



Common Name	Scientific Name	Taxon Group
Food Web Roles		
DECO	Decomposer: Energy from dead material	
AUTO	Autotroph/Producer: Energy from sun	
HERB	Herbivore: Energy from plants	
OMNI	Omnivore: Energy from plants, animals	
CARN	Carnivore: Energy from animals	
APEX	Apex Predator: Top Predator	
DETR	Detritivore: Energy from dead vegetation	
SANG	Sanguinivore: Energy from blood	
MULT	Multiple: Energy from multiple sources	
	Habitat (where species is found) + (indicates species is also found in other habitats)	
Taxonomic Classification		
	Kingdom	
• Bacteria		
• Plants		
	Phylum	
	• Marine Algae	
	• Molluscs	
	• Echinoderms	
	• Arthropods	
	• Flowering Plants	
	Subphylum	
	• Crustaceans	
	Class	
	• Birds	
	• Mammals	
	• Jellyfish	
	• Sea squirts	
	• Rayfinned fishes	

Check out these 48 commonly found species in coastal areas on the Boston Harbor Islands! Take this deck out into your park while exploring coastal wetlands, coastal uplands, and intertidal zones.

These cards were developed with the hope that students, families, and curious visitors might learn some interesting facts about how species have adapted for survival in the harsh and ever changing environments of coastal habitats.



For more information about the Boston Harbor Islands, visit www.bostonharborislands.org
Cover Photo by Matt Teuten
Courtesy of NPS/Boston Harbor Islands NRA

Project Description

American Searocket *Cakile edentula ssp.*

Flowering Plants

	Habitat		Foodweb Role
+ Coastal Uplands			AUTO
Reproduction	Fruits dispersed by wind and waves		
Flowering Season	July to September		
Origin	Native		
Size	About 2 feet tall		
Coastal Adaptations	Their fruits are divided into two parts: one stays with the parent plant, and the other drops off as the fruit dries out, carrying seeds over ocean waters to new shores.		
Image: John Hilty CC-BY-NC			

American Oystercatcher *Haematopus palliatus*

Birds

	Habitat		Foodweb Role
+ Intertidal Zone			CARN
Food	Mussels, crabs, limpets, clams, and oysters		
Predators	Gulls, raccoons, and raptors		
Lifespan	About 23 years and 10 months		
Wingspan	About 3 feet		
Coastal Adaptations	Oystercatchers use their sharp bill as a wedge to open shells and then to cut the strong muscle of molluscs that hold shells closed.		
Image: Dick Daniels (http://carolinabirds.org/) CC-BY-SA			

Acorn Barnacle *Balanus glandula*

Crustaceans

	Habitat		Foodweb Role
+ Intertidal Zone			OMNI
Food	Filter feeds on plankton and detritus		
Predator	Sea stars, fish, marine snails, and shore birds		
Reproduction	Brood eggs		
Zonation	Low to high intertidal zones		
Coastal Adaptation	Barnacles have impermeable shells that prevent water loss during low tide.		
Image: Chris Cook CC-BY-NC			



Asian Clubbed Tunicate
Styela clava

eol
Sea Squirts



Habitat + Intertidal Zone **OMNI**
Foodweb Role

Food Filter feeds on plankton and algae
Predators Fish and snails
Origin Invasive
Zonation Low intertidal zone and tidepools

Coastal Adaptations
Club tunicates have two siphons (tube-like openings) that can be closed for extended periods of time. This feature allows them to withstand environmental stressors.

Image: Melissa Frey, Royal BC Museum CC-BY-NC

Asian Shore Crab
Hemigrapsus sanguineus

eol
Crustaceans



Habitat + Intertidal Zone **OMNI**
Foodweb Role

Food Fish, algae, snails, barnacles, worms
Predator Gulls, shore birds, and other crabs
Reproduction Brood eggs
Zonation Low to high intertidal zones

Coastal Adaptations
The Asian Shore Crab is highly reproductive and has free floating larvae that can travel long distances through water.

Image: foto fitis, sytske dijksen CC-BY-NC

Atlantic Razor Clam
Ensis directus

eol
Molluscs



Habitat + Intertidal Zone **OMNI**
Foodweb Role

Food Filter feeds on plankton, detritus
Predators Clam worms, shore birds, snails
Reproduction Broadcast spawn
Zonation Sandy beaches and muddy shores

Coastal Adaptations
Common Razor Clams have a 5 inch "foot" that allows them to move through water and quickly burrow themselves.

