**Mexican Spadefoot**

*Spea multiplicata*

Nutrients: Engulfs bacteria and organic matter

Water: Moisture in the mouth

Energy: Food

Shelter: They live in stagnant water (in the mouths) but can take shelter in crevices and holes

Reproduction: Reproduce by cell division

Other Information: They are less than 0.1 mm in size.

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**Tooth Amoeba**

*Entamoeba gingivalis*

Nutrients: Eats termites, ants, beetles, spiders, detritus, carrion, and other spadefoot larvae

Water: Temporary ponds and rain

Energy: Food

Shelter: Buries itself in underground burrows for most of the year

Reproduction: Sexual reproduction between males and females during summer monsoon season

Other Information: Comes out from underground when summer rains occur. During the summer monsoon season, they mate and eat in temporary pools created by rain. Eggs are laid that attach to vegetation or debris in the pond, tadpoles hatch from eggs in 2-3 days, and tadpoles change into frogs within 3 weeks. Nocturnal. About 65 mm long.
Coyote
*Canis latrans*

**Nutrients:** They eat small mammals, reptiles, carrion, insects, and fruit

**Water:** They dig in the ground for water; food contains water; and take advantage of human-constructed sources of water (e.g., pools, ponds, etc.)

**Energy:** From food

**Shelter:** Crevices in rocks or dens in the ground

**Reproduction:** Sexual reproduction between males and females; pair for one mating season

**Other Information:** Weigh 7-20 kg; lifespan of about 15 years; found solitary, in pairs, or in packs. They have a range of about 26 km² in open grassland, but can take advantage of most open environments; they can be found in rural areas

Cactus wren
*Campylorhynchus brunneicapillus*

**Nutrients:** Eat mostly insects found around vegetation such as ants, beetles, grasshoppers, and wasps and some fruit and seeds

**Water:** From food; human constructed water elements

**Energy:** Food

**Shelter:** Builds nests within thorny plants such as cactus

**Reproduction:** Sexual reproduction between females and males; 2-3 broods per year

**Other Information:** About 16.5 cm long; does not migrate
**Saguaro**  
*Carnegiea gigantea*

**Nutrients:** From soil and makes its own food from carbon dioxide from air and water from soil  
**Water:** Absorbed from the ground on which rain falls  
**Energy:** Light from the sun to make food  
**Shelter:** When small, sheltered by larger trees and shrubs such as Palo Verdes on rocky slopes and well-drained flat areas  
**Reproduction:** Produce flowers that have female and male reproductive organs; requires cross-pollination with the help of bats, birds, and insects; reproduces by seed  
**Other Information:** Roots are close to ground surface and can radiate up to fifty feet from the trunk; average height is 9 m; average diameter of trunk is about 60 cm; can weigh 9,000 kg

**Mycorrhizal Fungi**  
*Glomus mosseae*

**Nutrients:** Elements from soil and food from plants  
**Water:** Soil  
**Energy:** Food from plants  
**Shelter:** In soil and in plant roots (between cells)  
**Reproduction:** Asexual by vegetative growth and producing spores  
**Other Information:** Over 90% of higher plants on land form symbiotic relations with mycorrhizal fungi; hyphae grow beyond plant root zones to patches of nutrients available in the soil

http://www.shannontech.com/ParkVision/Saguaro/Saguaro.html  
www.sci.muni.cz/~mykorrhi/html/g_mosseae_ERM.htm
Bruchid Beetle
*Mimosestes ulkei*

Nutrients: Adults feed on pollen of Palo Verde trees; larvae feed on seeds
Water: From food?
Energy: From food
Shelter: In plants and their seed pods
Reproduction: Sexual reproduction between males and females in flowers
Other Information: Less than 1 cm long; 34 days to maturity; when eggs hatch, larvae burrow into seeds to mature

http://agspsrv34.agric.wa.gov.au/ento/images/M_ulkei.jpg

Palo Verde
*Parkinsonia florida*

Nutrients: Elements from soil and makes food from water obtained from soil and carbon dioxide from the air
Water: soil
Energy: Light from the sun to make food
Shelter: Roots in soil
Reproduction: Sexual reproduction via flowers that have both male and female reproductive parts; requires insect pollinators
Other Information: Can grow up to 9 m tall; found in desert washes and southwest landscaping

xerophyte.co.il/cercidium_floridum.htm
**Gila Woodpecker**  
*Melanerpes uropygialis*

