

The Ecosystem

Canvas Settings

12 seconds = 12 months of the simulation

60 seconds = 1 run of simulation or 1 life cycle or 5 years

Properties of Organisms

Producers:

Grass

Movement: Stationary

Die if no rain within = 6 seconds

Die if exposed to poison (herbicide) = 2 seconds

Reproduce automatically = +2 per 12 seconds

Bump with predator (table) = die after 1 bump

Flower

Movement: Stationary

Die if no rain within = 6 seconds

Die if exposed to poison (herbicide) = 2 seconds

Reproduce, bumped by butterfly only (or bee) = +3 per 12 seconds

Bump with predator (table) = die after 2 bumps

Tree

Movement: Stationary

Die if no rain within = 12 seconds

Die if exposed to poison (herbicide) = 6 seconds

Reproduce automatically = +1 per 12 seconds

Bump with predator (table) = die after 3 bumps

Herbivores:

Beetle

Movement: fast

Die if no "prey" (producer) within = 6 seconds

Die if exposed to poison (insecticide) = 3 seconds

Bump with same (Beetle) = +4 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Butterfly

Movement: fast

Die if no "prey" (producer) within = 6 seconds

Bump with same (Butterfly) = +4 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Rabbit

Movement: fast

Die if no "prey" (producer) within = 12 seconds

Bump with same (rabbit) = +3 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Deer

Movement: slow

Die if no "prey" (producer) within = 6 seconds

Bump with same (deer) = +2 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Omnivores:

Songbird,

Movement: fast

Die if no "prey" (producer) within = 6 seconds

Bump with same (bird) = +2 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Mouse

Movement: slow

Die if no "prey" (producer) within = 6 seconds

Bump with same (mouse) = +2 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Raccoon,

Movement: slow

Die if no "prey" (producer) within = 6 seconds

Bump with same (raccoon) = +2 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Carnivores:

Frog

Movement: slow

Die if no "prey" (producer) within = 6 seconds

Bump with same (frog) = +2 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Snake

Movement: slow

Die if no "prey" (producer) within = 6 seconds

Bump with same (snake) = +2 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Coyote

Movement: slow

Die if no "prey" (producer) within = 6 seconds

Bump with same (coyote) = +1 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Hawk

Movement: slow

Die if no "prey" (producer) within = 6 seconds

Bump with same (hawk) = +1 per 12 seconds

Bump with prey (table) = eat (prey dies)

Bump with predator (table) = die

Decompers:

Mushrooms

Movement: stationary

Replaces dead producers when they die

Producer "starts/spawns" at place decomposer "dies"

Bump with predator (table) = die

Earthworm

Movement: slow

Bumps “dead” animal (herbivore, carnivore, omnivore) = eat (producer germinates in place)

Producer “starts/spawns” at place decomposer “eats” dead animals

Bump with same (worm) = +4 per 12 seconds

Bump with predator (table) = die

Predator-prey Chart

Predator-prey

Organism	Prey (“food”)	Predator
Producer - Grass	None (rain, sunlight)	Beetle, Rabbit, Deer, Mouse, Songbird
Producer - Flower	None (rain, sunlight)	Beetle, Rabbit, Deer, Mouse, Butterfly
Producer - Tree (or shrub)	None (rain, sunlight)	Beetle, Butterfly, Deer, Mouse, Songbird, Raccoon
Herbivore - Beetle (or grasshopper)	Grass, flower, tree	Songbird, mouse, frog
Herbivore/pollinator - Butterfly (or honey bee)	Flower, tree	Songbird, frog
Herbivore - Rabbit	Grass, flower, mushroom	Hawk, coyote
Herbivore - Deer	Grass, flower, tree, mushroom	Coyote
<u>Omnivore</u> - Songbird	Grass, tree, beetle, butterfly, worm	Snake, hawk
Omnivore - Mouse (or shrew)	Grass, tree, beetles, mushroom	Raccoon, snake, hawk, coyote