shoreline and 34 acres have been covered with topsoil and native plantings. Sand Point now hosts a pollinator friendly demonstration garden and walking/fitness trails next to Lake Superior as well as wetland trails nearby. This cap not only protects shoreline life but provides a buffer to protect nearby wetlands which hold our wild rice and cranberry beds as well as numerous other medicinal plants. Other life protected includes the numerous wildlife species which have been documented using this area through game camera, waterfowl, and amphibian studies. This area provides unique educational opportunities for community, schools, and organizations on the importance of legacy pollution restoration to the health of the environment.

Management Holistic Approach

- *"To live in harmony while enhancing and sustaining the resources of the Keweenaw Bay Indian Community for the Seventh Generation."*
- 2003 Integrated Resource Management Plan.
- 2013 Tribal Strategic Plan
- 2014 Wildlife Stewardship Plan
- 2014 Aquatic Invasive Plan



The IRMP emphasizes the importance of protection of native species to sustain the Anishinaabe lifeways of Tribal members.

The Honorable Harvest and Reciprocity

- Know the ways of the ones who take care of you,
  so you can care for them.
- Introduce yourself, be accountable.
- Ask permission and abide by the answer.
- Never take the first or the last.
- Take only what you need.
- Take only what is given.
- Never more than half.
- Harvest in way to minimize harm.
- Use it respectfully.
- Share.
- Give thanks for what you have been given. (Allegiance of Thankfulness).
- Give a gift, in reciprocity for what you have taken.
- Sustain the ones who sustain you and the earth will last forever.

Behold the Cedar

The Holy Tree

Come let her breathe you, new life within

We call her saving tree, she saves the people

We say nookomis, we show respect

"Go to the nearest high spot and look around

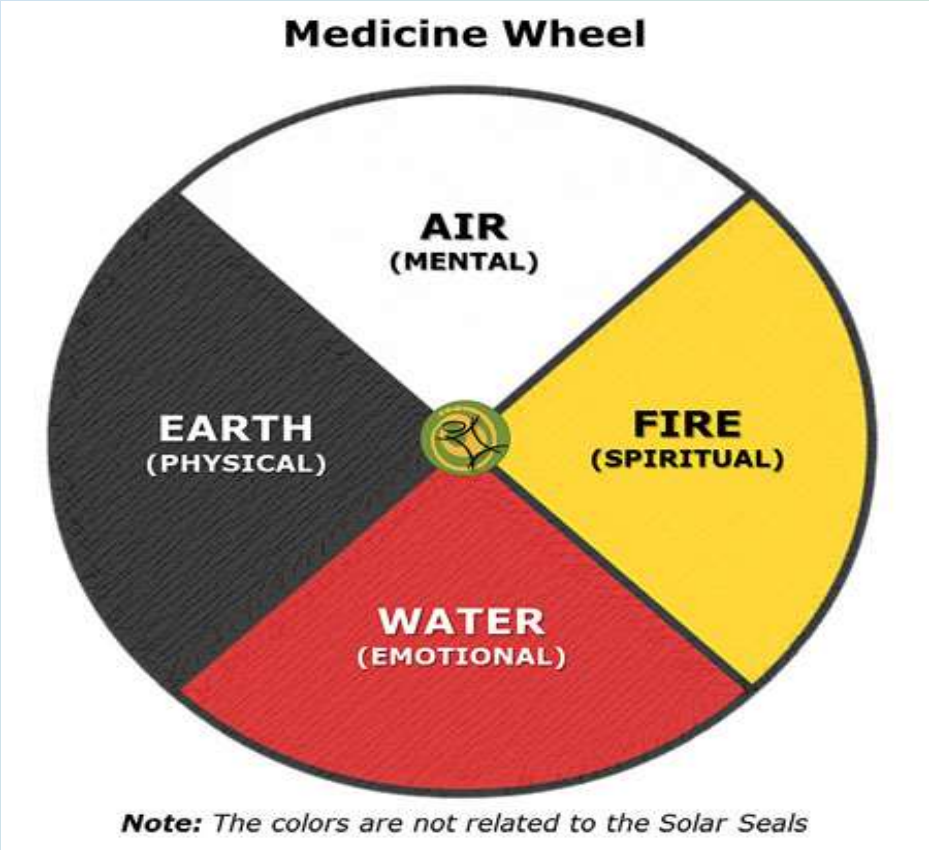
And if you can see grandmother cedar and grandfather birch,

