ALABAMA PRISON ARTS + EDUCATION PROJECT

THE WARBLER

AN EDUCATIONAL WEEKLY

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Dear Student, Artist, Thinker,

This spring, we offered a short course in Biogeography, which is the branch of biology that studies the geographical distribution of plants and animals. Students were asked to document living organisms they encountered around the facility. Much to the class's surprise, this was an easier task than they might have imagined: in just six weeks, they had observed 45 distinct species, including 16 different plants, 9 insects, 2 spiders, 10 birds, and 4 mammals. There is incredible personal empowerment in knowing the names of things, in what resides around us. Again, it can start with a simple question: what kind of bird is that? And that question can lead to understanding everything from habitat, to migration, to population density, to important efforts to conserve our natural world.

Alabama is incredibly diverse—the northern half of the state is mountainous, where the foothills of the Appalachian Mountains descend into the predominantly flat piedmont and coastal plain regions that lead to the Gulf of Mexico. In between are wetlands, grasslands, and just about every other ecosystem imaginable. This array of environments allows for a huge range of species. Some even call Alabama the "Amazon" of the United States because of its biodiversity. It is the most biodiverse state in the country. So, we've decided to dedicate a whole issue to exploring its biomes and creatures.

There's an old idea that once you start looking for something, you'll begin to notice it everywhere. Our hope for you this week, and with the newsletter in general, is that you'll begin to look at the world around you, no matter the environment, with new eyes.

Famous biologist and Alabama native E.O. Wilson (you'll learn more about him inside) once said, "there is no better high than discovery." We wish you luck on your journey.

Kyes Stevens and the APAEP Team

"Biodiversity" ... is the key to the maintenance of the world as we know it. Life in a local site struck down by a passing storm springs back quickly because enough diversity still exists. ... This is the assembly of life that took a billion years to evolve. It has eaten the storms—folded them into its genes—and created the world that created us. It holds the world steady." PAUL EHRLICH // German physician and scientist

WORDS INSIDE

FROM "BIODIVERSITY" ...

endemic | regularly found among particular people or in a certain area; denoting an area in which a particular disease is regularly found; native or restricted to a certain country or area

presided | be in the position of authority in a meeting or other gathering

escarpment | a long, steep slope, especially one at the edge of a plateau or separating areas of land at different heights

FROM "E.O. WILSON" ...

biodiversity | the variety of life in the world or in a particular habitat or ecosystem.

pheromone | a chemical substance produced and released into the environment by an animal, especially a mammal or an insect, affecting the behavior or physiology of others of its species.

altruism | the belief in or practice of disinterested and selfless concern for the well-being of others

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BIOLOGY

Biodiversity in Alabama

BY R. SCOT DUNCAN | Birmingham-Southern College | *Encyclopedia of Alabama* | June 12, 2013

Alabama ranks high among states for diversity of freshwater mussels, fishes, snails, crayfish, and turtles, and for the number of species found only within the state. Some of Alabama's most famous endemic species are the Red Hills salamander, Alabama sturgeon, and the Alabama beach mouse. Alabama is also one world's hotspots for carnivorous plants. The extensive cave system in the northeastern part of the state, only 10% of which has been explored, harbors the third most biodiverse cave fauna in the temperate world.

Alabama's location 30 to 35 degrees north of the equator means that it receives an abundance of sunlight, leading to a high rate of biological productivity, which is the sum of all energy captured by organisms in an ecosystem over time.

The Deep South competes with the Pacific Northwest as the rainiest region in the country, but is much more biologically diverse because of its higher temperatures. The Gulf of Mexico is an important factor in Alabama's climate. Approximately 50% of the rainfall in the eastern United States is water recently evaporated from the Gulf.

High levels of heat and moisture also produce volatile weather patterns. In particular, convective storms generate lightning, and the resulting wildfires have kept the Southeast burning for millions of years. Prior to widespread human settlement, most of the state would burn several times a decade. These fires maintained prairies and open woodlands and prevented fast-growing shrubs and trees from overtaking and monopolizing ecosystems. The plentiful sunlight reaching the ground supported hundreds of less-competitive, sun-loving species, especially wildflowers and grasses. These species evolved strategies to cope with the frequent, low-intensity fires. Within the longleaf pine woodland, Alabama's most widespread native ecosystem, there are more than 30 fire-adapted species per square meter.