- **Nutrients:** Eats moths, caterpillars, beetles, grasshoppers, cicadas, and occasionally cactus fruit  
- **Water:** From food?  
- **Energy:** From food  
- **Shelter:** Geothermally heated mines, caves, and tunnels  
- **Reproduction:** Sexual reproduction between females and males; females form nursery colonies of more than 100  
- **Other Information:** About 10 cm long; live about 15 years; forage at night within 1.5-5 km of roosting site; does not migrate

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**California Leaf-nosed Bat**  
*Macrotus californicus*

- **Nutrients:** Eats insects, fruit, and seeds  
- **Water:** From food?  
- **Energy:** From food  
- **Shelter:** Excavate nest in cactus (e.g., saguaro)  
- **Reproduction:** Sexual reproduction between females and males; up to 3 broods per year  
- **Other Information:** About 23 cm long; does not migrate
Follicle Mite
*Demodex folliculorum*

- **Nutrients:** Eat skin cell debris
- **Water:** Secretions from host body
- **Energy:** From food
- **Shelter:** Hair follicle
- **Reproduction:** Sexual reproduction between females and males; eggs laid in hair follicles
- **Other Information:** Less than 0.4 mm long; live about 14-18 days

Bladderwort
*Utricularia purpurea*

- **Nutrients:** From water; digested invertebrates (e.g., daphnia spp.), and communities living within bladders
- **Water:** From marshes or body of water in which it lives
- **Energy:** Light energy from the sun to make food and from digested organisms
- **Shelter:** N/A; free floating or in floating mats of vegetation
- **Reproduction:** Flowers that require pollination for sexual reproduction to produce seeds; vegetative reproduction
- **Other Information:** This plant is a rootless, free-floating, aquatic, carnivorous plant; about 50 cm long

http://www.geocities.com/thesciencefiles/eyelash/creatures.html

http://www.illusionary.com/~dglidden/cp/glades/
**Broad needleleaf**

*Tillandsia simulata*

**Nutrients:** Uses carbon dioxide and water from the air to make food; elements obtained from the plant detritus and animal feces

**Water:** From air

**Energy:** Uses light energy from the sun to make food

**Shelter:** Attaches to rough-barked trees in warm, moist swamps with a lot of light

**Reproduction:** Sexual reproduction via flowers

**Other Information:** About 20-40 cm tall; seeds germinate on bark of oaks and cypress

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**Florida panther**

*Puma concolor coryi*

**Nutrients:** Eats feral hogs, white-tailed deer, raccoons, armadillos, and sometimes rabbits, rats, and birds

**Water:** Drinks from surface water such as ponds

**Energy:** From food

**Shelter:** Under vegetation; will make dens out of palmetto thicket

**Reproduction:** Sexual reproduction between females and males

**Other Information:** They are solitary; males have a range of about 520 km² (no overlap with males) and females have a range of about 195 km² (overlap with males and females); they weigh 13-35 kg (females at the lower end of the scale); live about 12 years
**Mosquitofish**  
*Gambusia holbrooki*

- **Nutrients:** Eats ants, flies, aquatic arthropods, and beetles; female can eat hundreds of mosquito larva in one day
- **Water:** Surface water; will die in dried out water pools
- **Energy:** From food
- **Shelter:** Vegetation in water
- **Reproduction:** Sexual reproduction between males and females
- **Other Information:** About 2.5-5 cm long (females larger than males); prefers to be at the top of the water column in still or gently flowing warm water