You're with your family and you're safe…

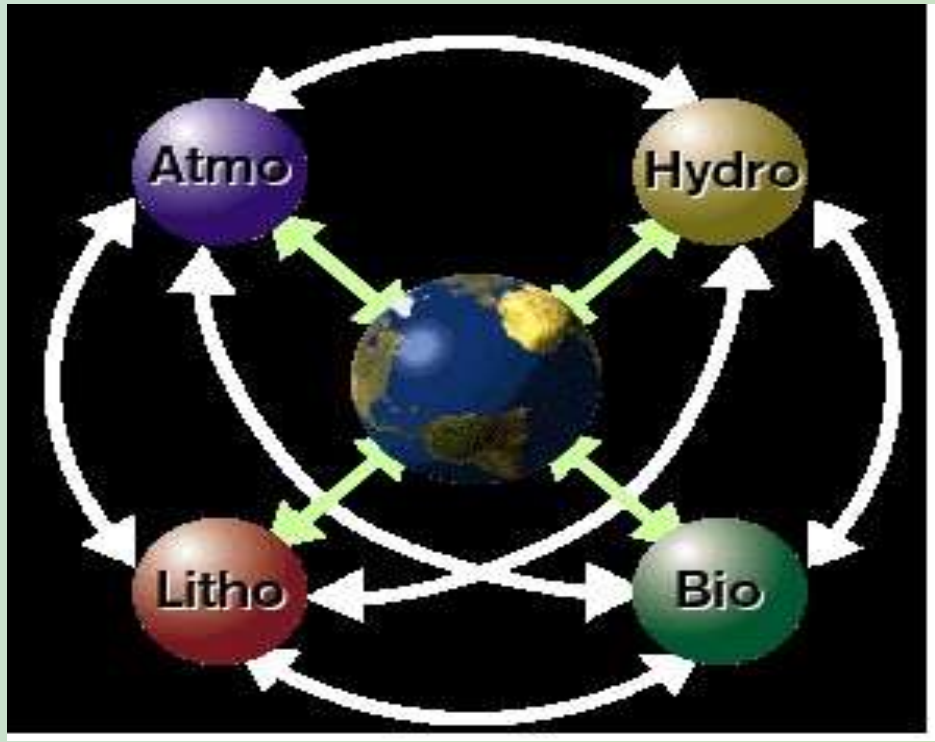
They can provide for you everything that you need to survive…"