Alabama has a high degree of geologic variation relative to most other southeastern states because of the many rock types uplifted by the rise of the Appalachian Mountains during the last 170 million years of the Paleozoic Era (542-251 million years ago). Variations in soil types, bedrock exposure, and topography affect biological productivity by moderating the availability of heat, light, water, and nutrients.

The quartz sand deposits along the coast support dune communities sparsely populated by grasses and shrubs. Though the dune sands are frequently doused by rain, water seeps through them quickly, and the resulting ecosystem is more akin to desert than any other ecosystem in the state. In contrast, the Cretaceous (145-66 million years ago) marine chalks of the Blackland Prairie region supported tallgrass prairies. Trees were kept at bay by frequent fire and the dense chalk, which was nearly impenetrable to tree roots and groundwater. Instead, grasses and wildflowers more typical of the tallgrass prairies of the Great Plains presided. Scattered throughout Alabama's coastal plains are seepage bogs, created by groundwater forced to remain on the surface by a thick layer of nonporous clay. These sunny wetlands support most of the state's roster of carnivorous plants.

White Topped Pitcher Plant

The treeless ecosystems on exposures of bedrock support hundreds of rare and unusual plant species. These glades are only found within the mountainous northern half of the state. Much of the ground is exposed rock, but where thin soils develop, an assembly of hardy wildflowers and grasses grow. Trees, however, are unable to gain a foothold. Glade types in Alabama are named for the rock upon which they are found, and each rock type weathers into a unique soil that supports its own collection of plant species.

Alabama's terrain ranges from the flat Coastal Plain province to the rugged peaks of the Valley and Ridge province in the state's northeast. Each of Alabama's five physiographic sections has a distinctive topography. In the southern Cumberland Plateau province, different

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IF A MAN CARRIED MY BURDEN, HE WOULD BREAK HIS BACK. I AM NOT RICH, BUT LEAVE SILVER IN MY TRACK. **WHAT AM I?**

Source: https://solveordie.com/animal-riddles/

rates of erosion have produced a template upon which many varied ecosystems survive side-by-side. The region is dominated by broad mountains with relatively level upper surfaces. These plateaus persist because a cap of sandstone near the surface resists erosion.

Up on the plateau surface, weathering of the sandstone produces well-drained sandy soils. Before they were transformed via logging and agriculture, these plateau surfaces supported dry, open woodlands dominated by Shortleaf pine and a handful of fire-tolerant oak. These glades support rare plants such as Little River Canyon onion and the elf orpine. Lower areas of the plateau, where erosion has been more persistent, collect groundwater and support bogs with green pitcher plants. At the margin of the plateau, a steep escarpment stretches down to the valley below, which supports lush broadleaf forests and other moist ecosystems.

Alabama's varied environmental changes triggered the evolution of many new species unique to the state or the region through a process known as speciation. The most common method of speciation begins when a unified population splits into two or more isolated populations because a physical barrier prevents the movement of organisms between the populations. Over millions of years, the isolated populations diverge genetically as they adapt to changes in their unique environments. Eventually, these populations become new species.

Southeastern salamanders are famous among biologists for their degree of speciation. The United States has more species of salamander than any other country in the world, and that diversity is centered in the southern Appalachian Mountains, which begin near Birmingham and extend northeastward in the state. These mountains harbor more than 40 species and subspecies of salamander, which have undergone multiple speciation events. Scientists believe the origins of the salamander date to the Jurassic period (200-146 million years ago), when an ancestral lineage became adapted to slightly drier conditions and spread across the Appalachians. During warm, wet periods their ranges expanded, but during lengthy cool, dry periods, various populations retreated to and became isolated in mountain valleys. Some of these isolated populations evolved into new species found only in the southern Appalachians.

The state's diverse array of plant species derives largely from the Pleistocene (2.6 million years ago to 11,700 years ago). Many plant species in the Appalachian forests share a peculiar biogeographic pattern in that they are very closely related to species in East Asia. The two regions share more than 100 plant genera, including wildflowers such as mayapple, ginseng, and jack-in-the-pulpit, and trees such as beech, catalpa, chestnut, oak, and tulip poplar. In fact, the two floras are more alike than either is to the neighboring floras of western North America and Europe. The beginnings of this pattern emerged in the Early Tertiary period (65-50 million years ago), when a vast deciduous forest encircled the Northern Hemisphere. Species migrated from continent to continent across temporary land bridges. During the Pleistocene, temperate forests were forced south by the advancing glaciers. In the eastern United States and East Asia, north-south trending mountains enabled species to migrate south. For many species, this resulted in their population being split in two, with the frigid arctic temperatures and the oceans keeping these populations isolated from one another. Sufficient time has elapsed for these isolated populations to diverge genetically and evolve into new species.

