Grade Four

Objective:

To explore and compare ways in which plant and animal communities satisfy their needs in a wetland habitat.

Conserving Canada's **Wetlands**

OAK HAMMOCK MARSH INTERPRETIVE CENTRE

Manitoba

Amazing Adaptations

Image from pixabay.com.

Specific Learning Outcomes

4-1-01: Use appropriate vocabulary related to their investigations of habitats and communities.
4-1-02: Recognize that each plant and animal depends on a specific habitat to meet its needs.
4-1-03: Identify the components of an animal habitat.
4-1-04: Identify physical and behavioural adaptations of animals and plants, and infer how these adaptations helps them to survive in a specific habitat.

General Learning Outcomes

4-0-1a: Ask questions that lead to investigations of living things, objects, and events in the local environment.
4-0-4e: Identify problems as they arise, and work with others to find solutions.
4-0-4g: Communicate questions, ideas and intentions, and listen effectively to others during classroom-learning experiences.
4-0-7b: Identify new questions that arise from what was learned.

Vocabulary

wetland, habitat, food, water, living space, shelter, survival, physical adaptation, behavioural adaptation, community, plant, animal, predator, caching

Summary

Students are introduced to wetlands by exploring the physical and behavioural adaptations of animals and plants who live in a wetland habitat, investigating how these adaptations help these living things meet their needs in a wetland.

Materials

- *Print or project Animal & Plant Choices page*
- *Print activity sheets for each student (three in total, first two double-sided, then the third single-sided)*
- *Writing utensils*
- *Scissors*
- *Glue*

Procedure

Warm Up

Begin by asking students what the word 'adaptation' means when used in the context of nature and living things. Discuss various definitions, coming up with a definition the whole class agrees upon. Have students then list various examples of plant and animal adaptations, writing the examples on a board or easel pad. Introduce the idea that some adaptations are physical (structural features of a living thing, like a bill on a duck or fur on a bear, that help them survive), and some are behavioural (actions that living things do to survive, like migration or hiding). Have the class sort the examples listed into either physical or behavioural adaptations.

Activity

Explain that students will be exploring the physical and behavioural adaptions of plants and animals who live in a wetland habitat. A wetland is... (see note below). Wetlands cover almost half of Manitoba (41%), and are home to many different kinds of plant and animal communities.

A wetland is an area of land that holds shallow water, with a maximum depth of two metres. The water makes the soil very moist, so plants who need moist soils will grow in and around the water; this is why a wetland can not be deeper then two metres, because otherwise these kinds of plants drown and do not receive enough sunlight. The water moves slowly because there are so many plants that slow the water down, absorbing some of the water like a sponge and filtering it as it moves through.

Explain that each student will have an opportunity to apply what they know about adaptations in a sorting and matching activity.

Hand out activity sheets, writing utensils, scissors and glue. Each student should receive a double-sided activity page and a single-sided page which they will use to cut from.

Instruct students to 1) cut out the statements; 2) sort the statements, deciding which are behavioural adaptations, which are physical adaptations, and which are statements of how an adaptation assists a living thing in its survival; 3) Match each adaptation with the correct statement for how the adaptation assists a living thing in its survival; 4) From the Animal & Plant Choices page (which can be printed or projected) students then write down the plant and/or animal with the appropriate adaptation and its accompanying statement.

Note that some animals can be matched with several different adaptations, and that these various possible answers are included in the Teacher's Key.

Before students glue down their answers, go through the activity sheet with the class to review everyone's answers. Students can then have an opportunity to correct their answers if needed before they glue down their cut-out papers. Explain that there are multiple answers for some of these adaptations because plants and animals usually have more then just one adaptation to help them survive. It is therefore fine if students did not include all the possibilities for each adaptation, just as long as they have at least one answer per adaptation.

Wrap Up

Wrap up the activity by discussing how these adaptations would help a plant or an animal survive in a wetland habitat found in Manitoba.

Conclude by explaining that as a class you will be visiting a wetland called Oak Hammock Marsh where students will be exposed to different living things that are found in a wetland, including the plants and animals highlighted in this activity.

Note that although migration and hibernation are excellent examples of behavioural adaptations, we have purposely excluded these particular adaptations from this activity. We find these particular adaptations are more complex and so requires more explanation then can be provided with this activity.

Our programming offered at the centre can expand and enrich the students' understanding of more complex adaptations like migration, hibernation, torpor, etc. Contact us to discuss which program would best suit your needs, and the particular adaptations you wish your students to learn more about.

Creating Food Chains & Webs

Image from imgarcade.com.

Specific Learning Outcomes

4-1-01: Use appropriate vocabulary related to their investigations of habitats and communities.
4-1-02: Recognize that each plant and animal depends on a specific habitat to meet its needs.
4-1-09: Recognize that plant and animal populations interact within a community.
4-1-10: Recognize that the food chain is a system in which some of the energy from the Sun is transferred eventually to animals.
4-1-11: Construct food chains and food webs, and classify organisms according to their roles.

General Learning Outcomes

4-0-1a: Ask questions that lead to investigations of living things, objects, and events in the local environment.
4-0-4e: Identify problems as they arise, and work with others to find solutions.
4-0-4g: Communicate questions, ideas and intentions, and listen effectively to others during classroom-learning experiences.
4-0-6d: Sort and classify according to an established classification system.
4-0-7b: Identify new questions that arise from what was learned.

Vocabulary

wetland, habitat, food web, food chain, producer, consumer, energy, predator, prey

Summary

Students are introduced to wetlands by organizing living things that are found in wetlands into food webs and food chains; classifying them according to their role within the chain and web.

Materials

- *Print and cut out cards (recommend laminating for reuse)*
- *Print or project image of wetland animal & plant scene*
- *Print activity sheet for students (one page per student **OR** one per pair, copy double-sided, one side with activity sheet, the other side showing the wetland scene with reference numbers)*
- *Chalk, White or Smart board*
- *Writing utensils*

Procedure

Warm Up

Begin by asking students to brainstorm what the word 'food chain' means when used in the context of nature and living things. Then ask students what they think 'food web' means in the same context.

Explain that a food chain is… (see note below). Show accompanying example of a food chain (which showcases living things found within a wetland setting). Have a brief discussion of what is shown in the example, and accompanying definition. Then ask students if only a muskrat could eat a cattail, or if a coyote only eats muskrats. Living things within a community have far more complex relationships then just one animal eating only one producer, etc.

A food chain is a means to show how energy is transferred from one living thing to the next. Food chains always begin with a producer, which will always be some form of plant. Plants convert the sun's energy into consumable energy. When a plant is consumed, the plant's energy is given to the animal who ate it, called the primary consumer. The consumer who eats the primary consumer is called the secondary consumer, and the chain continues from there.

A food web is a means to demonstrate the predator-prey and consumer-producer relationships within a habitat, and is made up of a network of food chains. A food web will always include producers (plants who convert the sun's energy to consumable energy) and consumers (those who eat living things). Food webs are able to show the more complex and interconnected nature of living things within a particular habitat or community.

Show accompanying example of a food web (which showcases living things found within a wetland setting), and have a brief discussion of what is shown in the example, and accompanying definition.

Activity

Explain that students will be organizing living things that are found in wetland habitats into food chains and webs, classifying them according to their role within the chain and web. A wetland is... (see note below). Wetlands cover almost half of Manitoba (41%), and are home to many different kinds of plant and animal communities.

Show or project image of the animal and plant wetland scene (first without the reference numbers), asking students if they recognize any animals. Then show or project the image of the wetland scene with the reference numbers, identifying all the living things within the scene.