Excerpt from
Our Knowledge is not Primitive
Wendy Makoons Geniusz

Relationships Between Knowledge



Earth-system-science model



Four Sacred Plants

Wiingashk Sweet Grass

Giizhikenh Cedar

Imbji'goa Sage

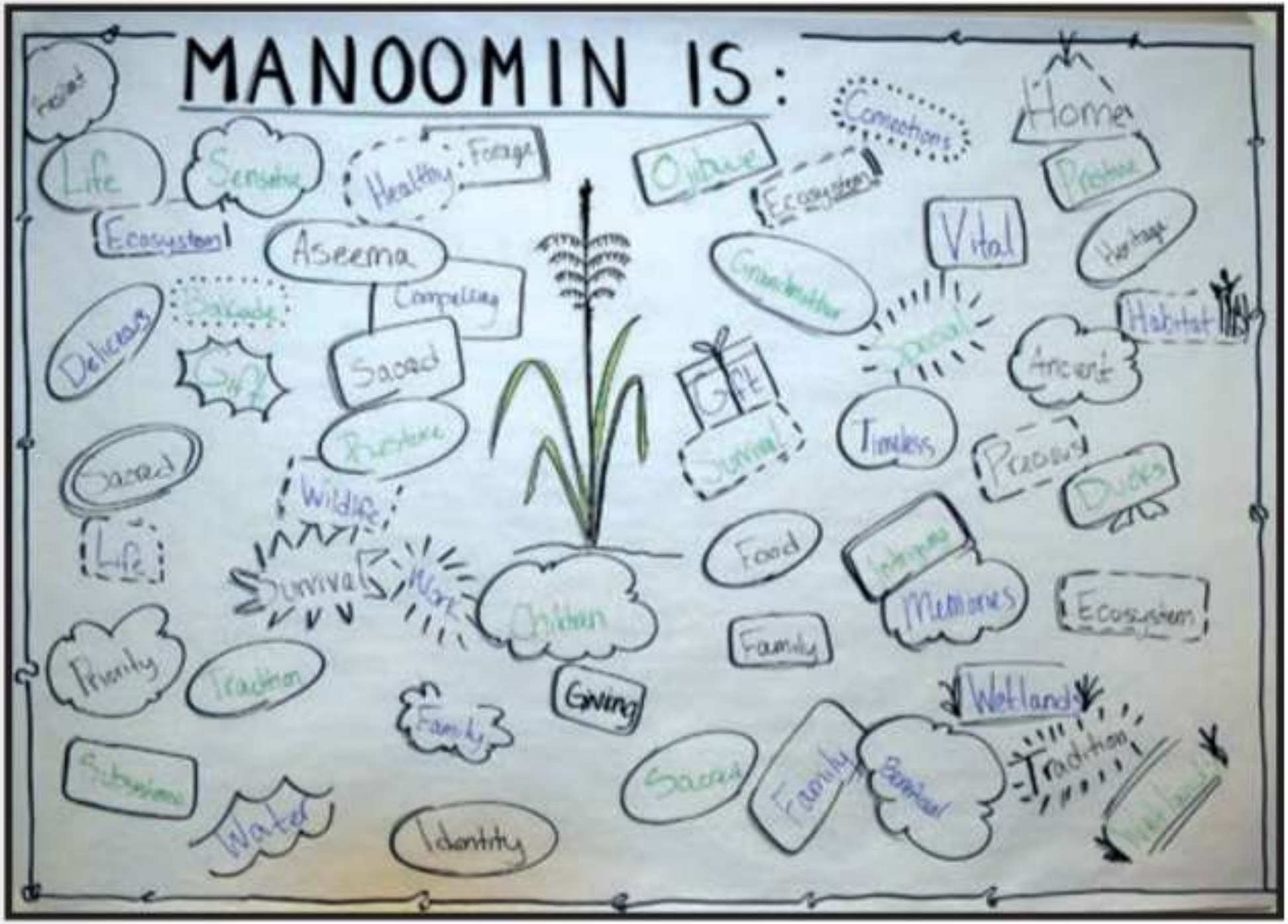
Asemaa Tobacco

Manoomin Wild Rice

Ojibwa prophecies underscore the importance and reverence held for wild rice – *manoomin*

As Edith Leoso, of the Bad River Band explains:

"The history of Wild Rice grounds us to this place that we were guided to for our survival, for our livelihood. We were guided to follow the path to the place where the food grows on water. We are to take care of that good seed so that the good seed takes care of us."


MANOOMIN IS:
Life
Sensing
Healthy
Forage
Culture
Connections
Home
Ecosystem
Aseema
Compelling
Vital
Delicious
Sacred
Gift
Ancient
Habitat
Sacred
Life
Wildlife
Survival
Work
Children
Food
Timeless
Ducks
Memories
Ecosystem
Priority
Tradition
Giving
Family
Wetlands
Tradition
Water
Identity
Sacred

SAND POINT Restoration PROJECT

KBIC Natural Resources Department

A manmade solution to a manmade problem

LSTF











Great Lakes
RESTORATION
Sand Point Restoration Project
ORV's
Littering


FATHERS

Sand Point - FUTURE

Biodiversity

Wild columbine
Big bluestem
Thimbleweed
Common milkweed
Boneset
Tickseed
Beebalm
Evening Primrose
Black eyed susan

Goldenrods
Little bluestem
Blue vervain
Pearly everlasting
Soft rush
Fringed sedge
Sweetgrass
Sage