Alabama Beach Mouse

When the Appalachians fractured the southeastern landscape into multiple watersheds, many opportunities for the evolution of aquatic species were created. Populations of fish, snails, mussels, and crayfish are easily isolated in the shallow streams in the headwaters of major rivers.

Alabama's ecosystems have not been as well-studied as other states, so there will likely be hundreds of new species discovered in Alabama this century. Just in the first decade, at least 76 new species were discovered in Alabama, including the Red Hills azalea; two pancake batfishes; an 11-inch-long bottlebrush crayfish; several cave species and fishes; three flesh flies that breed in pitcher plants; 32 plants; and two trapdoor spiders, including one named after Auburn University's mascot, Aubie the Tiger. ●

Edited for space.

WORD PLAY

A Rebus puzzle is a picture representation of a common word or phrase. How the letters/images appear within each box will give you clues to the answer! For example, if you saw the letters "LOOK ULEAP," you could guess that the phrase is "Look before you leap." *Answers are on the last page!*

MATHEMATICS

Sudoku

#17 PUZZLE NO. 4056870

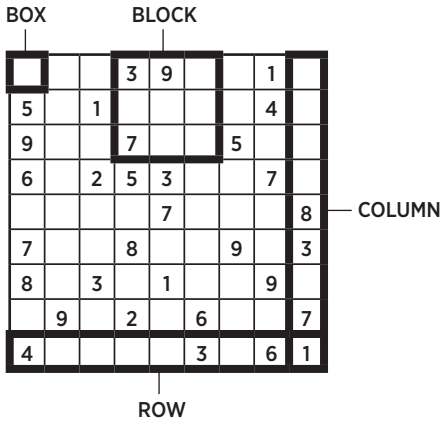
		3					8	
7			5	8				3
	8				9			2
			4			1		8
8						4		7
		2		1				
					4			
	4	9	6		7			
						7	3	

#18 PUZZLE NO. 8271412

	2	1			5			
				7			9	8
9		3						4
			4		2		1	5
	5				1			9
						3		6
2					8		4	
		6	2		9			
3		7						

SUDOKU HOW-TO GUIDE

1. Each block, row, and column must contain the numbers 1–9.
2. Sudoku is a game of logic and reasoning, so you should not need to guess.
3. Don't repeat numbers within each block, row, or column.
4. Use the process of elimination to figure out the correct placement of numbers in each box.
5. The answers appear on the last page of this newsletter.



What the example will look like solved

2	4	8	3	9	5	7	1	6
5	7	1	6	2	8	3	4	9
9	3	6	7	4	1	5	8	2
6	8	2	5	3	9	1	7	4
3	5	9	1	7	4	6	2	8
7	1	4	8	6	2	9	5	3
8	6	3	4	1	7	2	9	5
1	9	5	2	8	6	4	3	7
4	2	7	9	5	3	8	6	1

"It should not be believed that all beings exist for the sake of the existence of man. On the contrary, all the other beings too have been intended for their own sakes and not for the sake of something else."

MAIMONIDES // Jewish philosopher

Icons from the Noun Project

DID YOU KNOW?

There are more lifeforms living on **your skin** than there are people on the planet.

The **Mimic Octopus** can not only change colors, but will mimic the shapes of other animals, like the flounder, lionfish, and sea snakes.

Caterpillars **completely liquify** as they transform into moths.

When snakes are born with **two heads**, they fight each other for food.

A hippo can open its mouth wide enough to fit a **4 foot tall** child inside.

