Activity: Climate Change Vulnerability of Culturally Important Beings

Participants should gain an understanding of:

- What climate change effects we might expect in the region
- How climate change may affect culturally important beings
- How treaty rights and the lifeways of Ojibwe people may be impacted by climate change

Estimated time: 45 minutes – 1 hour

Age: 4th – 8th grade

Supplies:

- Laminated sheets with 1) a picture of an animal/plant, plus its English and Ojibwe names and preferred habitat on the front, and 2) a list of climate change impacts to that animal/plant on the back.
- A separate instructor page with a list of climate impacts we might see in the region, below.

Introduction:

- Brainstorm list of climate impacts we will experience and share one way these climate impacts might affect your life.
- How will climate change impact plants and animals?
- What are some ways humans depend on plants and animals, particularly Ojibwe people that have retained treaty rights to harvest beings in the upper Midwest Ceded Territories and depend on these beings as part of their lifeways?

Activity:

- Hand out cards to individuals or partners, don't look at the back of the sheet!
- Before activity, find a partner. Brainstorm how their animal/plant might be affected by climate change (think about where it lives, what it eats, etc.)
- Have group line up facing the same direction
- Read off climate impacts one by one; have group members take steps forward if their animal/plant is affected by that climate impact
- After each one, ask group members to explain what animal/plant they are and why they moved
- At end, have everyone notice where they ended up relative to everyone else

Wrap-up:

- Who was most vulnerable? Who was least vulnerable? Was anyone surprised by how far they did or did not move?
- Were there any beings that may benefit from climate change in some ways?
- What does this mean for people who have treaty rights to harvest these plants/animals and depend on them for so many things? (use your sheets for clues)
- What can we do to help these beings?

If your plant or animal will be affected by…

- Increasing temperatures – air temperatures are expected to increase in all seasons, but particularly in the winter. Water temperatures will increase too, in many cases more than air temperatures.
- Drought – we can expect longer dry periods, particularly in the summer
- Increases in predators – some beings are expected to be favored by climate change and those beings may predate more heavily on other beings
- Pathogens/diseases/parasites – warmer temperatures may favor certain diseases or pathogens that can affect native beings
- Extreme precipitation events – we can expect more rain to come in the form of large rain events, with inches of rain that may cause flooding
- Decreases in snowfall – more winter precipitation will fall as rain as the temperatures warm
- Low genetic variation – some beings may not be able to respond as easily to climate change because of low genetic variation
- Competing beings – some beings may be favored by climate change and may outcompete others
- Changes in diet – some beings might have fewer food sources available
- Limited dispersal – some beings cannot travel very far or across barriers, and may not be able to move north as climate change continues
- Human development – development of towns and cities may disrupt habitat for some beings

…. Then take the number of steps listed on your sheet.

Walleye

Ojibwe Name: Ogaa

Preferred Habitat: Cool water lakes

Importance to the Ojibwe: Ogaa is an important source of food and highly respected by the Ojibwe people.

Walleye Ojibwe name: Ogaa

Warmer temperatures: Lake water temperatures are predicted to increase, reducing habitat for ogaa by 10-40%. This will affect the survival of this being in some lakes. (Take 2 steps)

Drought: Drought is not likely to affect ogaa. (0 steps)

Predators: No predators expected to increase because of climate change. (0 steps)

Parasites/pathogens: No parasites or pathogens of ogaa expected to increase because of climate change. (0 steps)

Extreme precipitation: An increase in the intensity and frequency of extreme precipitation events might decrease the ability of ogaa to breed in some lakes and rivers. (Take 1 step)

Decrease in snowfall: Decrease in snowfall not likely to affect ogaa. (0 steps)

Genetic variation: Genetic variation is likely average or high. (0 steps)

Competing beings: Ogaa are likely to experience competition from largemouth bass and smallmouth bass because these fish can survive better in warmer water. (Take 2 steps)

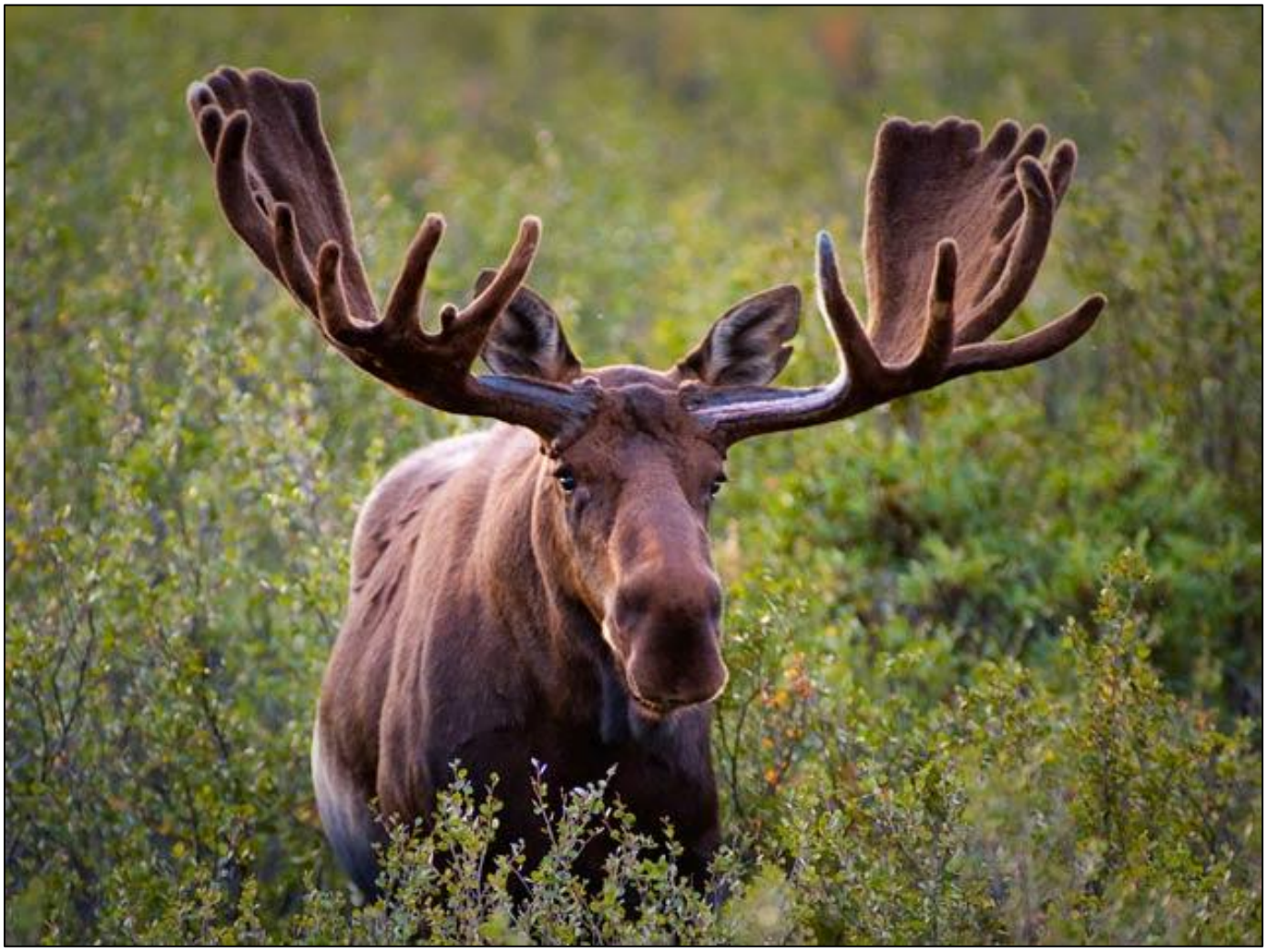
Changes in diet: Baby ogaa eat tiny animals found in lakes called zooplankton. It's possible that zooplankton populations will decrease as the climate changes. (Take 1 step)

