

BSC1051C, Exam 1, take-home

Name _____

This exam is due on Thursday, May 21, and there will be no in-class portion. Your answers should be a word or short phrase unless otherwise indicated.

Define *ecosystem* in one sentence.

Define *ecology* in one sentence.

In what way are turkey oaks *endemic* to scrub habitats? _____

Which species has the most narrow habitat requirement, the turkey oak or the slash pine? _____

What abiotic feature of the scrub explains why turkey oaks have long taproots?

Why do humans feel they have to modify or replace natural ecosystems with unnatural high maintenance ecosystems? _____

If the Prairie/Shell Creek scrub is a natural ecosystem, why then must land managers control burn it periodically? _____

Write one paragraph of three sentences that compares the behavior differences between the eastern (Florida) and western scrub jays?

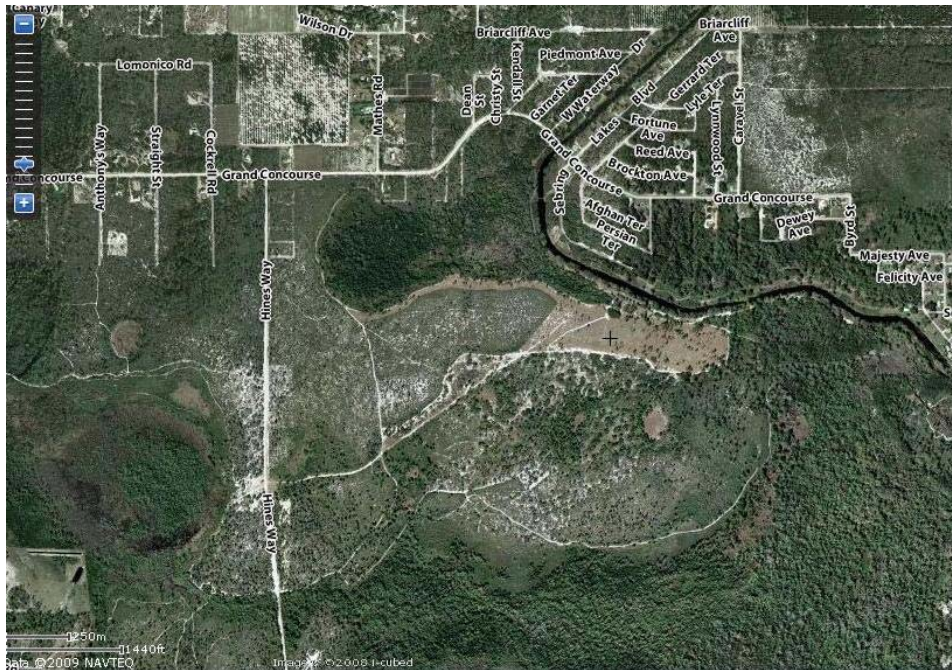
Approximately how many years ago was the last ice age that dropped sea levels enough for humans to migrate into North America from Asia? _____

In two sentences discuss the hydrologic cycle, and explain how ice ages cause sea level to drop. After answering below, also type your answer to me in an email with your name and class (Environmental Biology) in the *subject* line.

What is the dominant abiotic factor controlling the distribution of Florida's scrub habitat?

Name one human activity that has been particularly responsible for the loss of so much scrub habitat in Florida. _____

Draw a boundary line around the scrub habitat in the aerial below.

