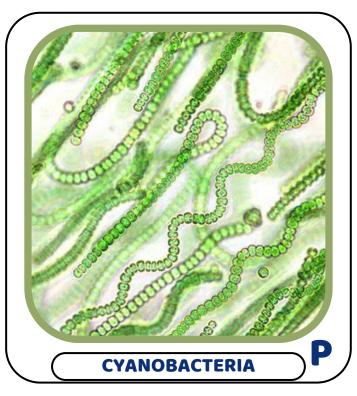
Chapter 5: From Sun to Sunfish

- Freshwater Food Web
- Freshwater Food Web
- Freshwater Food Web
- Freshwater Food Web
- Coastal Seagrass Meadow Food web
- Coastal Oyster Reef Food Web
- Gulf Food web
- Extra Cards for Activities 5.4 & 5.6
- \bigcup Sun and Arrows (per group one sun and page of arrows)
 - ★ State Symbols

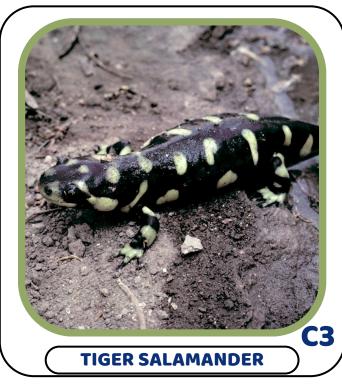












Food: Insects, fruit, crustaceans, invertebrates

Predators: Snakes feed on eggs and young

Habitat: Found in almost any kind of habitat: desert, forest, city, etc.

NORTHERN MOCKINGBIRD

Food: Mayflies, other insects, crustaceans, small fish, crayfish; snails and algae when animal foods are scarce

Predators: Bass, other fish, snapping turtles, herons, osprey, humans

Habitat: Open water, along shoreline where food is abundant

Food: Earthworms, insects, spiders, slugs, snails

Predators: Fish, snakes, snapping turtles, some birds and mammals

Habitat: In burrows under logs and rocks near water; active only at night

TIGER SALAMANDER

Producer: Many varieties found in ponds

Predators: Grazers that eat aquatic plants

Habitat: Along shoreline and in open water; needs sunlight to produce food; first link in food chain

ALGAE

Producer: Photosynthetic pigments that grow in water

Predators: Snails, crabs, small fish

Habitat: Grow in dense mats; float in water

CYANOBACTERIA

Food: Algae and decaying plants; sometimes decaying animal material at the bottom; sometimes eat mosquito larvae

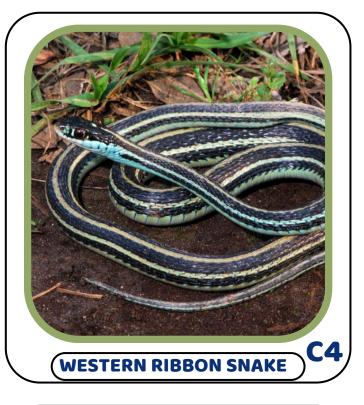
Predators: Fish

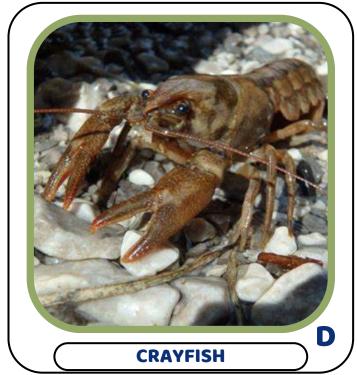
Habitat: Surface of pond, sometimes diving for food; must cling to something to stay under water

WATER BOATMAN













Food: Both plants and animals, some are predators; some are scavengers

Predators: Raccoons, otters, fish, wading birds

Habitat: Ponds and streams; sometimes in burrows or under logs

CRAYFISH

Food: Mostly fish, some insects, frogs, lizards

Predators: Raccoons, snakes, skunks prey on young and eggs

Habitat: Nests in banks near ponds, flies over water or sits on overhanging branches