Ability to disperse (move): Dams, culverts, and road crossings can limit water connections between lakes and reduce the ability of ogaa to find more suitable habitat as the climate changes. (Take 3 steps)

Human development: Development of shorelines around lakes can affect ogaa habitat. (Take 1 step)

Moose

Ojibwe Name: Mooz



Preferred Habitat: Cold snowy environments, wetlands and swampy areas

Importance to the Ojibwe: Mooz is hunted for food. Their hides for used for clothing and moccasins. All parts of mooz are used.

Moose Ojibwe name: Mooz

Warmer temperatures: Mooz experiences heat stress when temperatures are above 23°F in the winter and 59°F in the summer. (Take 3 steps)

Drought: Mooz eats aquatic plants and finds food in late spring, summer, and fall in wetland areas. Drought can dry out wetlands, decreasing food sources for mooz. (Take 1 step)

Predators: Predators of mooz include the wolf and bear. Populations of both may increase as climate warms. Predators cause 80% of the deaths of young mooz calves. (Take 3 steps)

Parasites/pathogens: Winter ticks are parasites that feed on mooz, causing skin irritations and blood loss. One mooz was found with over 100,000 ticks embedded in its body. (Take 3 steps)

Extreme precipitation: Extreme precipitation events not known to impact mooz. (0 steps)

Decrease in snowfall: Mooz are adapted to habitats with longer winters and lots of snow. (Take 3 steps)

Genetic variation: Mooz genetic variation is low making it less adaptable to a changing climate. (Take 2 steps)

Competing beings: White-tailed deer carry a disease called “brainworm,” which is deadly to mooz. Deer populations are predicted to increase as the climate warms and therefore could spread more diseases to mooz. (Take 2 steps)

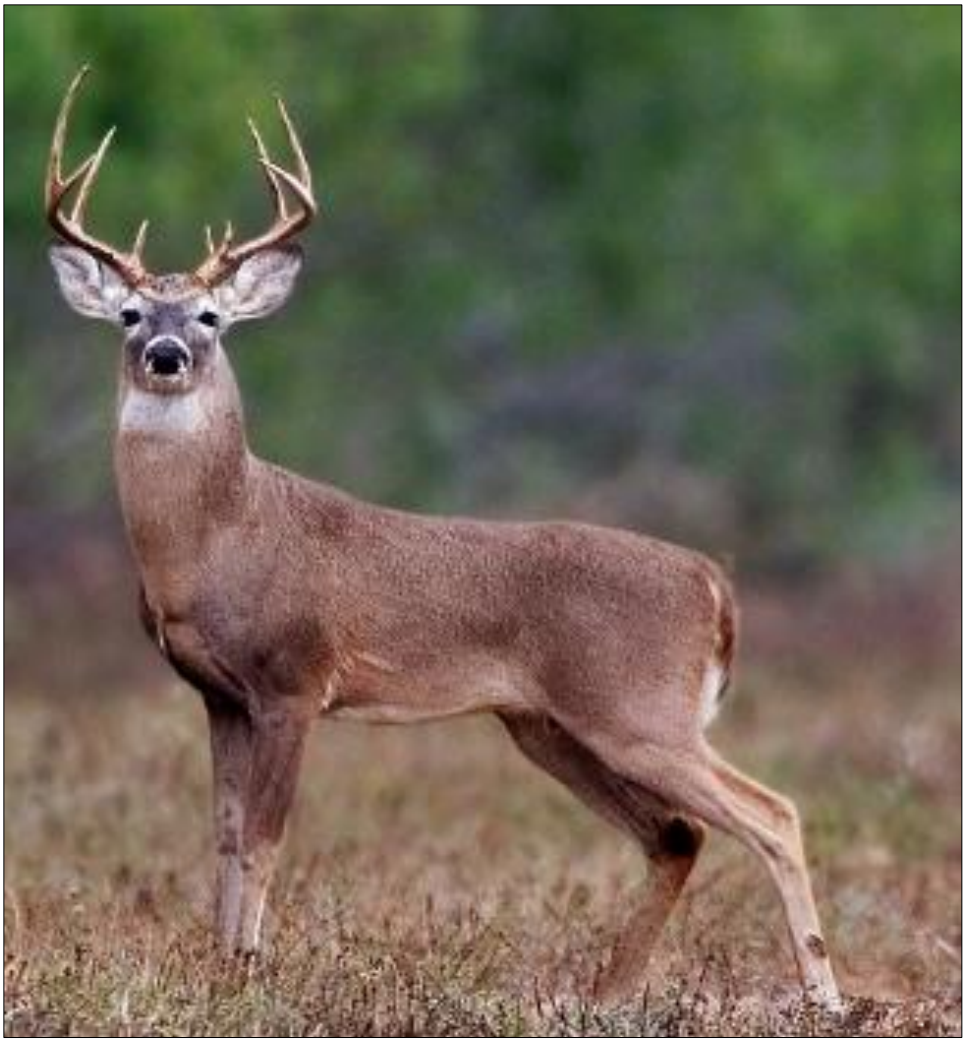
Changes in diet: The mooz diet is fairly flexible. (0 steps)

Ability to disperse (move): Mooz can move long distances. (0 steps)

Human development: Human development has a minimal impact on mooz. (0 steps)

White-Tailed Deer

Ojibwe Name: Waawaashkeshi



Preferred Habitat: Deer can adapt to live in many habitats including forests, farm fields, and in most rural and city environments.