Image: Wikimedia Commons CC-BY-SA

Atlantic Rock Crab
Cancer irroratus

eol
Crustaceans



Habitat + Intertidal Zone **OMNI**
Foodweb Role

Food Algae, worms, clams, hermit crabs, and mussels
Predator Fish, crabs, gulls, and humans
Reproduction Brood eggs
Zonation Low intertidal, underneath rocks

Coastal Adaptations
The Atlantic Rock Crab's hard exoskeleton allows it to successfully live in a harsh rocky intertidal environment.

Image: Mike Dillon CC-BY

Beach Rose
Rosa rugosa

eol
Flowering Plants



Habitat + Coastal Uplands **AUTO**
Foodweb Role

Reproduction Rose hips are dispersed by water and small animals
Flowering Season May to September
Origin Non-native
Size About 3 - 6 feet tall

Coastal Adaptations
Beach rose is also known as salt-spray rose due to its tolerance of windy coastal conditions.

Image: 2004 Nick Kurzenko

Bladder Wrack
Fucus vesiculosus

eol
Marine Algae



Habitat + Intertidal Zone **AUTO**
Foodweb Role

Predator Humans and periwinkle snails
Size About 7 feet
Origin Native
Zonation Low to mid-intertidal

Coastal Adaptations
Bladder Wrack has air pockets that help the algae float towards the light for optimized photosynthesis.

Image: User Stemoritis on en.wikipedia CC-BY-SA



Carolina Sea-lavender
Limonium carolinianum Flowering Plants



Habitat + Coastal Uplands **Foodweb Role** AUTO

Reproduction	Propagated by seeds
Flowering Season	June to December
Origin	Native
Size	About 2 feet tall

Coastal Adaptations
Carolina Sea-Lavender can alter its metabolism in response to salinity increases or lack of water, making it able to withstand highly variable conditions.

Image: Botsci

Common Eider
Somateria mollissima Birds



Habitat + Coastal Uplands Intertidal Zone **Foodweb Role** OMNI

Food	Molluscs, crustaceans, and sea urchins
Predators	Coyotes, seagulls, and rats
Lifespan	About 22 years and 7 months
Wingspan	About 3.5 feet

Coastal Adaptation
Eider feathers have evolved tiny structures that allow them to cling to each other, keeping their lined nests warm, and the birds warm in cold winter waters.

Image: Roland zh CC-BY-SA

Common Grass Shrimp
Palaemonetes vulgaris Arthropods



Habitat + Intertidal Zone **Foodweb Role** MULTI

Food	Plants, algae, zooplankton, phytoplankton, and detritus
Predators	Fish and crabs
Lifespan	About 6-13 months
Zonation	Muddy bottoms and salt marshes

Coastal Adaptations
The grass shrimp has evolved to become pollution tolerant and prefers areas of high salinity.

Image: 2010 Moorea Biocode CC-BY-NC-SA

Common Periwinkle
Littorina littorea Molluscs



Habitat + Intertidal Zone **Foodweb Role** HERB

Food	Diatoms and algae
Predators	Sea stars, fish, marine snails, crabs, and shore birds
Reproduction	Floating egg masses
Zonation	Low to high intertidal zones, underneath rocks

Coastal Adaptations
Common periwinkles have gills that retain moisture allowing them to live for many days without food or water.

Image: Biopix CC-BY-NC

Common Reed
Phragmites australis Flowering Plant



Habitat + Coastal Uplands **Foodweb Role** AUTO

Reproduction	Propagated by seeds and Rhizomes
Flowering Season	July to August
Origin	Invasive
Size	About 13 feet tall

Coastal Adaptations
Their root systems can extend up to 10 feet from the base of the plant and several feet deep, allowing them to grow in salty coastal areas.

Image: Malcolm Storey CC-BY-NC-SA

Common Seastar
Asterias forbesi Echinoderm



Habitat + Intertidal Zone **Foodweb Role** CARN

Food	Mussels, clams, oysters, and seaworms
Predators	Fish, gulls, shorebirds, and crabs
Origin	Native
Zonation	Low to Mid Intertidal

Coastal Adaptations
Common sea stars can regenerate arms if one of them is lost.