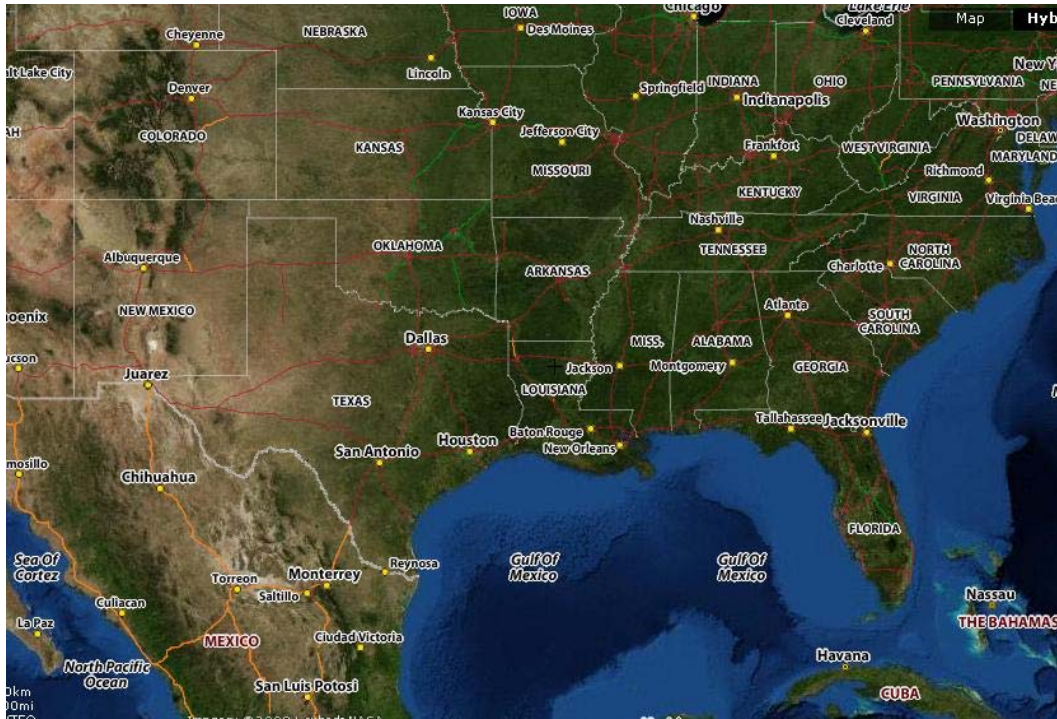


What would you expect to happen to the boundary of the above scrub if:

you had global warming making it warmer and wetter? _____

you had global cooling making it cooler and dryer? _____

Draw a line showing the extent of scrub habitat in the US during the last ice age?



Animals and plants that are endemic to scrub habitat have each accumulated genetic adaptations that are designed to _____.

Which changes temperature the fastest: water or land? _____









Based on the above, which way would the morning sea breeze blow if you were walking along the Gulf beaches in Englewood? A) East to West or B) West to East. _____









SETI, the Search for Extraterrestrial Intelligence, is especially interested in planets a certain distance from their sun; Why?

What might explain why Florida is largely a moist, subtropical environment, while Mexico, at the exact same latitude, is dry with many deserts? One sentence, and do not repeat the question in your answer.

A	wiregrass
B	blackroot
C	sand live oak
D	myrtle oak
E	turkey oak
F	palmetto
G	blueberry
H	Spanish moss
I	sand pine
J	slash pine
K	long leaf pine
L	Florida coonti (<i>Zamia</i>)
M	short-tailed shrew
N	eastern mole
O	red-bellied wood pecker
P	barred owl
Q	eastern diamond back
R	scrub jay
S	gopher tortoise

Match these species with the photographs on the following pages by placing the identifying letter (A, B, C, etc.) in the box to the left of the photographs. Each species is shown in two photographs.