Hand out the food chain activity sheet and a card to each student. Explain that students will use their cards (that each show one of the living things included in the wetland scene) to create three different food chains. Students are encouraged to reference the cards to help them figure out what eats what in order to help them build food chains. Students will then write in their answers on the activity sheet.

Wrap Up

Once students have finished filling in their food chains, explain that the class will create a food web using the food chains they all just created. As students offer their answers, draw the developing food web on a board, asking students how the different food chains connect with one another.

Conclude by explaining that as a class you will be visiting a wetland (like the one shown in the picture) called Oak Hammock Marsh where students will be exposed to the many different living things that are found in a wetland, including some of those used to create the food chains and food webs.

A wetland is an area of land that holds shallow water, with a maximum depth of two metres. The water makes the soil very moist, so plants who need moist soils will grow in and around the water; this is why a wetland can not be deeper then two metres, because otherwise these kinds of plants drown and do not receive enough sunlight. The water moves slowly because there are so many plants that slow the water down, absorbing some of the water like a sponge and filtering it as it moves through.

Naturalist's Note:

When organizing animals into food chains and food webs, or when classifying animals as either herbivore, omnivore, or carnivore, it should be noted that these classifications are not as straight forward as 'this animal only eats this, and this animals only eats that.' In nature, animals behave in a far more complex manner.

For example, a white-tailed deer is classified as a herbivore (only eating vegetation), but they in fact do eat mice or even baby birds if the opportunity arises, for the nutrients in that food source is far too valuable to pass up. You may ask 'why are white-tailed deer classified as herbivores then if they also eat meat?' White-tailed deer are classified as herbivores because they only seek out vegetation, eating meat only if the opportunity presents itself, where as an omnivore seeks out both vegetation and meat. Additionally, herbivores teeth are shaped differently then those of omnivores and carnivores, which them best for eating vegetation.

All animals are opportunistic to some extent, and will usually not pass up valuable nutrients when they are presented with some.

A Shoe-Box Wetland

Image from lpzoo.org .

Specific Learning Outcomes

4-1-01: Use appropriate vocabulary related to their investigations of habitats and communities.
4-1-02: Recognize that each plant and animal depends on a specific habitat to meet its needs.
4-1-03: Identify the components of an animal habitat.
4-1-09: Recognize that plant and animal populations interact within a community.
4-1-12: Use the design process to construct a model of a local or regional habitat and its associated populations of plants and animals.

General Learning Outcomes

4-0-1a: Ask questions that lead to investigations of living things, objects, and events in the local environment.
4-0-4e: Identify problems as they arise, and work with others to find solutions.
4-0-4g: Communicate questions, ideas and intentions, and listen effectively to others during classroom-learning experiences.
4-0-7b: Identify new questions that arise from what was learned.
4-0-7d: Construct meaning in different contexts by connecting new experiences and information to prior experiences and knowledge.

Vocabulary

wetland, habitat, community, animal, plant

Summary

Students continue their exploration of wetlands by using the design process to construct a model of Oak Hammock Marsh and its associated populations of plants and animals.

Materials

- *Oak Hammock Marsh Species Checklists (Invertebrates, Amphibians, Reptiles, Fish, Birds, Mammals, Plants) updated lists found at:* ***www.oakhammockmarsh.ca/learn/nature-at-oak-hammock-marsh/checklist/***
- *Shoe-box (one per student)*
- *Assortment of crafting materials*
- *Coloured paper*
- *Colouring utensils*
- *Glue*
- *Access to the internet*
- *Access to a library*

Procedure

Warm Up

Begin by reminding students about their visit to Oak Hammock Marsh Interpretive Centre, briefly reviewing the day's activities. Remind students of the word 'wetland' and ask them what they think it means now that they have visited one.

Discuss what kinds of wetland plants and animals students learned about and saw while visiting Oak Hammock Marsh. Discuss what are the four main components of a habitat (food, water, shelter, space), asking students how the wetland fulfills these components for one particular living thing they learned about or saw during their visit. Does this living thing live seasonally or year round at Oak Hammock Marsh? How does it interact with other living things at the marsh?

Image from brokeandtwentysomething.files.wordpress.com.

The Activity

After your discussion, explain to students that they will each create a model of the wetland at Oak Hammock Marsh using a shoe-box. Students will research five living things that live in wetlands and can be found at Oak Hammock Marsh (see checklists found at **oakhammockmarsh.ca**), showcasing them within their model.

Students will also write a description of their shoe-box wetland, identifying the living things highlighted within the wetland scene and providing some information about each (such as if the living thing lives in the wetland all year round or only seasonal, what are it's food, water, shelter and space needs, and how it may connect to the other living things highlighted). The description should also include an explanation as to how each of these living things depend on Oak Hammock Marsh as their habitat.

Recommended: *When picking their living things to showcase in their shoebox ask students to choose at least one plant, one mammal, one bird, one amphibian or reptile, and then one living things of their choice.*

Also, before students begin creating their shoe-box wetland, record the five living things each student has chosen to ensure there is a diversity of living things being represented within the class. The diversity amongst the projects provides an opportunity for students to get an understanding of the great diversity of living things within wetlands.

Wrap Up

Wrap up this activity by hosting a Shoe-Box Wetland Fair, where the different projects are displayed throughout the classroom alongside their descriptions. Students can move around the class, looking at each project.

Recommended: *Have students bring a notebook and pencil with them while they go to visit each project, having them write down at least five ways that the wetland at Oak Hammock Marsh helps living things meet their needs.*

Conclude by reiterating that habitats like Oak Hammock Marsh are large communities of plants and animals that interact and depend on one another to survive and to meet their needs. The shoe-box wetlands give students a small glimpse of the importance of wetland habitats.

We would love to see your Shoe-box Wetland creations! Send us pictures via email or tag us on social media!

Email: ohmic@ducks.ca

Facebook: @OakHammockMarsh

Twitter: @OakHammockMarsh

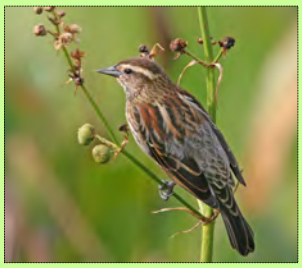
Instagram: oakhammockmarsh

Pinterst: Oak Hammock Marsh

Mail:
Oak Hammock Marsh Interpretive Centre
P.O. BOX 1160
Stonewall, Manitoba
Canada

Image from aharoo.com.

Speaking Out for Species at Risk



Specific Learning Outcomes

4-1-03: Identify the components of an animal habitat.
4-1-13: Predict, based on their investigations, how the removal of a plant or animal population may affect the rest of the community.
4-1-14: Investigate natural and human-caused changes to habitats, and identify resulting effects on plant and animal populations.
4-1-15: Describe how their actions can help conserve plant and animal populations and their habitats.

General Learning Outcomes

4-0-1a: Ask questions that lead to investigations of living things, objects, and events in the local environment.
4-0-4e: Identify problems as they arise, and work with others to find solutions.
4-0-4g: Communicate questions, ideas and intentions, and listen effectively to others during classroom-learning experiences.
4-0-7b: Identify new questions that arise from what was learned.
4-0-7d: Construct meaning in different contexts by connecting new experiences and information to prior experiences and knowledge.

Vocabulary

wetland, plant, animal, species at risk, extinct, extirpated, endangered, threatened, special concern

Summary

Students continue their exploration of wetlands by researching a species at risk that lives in a wetland habitat, preparing a television public service announcement (PSA) aimed at helping to conserve the species and their wetland habitat.