Image: Paul Morris CC-BY-SA



Common Slipper Shell
Crepidula fornicate

eol
Molluscs



Habitat + Intertidal Zone **Foodweb Role** HERB

Food Filter feeds on plankton and algae
Predators Hermit crabs, dog whelk, and oyster drill snail
Reproduction Broadcast spawn
Zonation Low intertidal

Coastal Adaptations
The top of the "slipper" on a Common Slipper Shell helps to protect and support the snail's organs.

Image: Biopix CC-BY-NC

Common Spider Crab
Libinia emarginata

eol
Crustaceans



Habitat + Rocky Intertidal Zone **Foodweb Role** OMNI

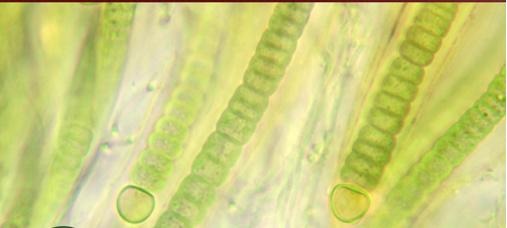
Food Feeds on algae, detritus, sea stars
Predator Gulls and other shore birds
Reproduction Brood eggs
Zonation In tidepools or underneath rocks

Coastal Adaptations
Spider crabs attach bits of algae, shells, and seaweed to the fine sticky hairs that cover their bodies for camouflage.

Image: NOAA

Blue-green Algae
Cyanobacteria Stanier ex

eol
Bacteria



Habitat + Subtidal Zone **Foodweb Role** AUTO

Food Uses sunlight to produce energy through photosynthesis
Predators Other unicellular organisms
Size About 0.5 - 40 µm
Zonation Tidepools/subtidal, freshwater, upper sunlit layer

Coastal Adaptations
Populations can explode in 'blooms' in areas where ponded water is cut off from open ocean exchange.

Image: Malcolm Storey CC-BY-NC-SA

Dead man's fingers
Codium fragile

eol
Marine Algae



Habitat + Intertidal Zone **Foodweb Role** AUTO

Predator Humans, sea slugs, and decomposers
Size Up to 36 inches
Origin Invasive
Zonation Low to high intertidal

Coastal Adaptation
It can tolerate wide ranges of temperature and salinity which allow it to survive the harsh conditions of the intertidal zone.

Image: Katy Johns CC-BY-NC

Diatoms
Khakista

eol
Plants



Habitat + Subtidal Zone **Foodweb Role** AUTO

Food Uses sunlight to produce energy through photosynthesis
Predators Zooplankton and filter feeders
Size About 2 - 186 µm
Zonation Tidepools/subtidal, freshwater, upper sunlit layer

Coastal Adaptation
Planktonic species have adaptations that allow them to remain suspended in water. Colonies may form a long chain or star shape to prevent sinking.

Image: Koninklijk NIOZ, www.nioz.nl CC-BY-NC

Dogwhelk
Nucella lapillus

eol
Molluscs



Habitat + Intertidal Zone **Foodweb Role** CARN

Food Barnacles, slipper shells, mussels
Predators Gulls, common eiders, crabs, and oystercatchers
Reproduction Eggs
Zonation Mid to low intertidal

Coastal Adaptations
A dog whelk moves onto its prey, then secretes digestive enzymes so it can ingest the soupy tissue of its prey.

Image: Jeffdelonge CC-BY-SA



Double-crested Cormorant
Phalacrocorax auritus

eol
Birds



Habitat + Intertidal Zone

OMNI
Foodweb Role

Food	Fish, insects, and crustaceans
Predators	Gulls, coyotes, foxes, raccoons
Lifespan	About 22 years and 6 months
Wingspan	About 4 feet

Coastal Adaptations
Cormorants have a long, hooked beak that is good for catching prey under water, and strong webbed feet that help steer and propel their bodies in water.

Image: Greg Lasley CC-BY-NC

Eastern Oyster
Crassostrea brasiliana

eol
Molluscs



Habitat + Intertidal Zone

OMNI
Foodweb Role

Food	Filter feeds on plankton
Predators	Humans, oyster drill snail, clams, slippershell, crabs, oystercatcher
Reproduction	Broadcast spawn
Zonation	Shallow intertidal, on bedrock, mud, rocks, and muddy gravel

Coastal Adaptations
Eastern Oysters release a cement like substance that allows them to attach tightly to surfaces.