Prevent erosion

Red osier dogwood
Nanny berry
Beaked hazelnut
Ninebark
Red Oak

Biomass

Native Species

Boulders
Mounds
Top Soil

Wildlife Habitat

Take home messages

Our First Treaty is with the Plant Nation

We must respect and honor the whole nation of plants

Some plants are more commonly used, yet ALL are important

We don't have to justify why all plants are important, they just are

We may not yet have received the teachings on their significance

As humans we don't know what all the nations need therefore we must dedicate ourselves to protect:

Biodiversity -- Pristine Environments -- High Quality

Need to practice reciprocity toward ancestors and 7th generation
What has been and what is to come

People the world over may need our plants for healing and we must safe-guard them

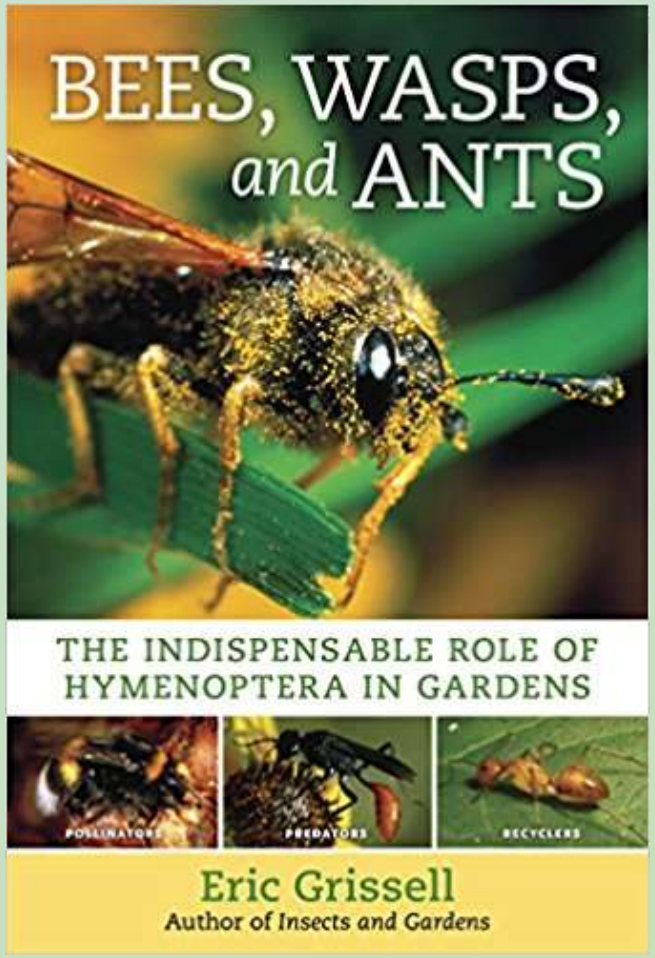
All about relationships and building relationships takes time to feel acceptance -- Through a gradual adoption of plants a purpose becomes recognized – e.g. plantain

We do not advocate an eradication mentality – rather hold invasives in check to make more room for the native species.

The Manidoosheg that make it all Possible

"Few insects are more important than bees, wasps, and ants. They maintain the garden's biological balance, fertilize vegetables, fruits, and flowers, and recycle nutrients within the soil. It's no exaggeration to say that a garden can't be understood without an understanding of its insects."

Eric Grissell, Author of Bees, Wasps and Ants, The Indispensable Role of Hymenoptera in the Garden



Keep your garden insects requited

1. Use plants that are rich in nectar and pollen.

2. Use a diverse range of plants that bloom at different times of the growing season.

3. Use specific host plants that serve as larval food for the caterpillar stage of butterflies.

4. Include some native plants in the landscape that have a natural relationship with native pollinators.

5. Consider leaving a small patch of flowering non-invasive weeds to create habitat -- remove any seedheads immediately after flowering.

6. Supply a source of water for butterflies, beneficial insects and some bee species – (small dish with damp sand or pebbles and water).

7. Supply and/or protect nesting and hibernation sites -- patches of bare earth for soil dwelling bees; hollow stems or tubes for cavity dwelling bees, leaf litter and small brush piles for butterflies.

8. Avoid the use of chemical pesticides. Instead, to control pests, use cultural and mechanical techniques and encourage the pest's natural enemies in the garden.