BELTED KINGFISHER

Food: Algae, other plants, dead plant and animal material

Predators: Many kinds of fish, turtles, some birds

Habitat: Pond bottom or in plants and dead material

SNAIL

Food: Insects, spiders, other invertebrates

Predators: Raccoons, snakes

Habitat: Sits near water's edge; jumps into water if threatened

LEOPARD FROG

Food: Smal animals, insects, seeds, fruit, garbage, crayfish, frogs, fish

Predators: Few as adults, humans and large meat eaters take some young

Habitat: Forest and forest edge; visits ponds and streams at night

COMMON RACCOON

Food: Worms, fish, tadpoles, frogs, toads, salamanders, mice, other small snakes

Predators: Hawks, owls, snapping turtles, herons, some fish

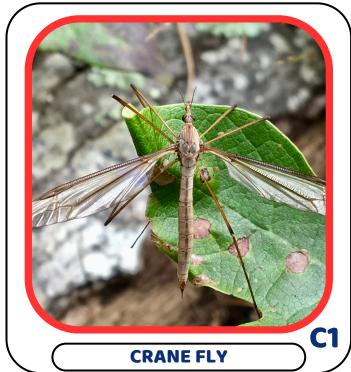
Habitat: Near water, ponds, swamps, marshes, sloughs, streams and rivers

WESTERN RIBBON SNAKE













Food: Larvae eats worms, insects or is herbivorous, adults feed on nectar, some don't eat at all

Predators: Birds, fish

Habitat: Wet moss and other shoreline plants

CRANE FLY

Food: Insects, larvae, crustaceans

Predators: Other fish, raccoons, some birds, turtles

Habitat: Low gradient streams and sloughs

BLACK STRIPE MINNOW

Food: Wetland grasses, grains, sedges, roots of water plants

Predators: Fox, raccoons, coyotes, bobcats, humans

Habitat: Marshes, rivers, lakes; nests on ground; defends nest vigorously

CANADA GOOSE

Producer: Aquatic seed plants

Predators: Birds, muskrat, beavers, deer

Habitat: Rooted near shoreline

PONDWEED

Producer: Blooming plant with submerged roots

Predators: Beavers, ducks, craneflies drink nectar

Habitat: Edges of ponds, lakes and streams

WATER LILY

Food: Caterpillars eat leaves, adults drink nectar from blooming plants and milkweed

Predators: Birds, lizards

Habitat: Fly through Texas on their migration path in the Fall and Spring; live near nectar sources and milkweed

MONARCH BUTTERFLY













Food: Crustaceans, insects, most aquatic organisms they can find and eat

Predators: Predatory fish, minks, otters, sea snakes

Habitat: Breed in the Sargasso Sea live in dark corners of rivers, estuaries, ponds, lakes

AMERICAN EEL

Food: Raccoons, beavers, birds, amphibians

Predators: few- humans, mountain lions

Habitat: Diverse habitats across North America

COYOTE

Producer: Detritus, decaying plants on the bottom

Predators: Rarely eaten by fish

Habitat: Bottom dwellers, able to stand acidic waters, hide beneath rock and debris

AQUATIC SOWBUG

Food: Mosquitos, flies, other insects

Predators: Birds, fish

Habitat: Plants that grow up and stick out from water; open air over pond

DRAGONFLY

Food: Bark and twigs, water lilies, pondweed, cattails

Predators: Coyotes, bobcats, minks, humans (for fur)

Habitat: Streams, rivers, marshes, small lakes; ponds when near large water bodies

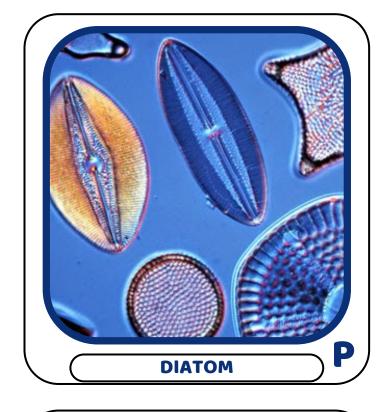
AMERICAN BEAVER

Food: Tiny plants and animals suspended in the water

Predators: Fish, other insects

Habitat: Water's surface; dive if threatened

MOSQUITO LARVA













Food: Mostly insects, occasionally small fish and tadpoles

Predators: Snakes, frogs, some birds

Habitat: Surface of pond in dense aquatic plants

FISHING SPIDER

Food: Beetles, grasshoppers, dragonflies, aquatic nymphs, caterpillars, seeds, corn, rice