Image: Fabio Moretzsohn CC-BY-NC

European Flat Oyster
Ostrea edulis

eol
Molluscs



Habitat + Intertidal Zone

OMNI
Foodweb Role

Food	Filter feeds on plankton
Predators	Humans, oyster drill snail, slippershell, and oystercatcher
Reproduction	Broadcast spawn
Zonation	Shallow intertidal, on bedrock, mud, rocks, and muddy gravel

Coastal Adaptations
European Oysters change from male to female and back to male to reproduce.

Image: [H. Zell] CC-BY-SA

Great Blue Heron
Ardea herodias

eol
Birds



Habitat + Intertidal Zone

OMNI
Foodweb Role

Food	Fish, small birds, small mammals, and insects
Predators	Raccoons and red tailed hawks
Lifespan	About 24 years and 6 months
Wingspan	About 5.5 - 6.5 feet

Coastal Adaptations
These herons have special feathers that continually fray and turn powdery. This allows oil and swamp slime to cling to their feathers and be easily brushed off.

Image: Mike Baird from Morro Bay, USA CC-BY

Green Crab
Carcinus maenas

eol
Crustaceans



Habitat + Intertidal Zone

OMNI
Foodweb Role

Food	Fish, other crabs, snails, barnacles, clams, oysters, and mussels
Predator	Green crabs, gulls, other shore birds
Reproduction	Brood eggs
Zonation	Low to high intertidal zones, under rocks

Coastal Adaptations
Green crabs have adapted to survive for up to two months out of water.

Image: Valter Jacinto CC-BY-NC-SA

Harbor Seal
Phoca vitulina

eol
Mammals



Habitat + Subtidal zone

CARN
Foodweb Role

Food	Fish, shellfish, and crustaceans
Predator	Sharks, humans, killer whales, and coyotes
Lifespan	Up to 30 years
Size	About 6 feet

Coastal Adaptations
Harbor seals have skin glands that secrete an oil that waterproofs their fur.

Image: Mike Baird CC-BY



Long-clawed Hermit Crab
Pagurus longicarpus

eol
Crustaceans



Habitat + Intertidal Zone **CARN** Foodweb Role

Food Feeds on small bits of fish, shrimp, algae, and other hermit crabs

Predator Green crabs, gulls, other shore birds

Reproduction Brood eggs

Zonation Rocky tidal zones, tidal pools, salt marshes, and open shores

Coastal Adaptations
Hermit crabs use empty shells from other species as armor to protect their delicate bodies.

Image: Mike Hansen CC-BY-NC-SA

Herring Gull
Larus argentatus

eol
Birds



Habitat + Coastal Uplands Intertidal Zone **OMNI** Foodweb Role

Food Fish, insects, small birds, eggs of other birds, and crustaceans

Predators Coyotes, raccoons, other gulls

Lifespan About 29 years and 3 months

Wingspan About 4.5 feet

Coastal Adaptations
Herring Gulls can stay hydrated by drinking salt water when fresh water is not available, thanks to special glands over their eyes that secrete the excess salt.

Image: Falk Haehle

Irish Moss
Chondrus crispus

eol
Marine Algae



Habitat + Intertidal Zone **AUTO** Foodweb Role

Predator Humans and periwinkle snails

Size About 8 inches

Origin Native

Zonation Low intertidal to subtidal zone

Coastal Adaptation
Irish moss has holdfasts (root-like structures) that help the plant anchor down on surfaces.

Image: Valter Jacinto CC-BY-NC-SA

Killdeer
Charadrius vociferus

eol
Birds



Habitat + Coastal Uplands Intertidal Zone **OMNI** Foodweb Role

Food Earthworms, snails, crayfish, and insects

Predators Gulls, raccoons, foxes, coyotes

Lifespan About 10 years and 11 months

Wingspan About 1.5 feet

Coastal Adaptations
The Killdeer performs a "broken wing" act, which tricks predators into following them away from their young and nesting area. They nest in any coastal or upland area.

Image: DickDaniels (<http://carolinabirds.org/>) CC-BY-SA

Least Tern
Sternula antillarum

eol
Birds



Habitat + Intertidal Zone **CARN** Foodweb Role

Food Small fish and small invertebrates

Predators Gulls, Great Blue Herons, coyotes, rats, and owls

Lifespan About 24 years

Wingspan About 1.5 - 2 feet

Coastal Adaptations
The Least Tern plunges into the water while flying to catch fish. Look for groups of terns hovering and diving when they spot a school of fish.

