



Meet the Gopher Tortoise:

Ecosystem Engineers

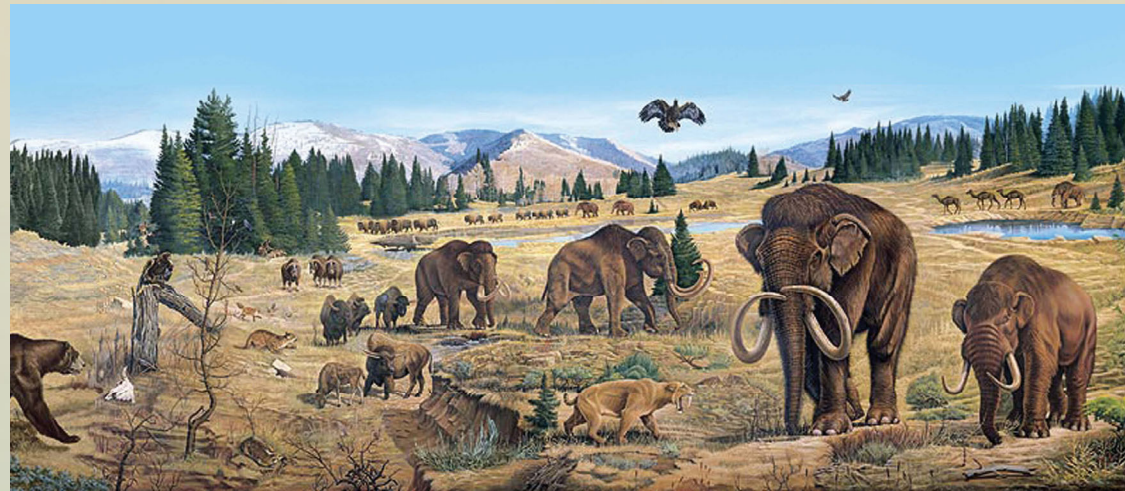
Turtle vs. tortoise

- Both are reptiles and have a shell, scales, ectothermic (cold-blooded), lay eggs
- **Turtles** are generally aquatic
 - Streamlined shell, webbed feet
 - Some spend more time on land than in water – Box turtles
- **Tortoises** are turtles that live exclusively on land
 - Adapted to dry habitats



History in Florida

- Gopher tortoises have been living in Florida since the Pleistocene when they coexisted alongside mammoths, saber-toothed cats, giant sloths, horses, and camels
- Oldest *Gopherus polyphemus* fossils are around 2 million years old
- The first humans to live in Florida (about 12000 years ago) respected the tortoise's longevity and ability to survive