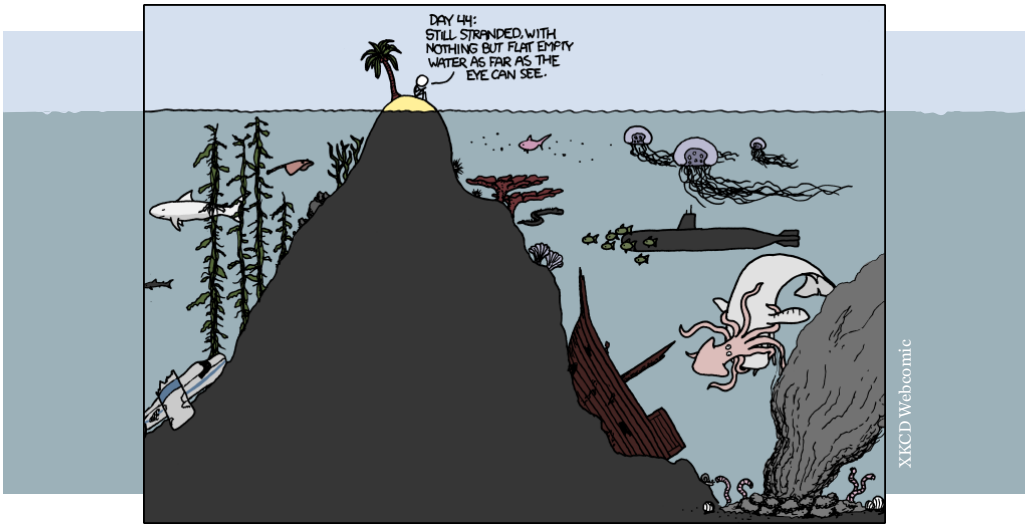
A cockroach can live **several weeks** with its head cut off.

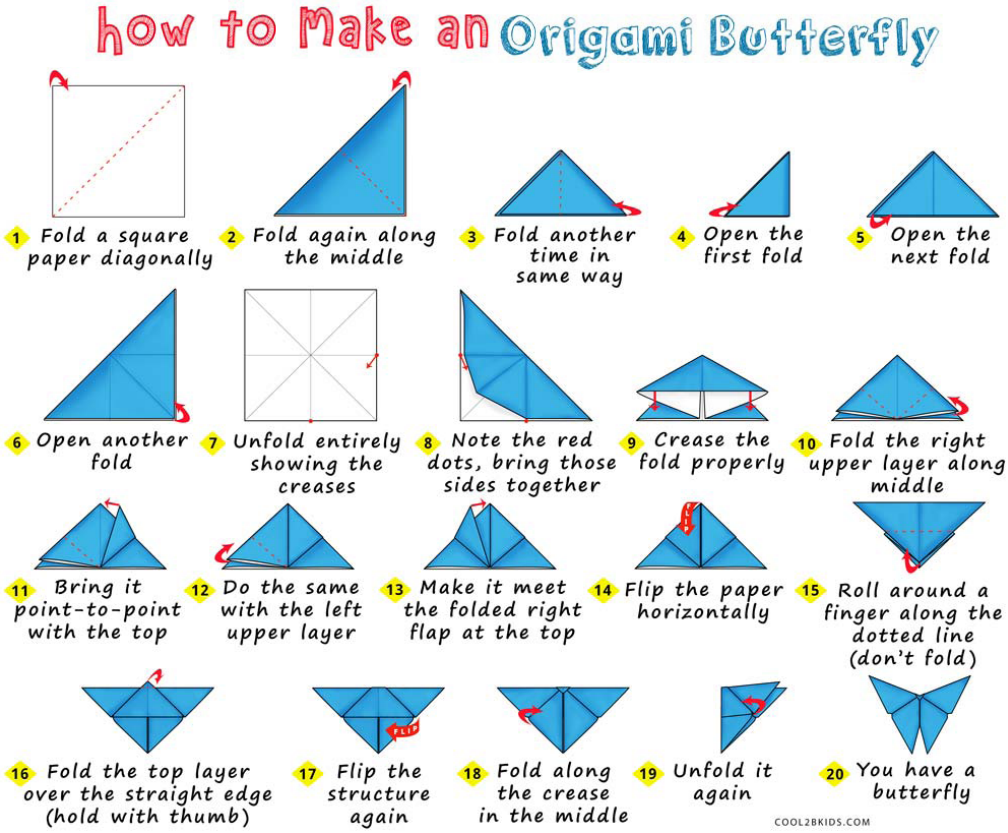
Frozen lobsters can **come back to life** when thawed.

The average person consumes a **pound of insects** per year, mostly mixed in from other foods.

An ostrich's eye is bigger than its brain.