Image: Dick Daniels (<http://carolinabirds.org/>) CC-BY-SA

Mallard
Anas platyrhynchos

eol
Birds



Habitat + Coastal Uplands Intertidal Zone **OMNI** Foodweb Role

Food Vegetation, earthworms, snails, and aquatic larvae

Predators Minks, foxes, coyotes, raccoons

Lifespan About 27 years and 7 months

Wingspan About 3 feet

Coastal Adaptations
Males stay camouflaged from predators during several flightless weeks after the breeding season by producing a dull-colored basic plumage, called "eclipse plumage."

Image: Roland zh CC-BY-SA



Meadow Vole

Microtus pennsylvanicus

eol
Mammals



Habitat + Coastal Uplands

Food HERB Grasses, insects, barks, and roots

Predator Hawks, owls, blue jays, raccoons, and coyotes

Lifespan About 16 months

Size About 5 - 7 inches

Coastal Adaptations
Voles create tunnels in grassy areas as a hiding tactic to avoid predation.

Image: cyric CC-BY-NC-SA

Moon Jelly

Aurelia aurita

eol
Jellyfishes



Habitat + Rocky Intertidal Zone

Food CARN Zooplankton and young worms

Predator Shore birds

Lifespan About 1 year

Zonation Low intertidal and subtidal zones

Coastal Adaptations
Moon Jellies' transparent bodies make them less visible to predators.

Image: user Benutzer:BS Thurner Hof

Mummichog

Fundulus heteroclitus

eol
Ray-finned Fishes



Habitat +

Food OMNI Algae, plants, insects, smaller fish, shrimp, and molluscs

Lifespan About 3 years

Predator Shore birds, gulls, Great Blue Heron, Snowy egret, crabs, and larger fish

Size Up to 6 inches

Coastal Adaptations
During the winter months mummichogs bury themselves in the mud to avoid freezing.

Image: President and Fellows of Harvard College CC-BY-NC-SA

Northern Bayberry

Morella pensylvanica

eol
Flowering Plants



Habitat + Coastal Uplands

Reproduction AUTO Propagated by seeds

Flowering Season March to May

Origin Native

Size About 5 - 10 feet tall

Coastal Adaptations
Bayberry plants have nitrogen-fixing roots that enable them to grow in nitrogen low environments such as sandy beaches.

Image: yaoshawn CC-BY-NC

Orange Sheath Tunicate

Botrylloides violaceus

eol
Sea Squirts



Habitat + Intertidal Zone

Food OMNI Filter feeds zooplankton, plankton, and detritus

Predators Snails and sea urchins

Origin Invasive

Zonation Attached to submerged rocks, algae, and slow moving organisms

Coastal Adaptations
These tunicates have a siphon at either end of the body that filter seawater for food.

Image: WoRMS for SMEBD CC-BY-NC-SA

Raccoon

Procyon lotor

eol
Mammals



Habitat + Coastal Uplands

Food OMNI Rodents, insects, bird eggs, and fruits

Predator Foxes, coyotes, humans, and owls

Lifespan About 16 years

Size About 3 feet

Coastal Adaptations
Raccoons' human-like paws allow them to forage with ease for intertidal species during low tide.

Image: Greg Lasley CC-BY-NC



Rockweed

Fucus distichus

eol
Marine Algae



Habitat + Intertidal Zone **Foodweb Role** AUTO

Predator	Periwinkles, limpets, and isopods
Size	About 9 - 12 inches
Origin	Native
Zonation	Low to high intertidal

Coastal Adaptations
Rockweed is made up of gas-filled pockets that act as "airbags," helping the seaweed stand upright in the water, enhancing photosynthesis.

Image: Katherine Reutter CC-BY-NC

Sea Lettuce

Ulva lactuca

eol
Marine Algae



Habitat + Intertidal Zone **Foodweb Role** AUTO

Predator	Sea urchins, crabs, and snails
Size	About 12 inches
Origin	Non-native
Zonation	Low to high intertidal

Coastal Adaptations
Sea lettuce features a thin blade that is made up of only two cells. This allows it to grow fast in nutrient-rich water.