Importance to the Ojibwe: Deer are highly respected and are an Ojibwe “clan” animal. They are an important source of food. Their hides are used for clothing and moccasins. All parts of the deer are used.

White-tailed Deer Ojibwe name: Waawaashkeshi

Warmer temperatures: Waawaashkeshi is adaptable to warming temperatures and their populations are increasing. (0 steps)

Drought: Because they can move to other areas, waawaashkeshi is not as affected by drought as other beings. (0 steps)

Predators: No predators favored by climate change that are expected to impact the waawaashkeshi population. (0 steps)

Parasites/pathogens: A biting midge (insect) carries a deer disease called “EHD.” Warming temperatures have allowed this insect to move further north and bring the disease with it. Chronic Wasting Disease is also a major threat to waawaashkeshi. (Take 1 step)

Extreme precipitation: Extreme precipitation will not impact waawaashkeshi. (0 steps)

Decrease in snowfall: Less snowfall and warmer winter temperatures will make it easier for waawaashkeshi to survive. (0 steps)

Genetic variation: Genetic variation is high and therefore they will be better able to adapt to climate change. (0 steps)

Competing beings: Waawaashkeshi is not negatively impacted by competition. (0 steps)

Changes in diet: Waawaashkeshi can adapt to a variety of foods. (0 steps)

Ability to disperse (move): Waawaashkeshi is very mobile and can move to habitats that favor it. (0 steps)

Human development: Waawaashkeshi is able to adapt to living close to humans. (0 steps)

Wild Turkey

Ojibwe Name: Giche-bine

Preferred Habitat: Turkeys are adapted to living in many habitats including forests, farm fields, and most rural and city environments.

Use by the Ojibwe: Turkeys are hunted for food. Their beautiful feathers are sometimes used in crafts.

Wild Turkey Ojibwe name: Giche-bine

Warmer temperatures: Turkeys are adaptable to warming temperatures and their populations are increasing. (0 steps)

Drought: Because they can fly or travel over land to move to other areas, gichi-bine is not as affected by drought as other beings. (0 steps)

Predators: Although giche-bine has predators that may increase, higher populations numbers of turkeys can offset losses. (0 steps)

Parasites/pathogens: With increasing populations, giche-bine has more contact with humans and domestic farm-raised poultry which makes them more capable of transmitting diseases. These diseases are not common, but are expected to increase as climate change continues. (Take 1 step)

Extreme precipitation: Not expected to affect giche-bine. (0 steps)

Decrease in snowfall: Less snowfall and warmer winter temperatures will make it easier for giche-bine to find food during the winter and survive. (0 Steps)

Genetic variation: Genetic variation of giche-bine is high and therefore will help it adapt to climate change. (0 steps)

Competing beings: Giche-bine does not have many competing beings. (0 steps)

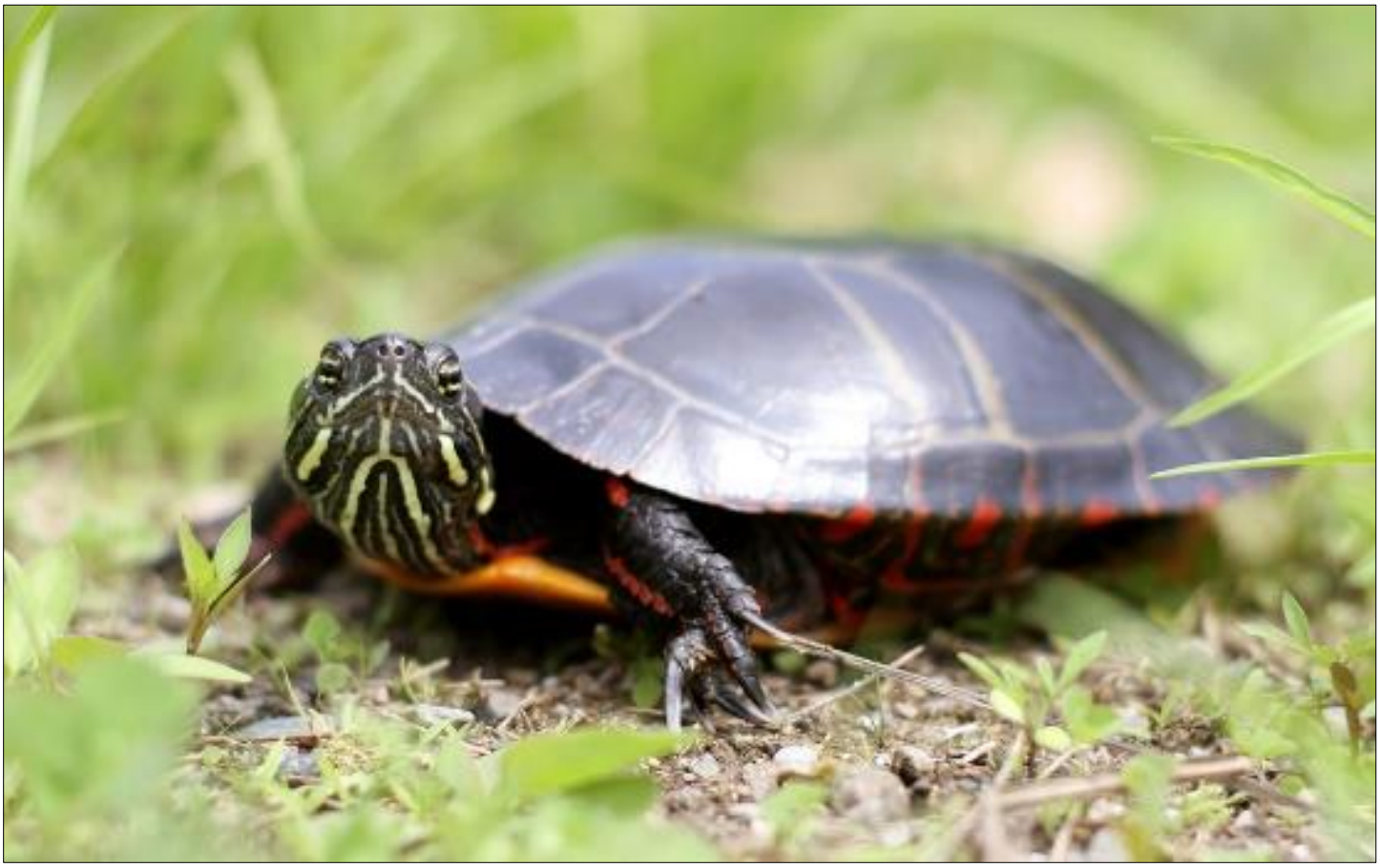
Changes in diet: Giche-bine likes acorns, but can adapt to a variety of foods including agricultural crops. (0 steps)

Ability to disperse (move): Giche-bine is very mobile and can move to favorable habitats. (0 steps)

Human development: Giche-bine can adapt to living close to humans. (0 steps)

Painted Turtle

Ojibwe Name: Miskwaadesi



Preferred Habitat: Shallow ponds, marshes, wet areas

Importance to the Ojibwe: The turtle is important because of its role in the Ojibwe's story of Creation. Its shell is used to make ceremonial rattles.