Predators: raccoons, turtles, foxes, raptors and snakes

Habitat: Nests in cattails, migrates in winter

RED-WINGED BLACKBIRD

Food: Insects, worms, beetles, snails

Predators: Birds, raccoons, lizards, snakes, minks

Habitat: Swamps, marshes, ditches, streams; anywhere with muck and insects

SPOTTED CHORUS FROG

Producer: Microscopic algae

Predators: Insects, fish, microscopic animals

Habitat: Free-floating; or suspended in open water

Producer: Tall plants with long leaves and a green or brown head

Predators: Aphids, caterpillars, moths, beetles, birds, small mammals

Habitat: Rooted along shoreline

CATTAIL

Food: Submerged oozes and scums containing small plants and animals, algae, diatoms, decaying plants

Predators: Fish, snakes, giant water bugs

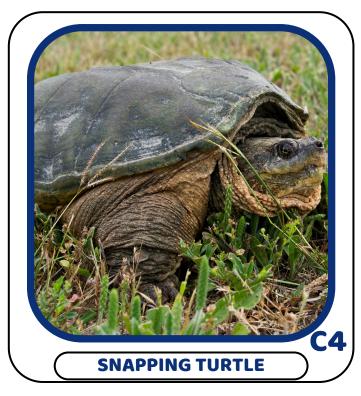
Habitat: In shallow areas near water's edge

TADPOLE

DIATOM

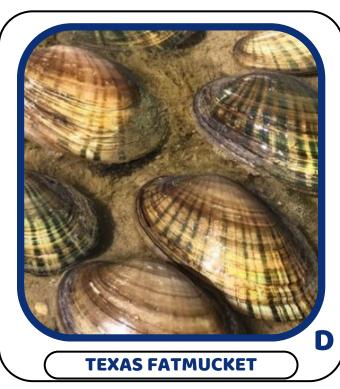












Food: Parasite that feeds on the blood of animals (fish, turtles, frogs, snails)

Predators: Fish

Habitat: Bottom dwellers

LEECH

Food: Insects, crustaceans, tadpoles, frogs, fish

Predators: Fish, frogs, shorebirds

Habitat: Hangs from surface of water; on or among plants; sometimes free swimming

GIANT WATER BUG

Food: Small bits of organic matter suspended in the water, they are considered scavengers

Predators: Fish, muskrats, mink, otters, raccoons, turtles

Habitat: On the bottom of ponds and streams

TEXAS FATMUCKET

Food: Rabbits, muskrats, other small mammals, birds, fish, crayfish, frogs, crustaceans, insects

Predators: Humans, dogs, foxes, owls, coyotes, bobcats

Habitat: On the bottom of ponds and streams

AMERICAN MINK

Food: Insects, invertebrates; sometimes berries and bird eggs

Predators: Dogs, mountain lions, coyotes

Habitat: Live in burrows where soil is soft enough to dig

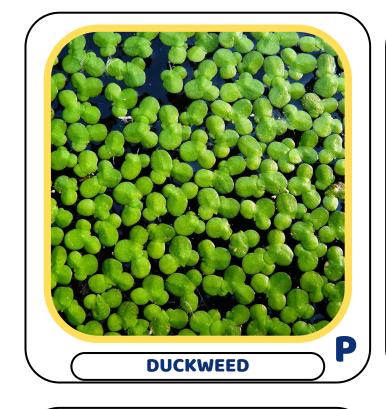
(NINE-BANDED ARMADILLO)

Food: Insects, crayfish, fish, snails, earthworms, amphibians, snakes, small mammals

Predators: Humans catch adults for meat, fish eat young, snakes and mammals eat eggs