Bees

Eat pollen
Stout hairy legs
Long antennae
Eyes on side of head

Wasps

Eat Meat
Long spindly legs
No pollen-collecting hairs
Silver hair on

Flies

Single pair of wings
Short antennae
Eyes forward facing

- Bees are all around us
- Bees actively gather pollen
- Bees enhance the quality of our lives
- Bees benefit from our improved understanding of them

Don’t be afraid to touch them

Halictidae Sweat bees		Many have nests with queens One suture below antenna Curved basal vein on wing Short tongue
Colletidae Plasterer bees		Solitary nesters One suture below antenna Very short-tongues
Megachilidae Mason, leaf-cutter bees		Carry pollen on underside of abdomen Bodies robust, rounder Large mouth-parts Often nest in wood
Apidae Social, honey bees, bumble bees		Hairy, relatively large Long tongues Fast flying
Andrenidae Mining bees		Nest in the earth Two grooves beneath the antenna Short tongues

Bees and Blueberries

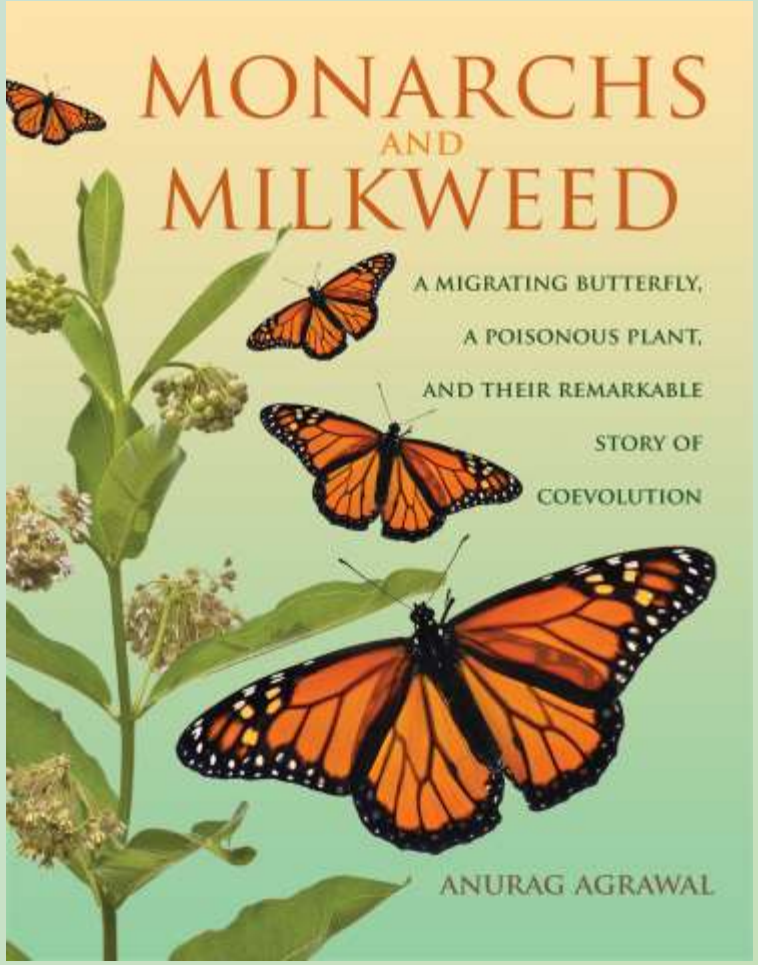
The Bumble bee song
Buzz pollination = Sonication