Painted Turtle Ojibwe name: Miskwaadesi

Warmer temperatures: Painted turtles are adapted to warming temperatures. (0 steps)

Drought: Turtles can survive temporary drought conditions. (0 steps)

Predators: No predators expected to increase with a warming climate. (0 steps)

Parasites/pathogens: – Viruses affecting turtles are increasing as the climate warms. Viruses weaken their immune system which decreases populations. (Take 2 steps)

Extreme precipitation: Turtle nests and baby turtles can be washed away by extreme rain and storm events. (Take 1 step)

Decrease in snowfall: Not known to be affected by a decrease in snowfall. (0 steps)

Genetic variation: Genetic variation of miskwaadesi is unknown. (0 steps)

Competing beings: Miskwaadesi doesn't have many competing beings currently, but may in the future. (0 steps)

Changes in diet: Miskwaadesi eats a lot of things and has a flexible diet. (0 steps)

Ability to disperse (move): Turtles are not very mobile. If habitat conditions change due to climate change, they are slow to move. (2 steps)

Human development: Roads created barriers for turtles to cross. Many turtles are killed crossing roads while they are looking for nesting areas. (Take 1 step)

Blueberry

Ojibwe Name: Miin

Preferred Habitat: Forests, clearings, and bogs. Miin especially likes areas that have been recently burned.

Importance to the Ojibwe: Source of food and used in ceremonies

Blueberry Ojibwe name: Miin

Warmer temperatures: Miin is a northern being limited to growing in cool environments. Increasing temperatures, especially warm winter or spring temperatures, could cause the plants to bloom out of season. Hot summer temperatures can reduce the quality and quantity of the fruit crop. (Take 1 step)

Drought: Miin, like most plants, is dependent on a consistent source of water and would be affected by drying. Severe drought can limit fruit production and weaken plants. (Take 1 step)

Predators: No predators of miin that will increase significantly with climate change. (0 steps)

Parasites/pathogens: No known pathogens that will increase due to climate change. (0 steps)

Extreme precipitation: Extreme precipitation unlikely to affect miin. (0 steps)

Decrease in snowfall: Miin benefits from a snowpack in the winter to provide protection from cold. Snowpack also prevents other beings from browsing on their branches. (Take 2 steps)

Genetic variation: Little is known about miin genetic variation. (0 steps)

Competing beings: Not affected by competing beings. (0 steps)

Changes in diet: Not applicable to miin. (0 steps)

Ability to disperse (move): Most of the dispersers of miin, such as small mammals, travel small distances. However, seeds can also be spread by birds, which travel longer distances. (Take 1 step)

Human development: Miin needs fire to maintain its habitat. Humans often limit fire on the landscape. This prevents miin's habitat from being maintained. (Take 2 steps)

Common Loon

Ojibwe Name: Maang

Preferred Habitat: Larger cold-water lakes with sheltered islands and bays for nesting.

Importance to the Ojibwe: Loon is an Ojibwe “clan” animal and highly respected.

Common Loon Ojibwe name: Maang

Warmer temperatures: Maang is extremely vulnerable to increasing temperatures which are pushing them farther north. (Take 4 steps)

Drought: Drought not likely to impact maang. (0 steps)

Predators: No predators expected to increase and affect maang in the future. (0 steps)

Parasites/pathogens: With warming temperatures, outbreaks of bird diseases, parasites, and biting insects that can cause maang to abandon nests are increasing and becoming more severe. (Take 1 step)

Extreme precipitation: Extreme storms and flooding can cause wash away loon nests and baby loons, and decrease water clarity which makes it hard for them to hunt. (Take 3 steps)

Decrease in snowfall: Maang migrates south in the winter and is not affected by decreases in snowfall. (0 steps)

Genetic variation: Little known about maang genetic variation. (0 steps)

Competing beings: Maang does not compete with many other beings. (0 steps)