Habitat: Ponds with muddy bottoms and snags

SNAPPING TURTLE













Food: Insects, crayfish, small snakes, minnows, frogs

Predators: Snakes, herons, fish, raccoons, humans

Habitat: SHores of lakes, ponds, streams

AMERICAN BULLFROG

Food: Scuds, shrimp, mussels, leeches, mayflies

Predators: Otters, raccoons, osprey

Habitat: Cold freshwater streams, creeks

RAINBOW TROUT

Food: Fish, crayfish, frogs, large insects

Predators: Snapping turtles, herons

Habitat: Open water; along edge where food is abundant

GUADALUPE BASS

Producer: Small, single leaf floating plant, rootlets dangle in water

Predators: Flatworms, insect larvae, ducks, geese

Habitat: Free floating on pond surface

DUCKWEED

Food: Smartweed, corn, acorns, seeds of water plants, some aquatic invertebrates

Predators: Foxes, coyotes, bobcats, minks, humans, raccoons, skunks

Habitat: Marshes, lakes, rivers, nests on ground

MALLARD

Food: Insects

Predators: Birds of prey

Habitat: Roost together in dark dry areas: caves, roof under hangs, attics, hollow trees

(MEXICAN FREE-TAILED BAT)













Food: Small plants, animals, organic debris, diatoms

Predators: Fish, dragonfly larvae, beetles

Habitat: Free swimming among aquatic plants; some live on the bottom or burrow

MAYFLY NYMPH

Food: Do not eat at all, only live long enough to reproduce

Predators: Fish, dragonflies, birds

Habitat: Air over pond

MAYFLY ADULT

Food: Caddisfly nymphs, mayfly nymphs, stonefly nymphs, small animals and insects

Predators: Reptiles, amphibians, fish, wading birds, raccoons, skunks

Habitat: Weedy shallows along shoreline

DIVING BEETLE

Food: Small birds and bird eggs, insects, frogs, earthworms

Predators: Great horned owls, foxes, coyotes, raccoons

Habitat: Forest edges; nocturnal and sleep in dens during the day

SKUNK

Food: Dead plant material, detritus, algae, bacteria, fungi

Predators: Fish, other invertebrates, amphibians

Habitat: Only found in cool, well oxygenated waters (very sensitive to pollution)

STONEFLY NYMPH

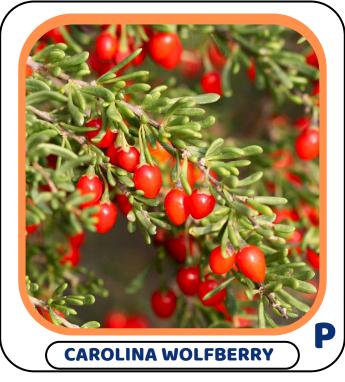
Food: Dead and decaying plant matter, detritus

Predators: Small fish, birds, larger invertebrates

Habitat: Shallow freshwater streams, ponds and rivers

GRASS SHRIMP

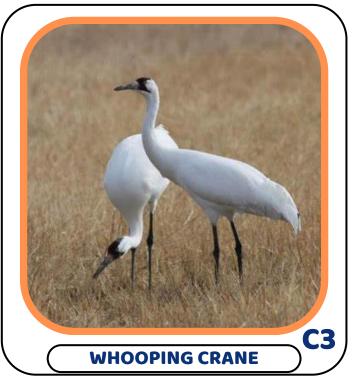












Food: Small fish, mollusks, crustaceans

Predators: Sharks, eels, humans

Habitat: Bays; move to the gulf for spawning in the fall

SOUTHERN FLOUNDER

Food: Seagrass

Predators: Eggs eaten by raccoons and coyotes; hatchlings eaten by seabirds and crabs; some sharks eat turtles

Habitat: Seagrass beds, sleep on shallow bottom and rocky ledges

GREEN SEA TURTLE

Food: Crustaceans, minnows, frogs, larvae, leeches; occasionally voles, lemmings, shrews, fruit, acorns

Predators: Bears, coyotes

Habitat: Winter in Aransas
National Wildlife refuge on salt
flats and marshes; summer in
Canada's Northwest Territiories