**Fishing Spider**  
*Dolomedes triton*

- **Nutrients:** Eats aquatic insects, small fish, and tadpoles; can eat up to 5x its weight in a day
- **Water:** Surface water
- **Energy:** From food
- **Shelter:** Under vegetation and human built structures near bodies of water
- **Reproduction:** Sexual reproduction between females and males
- **Other Information:** About 2.5 cm; sits on water surface and waits for prey; mass is about 1 gram; hunts during the day; can dive under water; solitary
**American Crocodile**
*Crocodylus acutus*

- **Nutrients:** Eats birds, fish, and other aquatic animals
- **Water:** Surface water
- **Energy:** From food
- **Shelter:** Freshwater, brackish water, and underground burrows
- **Reproduction:** Sexual reproduction between males and females
- **Other Information:** About 3.5-5 m long; mass of about 225-450 kg; active at night; will travel long distances to find new water holes if theirs dry up

**Snail Kite**
*Rostrhamus sociabilis plumbeus*

- **Nutrients:** Eats apple snails; will eat some other snails if apple snails are not available
- **Water:** Freshwater lakes and marshes
- **Energy:** From food
- **Shelter:** In low trees and shrubs near water
- **Reproduction:** Sexual reproduction between males and females
- **Other Information:** About 40-45 cm long; weighs less than a pound; females are larger than males; population declines in apple snails results in declines in kite populations

[http://www.uta.edu/biology/campbell/herpetology/Crocodilians.html](http://www.uta.edu/biology/campbell/herpetology/Crocodilians.html)

Schaus Swallowtail Butterfly  
*Papilio aristodemus ponceanus*

**Nutrients:** Adults eat guava, tamarind, and cheese shrub nectar; larvae eat new growth on torchwood and wildlime plants

**Water:** From food?

**Energy:** From food

**Shelter:** Shady areas within tropical hardwood hammocks

**Reproduction:** Sexual reproduction between males and females

**Other Information:** Larvae can take up to a couple of years to develop and the adults live for one month; about 9-11 cm long

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Cotton Mouse  
*Peromyscus gossypinus*

**Nutrients:** Eat seeds, fruits, nuts, buds, and invertebrates

**Water:** Surface freshwater

**Energy:** From food

**Shelter:** Dead trees, hollow trees, stone walls, and rock piles of mature, tropical, hardwood hammocks near water

**Reproduction:** Sexual reproduction between females and males

**Other Information:** About 18-20 cm long; weighs about 28-56 g; live about 5 months; active at night; home range is about 1,800-4,900 m²
Brown Bear
*Ursus arctos*

**Nutrients:** Eat grasses, roots, fruits, nuts, arthropods, fish, and mammals

**Water:** Surface water

**Energy:** From food

**Shelter:** Forested areas; dens in rock caves and hallowed trees

**Reproduction:** Sexual reproduction between males and females; only a few females are receptive in an area in a given year

**Other Information:** Weigh between 90-390 kg (females are smaller than males); up to 3 m long; live up to 25 years; solitary, but will congregate around food and have overlapping home ranges of 25-980 km²; active at dawn and dusk

Bald Eagle
*Haliaeetus leucocephalus*

**Nutrients:** Eat fish, aquatic birds, small mammals, and carrion

**Water:** From food?

**Energy:** From food

**Shelter:** Nest at top of large, tall trees (nests can weigh more than 450 kg)

**Reproduction:** Sexual reproduction between females and males; pairs mate for life

**Other Information:** Weigh about 4-5.5 kg; up to 1 m tall; 2-2.5 m wingspan; live up to 30 years; build nests with sticks and moss; home range up to 7-40 km²
**Arctic Tern**  
*Sterna paradisaea*

- **Nutrients:** Eats mostly small fish and some insects, krill, and shrimp
- **Water:** From food?
- **Energy:** From food
- **Shelter:** Builds nests for eggs in grassy, sandy, or rocky areas; spends most of its time in the air
- **Reproduction:** Sexual reproduction between males and females during summer months in Arctic Circle
- **Other Information:** Lives in groups of about 50; live about 20 years; about 30-40 cm long; weighs less than 450 g; migrates to Antarctica; active night and day