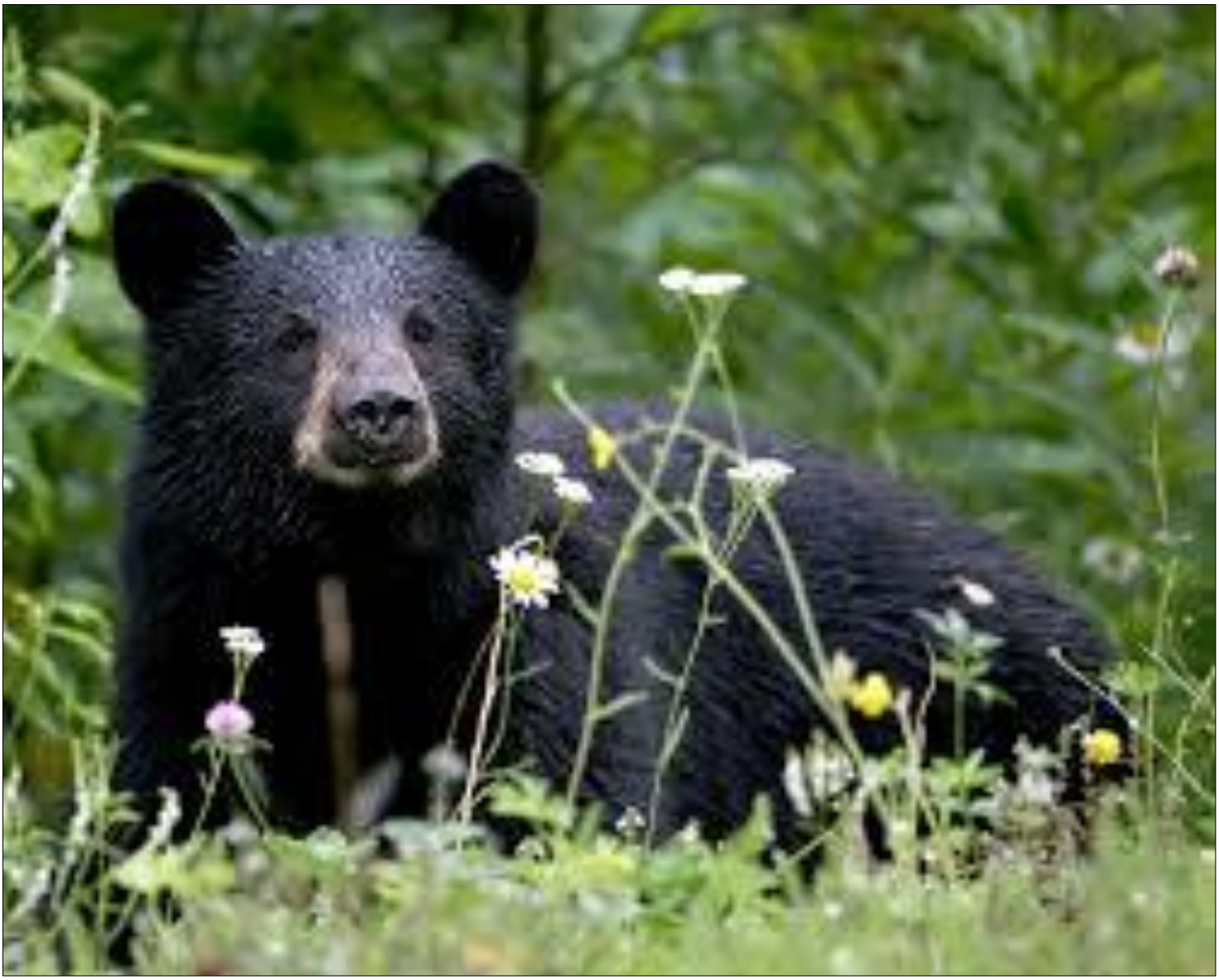
Changes in diet: Maang's diet is fairly flexible and eats a variety of fish. (0 steps)

Ability to disperse (move): Maang can travel large distances. (0 steps)

Human development: Dams, irrigation, and development of shoreline areas are affecting maang's habitat and the ability to nest successfully. (Take 2 steps)

Black Bear

Ojibwe Name: Makwa



Preferred Habitat: Makwa is adapted to living in a variety of habitats including forests, fields, most rural areas, and even in cities!

Importance to the Ojibwe: Makwa is an Ojibwe “clan” animal and highly respected.

Black Bear Ojibwe name: Makwa

Warmer temperatures: Makwa is more adaptable to warming temperatures than many other beings. (0 steps)

Drought: Makwa is not affected by drought. (0 steps)

Predators: Makwa has few predators. (0 steps)

Parasites/pathogens: No evidence of pathogens affecting makwa increasing because of climate change. (0 steps)

Extreme precipitation: Makwa is not affected by extreme precipitation events. (0 steps)

Decrease in snowfall: Makwa is not dependent on snow, but can be affected by it. With climate change, snow and ice can thaw out and floods winter bear dens. This can lead to bears leaving their dens early when food isn't available yet. This can lead to weight loss or death of their cubs. (Take 1 Step)

Genetic variation: Genetic variation is high and therefore might help makwa adapt to climate change. (0 steps)

Competing beings: Makwa does not compete with many beings. (0 steps)

Changes in diet: Makwa's diet is very adaptable. It is not expected to be negatively affected by climate change. (0 steps)

Ability to disperse (move): Makwa can move long distances. (0 steps)

Human development: Major highways are a major barrier and threat to makwa. Any lack in food caused by climate change will cause bears to move more and have a greater chance of being hit by a car. Highways account for around 100 road deaths of bear each year in the Upper Great Lakes region. (Take 1 Step)

Paper Birch

Ojibwe Name: Wiigwaas

Preferred Habitat: Cool to cold areas with well-drained soil

Importance to Ojibwe: The bark of wiigwaas is used to make birchbark canoes, shelters, containers, and craft items.

Paper Birch Ojibwe name: Wiigwaas

Warmer temperatures: Wiigwaas is adapted to colder temperatures and won't be able to grow as well with increased temperatures. (Take 3 steps)

Drought: Wiigwaas seedlings have a hard time growing during drought. (Take 3 steps)

Predators: Wiigwaas can be killed by an insect pest called the bronze birch borer. White-tailed deer also eat its leaves. Both beings are likely to increase with climate change. (Take 3 steps)

Parasites/pathogens: No known wiigwaas pathogens that will increase with climate change. (0 steps)

Extreme precipitation: Not affected by extreme precipitation. (0 steps)

Decrease in snowfall: Wiigwaas needs snow in the winter to protect its roots. (Take 1 step)

Genetic variation: Genetic diversity of wiigwaas is high and may help it adapt to climate change. (0 steps)

Competing beings: Wiigwaas seedlings are often out competed and taken over by raspberry plants. Raspberries are expected to increase with climate change. (Take 2 steps)