WHOOPING CRANE

Producer: Seagrass

Predators: Redhead ducks

Habitat: High salinity waters of all bays south from Matagorda Bay

Producer: Succulent subshrub with spiny branches

Predators: Nectar-insects, Fruitbirds, Browse: deer, racoons and other wildlife

Habitat: Coastal marshes, swamps, and ditches

CAROLINA WOLFBERRY

Food: Seagrass leaves and roots, seeds

Predators: raptors, gulls, mink, otters, large fish, turtles, humans

Habitat: Seagrass beds

REDHEAD

SHOALGRASS













Food: Rodents, young rabbits, crustaceans, frogs, fruits, berries, vegetation

Predators: Dogs, cats, birds

Habitat: Near marshes in hollow trees, woodpiles, rockpiles or crevices

VIRGINIA OPOSSUM

Food: Clams, oysters, mussels, plant or dead animal matter

Predators: Red drum, Atlantic croaker, herons, sea turtles

Habitat: Bottom dweller in bays and estuaries as well as salty gulf waters

BLUE CRAB

Food: small (larval) fish, plankton, worms, and crustaceans

Predators: sea slugs, sea turtles, crabs, fish, and the purple storm snail

Habitat: Open waters, washed up on beaches

PORTUGUESE MAN O'WAR

Food: Plant material, algae, detritus, small fish

Predators: Red drum, spotted seatrout, Atlantic croaker, turtles, wading birds

Habitat: Quiet shallow waters in bays and estuaries

SHEEPSHEAD MINNOW

Food: Crabs, shrimp, bivalves, snails, small fish

Predators: Larger sharks, humans unintentionally catch them in fishing lines

Habitat: Shallow coastal waters, bays, estuaries and rivers

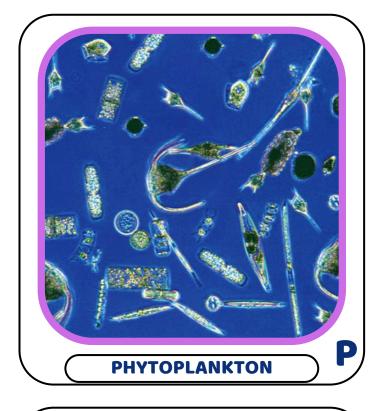
BONNETHEAD SHARK

Food: Young feed on small crabs, shrimp and worms

Predators: Humans, birds, larger fish, turtles

Habitat: Water 1-4 feet deep with submerged vegetation such as seagrass

RED DRUM













Food: Oysters, clams, barnacle, starfish, crabs, limpets, chitons, marine worms, other invertebrates

Predators: Large raptors (birds of prey); raccoons and skunks eat eggs

Habitat: Rocky or sandy shell beaches, saltmarshes, mudflats

OYSTERCATCHER

Food: Zooplankton, benthic (bottom-dwelling) organisms, detritus, invertebrates

Predators: Larger fish, water snakes, turtles, wading birds

Habitat: Warm or temperate, highly salty to fresh waters; mouths of streams or rivers

STRIPED MULLET

Food: Algae, seagrass, crabs, shrimp

Predators: Sharks, larger fish

Habitat: Bay and gulf waters

HARDHEAD CATFISH

Producer: Microscopic photosynthetic marine organisms

Predators: Small fish, crustaceans, zooplankton

Habitat: Upper sunlit layer of bodies of water

PHYTOPLANKTON

Food: Plankton and algae

Predators: American oystercatchers, sea anemone, sea stars, sea nettles, parasites, humans

Habitat: Shallow water bays, lagoons and estuaries

EASTERN OYSTER

Food: Small oysters, clams

Predators: Blue crabs, fish, birds

Habitat: Shallow waters in oyster

reefs

OYSTER DRILL













Food: Bivalves: oysters, clams, scallops

Predators: Gulls, crabs, other whelks

Habitat: Bottoms of shallow bays

LIGHTNING WHELK

Food: Many different fish

Predators: Few- eggs are eaten by raccoons, owls and eagles

Habitat: Nests on high platforms near large bodies of water

OSPREY

Food: Oysters, small mollusks, polychaete worms, crustaceans, seagrass

Predators: Horse conches, groupers, sea turtles, corbia, octopi and humans

Habitat: Bottoms of bays, oyster reefs, rock jetties where they can burrow

STONE CRAB

Food: Atlantic bay scallops, mollusks, crustaceans, clams

Predators: Sharks, human indirectly catch them in fishing nets

Habitat: Migratory; found in coastal and estuarine waters

COWNOSE RAY

Food: Soft-bodied animals; use human-like teeth to eat small shelled animals, crustaceans, mollusks and barnacles