https://www.youtube.com/watch?v=SZrTndD1H10

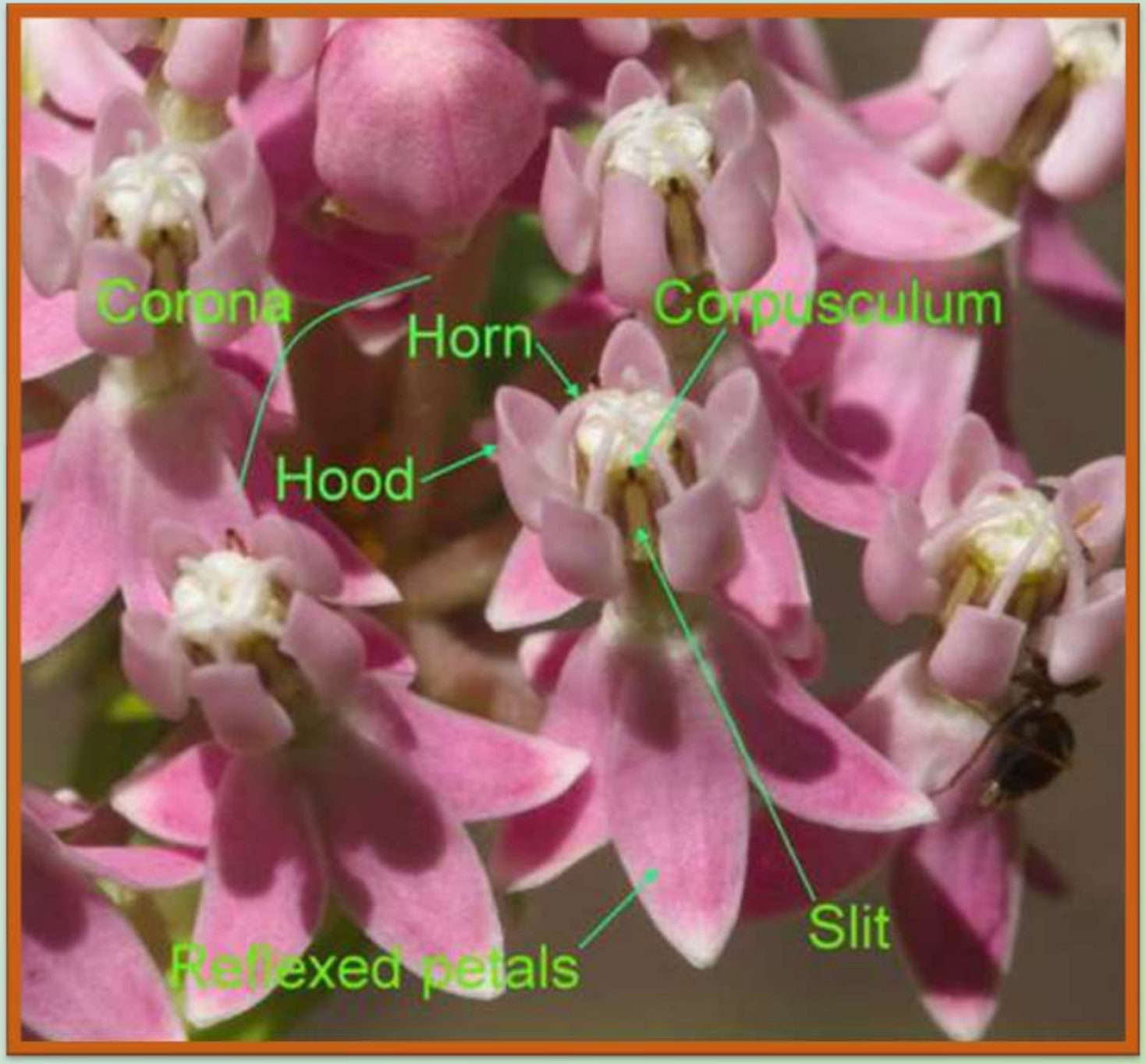
https://www.youtube.com/watch?v=J7q9Kn1rhRc

“A monarch butterfly is perched on a milkweed flower, ready to take a sip of nectar. What a site of harmony in nature. But this butterfly is not a pollinator of milkweed. Instead, the butterfly is hoping to find a mate and then to have children that will devour the milkweed plant. Through coevolution, the milkweed does not invite the monarch, but rather tries to ward it off. The nature of the monarch-milkweed interaction is simplified by the fact that monarchs are unquestionably pests and are not also pollinators…milkweeds must defend themselves.

Anurag Agrawal, Author of Monarchs and Milkweed



Monarchs and Milkweed


Corona
Horn
Corpusculum
Hood
Slit
Reflexed petals


© Dwight Kuhn


Scott Alan Johnson ©

Whose legs are better suited to transfer pollen?

Enjoying delicious nectar

Enjoying nutritious pollen

Miigwech