Materials

- *Paper*
- *Writing utensils*
- *Access to the internet*
- *Access to library*

Procedure

Warm Up

Begin by reminding students about their visit to Oak Hammock Marsh Interpretive Centre, briefly reviewing the day's activities. Remind students of the word 'wetland' and ask them what they think it means now that they have visited one.

Ask students to identify the four main components that are required in order to make a habitat (food, water, shelter, space). Brainstorm together what would happen if one or all of these components were taken away (the draining of the water in the marsh, or the removal of plants for example), how would this affect living things? What if the removal of basic habitat components occurred en masse? How would living things who depend on these habitats and habitat components survive?

All over the world there are living things that have disappeared or their population has been severely reduced in numbers due to the natural and human-caused changes to habitat. Across Canada there are living things that are being greatly affected by natural changes to habitats, which has resulted in certain living things being at great risk of disappearing forever (extinction). The Government of Canada has created the *List of Wildlife Species at Risk* so Canadians can take action to make sure these living things do not disappear and can thrive once more in Canada.

The Activity

According to Wildlife Habitat Canada, one out of every three species at risk in Canada live in or a wetland at some point in their life.

Wetlands, like Oak Hammock Marsh, are important habitats to protect for they house many living things, including species at risk (see lists).

One way of helping species at risk in Canada who depend on wetlands is by spreading awareness through an educational platform. Explain to students that they will be working in groups to create a television public service announcement (PSA) to help spread awareness about one living thing that is at risk in Manitoba.

A PSA is like a commercial but instead of selling a product the PSA provides a persuasive message that is in the public's interest. A PSA's main objective is to change the public's attitude and behaviour towards a social issue. Look up **Hinterland's Who's Who** for excellent examples of PSAs with an environmental focus.

Each student group will choose one species that is listed as a Species at Risk and can be found at Manitoba or in another wetland habitat in Manitoba (see lists). Students will then work together to research and create a persuasive presentation on their chosen species and their habitat, which they will present to the class.

Students must include in their presentation:

- The name of their species with a picture of what it looks like
- Identify its habitat needs (what it eats, what it uses for shelter, etc.)
- Briefly explain what human– and/or natural-caused changes are occurring which are damaging critical habitat for the species
- Identify how these changes affect the plant and animal populations, especially how it affects your chosen species
- Provide three ideas of how to help conserve this species and its habitat

Students can check out the following websites to help them with their research. *Make sure to check the websites beforehand to see if they are correct and still functioning*.

- **Hinterland's Who's Who — Species at Risk in Canada**: http://www.hww.ca/en/issues-and-topics/species-at-risk-in-canada.html?referrer
- **Government of Canada—A to Z Species Index**: https://www.registrelep-sararegistry.gc.ca/sar/index/default_e.cfm
- **Government of Canada—Why do some species become at risk in Canada?** https://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=7C05556B-1
- **Government of Canada—Everyone can help!** https://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=566F2794-1

Recommended: *Before students present their work, have them write a script for their PSA, with notes that indicate their plan for the presentation. Students should then hand in their scripts for approval prior to the presentations to ensure the criteria are met, and allow time for revisions.*

Wrap Up

Wrap up this activity with the class presentations, finishing off with a question period.

Optional: *Have students write down at least five ways that they can help conserve at risk plant and animal populations and their habitats.*

Conclude by reiterating that wetland habitats, like Oak Hammock Marsh, are very important places which help conserve and protect at risk plant and animal populations, alongside non-threatened species, by providing the space, shelter, food and water they need to flourish.

Animal Highlight — the Red-Winged Blackbird

On the cover of this section, and in the insets you will see pictures of the Red-winged Blackbird. The Red-winged Blackbird is found in abundant numbers in wetlands across North America. The male's telltale black body with its bright red patch and yellow striped shoulders make it easy to identify. The female however looks more sparrow-like, with its brown body and black speckled breast.

The Red-winged Blackbird eats insects, mainly foraging on the ground. The males will spend most of the breeding season perching and singing, while the females collect food and nest materials. The female will nest in dense grass-like vegetation such as cattails or Phragmites, creating a deep cup-shaped nest where she will lay two to four eggs which are coloured pale blue, grey with black or brown markings. Once hatched, the young will grow their feathers, learn to feed, fly and what a predator is all before they have to migrate in the fall.

*To learn more, visit****: www.allaboutbirds.org/guide/Red-winged_Blackbird/id***

Oak Hammock Marsh Interpretive Centre, together with the Province of Manitoba and Ducks Unlimited Canada as our partners, we work to connect people with wetlands through educational and hands on experiences.

Ducks Unlimited Canada, who's national headquarters is located at Oak Hammock Marsh, are excellent examples of Canadians working to conserve and protect wetlands and the many species that need them. Learn more about Ducks Unlimited Canada's conservation efforts at ***ducks.ca****.*

Wetland

Wetland

Amazing Adaptations

- Animal & Plant Choices -

Milfoils

Coontails

Common Bladderworts

Ducks

Most Shorebirds

Pelicans

Blue Jays

Black-capped Chickadees

Canada Geese

American Bitterns

Ground Squirrels

Beavers

Ermine (Short-tailed Weasel)

Muskrats

Turtles

Snakes

Northern Leopard Frogs

Dragonflies

Name: _____

Amazing Adaptations

Cut out the statements from the following page. First sort the statements, deciding which are behavioural adaptations, which are physical adaptations, and which are reasons why an adaptation assists a living thing in its survival. Second, match each adaptation with the correct reason for why the adaptation assists a living thing in its survival. Finally, match which plant and/or animal has which adaptation.

Physical Adaptation	How does this adaptation assist in survival?	Who has this adaptation?

Name: _____

Amazing Adaptations

Behavioural Adaptation	How does this adaptation assist in survival?	Who has this adaptation?

Cut in half, provides two sets of statements.

Winter bud	Water-proofing to keep them warm in cold water.
Sunning themselves	To find food to eat (water bugs that are hiding in the mud).
Swaying in the wind	To become warmer.
Standing guard while others eat	Watching for predators so they can alert the others in the group of danger.
Webbed Feet	To camouflage (blend in) to its surroundings so it is not seen by predators who may eat them.
Oil Gland	To help them swim so they can feed or hide.
Caching (storing) food	To have something to eat when there is not a lot of food available, like during the winter.
Highly sensitive, long bill	Adds weight to help them sink to the bottom of the wetland, to help it survive the winter.

Winter bud	Water-proofing to keep them warm in cold water.
Sunning themselves	To find food to eat (water bugs that are hiding in the mud).
Swaying in the wind	To become warmer.
Standing guard while others eat	Watching for predators so they can alert the others in the group of danger.
Webbed Feet	To camouflage (blend in) to its surroundings so it is not seen by predators who may eat them.
Oil Gland	To help them swim so they can feed or hide.
Caching (storing) food	To have something to eat when there is not a lot of food available, like during the winter.
Highly sensitive, long bill	Adds weight to help them sink to the bottom of the wetland, to help it survive the winter.