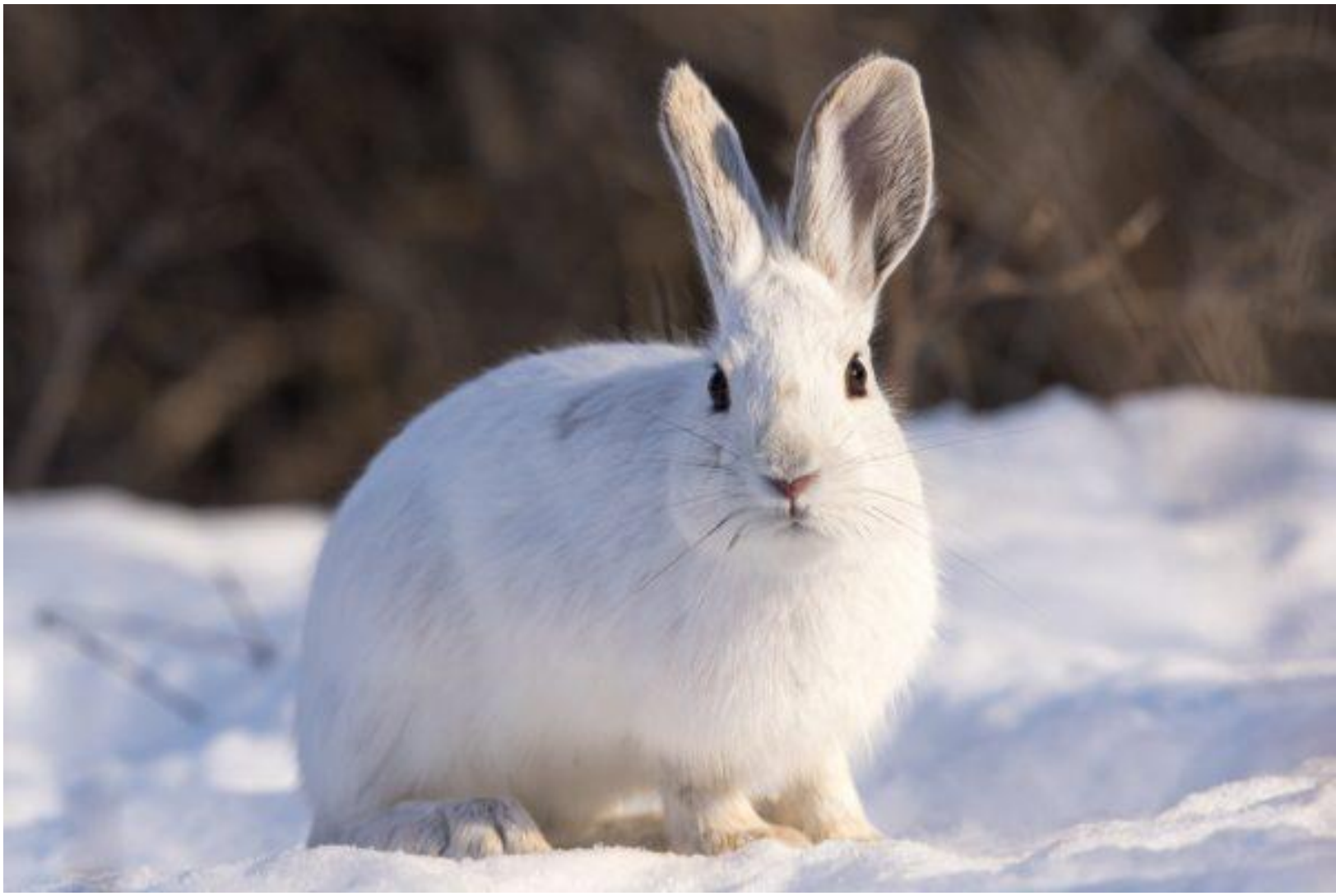
Changes in diet: Not applicable to wiigwaas. (0 steps)

Ability to disperse (move): Wiigwaas seeds can't disperse or move very far. Wiigwaas will have a hard time spreading to new habitats as the climate changes. (Take 2 steps)

Human development: Logging and development can impact wiigwaas but wiigwaas also like to grow in disturbed areas. (0 steps)

Snowshoe Hare

Ojibwe Name: Waabooz



Preferred Habitat: Cold forested areas with deep snow

Importance to the Ojibwe: Source of food. Fur used as lining in clothing and crafts.

Snowshoe Hare Ojibwe name: Waabooz

Warmer temperatures: Waabooz only lives in cold environments. Increases in temperature, especially in the winter, will negatively affect waabooz. (Take 3 steps)

Drought: Drought is not likely to affect waabooz. (0 steps)

Predators: The populations of predators that eat waabooz are expected to increase with climate change. These include bobcat, coyote, and fisher. (Take 2 steps)

Parasites/pathogens: There are some diseases that affect waabooz that may increase with climate change. (Take 1 step)

Extreme precipitation: Waabooz will not be impacted by extreme precipitation. (0 steps)

Decrease in snowfall: Snow cover is critical to waabooz. If snow cover declines or snow comes later in the year and the ground is bare, waabooz's white color will not give it camouflage. It will be even more visible to hungry predators. (Take 5 steps)

Genetic variation: The genetic variation of waabooz is lower than in some other beings, making it harder for it to adapt to climate change (Take 1 step).

Competing beings: No competing beings favored by climate change that will increase in population. (0 steps)

Changes in diet: Waabooz's diet is flexible. (0 steps)

Ability to disperse (move): The ability of waabooz to disperse (or move) in fragmented landscapes or areas with agriculture, roads and urban development is limited. (Take 3 steps)

Human development: Development is not a major threat to waabooz. (0 steps)

Sugar Maple

Ojibwe Name: Ziinzibaakwadwaatig

Preferred Habitat: Rich, moist forests as well as drier, upland forests

Importance to Ojibwe: Ziinzibaakwadwaatig is tapped for sap which is used to make maple syrup.

Sugar Maple Ojibwe name: Ziinzibaakwadwaatig

Warmer temperatures: Warmer temperatures will make it harder for ziinzibaakwadwaatig to grow, particularly hotter and drier summers. (Take 3 steps)

Drought: Drought will impact ziinzibaakwadwaatig, particularly when there are multiple years of drought, and make it harder for them to grow. (Take 2 steps)

Predators: There are many insects that eat ziinzibaakwadwaatig leaves that will likely increase. Also, white-tailed deer eat ziinzibaakwadwaatig leaves and will likely increase due to climate change. (Take 1 step)

Parasites/pathogens: There may be pathogens that will increase but not much is known. (0 steps)

Extreme precipitation: Heavy rains and flooding can impact ziinzibaakwadwaatig roots. (Take 1 step)

Decrease in snowfall: Ziinzibaakwadwaatig depends on snow to protect its roots from frost damage. Less snow in the winter could damage their roots. (Take 3 steps)

Genetic variation: Genetic variation of ziinzibaakwadwaatig is high and may help it adapt to climate change. (0 steps)

Competing beings: Earthworms compete with ziinzibaakwadwaatig for nutrients and are increasing due to climate change. (Take 2 steps)

Changes in diet: Not applicable to ziinzibaakwadwaatig. (0 steps)

Ability to disperse (move): Ziinzibaakwadwaatig's seeds are moved by small mammals and the wind, but cannot move too far. (0 steps)

Human development: Ziinzibaakwadwaatig is not very tolerant of compacted soil, pollution, and road salt. Development could harm this being. (Take 1 step)

Raspberry

Ojibwe Name: Miskomin

Preferred Habitat: A variety of habitats, including the edges of swamps and bogs, in the understory of forests, and in openings in the forest canopy.

Importance to Ojibwe: Miskomin berries are used as a food source.