Identification



Shovel like front feet



Stumpy back legs

Broad head with
non-projecting snout



Adaptations for burrowing



Shovel-like front legs for digging



Stumpy back legs for pushing & bracing



Adult gopher tortoises



Nesting



Juvenile gopher tortoises

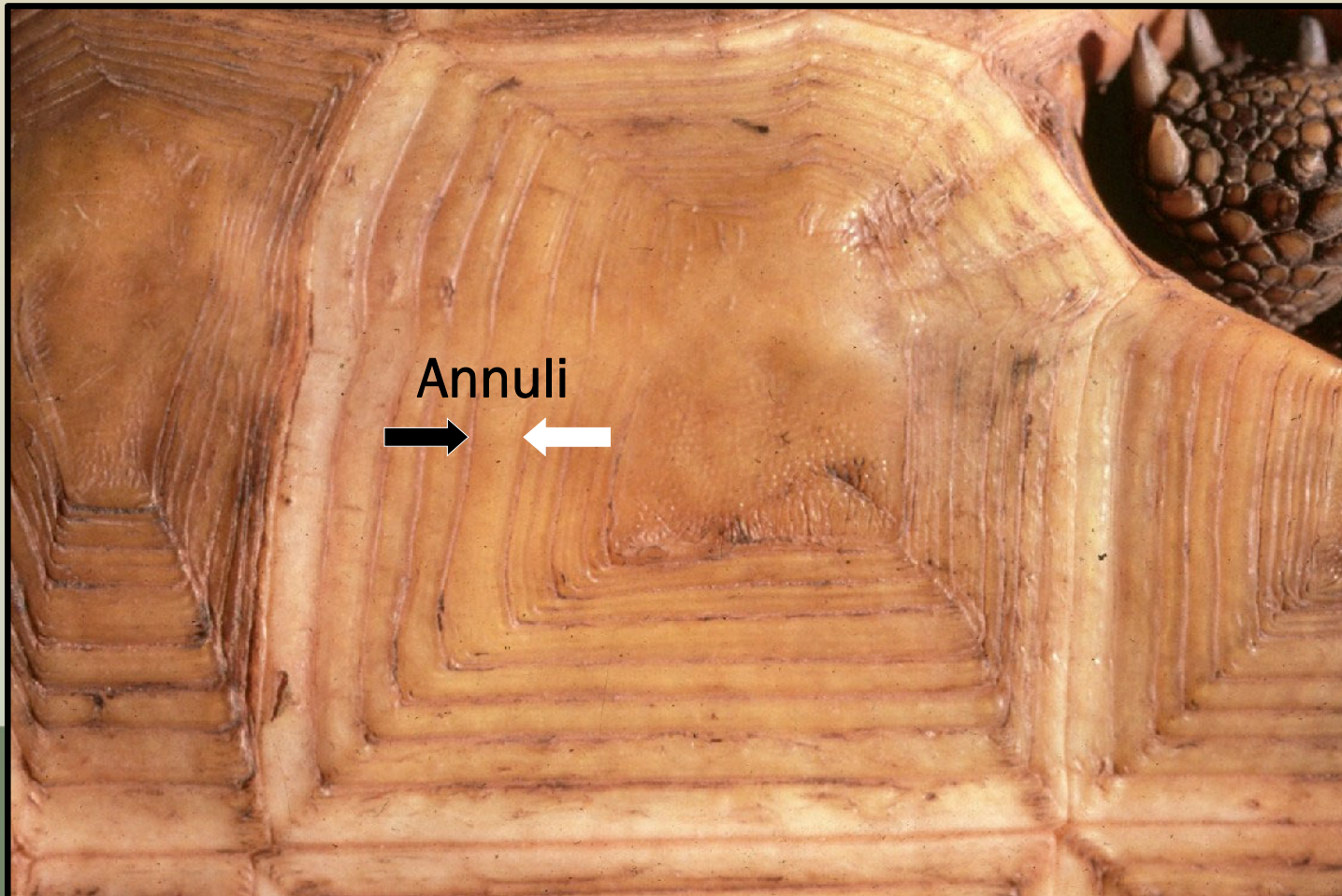


Gopher tortoises are long-lived

- A gopher tortoise can live between 40-60 years!
- They grow very slowly...



Growth in gopher tortoises



Where do gopher tortoises live?



What do they eat?



Keystone species

- Gopher Tortoises are a keystone species, meaning they are so important to an ecosystem compared to their population size that removing them collapses entire ecosystems



WILDLIFE Nomads

Types of Keystone Species

<p>Keystone Predators</p>  <p>Wolves – Regulate prey populations and prevent overgrazing, keeping ecosystems in balance and promoting vegetation recovery.</p>	<p>Ecosystem Engineers</p>  <p>Beavers – Build dams that create wetlands, providing new habitats and improving water quality for countless species.</p>
<p>Keystone Mutualists</p>  <p>Hummingbirds – Pollinate tropical plants that rely solely on them, ensuring food sources and biodiversity thrive.</p>	<p>Foundation Species</p>  <p>Kelp – Form underwater forests that shelter marine life, shaping entire ecosystems through sheer abundance.</p>