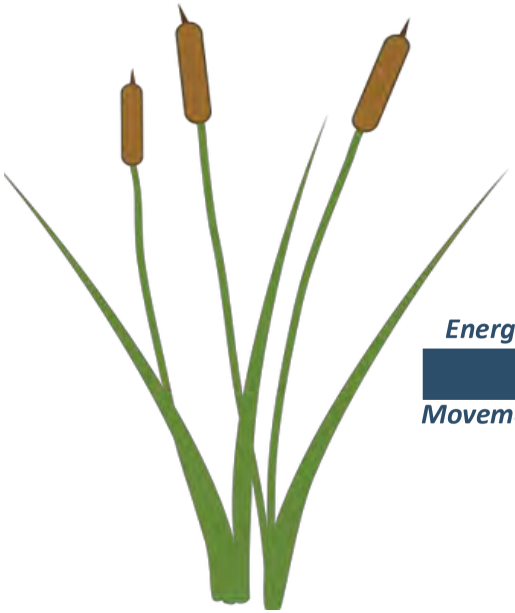
- Teacher's Key -

Amazing Adaptations

	Adaptation	How does this adaptation assist in survival?	*Various Possible Answers* Who has this adaptation?
Physical Adaptation	Oil Gland	When spread it keeps fur/feathers dry which helps keep it warm.	Muskrats; Beavers; Ducks; Geese; Pelicans
	Highly Sensitive, Long Bill	To find food to eat (like water bugs that are hiding in the mud or swimming in the water).	Most Shorebirds (like the Marbled Godwit); Ducks
	Webbed Feet	To help them swim so they can feed or hide.	Ducks (like the Northern Pintail); Pelicans; Canada Geese; beavers; muskrats; Northern Leopard Frogs; Turtles
	Winter Bud	Adds weight to help them sink to the bottom of the wetland, to help it survive the winter.	Common Bladderwort; Milfoil; Coontail
Behavioural Adaptation	Sunning themselves	To become warmer, so it can get moving again.	Snakes ; Turtles; Butterflies; Dragonflies; Leopard Frogs
	Caching (storing) food	To have something to eat when there is not a lot of food available, like during the winter.	Ermine (Short-tailed Weasel); Black-capped Chickadees; Blue Jays; Beavers; Muskrats; Badgers
	Swaying in the wind	To camouflage (blend in) to its surroundings so it is not seen by predators.	American Bitterns
	Standing guard while others eat	Watching for predators so they can alert the others in the group of danger.	Ground Squirrels, Canada Geese

Food Chain

A food chain is a means to show how energy is transferred from one living thing to the next. Food chains always begin with a producer, which will always be some form of plant. Plants convert the Sun's energy into consumable energy, so when a plant is consumed, the plant's energy is given to the animal who ate it, and is referred to as the primary consumer. The consumer who eats the primary consumer is called the secondary (second) consumer, and the chain goes on and on from there.



Cattail
(Producer)

Energy
Movement

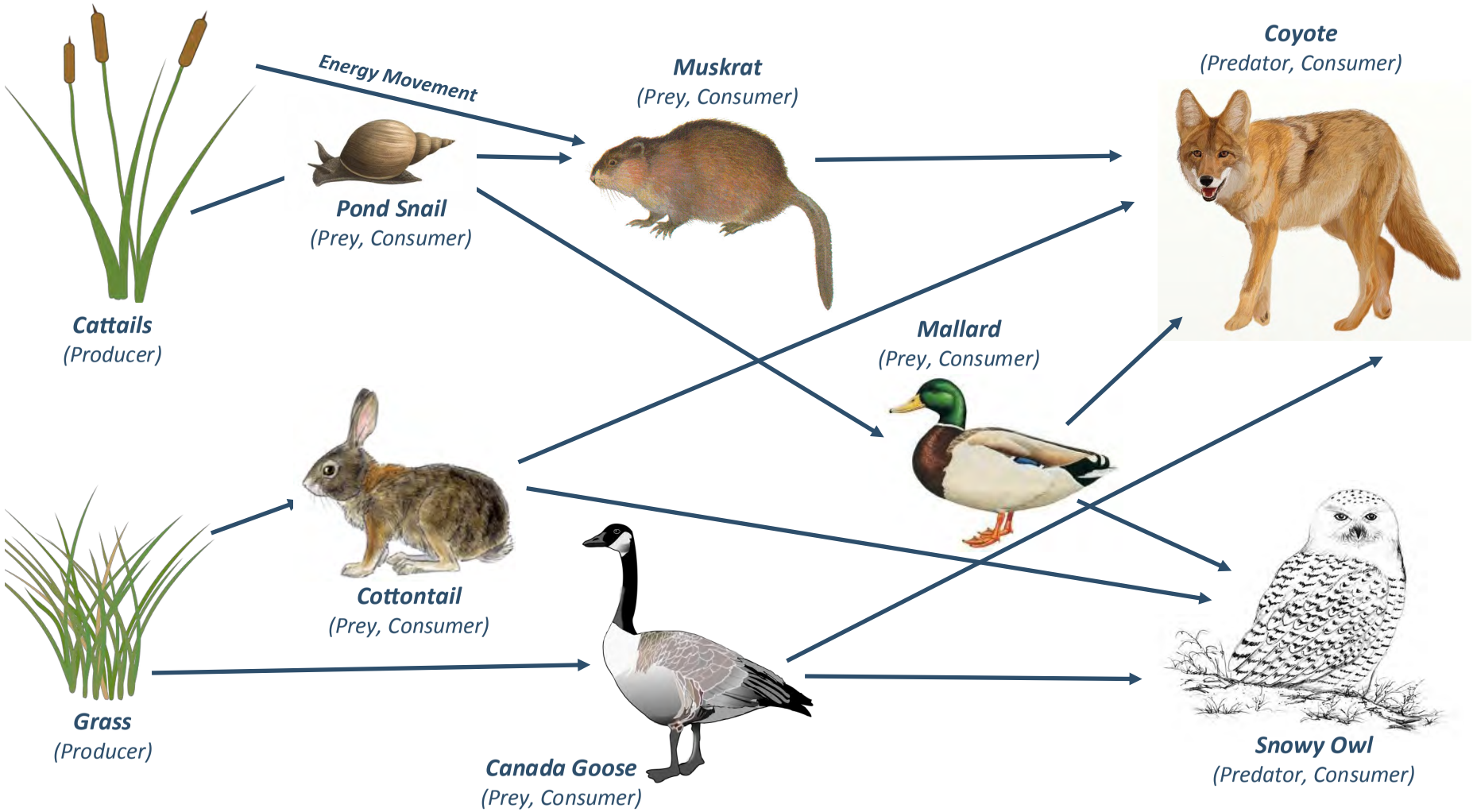
Muskrat
(Primary Consumer)

Coyote
(Secondary Consumer)

Cattail image from clipground.com. Muskrat image from naturalunseenhazards.wordpress.com. Coyote image from yedraw.com.

Food Web

A food web is a means to demonstrate the predator-prey and consumer-producer relationships within a habitat, and is made up of a network of food chains. A food web will always include producers (plants who convert the Sun's energy to consumable energy) and consumers (those who eat living things). Unlike a food chain, food webs are able to show the more complex and interconnected nature of living things within a particular habitat or community.



Cattail image from clipground.com. Muskrat image from naturalunseenhazards.wordpress.com. Coyote image from yedraw.com. Pond snail image from memrise.com. Cottontail image from kidssearch.com. Canada goose image from pngimg.com. Snowy owl image from birdwatchersgeneralstore.com. Mallard image from hbw.com. Grass image from supagro.fr

Image courtesy of Ducks Unlimited, Puddler Spring 2016 issue. Coyote image from yedraw.com.