Raspberry Ojibwe name: Miskomin

Warmer temperatures: Not affected by warmer temperatures. (0 steps)

Drought: Not affected by drought. (0 steps)

Predators: Not affected by predators. (0 steps)

Parasites/pathogens: Not affected by pathogens. (0 steps)

Extreme precipitation: Not affected by extreme precipitation. (0 steps)

Decrease in snowfall: Not affected by a decrease in snowfall. (0 steps)

Genetic variation: Genetic variation is high, which may help it adapt to climate change. (0 steps)

Competing beings: Not affected by any competing beings. (0 steps)

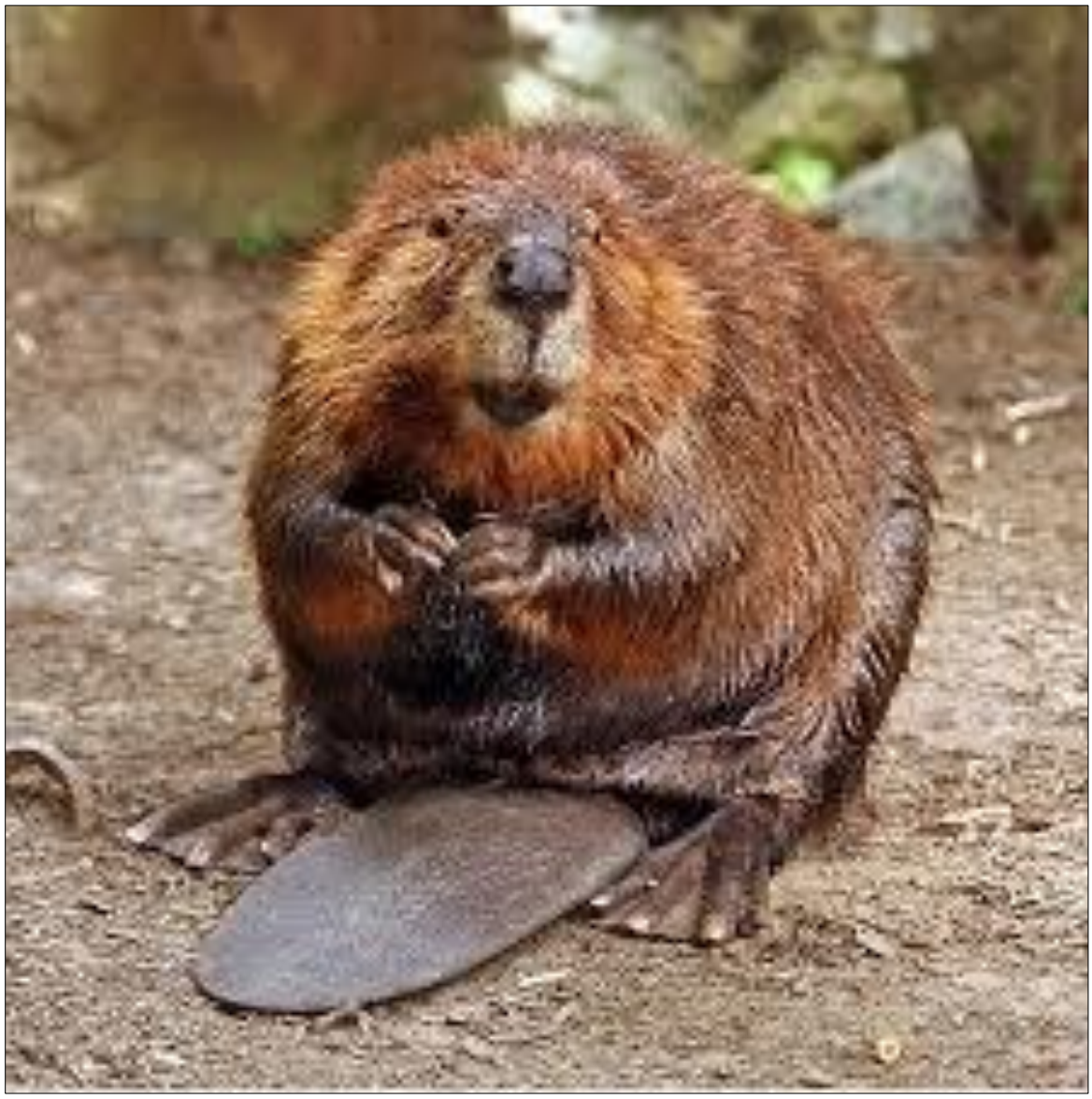
Changes in diet: Not applicable to miskomin. (0 steps)

Ability to disperse (move): Miskomin seeds are dispersed by birds and animals. (0 steps)

Human development: Miskomin grows in disturbed areas and can live near humans. (0 steps)

Beaver

Ojibwe Name: Amik



Preferred Habitat: Ponds, small lakes with muddy bottoms, and meandering streams, but will also use artificial ponds and drainage ditches.

Importance to Ojibwe: Amik is a clan animal and are eaten for food. The entire body of the amik is used.

American beaver Ojibwe name: Amik

Warmer temperatures: Amik tolerates a wide range of temperatures. (0 steps)

Drought: Droughts may make some habitats unsuitable for amik, increase its vulnerability to predators, and decrease access to food. (Take 1 step)

Predators: No major predators whose populations will increase dramatically with climate change. (0 steps)

Parasites/pathogens: Tularemia is a disease that amik is susceptible to that may increase with climate change. (Take 1 step)

Extreme precipitation: Extreme storm events may cause flooding, soil erosion, and sediment transport, which could negatively alter amik habitat. Flooding could also destroy dams and lodges. (Take 1 step)

Decrease in snowfall: Not dependent on snow. (0 steps)

Genetic variation: Genetic variation may be low, as the amik population was reduced to around 500 individuals in 1900 due to hunting. (Take 1 step)

Competing beings: Little competition between amik and other beings. (0 steps)