Source: *All Things Interesting*





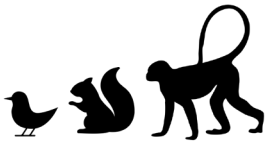
Idiom

"Let the cat out of the bag"

Meaning To mistakenly reveal a secret

Origin First seen in several London publications in the 1700s, its origin dates well before that and refers to a then-common street fraud. Market scamsters apparently attempted to replace pigs (valuable) with cats (not so much); if the cat was let out of the bag, the gig was up. That's related to why you don't want to buy "a pig in a poke" (i.e., a small bag): You might not be getting the real item.

Source: *Women's Day*



A BIRD, SQUIRREL, AND A MONKEY ARE RUNNING TO THE TOP OF A COCONUT TREE TO GET A BANANA — **WHO WILL BE THE FIRST TO GET TO THE BANANA?**

ART + CULTURE

Praise the Rain

BY JOY HARJO

Praise the rain; the seagull dive
The curl of plant, the raven talk—
Praise the hurt, the house slack
The stand of trees, the dignity—
Praise the dark, the moon cradle
The sky fall, the bear sleep—
Praise the mist, the warrior name
The earth eclipse, the fired leap—
Praise the backwards, upward sky
The baby cry, the spirit food—
Praise canoe, the fish rush
The hole for frog, the upside-down—
Praise the day, the cloud cup
The mind flat, forget it all—

Praise crazy. Praise sad.
Praise the path on which we're led.
Praise the roads on earth and water.
Praise the eater and the eaten.
Praise beginnings; praise the end.
Praise the song and praise the singer.

Praise the rain; it brings more rain.
Praise the rain; it brings more rain.

WRITING PROMPT
Humans are conditioned to categorize the world around us: up or down, life or death, strong or weak. We rank things; this thing is better than that thing over there. But this poem sets aside those rankings, those categories, and offers praise for the simple fact that one could not exist without the other. Write a poem in which you describe the value of something usually thought of negatively, but in a positive light. What do you see in this plant/animal that the average person might not at first glance?

Joy Harjo is a poet, musician, playwright, and author. Harjo is a member of the Mvskoke Nation and belongs to Oce Vpofv. She is also the first Native American United States Poet Laureate.

Word Search

N	R	S	P	O	F	P	A	V	I	R	L	N	T
A	N	S	R	D	U	T	R	S	R	V	I	I	R
E	E	M	L	S	R	R	T	E	R	M	O	O	N
S	V	G	O	R	F	A	N	R	C	D	L	A	V
E	A	D	E	C	L	I	P	S	E	N	I	A	R
A	R	S	G	R	C	S	M	I	S	T	F	L	S
G	L	T	N	A	T	N	P	L	O	S	L	R	C
U	P	O	T	E	R	S	L	L	G	I	V	I	E
L	N	M	S	D	Y	K	R	C	R	A	D	L	E
L	M	W	S	U	A	Y	E	T	P	I	S	Y	C
A	A	A	P	O	S	I	N	G	E	R	E	I	A
I	G	T	I	L	D	O	E	S	I	A	R	P	N
L	T	E	S	C	L	T	M	E	A	R	T	H	O
E	R	R	L	R	T	N	S	P	I	R	I	T	E

MOON
PRAISE
SINGER
CRADLE
CLOUD
RAIN
FROG
CANOE
ECLIPSE
SEAGULL
EARTH
MIST
RAVEN
WATER
SKY
SPIRIT

GEOGRAPHY

A Few Miles from Mobile, A Wealth of History, Nature—and Danger

DEBBIE ELLIOTT | Heard on *Morning Edition* | National Public Radio | July 6, 2015

The point where five rivers empty into Mobile Bay is a fisherman and hunter's paradise, but it's also a draw for naturalists and history buffs.

"You can see downtown Mobile over there. And then within a few minutes, we're teleported into this totally alien world," says Ben Raines, director of the Weeks Bay Foundation conservation group.

Raines has a center-console skiff that's small enough to navigate the more than 40 miles of rivers, creeks, bays and bayous that make up the Mobile delta.

In moments, we see egrets, ospreys, pelicans, wild rice, the giant yellow blooms of the American lotus, and purple pickerelweed. The lower end of the delta is a wide expanse of water and wetland grasses.

Raines steers the boat through a narrow creek and into a small bay called Little Bateau. Spanish explorers were here in the mid-1500s. The French came 150 years later. The creatures have been here the whole time.