Predators: Humans

Habitat: Saltwater & brackish waters, oyster reefs

SHEEPSHEAD

Food: Absorbs floating detritus

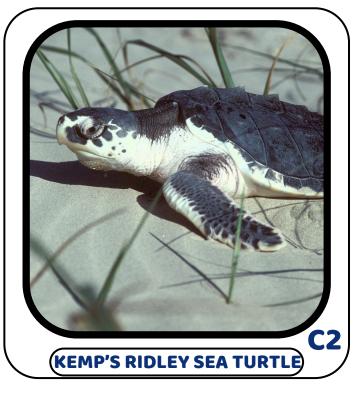
Predators: Starfish, wading birds, seagulls, pinfish, lightning whelks, cow-nosed rays, crabs, humans

Habitat: High salinity bays

ATLANTIC BAY SCALLOP













Food: Plankton, detritus

Predators: Whelks, mussels, starfish, limpets

Habitat: Shallow tidal waters; attach themselves to any hard surface, including crustaceans

BARNACLE

Producer: Seaweed that grows as mats; floats using their airfilled structures

Predators: Seabirds, smaller fish

Habitat: Upper parts of water columns, providing a habitat and nursery for many small organisms

SARGASSUM

Food: Marine worms, shrimp, crab, fish, mollusks

Predators: Larger fish, sharks, humans

Habitat: Bays and inshore waters, offshore gulf waters

BLACK DRUM

Producer: Single-celled photosynthetic seaweed

Predators: Fish, crustaceans, mollusks

Habitat: Shallow sea areas

GREEN GRAPE ALGAE

Food: Draws in water to extract food and oxygen

Predators: Few-starfish, sea urchins

Habitat: Nearshore waters on coral reefs

BRANCHING TUBE SPONGE

Food: Crabs, clams, jellyfish, starfish, shrimp

Predators: Humans, shorebirds, sharks

Habitat: Open ocean and gulf waters, females come to shore only to lay eggs, young turtles float on sargassum mats

(KEMP'S RIDLEY SEA TURTLE)













Food: Atlantic bay scallops, clams, oysters

Predators: Oystercatchers, sharks, manta ray, sea turtles

Habitat: Kelp forests, coral reefs, tide pools

STARFISH

Food: Scavengers that eat anything organic they can find

Predators: Red drums, Atlantic croakers, spotted seatrout, humans, crabs, starfish

Habitat: Sea floor of coasts and estuaries

BROWN SHRIMP (TX GULF SHRIMP)

Food: Filter feeders that take in nutrients from the water

Predators: Crabs, mussels, clams

Habitat: Near cold seeps in the Gulf of Mexico

TUBE WORM

Food: Dive into water to catch fish

Predators: Coyotes and humans

Habitat: Near inland coastal waters like estuaries

BROWN PELICAN

Food: Algae, sponges, small fish, jellyfish, sea anemones

Predators: Fish, crabs, lobsters

Habitat: Bottom of shallow gulf waters

SEA SLUG

Food: Fish, crustaceans, squid, jellyfish

Predators: Orcas, sharks

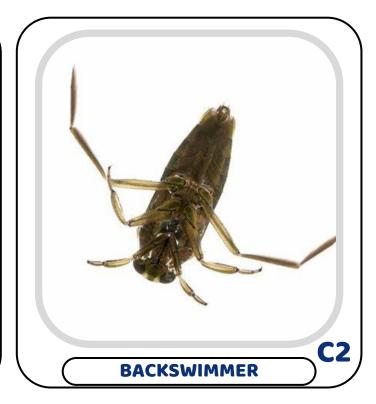
Habitat: Many inhabit shallow coastal areas