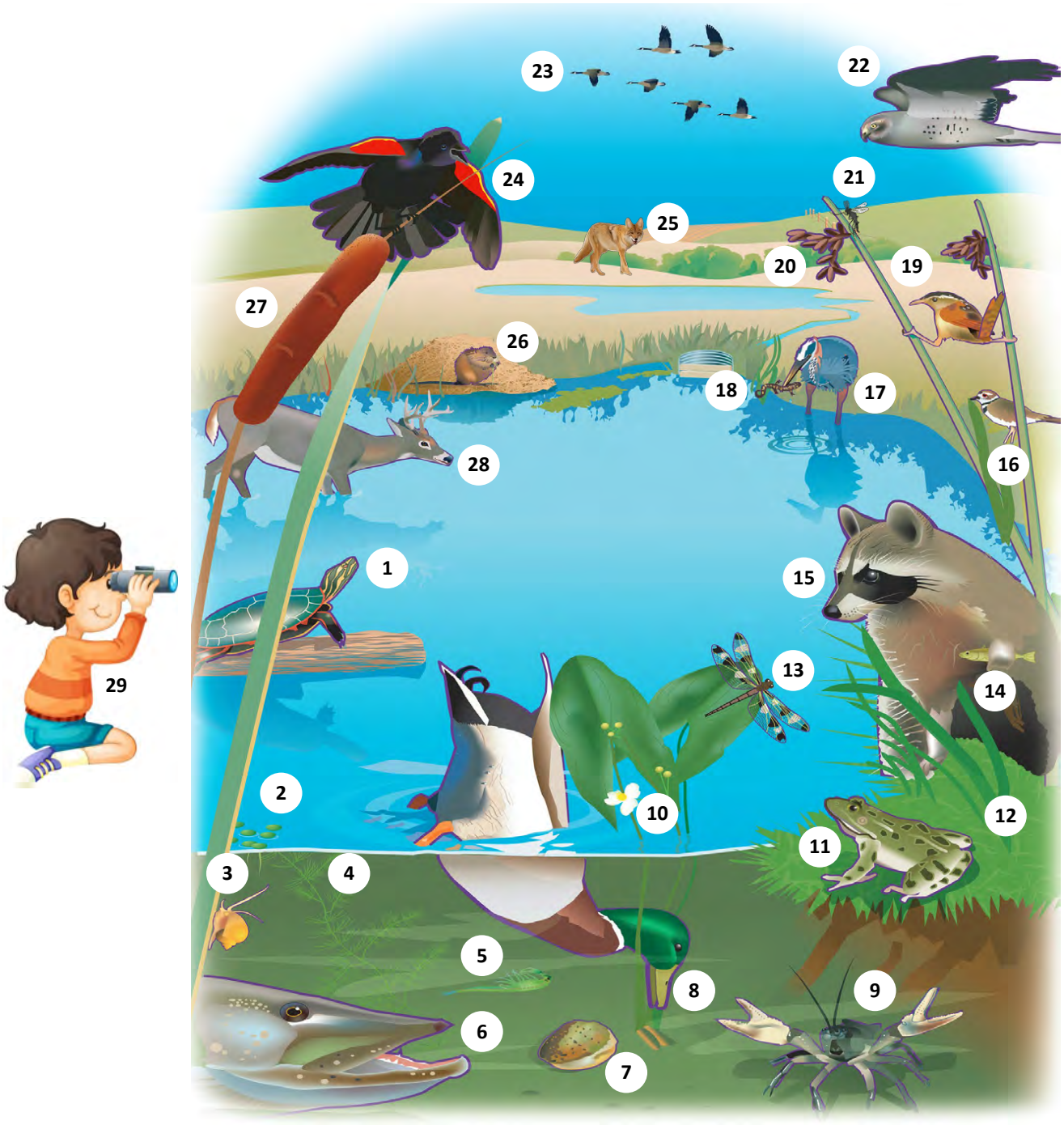
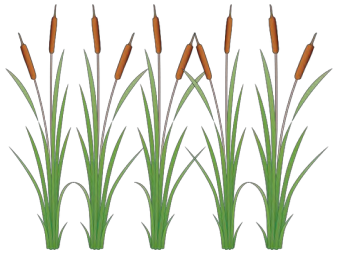


Image courtesy of Ducks Unlimited, Puddler Spring 2016 issue. Human image retrieved from Pinterest. Coyote image from yedraw.com.

1. Painted Turtle
2. Duckweed
3. Pond Snail
4. Coontail
5. Fresh Water Shrimp
6. Northern Pyke
7. Clam
8. Mallard
9. Crayfish
10. Arum-leaved Arrowhead
11. Northern Leopard Frog
12. Grass
13. Dragonfly
14. Minnow
15. Raccoon
16. Killdeer
17. Great Blue Heron
18. Yellow Spotted Salamander
19. Marsh Wren
20. Bulrush
21. Midge
22. Northern Harrier
23. Canada Goose
24. Red-Winged Blackbird
25. Coyote
26. Muskrat
27. Narrow-leaved Cattail
28. White-tailed Deer
29. Human

Narrow-leaved Cattail

Plant



Eats:
Turns sunlight into energy

Eaten By:
Muskrat
Humans
Pond Snail
Mallard
Painted Turtle

Coontail

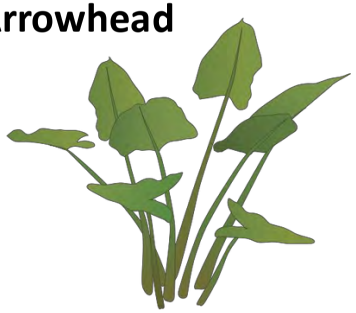
Plant

Eats:
Turns sunlight into energy

Eaten By:
Pond Snail
Mallard
Painted Turtle
Muskrat

Arum-leaved Arrowhead

Plant



Eats:
Turns sunlight into energy

Eaten By:
Pond Snail
Mallard
Painted Turtle
Muskrat
Canada Goose

Bulrush

Plant

Eats:
Turns sunlight into energy

Eaten By:
Pond Snail
Muskrat
Mallard
Painted Turtle
Canada Goose

Grass

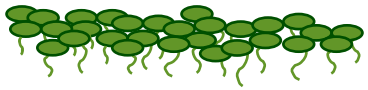
Plant

Eats:
Turns sunlight into energy

Eaten By:
Muskrat
Coyote
Canada Goose
Painted Turtle
Red-winged Blackbird
White-tailed Deer

Duckweed

Plant



Eats:
Turns sunlight into energy

Eaten By:
Mallard
Painted Turtle
Canada Goose

Pond Snail

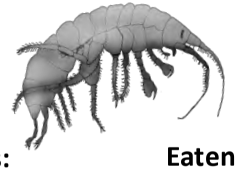
Invertebrate

Eats:
Narrow-leaved Cattail
Coontail
Arum-leaved Arrowhead
Bulrush

Eaten By:
Muskrat
Painted Turtle
Northern Pyke
Crayfish
Mallard
Canada Goose
Raccoon
Minnow
Yellow Spotted Salamander
Killdeer

Fresh Water Shrimp

Invertebrate



Eats:
Dead things (they are ***scavengers*** so they eat everything that has died in the *water*)

Eaten By:
Mallard
Minnow
Northern Pyke
Northern Leopard Frog
Yellow Spotted Salamander
Painted Turtle
Killdeer
Marsh Wren
Red-winged Blackbird

Cattail, Arrowhead, Bulrush, & Grass images from supagro.fr. Coontail image from cayugacounty.us. Snail image from memrise.com.