"There's an alligator there," Raines says. "Pretty good-size one, about 10 feet probably." He calculates its size by estimating the length between its snout and eyes. Ten inches equals a 10-foot gator.

"You've got alligators, you've got manatees, you've got bull sharks that come up here. You've got bears. And you've got those guys," he says, as a bird chirps. "I think that's a marsh hen. And multiple species of poisonous snake. So you've got all these ways to get killed just a couple of miles from home."

With the motor off, a deep quiet sets in, save for a passing breeze.

Raines says about 300 bird species migrate through the delta, and it's home to more species of fish, turtles, salamanders, crawfish and mussels than anywhere else in the country. "This place is as rich as the Amazon in fish species, in animals, in plants."

As we move deeper into the delta, the air feels thicker, and Spanish moss-draped trees form a canopy over the water. Raines says this is a classic maritime forest. The banks of the bayou are lined with saw palmetto.

"The palmetto fronds make all this racket when you touch them," he explains, "and that's how you can tell the wild hogs are coming. So when you hear that, get up in a tree, because they've got teeth like a German shepherd and there are a lot of them."

Upriver, we climb off the boat in search of an ancient Indian shell mound. This was once the center of Native American culture on the Gulf Coast. A trek through thick vegetation brings us to the 8-foot mound of shells that would have been a dry ground for camping near fishing waters.

Just beyond the shell mound is what's known as the Ecor Rouge — giant red river bluffs and the site of a Civil War battleground.

Out in the river, the water is nearly 100 feet deep. In this upper part of the delta, we're now seeing signs of human life. Homes and houseboats dot the river bank.

At Cloverleaf Landing, a private boat launch, the proprietor steps off a houseboat to greet us. "I'm Lucy Pie. Most everybody call me Pie." She lives off the land and river here.

"I love to eat fish and just about everything out of the delta," Hollings says. "My foreparents was Indians. My grandmama was Cherokee. So I enjoy living off the land. Very seldom go to the store and buy food. Don't have to."

Out on a long wooden pier, her grandchildren are gathering the day's catch. They use a long-handled scoop net to pull the crab from the water below.

Seven-year-old Kendall explains how to get a crab on your line.

"You tie the chicken on it," Kendall says. "You throw it in, and once it goes straight, you pull it up very slow, then you get the net and scoop the chicken up and you get the crab."

Pie says she has seen life in the delta change as suburban subdivisions move ever closer. Raines says that's the biggest threat to biodiversity here.

There's a move to have the Mobile delta preserved as a national park. But conservative local politicians don't like the idea of the federal government having control. Raines says either way, it's a national treasure.

"Alabama in the public mind is civil rights and steel mills, it's cotton fields," he says. "Those are the things we've done to Alabama; those aren't what Alabama is. This is what Alabama is — it's America's Amazon. It is the wildest, most diverse place we've got in the country." ●

Edited for space.

ARMORED BUT NOT A KNIGHT, SNAPPING BUT NOT A TWIG, AND ALWAYS AT HOME, EVEN ON THE MOVE. **WHAT AM I?**

solveordie.com

PERSONAL HISTORY

A Biography of E.O. Wilson

FROM THE E.O. WILSON BIODIVERSITY FOUNDATION | 2017-2020

In his long career, E.O. Wilson has transformed his field of research—the behavior of ants—and applied his scientific perspective and experience to illuminate the human circumstance, including human origins, human nature, and human interactions. Wilson has also been a pioneer in spearheading efforts to preserve and protect the biodiversity of this planet.

Wilson was born in Birmingham, Alabama, in 1929. Growing up in the countryside around Mobile, he was entranced by nature and all its creatures. A fishing accident left him blind in one eye, interfering with his ability to study birds and other animals in the field. He decided to focus on insects—creatures he could examine under a microscope.

"Most children have a bug period," he wrote in his memoir. "I never grew out of mine."

While still in high school, Wilson discovered the first colony of fire ants in the United States. After earning a B.S. and M.S. in biology at the University of Alabama, he received his Ph.D. from Harvard University in 1955. From 1953 to 1956 he was a Junior Fellow in Harvard's Society of Fellows. During this period he commenced a series of research field trips that took him to many parts of the South Pacific and New World tropics. In 1956, he joined the Harvard faculty.