BOTTLENOSE DOLPHIN

Extras: for activities 5.4 and 5.6







Food: Mostly small fish, limited numbers of frogs, crayfish, insects and mice

Predators: Fox, coyotes, bobcats

Habitat: Marshes, rivers, lakes, nests on top of large streamside trees

GREAT BLUE HERON

Food: Fish, insects, crayfish, mollusks, plants

Predators: Young eaten by other fish, adults prized by anglers

Habitat: Open water or bottom of ponds where they have been stocked

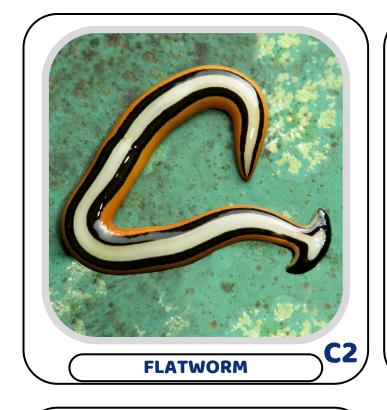
CHANNEL CATFISH

Food: Other insects, invertebrates, and small fish

Predators: Fish, frogs, birds

Habitat: Hangs from water's surface, on or among plants, occasionally free swimming

BACKSWIMMER













Food: Insect larvae, worms, small crustaceans, small fish, tadpoles

Predators: Fish, larger insects, crustaceans

Habitat: Hides in algae and other plants along shoreline

DAMSELFLY NYMPH

Food: Insect larvae, worms, small crustaceans, small fish, tadpoles

Predators: Fish, larger insects, crustaceans

Habitat: Hides in algae and other plants along shoreline

DRAGONFLY NYMPH

Food: Mosquitoes, flies, other insects

Predators: Fish, birds

Habitat: Plants that grow up and stick out from the water; open air over pond

DAMSELFY ADULT

Food: Small animals, protozoans, nematodes

Predators: Worms, insects, crustaceans

Habitat: under stones and submerged leaves in dark areas

FLATWORM

Food: Small crustaceans, insects, worms, diatoms, algae

Predators: Fish, diving beetles, giant water bugs

Habitat: Submerged stems of plants in shallow water, stream bottoms in riffles; construct tube-like shells from bits of plants or sand

CADDISFLY LARVA

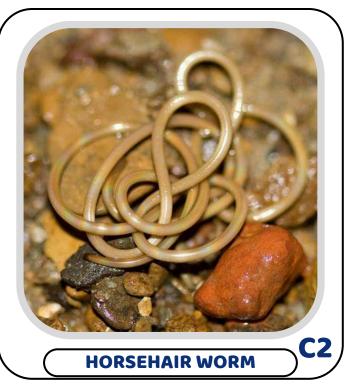
Food: Microscopic animals, algae, detritus

Predators: Nearly everything that eats plankton

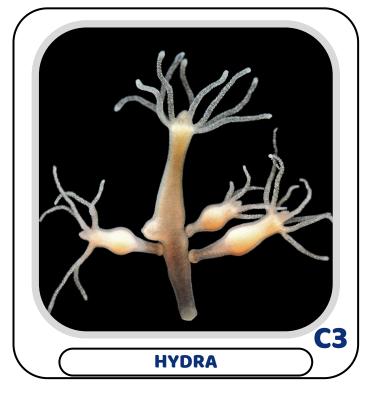
Habitat: Open water; shallow water of ponds

COPEPOD













Food: Microscopic animals are trapped in its stinging tentacles; captures small crustaceans, insects, clams, fish, water fleas

Predators: Carnivorous insects, water beetles, newly hatched fish

Habitat: Attaches to twigs or plats at bottoms of ponds
HYDRA

Food: Females suck mammal blood, males feed on plant juices

Predators: Dragonflies, damselflies, other insects, birds, frogs, fish, bats

Habitat: Air over water and surrounding areas

MOSQUITO ADULT

Food: Roots, bulbs, foliage of cattails, pondweeds, rushes and wild rice; will eat fish, frogs and insects sometimes