Clam

Invertebrate

Eats:
Microscopic organisms

(Clams are ***filter feeders***, pulling food out of the water)

Eaten By:
Mallard

Canada Goose

Raccoon

Crayfish

Invertebrate

Eats:
Minnow

Northern Leopard Frog

Pond Snail

Eaten By:
Raccoon

Painted Turtle

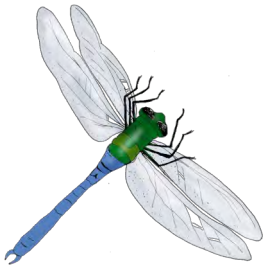
Great Blue Heron

Yellow Spotted Salamander

Killdeer

Dragonfly

Invertebrate



Eats:
Midge

Eaten By:
Marsh Wren

Red-winged Blackbird

Killdeer

Northern Leopard Frog

Minnow

Fish

Eats:
Fresh Water Shrimp

Pond Snail

Minnow

Eaten By:
Northern Pyke

Raccoon

Great Blue Heron

Muskrat

Crayfish

Minnow

Yellow Spotted Salamander

Northern Pyke

Fish

Eats:
Pond Snail

Fresh Water Shrimp

Minnow

Northern Leopard Frog

Mallard ducklings

Eaten By:
Raccoon

Great Blue Heron

Coyote

Human

Northern Leopard Frog

Amphibian

Eats:
Midge

Dragonfly

Fresh Water Shrimp

Eaten By:
Crayfish

Raccoon

Great Blue Heron

Northern Pyke

Muskrat

Coyote

Humans

Painted Turtle

Northern Harrier

Northern Leopard Frog

White-tailed Deer

Yellow Spotted Salamander

Amphibian

Eats:
Minnow

Crayfish

Pond Snail

Fresh Water Shrimp

Eaten By:
Raccoon

Great Blue Heron

Muskrat

Coyote

Painted Turtle

Reptile

Eats:
Pond Snail

Crayfish

Fresh Water Shrimp

Northern Leopard Frog

All Plants (included in the game)

Eaten By:
Coyote

Raccoon

Crayfish image from seafoodsource.co. Minnow image from earthguide.ucsd.edu/fishes. Pyke & Turtle image from Wikimedia Commons. Salamander image form exploringnature.org.

Mallard

Bird

Eats:
Narrow-leaved Cattails
Arum-Leaved Arrowhead
Bulrush
Duckweed
Coontail
Pond Snail
Fresh Water Shrimp
Clam

Eaten By:
Northern Harrier
Coyote
Humans
Northern Pyke (ducklings)
White-tailed Deer (eggs)

Killdeer

Bird

Eats:
Midge
Pond Snail
Fresh water Shrimp
Crayfish

Eaten By:
Northern Harrier
Coyote
White-tailed Deer (eggs)

Marsh Wren

Bird

Eats:
Dragonfly
Midge
Fresh Water Shrimp

Eaten By:
Northern Harrier
Coyote
White-tailed Deer (eggs)

Red-winged Blackbird

Bird

Eats:
Dragonfly
Midge
Fresh Water Shrimp
Seeds from Grasses

Eaten By:
Northern Harrier
Coyote
White-tailed Deer (eggs)

Great Blue Heron

Bird

Eats:
Yellow Spotted Salamanders
Minnow
Crayfish
Northern Leopard Frog
Northern Pyke

Eaten By:
Coyote
White-tailed Deer (eggs)

Northern Harrier

Bird

Eats:
Mallard
Killdeer
Marsh Wren
Red-winged Blackbird
Northern Leopard Frog
Muskrat

Eaten By:
Coyote
White-tailed Deer (eggs)

Canada Goose

Bird

Eats:
Grass
Arum-leaved Arrowhead
Bulrush
Duckweed
Dragonfly
Midge
Pond Snail
Clam

Eaten By:
Coyote
Human
White-tailed Deer (eggs)

Raccoon

Mammal

Eats:
Pond Snail
Northern Leopard Frog
Crayfish
Northern Pyke
Minnow
Clam
Yellow spotted Salamander
Painted Turtle

Eaten By:
Coyote
Humans

Mallard image from hbw.com. Killdeer, Wren, Blackbird, Heron, Harrier, and Goose images from audobon.org. Raccoon image from yedraw.ca.

Muskrat

Mammal

Eats:

Narrow-leaved Cattail

Bulrush

Coontail

Arum-leaved Arrowhead

Pond Snail

Fresh Water Shrimp

Northern Leopard Frog

Minnow

Northern Pyke

Yellow Spotted Salamander

Grass

Eaten By:

Northern Harrier

Coyote

Humans

White-tailed Deer

Mammal

Eats:

Grass

Northern Leopard Frog

All Bird Eggs (included in the game)

Eaten By:

Coyote

Human

Coyote

Mammal

Eats:

Grass

Northern Pyke

Norther Leopard Frog

Yellow Spotted Salamander

Painted Turtle

All Birds (include in the game)

Racoon

Muskrat

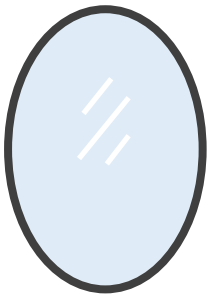
White-tailed Deer

Eaten By:

Humans

Human

Mammal



Eats:

Narrow-leaved Cattail

Mallard

Canada Goose

Northern Pyke

Muskrat

Raccoon

White-tailed Deer

Northern Leopard Frog

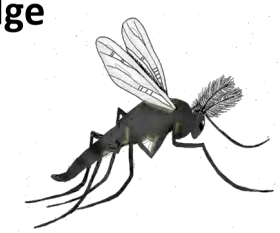
Coyote

Eaten By:

None

Midge

Invertebrate



Eats:

Larvae are **scavengers** (eating dead things) but adults eat nothing.

Eaten By:

Dragonfly

Northern Leopard Frog

Killdeer

Marsh Wren

Red-winged Blackbird

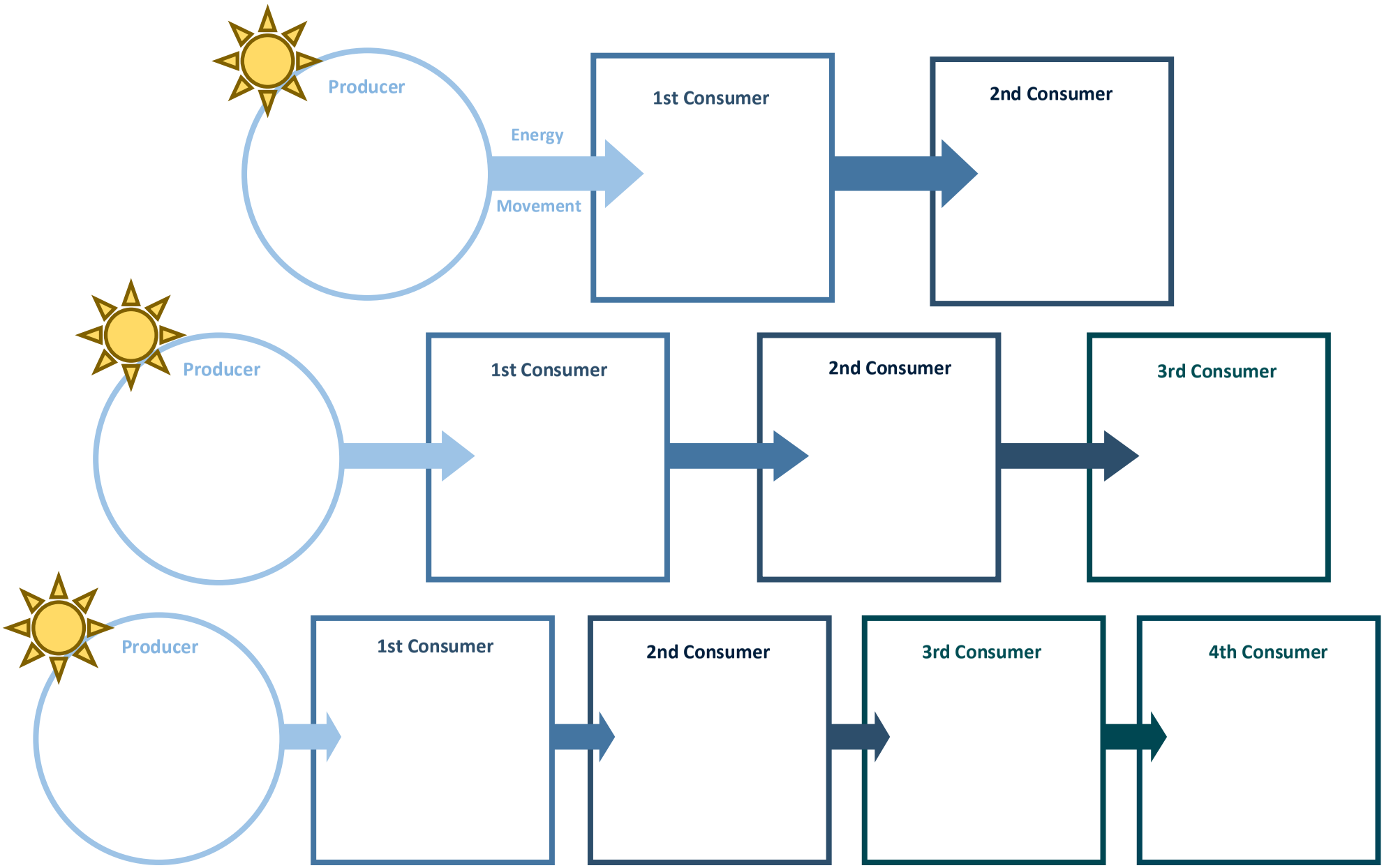
Canada Goose

Muskrat image from naturalunseenhazards.wordpress.com. Deer image from moziru.com. Coyote image from yedraw.com.

Name: _____

Create a Food Chain

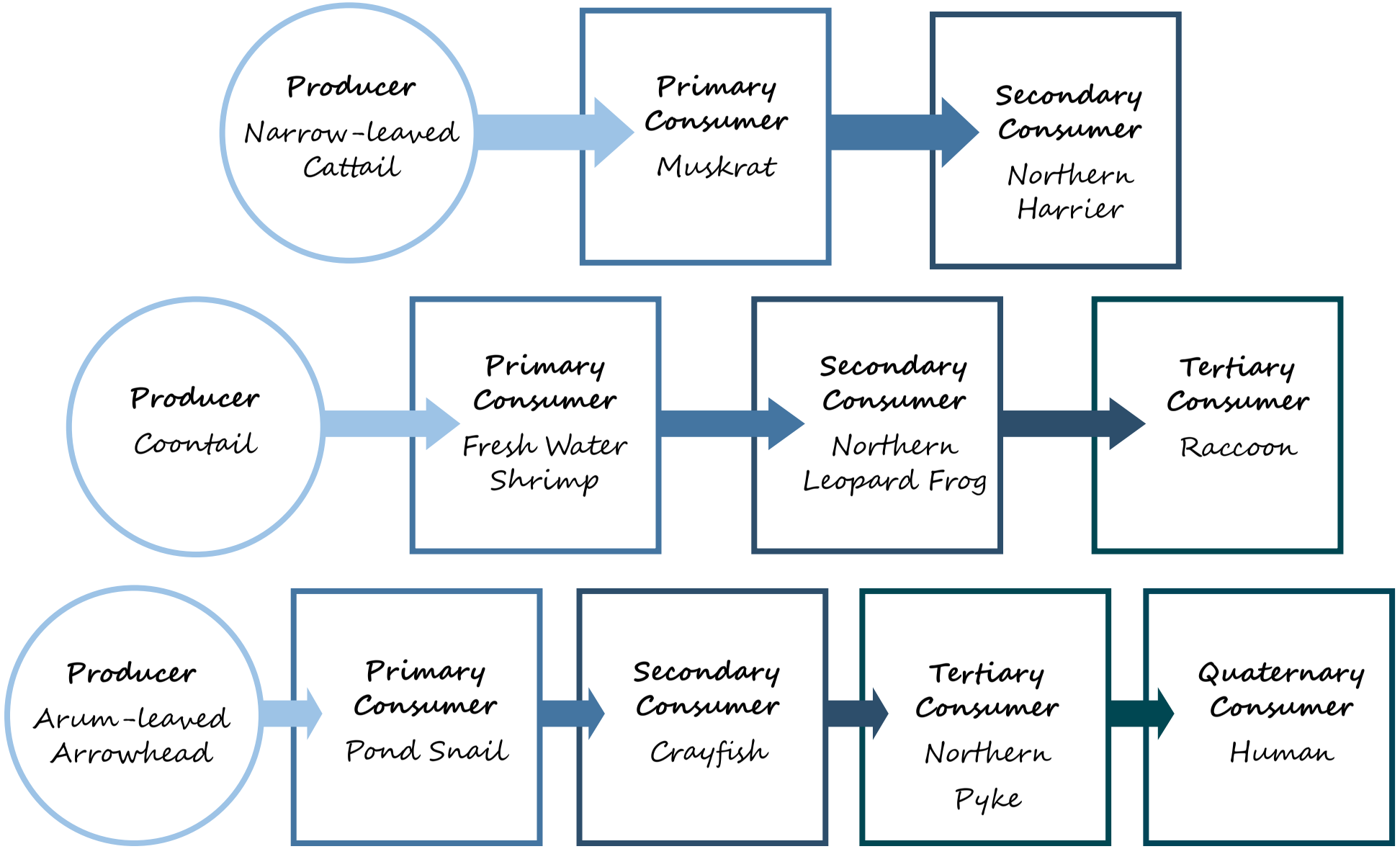
Energy is passed from the sun to one living thing to another through a food chain, each living thing adding another link to the chain.
Create your own three food chains by filling in the spaces provided.



Name: _____*Example*_____

Create a Food Chain

Energy is passed from the sun to one living thing to another through a food chain, each living thing adding another link to the chain.
Create your own three food chains by filling in the spaces provided.



Canada's Four Categories for Species at Risk

Special Concern:

"A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identifies threats."

Example:
Peregrine Falcon

Threatened:

"A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction."

Example:
Canada Warbler

Endangered:

"A wildlife species that is facing imminent extirpation or extinction."

Example:
Piping Plover

Extirpated:

"A wildlife species that no longer exists in the wild in Canada, but exists elsewhere."

Example:

Greater Prairie-Chicken

Extinct:

"A wildlife species that no longer exists."

Example:

Passenger Pigeon

Definitions from the Government of Canada's Species at Risk Act (SARA). Retrieved December 19, 2017 from https://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=D5CEFC12-1
Peregrine Falcon image ©Erwin & Peggy Bauer. Canada Warbler image © Danny Bales. Piping Plover image © Brian E. Kushner. Greater Prairie-Chicken image © Doug Dance. Passenger Pigeon image from reviverestore.org.