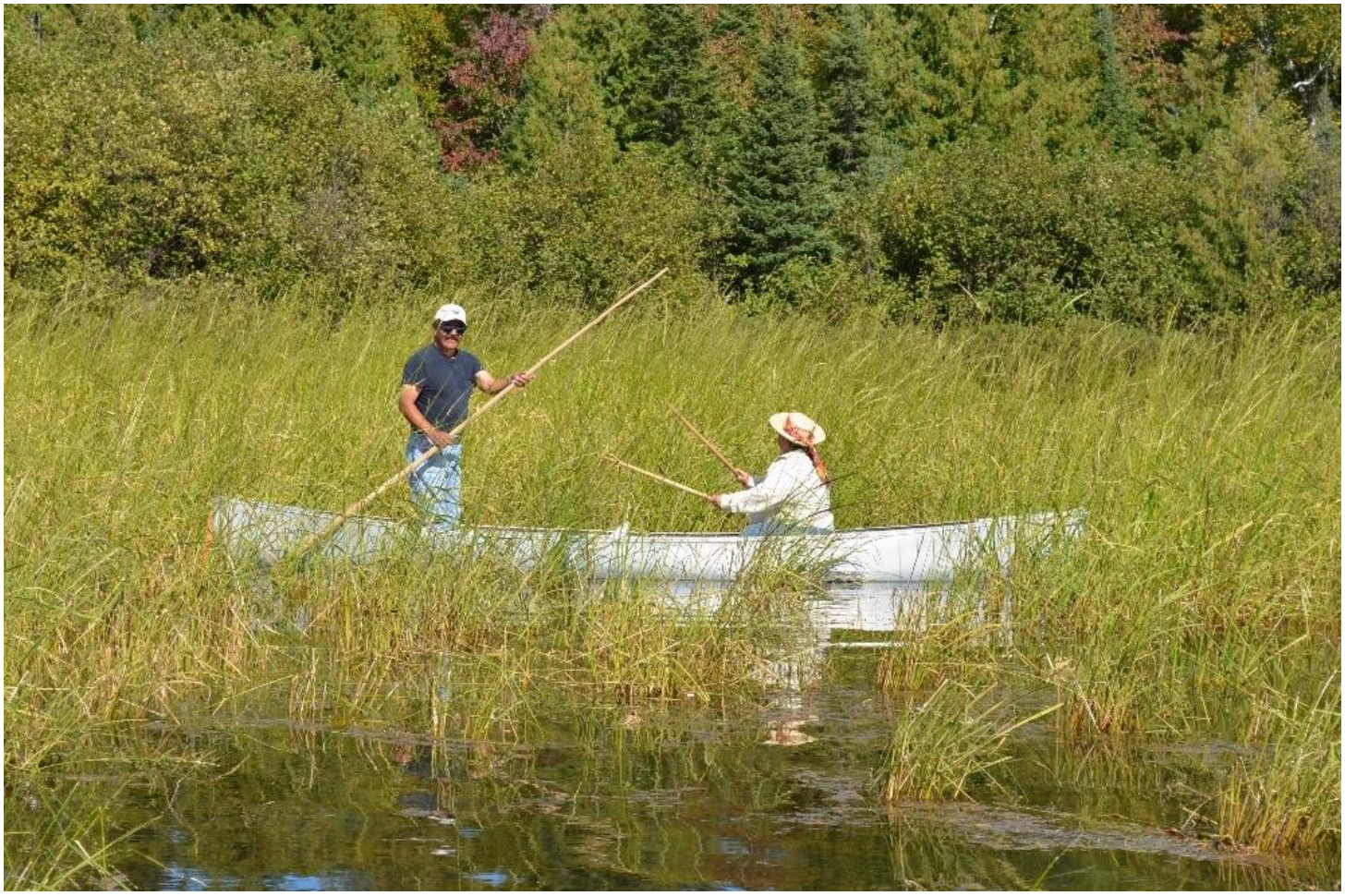
Changes in diet: Amik's diet is flexible. (0 steps)

Ability to disperse (move): Amik can travel long distances. (0 steps)

Human development: Amik is not negatively impacted by human development in general. (0 steps)

Wild Rice

Ojibwe Name: Manoomin



Preferred Habitat: Shallow cool water lakes and rivers with slow moving water

Importance to the Ojibwe: In the Ojibwe language “manoomin” means the “good berry.” Manoomin is a sacred food harvested by the Ojibwe people. It is also an important food for birds and wildlife.

Wild Rice Ojibwe name: Manoomin

Warmer temperatures: Warmer air and water temperatures will decrease manoomin seed production and may make it difficult for it to grow well. (Take 3 steps)

Drought: Manoomin likes fluctuating water levels year-to-year and multiple years of low water levels may prevent it from growing. (Take 3 steps)

Predators: Nikag (Canada geese) have been known to decimate manoomin beds. (Take 1 step)

Parasites/pathogens: Climate change will favor rice worms, which can decrease manoomin seed production. Warm humid nights can allow brown spot disease to spread which hurts manoomin's growth. (Take 2 steps)

Extreme precipitation: Changes in water level from extreme storm events and flooding can drown this plant during certain points of its life (Take 3 steps)

Decrease in snowfall: Manoomin depends on snow and ice in the winter for seeds to germinate and to keep populations of other beings that compete with it low. (Take 3 steps)

Genetic variation: Manoomin's genetic variation is likely low, making it harder for it to adapt to climate change. (Take 1 step)

Competing beings: There are many competing beings that are likely to be favored by climate change such as pondweeds, water lilies, cattail, and flowering rush. (Take 2 steps)

Changes in diet: Not applicable (0 steps)

Ability to disperse (move): Manoomin has limited ability to spread its seeds and move to other areas. This is because its seeds are heavy and fall straight down into the water. (Take 3 steps)

Human development: Boat traffic, dams, and shoreline development can all negatively impact manoomin. (Take 2 steps)

Largemouth Bass

Ojibwe Name: Ashigan

Preferred Habitat: Cool to warm water lakes

Importance to the Ojibwe: Source of food

Largemouth Bass Ojibwe name: Ashigan

Warmer temperatures: Ashigan likes cool to warm waters. Increasing temperatures in some lakes may favor ashigan. (0 steps)

Drought: Droughts can reduce habitat or cause ashigan to leave their spawning nests. (1 step)

Predators: No predators expected to increase with climate change. (0 steps)

Parasites/pathogens: Tapeworms, parasitic worms and largemouth bass virus are some of the few parasites and pathogens common in ashigan. Higher water temperatures will result in higher death rates for infected fish. (Take 2 steps)

Extreme precipitation: No known effects of extreme precipitation on ashigan. (0 steps)

Decrease in snowfall: Ashigan is not known to be affected by decreases in snowfall. (0 steps)

Genetic variation: Genetic variation of ashigan is high. (0 steps)

Competing beings: As temperatures get warmer ashigan is expected to outcompete other fish, such as ogaa (walleye), because it is adapted to warmer water. (0 Steps)

Changes in diet: Climate change is not expected to affect ashigan's diet. (0 Steps)

Ability to disperse (move): Ashigan can move large distances. (0 steps)

Human development: Development is not known to negatively impact ashigan in a major way. (0 steps)