Find more at www.wildlifenomads.com



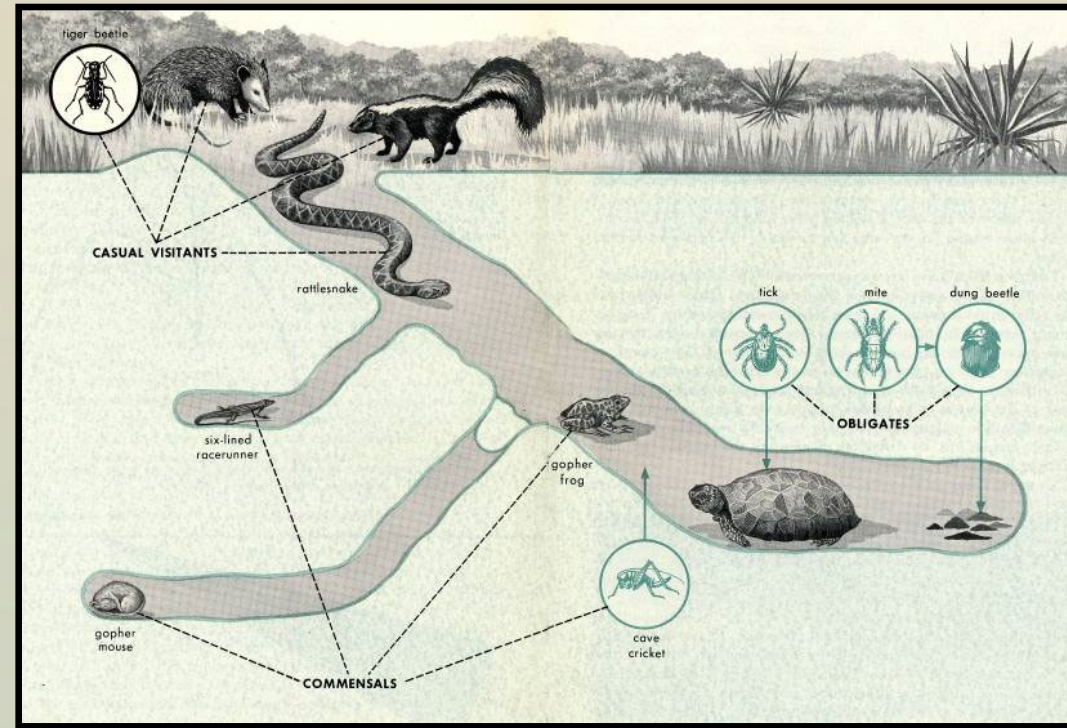
The burrow

- Averages 7 feet deep and 15 feet long
- Tortoises usually have more than one burrow
- Tortoise burrows have a distinct half-moon shape
- More than 350 species use the burrow



The burrow – ecosystem engineer

- Microhabitat
 - Constant temperature
 - Consistent humidity
- Protection from predators
- Refuge from fire



Burrow buddies



Eastern indigo snake

Florida pine snake



Gopher frog

Florida mouse



Diamondback rattlesnake



Commensalism

- One organism benefits from another, without hurting or helping that organism
- Keystone species
 - 362 species visit or use the gopher tortoise burrow in some way
 - Obligates
 - Mutualists
 - Occasional Inhabitants



Ecosystem engineer

- Soil nutrient redistribution
- Soil aeration
- Seed germination and dispersal



Gopher Tortoise Management Plan

- Goal: *To restore and maintain **secure, viable** populations throughout Florida so the species no longer warrants listing*
- Objectives:
 1. Minimize loss of tortoises
 2. Increase and improve habitat
 3. Restore populations where they are depleted
 4. Maintain the tortoise as a keystone species



Kearstin Hess



Conservation Actions

- Research
- Regulation
- Permitting
- Local Government Coordination
- Law Enforcement
- Habitat Protection
- Habitat Management
- Incentives
- Population Management
- Disease Management
- Monitoring
- Education and Outreach



Permitted relocation



Kelly Smith



Kelly Smith

Gopher Tortoise Day

- April 10th has been designated Gopher Tortoise day in Florida
- A day to raise awareness of conservation for this important species



What can you do to help?



Erin Thompson



Chad Williamson



Anonymous photo app submission



Questions?