Canada's List of Wildlife Species at Risk

Species found at Oak Hammock Marsh

Extirpated Species:

Greater Prairie-Chicken (Bird)

Endangered Species:

Burrowing Owl (Bird)

Piping Plover *circumcinctus* subspecies (Bird)

Red Knot *rufa* subspecies (Bird)

Monarch (Invertebrate)

Threatened Species:

Least Bittern (Bird)

Bobolink (Bird)

Olive-sided Flycatcher (Bird)

Chestnut-collared Longspur (Bird)

Common Nighthawk (Bird)

Bank Swallow (Bird)

Barn Swallow (Bird)

Wood Thrush *accidental sighting* (Bird)

Canada Warbler (Bird)

Golden-winged Warbler (Bird)

Red-headed Woodpecker (Bird)

Special Concern Species:

American Badger *taxus* subspecies (Mammal)

Rusty Blackbird (Bird)

Peregrine Falcon *anatum/tundrius & pealei* subspecies (Bird)

Horned Grebe (Bird)

Western Grebe (Bird)

Evening Grosbeak (Bird)

Red-necked Phalarope (Bird)

Short-eared Owl (Bird)

Yellow Rail (Bird)

Special Concern Species continued:

Buff-breasted Sandpiper (Bird)

Baird's Sparrow (Bird)

Harris's Sparrow (Bird)

Snapping Turtle (Reptile)

Western Painted Turtle (Reptile)

Northern Leopard Frog (Amphibian)

References:

Committee on the Status of Endangered Wildlife in Canada. (2017, October). ***Canadian wildlife species at risk***. Environment and Climate Change Canada. Retrieved December 19, 2017 from http://www.registrelep.gc.ca/sar/assessment/wildlife_species_accessed_e.cfm.

Oak Hammock Marsh Interpretive Centre. (2013, March). ***Birds of Oak Hammock Marsh***. Retrieved December 18, 2017 from http://www.oakhammockmarsh.ca/assets/2014/12/bird-checklist-2017.pdf

Oak Hammock Marsh Interpretive Centre. (n.a.). ***Plants of Oak Hammock Marsh***. Retrieved December 18, 2017 from http://www.oakhammockmarsh.ca/assets/2014/12/OHM-Plants-2017.pdf

Oak Hammock Marsh Interpretive Centre. (n.a.). ***Species list: Amphibians of Oak Hammock Marsh***. Retrieved December 18, 2017 from http://www.oakhammockmarsh.ca/assets/2014/12/Amphibian-List-2017.pdf

Oak Hammock Marsh Interpretive Centre. (n.a.). ***Species list: Fish at Oak Hammock Marsh***. Retrieved December 18, 2017 from http://www.oakhammockmarsh.ca/assets/2014/12/Fish-List-2017.pdf

Oak Hammock Marsh Interpretive Centre. (n.a.). ***Species list: Invertebrates of Oak Hammock Marsh***. Retrieved December 18, 2017 from http://www.oakhammockmarsh.ca/assets/2014/12/Invertebrate-List-2017.pdf

Oak Hammock Marsh Interpretive Centre. (n.a.). ***Species list: Mammals of Oak Hammock Marsh***. Retrieved December 18, 2017 from http://www.oakhammockmarsh.ca/assets/2014/12/Mammal-List-2017.pdf

Oak Hammock Marsh Interpretive Centre. (n.a.). ***Species list: Reptiles of Oak Hammock Marsh***. Retrieved December 18, 2017 from http://www.oakhammockmarsh.ca/assets/2014/12/Reptile-List-2017.pdf

Canada's List of Wildlife Species at Risk

Species found in Manitoba

Extinct Species:

Passenger Pigeon (Bird)

Extirpated Species:

Greater Prairie-Chicken (Bird)

Endangered Species:

Caribou *eastern migratory population* (Mammal)

Little Brown Myotis (Mammal)

Northern Myotis (Mammal)

Burrowing Owl (Bird)

Eskimo Curlew (Bird)

Piping Plover *circumcinctus* subspecies (Bird)

Red Knot *rufa* subspecies (Bird)

Whooping Crane (Bird)

Prairie Skink (Reptile)

Eastern Tiger Salamander (Amphibian)

Lake Sturgeon *Western Hudson Bay, Saskatchewan—Nelson River populations* (Fish)

Gypsy Cuckoo Bumble Bee (Invertebrate)

Mottled Duskywing *boreal population* (invertebrate)

Hite Flower Moth (Invertebrate)

Gold-edged Gem (Invertebrate)

Nine-spotted Lady Beetle (Invertebrate)

Monarch (Invertebrate)

Dusky Dune Moth (Invertebrate)

Dakota Skipper (Invertebrate)

Ottoe Skipper (Invertebrate)

Poweshiek Skipperling (Invertebrate)

Gattinger's Agalinis (Plant)

Rough Agalinis (Plant)

Fascicled Ironweed (Plant)

Endangered Species Continued:

Western Prairie Fringed Orchid (Plant)

Threatened Species:

Caribou *boreal, barren-ground population* (Mammal)

Least Bittern (Bird)

Bobolink (Bird)

Lark Bunting (Bird)

Olive-sided Flycatcher (Bird)

Ross's Gull (Bird)

Ferruginous Hawk (Bird)

Chestnut-collared Longspur (Bird)

Common Nighthawk (Bird)

Sprague's Pipit (Bird)

Loggerhead Shrike *prairie* subspecies (Bird)

Bank Swallow (Bird)

Barn Swallow (Bird)

Chimney Swift (Bird)

Canada Warbler (Bird)

Golden-winged Warbler (Bird)

Eastern Whip-poor-will (Bird)

Red-headed Woodpecker (Bird)

Shortjaw Cisco (Fish)

Carmine Shiner (Fish)

Verna's Flower Moth (Invertebrate)

Mapleleaf (Invertebrate)

Western Silvery Aster (Plant)

Smooth Goosefoot (Plant)

Small White Lady's-slipper (Plant)

Western Spiderwort (Plant)

Canada's List of Wildlife Species at Risk

Species found in Manitoba

Special Concern Species:

American Badger *taxus* subspecies (Mammal)

Grizzly Bear (Mammal)

Polar Bear (Mammal)

Wood Bison (Mammal)

Atlantic Walrus (Mammal)

Beluga Whale (Mammal)

Wolverine (Mammal)

Rusty Blackbird (Bird)

Peregrine Falcon *anatum/tundrius & pealei* subspecies (Bird)

Horned Grebe (Bird)

Western Grebe (Bird)

Evening Grosbeak (Bird)

Red-necked Phalarope (Bird)

Short-eared Owl (Bird)

Yellow Rail (Bird)

Buff-breasted Sandpiper (Bird)

Baird's Sparrow (Bird)

Harris's Sparrow (Bird)

Eastern Wood-pewee (Bird)

Snapping Turtle (Reptile)

Western Painted Turtle (Reptile)

Western Tiger Salamander (Amphibian)

Northern Leopard Frog (Amphibian)

Great Plains Toad (Amphibian)

Bigmouth Buffalo (Fish)

Lake Sturgeon (Fish)

Yellow-banded Bumble Bee (Invertebrate)

Transverse Lady Beetle (Invertebrate)

Pale Yellow Dune Moth (Invertebrate)

Special Concern Species Continued:

Buffalograss (Plant)

Riddell's Goldenrod (Plant)

Hairy Praire-clover (Plant)

Flooded Jellyskin (Plant)

Golden-eye Lichen (Plant)

References:

Committee on the Status of Endangered Wildlife in Canada. (2017, October). ***Canadian wildlife species at risk***. Environment and Climate Change Canada. Retrieved December 19, 2017 from http://www.registrelep.gc.ca/sar/assessment/wildlife_species_accessed_e.cfm.