Early in his career, Wilson conducted work on the classification and ecology of ants in New Guinea and other Pacific islands, and in the American tropics. In 1963 his work and his conception of species equilibrium led him to the theory of island biogeography. In their theory, immigration and extinction, the determinants of biodiversity at the species level, were tied to area (distance of islands from source regions) and the basic properties of ecology and demography. The theory greatly influenced the discipline of ecology and became a cornerstone of conservation biology. Applied to "habitat islands," such as forests in a sea of agricultural land, it has influenced the planning and assessment of parks and reserves around the world.

In the late 1950s and 1960s, Wilson played a key role in the development of the new field of chemical ecology. With several collaborators he worked out much of the pheromone language of ants, and created the first general theory of properties of chemical communication. Because all plants and microorganisms, as well as the vast majority of animals, communicate primarily or entirely by chemical signals, the importance of this work has been immense.

E.O. Wilson is known as "the father of biodiversity." (APT)

By the late 1970s, Wilson was actively involved in global conservation, adding to and promoting biodiversity research. In 1984 he published *Biophilia*, which explored the evolutionary and psychological basis of humanity's attraction to the natural environment. This work introduced the word biophilia into the language, and has been influential in the shaping of the modern conservation ethic, and creating the modern field of biodiversity studies.

In 1975 he published *Sociobiology: The New Synthesis*, which extended the subject to vertebrates and united it more closely to evolutionary biology, as well as introduced the concept of a new discipline, sociobiology, the systematic study of the biological basis of social behavior in all kinds of organisms. The foundational discoveries of sociobiology are generally recognized to be the analysis of animal communication and division of labor, in which Wilson played a principal role, and the genetic theory of the origin of social behavior. *Sociobiology* was later ranked in a poll of the international Animal Behavior Society as the most important book on animal behavior of all time. The book also included a brief analysis of the origins of human nature, which stirred a bitter controversy on the role of biology in human behavior, though has now been largely resolved in favor of the sociobiolog-

WHAT JUMPS
WHEN IT WALKS
AND SITS WHEN
IT STANDS?

solveordie.com

ical view. Later, Wilson also helped identify the theory that coined the term coevolution.

On the occasion of his 80th birthday, the World Science Festival in New York honored the life and legacy of E.O. Wilson. In an article in *The Atlantic*, Howard W. French writes, "Amidst his astonishing range and volume of intellectual and creative output, Wilson's reputation, and most of his big ideas, have been founded primarily on his study of ants, most famously his discoveries involving ant communication and the social organization of ant communities." Wilson's book about ants is the definitive work on the earth's most abundant insect and the only professional science work to win a Pulitzer Prize.

Other of Wilson's books include *The Diversity of Life*, *On Human Nature*, T*he Meaning of Human Existence*, and *The Future of Life*. His most recent book, *The Social Conquest of Earth* was selected for *Newsweek's* "12 Not to Miss in 2012" list of books. Uniting the diverse strands of thought he has developed over the course of his 60-year career, the book reconsiders the theory of altruism to better understand how man became the dominant species on the planet. Wilson draws on his remarkable knowledge of biology and social behavior to show that group selection, not kin selection, is the primary driving force of human evolution.

Throughout his life, Wilson has spearheaded efforts to preserve the world's biodiversity. He played a central role in establishing the *Encyclopedia of Life*, which has the goal of curating a web page for every one of Earth's species, and he has mobilized the movement to protect the world's "hot spots," the realms of highest biodiversity on the planet.

In addition to authoring books and articles on entomology and conservation and lecturing in many countries, Wilson has served on the boards of directors of the American Museum of Natural History, Conservation International, The Nature Conservancy, and the World Wildlife Fund, and has been a key consultant of the New York Botanical Garden, Columbia University's Earth Institute, and many other environmental and scientific organizations.

The more than 150 awards received by Wilson from around the world in science and letters include the National Medal of Science, two Pulitzer Prizes for Nonfiction, the Crafoord Prize of the Royal Swedish Academy of Science, the Gold Medal of the Worldwide Fund for Nature, the Audubon Medal of the Audubon Society, the Benjamin Franklin Medal of the American Philosophical Society, and Sweden's highest award given to a non-citizen, Commander, First Class, Royal Order of the Polar Star. He also received both of the teaching prizes voted by the students of Harvard College. In 1995 he was named one of the 25 most influential Americans by *Time* magazine, and in 2000 one of the century's 100 leading environmentalists by both *Time* and *Audubon* magazine. In 2005, *Foreign Policy* named him one of the world's 100 leading intellectuals.