Predators: Minks, humans, hawks, owls, snakes, snapping turtles

Habitat: Marshes, sloughs, streams, rivers, ponds, lakes

MUSKRAT

Food: Worms, snails, other small insects

Predators: Fish, birds

Habitat: Among plants and at bottom of pond's edge

Food: Immature are parasites on crustaceans, mollusks, insects; adults don't eat

Predators: Fish, giant water bugs

Habitat: Quiet water

HORSEHAIR WORM

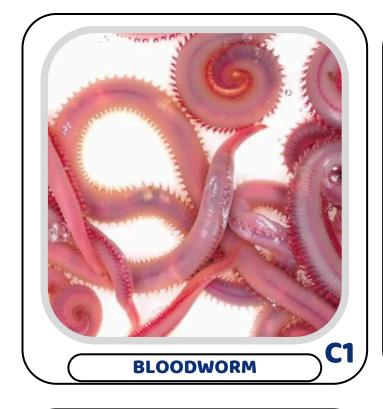
Food: Bass, bluegill, channel catfish, bullfrogs, green frogs, crayfish, snapping turtles

Predators: None

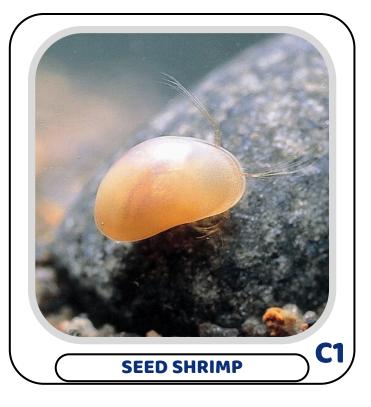
Habitat: Designs structures and alters environment to provide suitible places to live

HUMAN (ANGER)

HORSEFLY LARVA













Food: Decaying plant and animal material, some living plant material

Predators: Fish, spiders, frogs, other insect eating animals

Habitat: Pond surface in quiet backwaters; they hibernate and are first signs of life in the spring

SPRINGTAIL

Food: Scavengers on plant and animal debris

Predators: Birds, fish, insects, amphibians

Habitat: Clear, unpolluted water, on and among plants; near pond bottom to avoid light

SCUD

Food: Crayfish, frogs, tadpoles, small fish, worms, insects

Predators: Hawks, owls, large game fish eat young snakes

Habitat: Under rocks or debris near shore of ponds, lakes, streams or rivers

WATER SNAKE

Food: Plankton, detritus

Predators: Large and small fish

Habitat: Bottoms sediments of ponds; not really a worm but the larva of a fly

Food: Microscopic plants and animals

Predators: Worms, crustaceans

Habitat: Near shoreline around aquatic plants; some occur in open water

ROTIFER

Food: Bacteria, mold, algae

Predators: Small fish

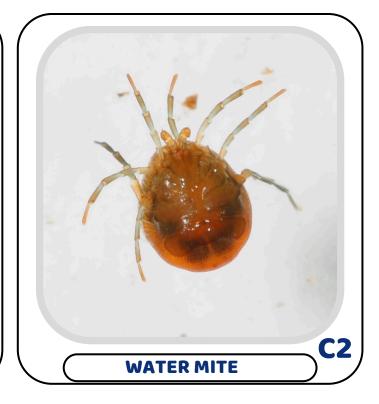
Habitat: On and just above bottom of ponds; look like microscopic clams

SEED SHRIMP

BLOODWORM











Food: Prey on insects and small crustaceans near the surface

Predators: Some fish and birds

Habitat: "Skate" on surface of water in search for food

WATER STRIDER

all

water

Predators: Fish, birds, frogs, snakes

Food: Whirl in circles collecting

insects and debris from surface

Habitat: On the surface among plants; eyes are divided and can see above and below water

WHIRLING BEETLE

Food: Small insects, seize prey with powerful forelegs

Predators: Insect eating animals

Habitat: Ponds, weedy sections of lakes and streams, hides just under surface

WATER SCORPION

Food: Filter plankton from water; algae, organic debris

Predators: Hydras, insects, fish, rotifers

Habitat: Weedy margins or ponds, abundant in all types of water except fast streams and polluted water

WATER FLEA

Food: Insects, worms; some are parasitic

Predators: Hydras, insects, fish

Habitat: Creep on bottom and plants

WATER MITE