Image: 4028mdk09 CC-BY-SA

Seaside Goldenrod

Solidago sempervirens

eol
Flowering Plants



Habitat + Coastal Uplands **Foodweb Role** AUTO

Reproduction	Pollination by wind or insects
Flowering Season	August to October
Origin	Native
Size	About 2 - 8 feet tall

Coastal Adaptations
Seaside Goldenrod plants have leaves with a waxy coating that help them retain water, and protect them from the drying effects of salt spray.

Image: gabechuckran CC-BY-NC

Smooth Cordgrass

Spartina alterniflora

eol
Flowering Plant



Habitat + Coastal Uplands **Foodweb Role** AUTO

Reproduction	Propagated by rhizomes
Flowering Season	July to August
Origin	Native
Size	About 7 feet tall

Coastal Adaptations
Smooth Cordgrass has evolved a mechanism to get oxygen into its roots even in wet, salty soils, allowing it to thrive in tidal salt marsh environments.

Image: Wikimedia Commons

Snowy Egret

Egretta thula

eol
Birds



Habitat + Intertidal Zone **Foodweb Role** CARN

Food	Fish, worms, crustaceans, and insects
Predators	Owls and raccoons
Lifespan	About 17 years and 7 months
Wingspan	About 3.5 feet

Coastal Adaptations
Snowy Egrets have large, bright yellow feet that are used to stir up water and probe in mud to forage for food, such as fish, frogs, crustaceans, worms, and insects.

Image: DickDaniels (<http://carolinabirds.org>) CC-BY-SA

Staghorn Sumac

Rhus typhina

eol
Flowering Plants



Habitat + Coastal Uplands **Foodweb Role** AUTO

Reproduction	Propagated by seeds
Flowering Season	June to July
Origin	Native
Size	About 30 - 35 feet tall

Coastal Adaptations
Staghorn Sumac is able to tolerate low nutrient soil conditions, and grows shorter in areas with intense coastal winds.

Image: Tim Hite CC-BY



Tree Of Heaven
Ailanthus altissima

eol
Flowering Plants



Habitat	+ Coastal Uplands	AUTO Foodweb Role
Reproduction	Propagated by seeds	
Flowering Season	June	
Origin	Invasive	
Size	Up to 80 feet tall	
Coastal Adaptations Tree-of-Heaven grows long straight roots until reaching a favorable soil, allowing it to survive salty surface soils.		
Image: Shipher (土峰) Wu (吳) CC-BY-NC-SA		

Wild Turkey
Meleagris gallopavo

eol
Birds



Habitat	+ Coastal Uplands	OMNI Foodweb Role
Food	Plant matter, berries, fruit, acorns, and insects	
Predators	Rats, raccoons, coyotes, hawks	
Lifespan	About 10 years	
Wingspan	About 4 - 5 feet	
Coastal Adaptations Turkeys prefer to walk, but they can fly and swim if they need to!		
Image: Ken Thomas		

eol species cards

Adaptation: A characteristic or behavior that helps an organism survive in its environment

Arthropod: A spineless animal with a hard outer shell, a segmented body, and jointed legs

Broadcast Spawn: When reproduction and fertilization of the egg occurs outside of the organism's body

Brood: Group of young produced at once

Class: A taxonomic category ranked lower than phylum but higher than order

Crustaceans: A large subphylum of arthropods made up of organisms with a hard outer protective layer and two antennae

Down Feathers: Layer of fine, usually soft, feathers of a bird found underneath the outer feathers

Vocabulary

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Habitat: The area an organism lives in and can find its resources

Intertidal Zone: The area between high tide and low tide

Invasive: Species that have the tendency to spread quickly and take over an area

Molluscs: A large phylum of spineless animals

Native: Species that originated naturally within a region

Non-native: Species that have been introduced to a region

Photosynthesis: The process through which plants transform water, CO₂, and sunlight into energy

Phylum: A taxonomic category ranked lower than kingdom but higher than class

eol species cards

Propel: Drive push or move in a direction, usually forwards

Propagate: To spread genetic information by creating offspring

Rhizomes: Modified roots-like systems that are capable of producing a new plant

Subphylum: Groups within the phylum taxonomic group

Taxon: A category for how living organisms are classified

µm (micrometer): A unit of measurement used for extremely small lengths

Webbed: When the feet of a bird or animal are connected by a thin piece of flesh

Zooplankton: Tiny organisms that get their energy from carbon matter, and sometimes detritus

Vocabulary

Vocabulary