Wilson lives in Lexington, Massachusetts, with his wife Irene. A daughter, Catherine, and her husband Jonathan, reside in Florida. ●

Edited for space.

RANDOM-NEST

Symbols of Alabama

FROM WIKIPEDIA

Below is a partial list of state symbols of Alabama, which have been officially sanctioned by the Alabama Legislature. The state has no official nickname, although "Heart of Dixie" was strongly promoted by the Alabama Chamber of Commerce in the 1940s and 1950s, and put on state license plates. Alabama has a total of 41 official state emblems—the oldest is the Alabama State Bible, from 1853, and the most recently designated is the peach, Alabama's state tree fruit, established in 2006.

Motto | Audemus jura nostra defendere (We dare defend our rights)
Mascot | Eastern tiger swallowtail
Bird | Yellowhammer (yellow-shafted flicker)
Saltwater fish | Atlantic tarpon
Flower | Camellia
Horse | Racking Horse
Freshwater fish | Largemouth bass
Game bird | Wild turkey
Nut | Pecan
Butterfly | Eastern tiger swallowtail
Insect | Monarch butterfly
Reptile | Alabama red-bellied turtle
Shell | Johnstone's junonia
Tree | Southern longleaf pine
Wildflower | Oak-leaf hydrangea
Amphibian | Red Hills salamander
Fruit | Blackberry
Mammal | American black bear
Tree fruit | Peach
Mineral | Hematite
Rock | Marble
Fossil | Basilosaurus
Gemstone | Star blue quartz
Soil | Bama
Song | "Alabama"
American folk dance | Square dance
Renaissance fair | Florence, Alabama Renaissance Fair
Horse show | AOHA Alabama State Championship Horse Show
Outdoor drama | *The Miracle Worker*
Barbecue competition | Alabama Barbecue Championship
Agricultural museum | Dothan Landmark Park
Horseshoe tournament | Stockton Fall Horseshoe Tournament
Historic theatre | Alabama Theatre
Outdoor musical drama | *The Incident at Looney's Tavern*
Quilt | Pine Burr Quilt

Words of Encouragement

Dear Students,

This is a difficult time for everybody, and I believe especially for you all. I know each of you are brave, outstanding, and dedicated people, and will overcome this period with focus and good thoughts. Classes will be back, and it is essential to be prepared to enjoy the good things programming can bring to all involved. I really hope that, even if you are not currently in a completely favorable environment, each of you can find moments to connect with yourselves by enjoying an interesting book, reviewing class materials, meditating, or anything that makes you grow internally.

"Instruction ends in the school-room, but education ends only with life."
FREDERICK W. ROBERTSON

Sending good thoughts to each of you. Stay safe, stay together, stay strong!

Leticia

"We consider species to be like a brick in the foundation of a building. You can probably lose one or two or a dozen bricks and still have a standing house. But by the time you've lost 20 percent of species, you're going to destabilize the entire structure. That's the way ecosystems work."

DONALD FALK // American ecologist

Answers

SUDOKU #17

9	5	3	7	4	2	6	8	1
7	2	6	5	8	1	9	4	3
1	8	4	3	6	9	5	7	2
6	9	5	4	7	3	1	2	8
8	3	1	2	5	6	4	9	7
4	7	2	9	1	8	3	5	6
5	1	7	8	3	4	2	6	9
3	4	9	6	2	7	8	1	5
2	6	8	1	9	5	7	3	4

SUDOKU #18

8	2	1	9	4	5	7	6	3
5	6	4	1	7	3	2	9	8
9	7	3	8	2	6	1	5	4
7	3	9	4	6	2	8	1	5
6	5	2	3	8	1	4	7	9
1	4	8	5	9	7	3	2	6
2	9	5	7	3	8	6	4	1
4	8	6	2	1	9	5	3	7
3	1	7	6	5	4	9	8	2

Brainteasers

Page 2 Snail
Page 3 Rebus Puzzle:
1. It's up to you
2. Room for one more
3. Once upon a time

Page 5 None — you cannot get a banana from a coconut tree.
Page 7 A turtle
Page 8 A kangaroo

Send ideas and comments to:

APAEP
1061 Beard-Eaves Memorial Coliseum
Auburn University, AL 36849

UNTIL NEXT TIME !