Mostly 3 needles per leaf bundle



Largest cones of Florida pines



2-3 needles per leaf bundle



Winged seeds











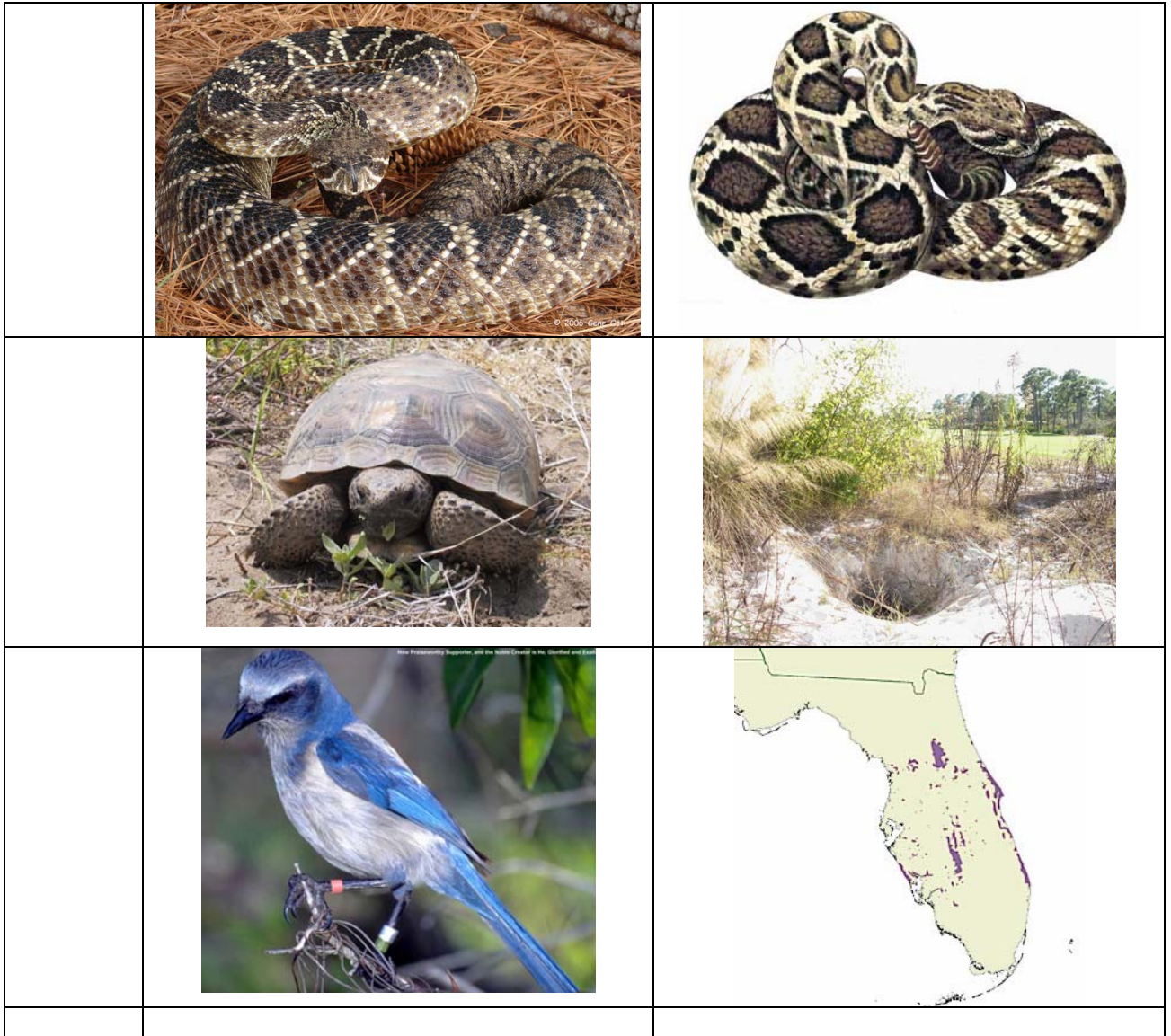
Female cones



Male cones



	 A detailed illustration of a mole, showing its dark brown fur, long snout, and prominent white whiskers extending from its face.	 A photograph of a mole in its natural habitat, resting on a piece of wood. Its dark, velvety fur and long snout are clearly visible.
	 A close-up photograph of a mole's face, highlighting its pinkish, fleshy snout and its large, white, clawed front paws.	 A black and white line drawing of a mole, showing its body shape, fur texture, and long snout.
	 A photograph of a red-bellied woodpecker perched on a tree trunk. It has a bright red cap and a yellow face.	 Another photograph of a red-bellied woodpecker, this time perched on a tree trunk next to a red flower.
	 A photograph of a barred owl perched on a branch. It has a mottled brown and white pattern on its face and chest.	 A detailed illustration of a barred owl perched on a branch, showing its characteristic vertical stripes on its chest and face.



Match the name of one of the above species with the descriptions below. Write the name; do not use the letter associated with the name.

Which of the bird species in the table above is monogamous, maintains tight knit family units and defends territory? _____

Pick one above that would be classified as a primary producer that provides much of its energy to the ecosystem in the form of large seeds. _____

A mammal with very high metabolic rate, must eat voracious amounts of food and exhibits an almost totally subterranean life style: _____

Subterranean mammal with eyes completely covered with skin: _____

Largely nocturnal, detecting prey by sound with ear openings on front of face and offset left to right and up and down: _____

A *keystone* species that is classified as a reptile and lays eggs: _____

Classified as an *epiphyte*: _____

One of the first Florida species to re-sprout after a fire and forms the dominant ground cover in much of the pine woods of south Florida: _____

Primitive ancestor of the gymnosperms (cone bearing plants), largely toxic, but boiled underground portions were used as food by native Americans: _____

Has *serrotinous* cones that must be burned to open: _____

A deciduous oak tightly restricted to scrub habitats: _____

A large oak with cupped leaves, hairy on the undersurface to aid in retaining moisture: _____

A ground cover in scrub and pine woods, produces numerous wind-blown seeds that screw themselves into the ground in response to changes in moisture: _____