**Sitka Spruce**  
*Picea sitchensis*

- **Nutrients:** Obtains water from soil and carbon dioxide from air to make food; obtains elements from soil
- **Water:** From air (fog); nearby streams, and inlets
- **Energy:** Light energy from the sun to make food
- **Shelter:** Grows near water, on flood plains, in coastal fogbelts
- **Reproduction:** Sexual reproduction between male and female cones on the same tree to produce seeds
- **Other Information:** About 38-55 m tall; 1-1.5 m in diameter; lives up to 800 years
Sphagnum  
*Sphagnum papillosum*

**Nutrients:** Elements from soil; uses carbon dioxide from air and water from soil and air to produce food  
**Water:** Soil and air  
**Energy:** Uses light energy to help make food  
**Shelter:** Grows in wet and boggy areas where there is sunlight  
**Reproduction:** Usually by asexual vegetative growth (pieces break off and grow into new “individuals”); also, sexual reproduction between male and female individuals  
**Other Information:** About 6 mm long; grows in clumps; no roots; individuals may live up to 10 years

http://honeybee.helsinki.fi/users/korpela/sphagnum_papillosum_2.jpg

Chinook Salmon  
*Oncorhynchus tshawytscha*

**Nutrients:** Young eat plankton, insects, and crustaceans; adults eat zooplankton, fish, crustaceans, and squid  
**Water:** Freshwater and saltwater  
**Energy:** From food  
**Shelter:** Eggs laid in gravel nests in cold, clear water; adults use gravel and aquatic vegetation in cold water  
**Reproduction:** Sexual reproduction between females and males; die after spawning  
**Other Information:** 17-45 kg; about 30.5-152 cm long; live 3-7 years; hatch in freshwater, migrate to ocean, spawn in freshwater (same place they hatched); may migrate thousands of miles

http://www.jjphoto.dk/fish_archive/freshwater/oncorhynchus_tshawytscha.jpg
Beaver
*Castor canadensis*

**Nutrients:** Eat bark, tree leaves, aquatic plants, grasses, and roots; usually forage within 90 m of water

**Water:** surface freshwater

**Energy:** From food

**Shelter:** Builds dams (mud, stones, logs, vegetation) that create a pond at least 0.5-1 m deep in which they build a domed lodge up to 9 m at base; sometimes dig and build terrestrial dens

**Reproduction:** Sexual reproduction between males and females; probably mate for life

**Other Information:** About 18-32 kg; about 1 m long; live about 12 years; live in small family groups or alone; builds canals for transporting logs

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Worm
*Eisenia fetida*

**Nutrients:** Eats organic detritus

**Water:** From soil

**Energy:** From food

**Shelter:** Soil; young develop in cocoons

**Reproduction:** Sexual reproduction between individuals (hermaphrodites); self-fertilization is possible

**Other Information:** Lives within top 25 cm of loose topsoil or litter with a lot of organic matter; about 35-130 mm long; about 3-5 mm in diameter; can eat its body mass in one day
**Giardia lamblia**

**Nutrients:** Absorbs digested food from surroundings in host’s small intestine

**Water:** Absorbs from surroundings in small intestine

**Energy:** From food (by fermentation)

**Shelter:** Small intestine of animals; cysts (one stage in life cycle) are found in soil and water

**Reproduction:** Asexually by cell division

**Other Information:** About 15 µm long; cysts are dispersed by feces and find new hosts when the host ingests contaminated food or water

[http://www.biosci.ohio-state.edu/~parasite/giardia_sem.html](http://www.biosci.ohio-state.edu/~parasite/giardia_sem.html)

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**Diphyllobothrium latum**

**Nutrients:** Absorbs digested food from surroundings in host’s small intestine

**Water:** Absorbs from surroundings in small intestine

**Energy:** From food

**Shelter:** Small intestine of final host; tissue of intermediate hosts

**Reproduction:** Sexual reproduction

**Other Information:** Four life stages: egg that is ingested by a copepod (crustacean) host, fish host (eats copepod), final host in whatever eats the fish; can grow up to 12 yards long; can live several decades; infection occurs by ingestion of cyst or egg; solitary