

In The Pink

By Stephen Fraser

The tall, graceful waterbirds keep astonishing scientists.

Something curious happened at the Smithsonian's National Zoological Park in Washington, D.C.,. Early in the afternoon of August 23, 2011, all 64 flamingos on exhibit suddenly rushed about before huddling together. They seemed to sense that something ominous was afoot.

It certainly was. Moments later, a magnitude 5.8 earthquake jostled the northeastern United States.

"It's possible the flamingos were sensing some primary waves that the earthquake generated before the stronger waves that were felt by people," says Felicity Arengo, a biologist at the American Museum of Natural History in New York. "In the wild, when a predator approaches, flamingos become alert and vocalize, and do tend to group together."



Felicity Arengo

The Smithsonian incident was just the latest surprise that the elegant pink birds have held out for the scientists who observe them. "They are fascinating birds," says Arengo.

Water Lovers

The only flamingos that most Americans ever encounter are lawn ornaments. Arengo didn't see her first wild one until she was 29 years old, on a boat ride through a coastal lagoon in Mexico. "From a distance all I could see was a thin pink line on the water," she recalls. "As we got closer I could see that it was a big group of flamingos standing very close to each other, feeding and making a lot of noise."

Arengo was a graduate student at the State University of New York College of Environmental Science and Forestry. The trip to Mexico inspired her to make flamingos the focus of her research. "Once I started studying them, more and more questions came up," she says.



Getty Images

An enormous flock of flamingos inhabits Lake Nakuru, one of several shallow, salty lakes in the Great Rift Valley of eastern Africa.

The Caribbean flamingos of Mexico are one of six flamingo species in the world. Members of that species also inhabit parts of southern Florida. Finding flamingos elsewhere in the world can be more challenging as some populations reside in remote locations and extreme environments, says Arengo. Flamingos have few problems with heat, cold, or altitude. "They look dainty but are actually very rugged," she notes. In South America, flamingos live as high as 4,600 meters (about 15,000 feet) above sea level in the chilly heights of the Andes mountains. In Africa, an estimated 2.5 million flamingos—the world's largest flamingo population—reside along the shoreline of Lake Natron. The temperature there can reach 50 degrees Celsius (about 120 degrees Fahrenheit).

One thing unites all flamingo habitats: water. Flamingos are *waders*—birds with long legs and long, pointed beaks that spend most of their time standing in shallow waters. Flamingos prefer salty water. Natron is a very salty, very shallow (1-meter-deep) lake.

Flamingos need water because they're *filter feeders*—organisms that strain food like a sieve from the waters they inhabit. To feed, a flamingo turns its head upside down and dips it underwater. Rapidly waving its tongue back and forth, it pumps water into its bill, strains the food, and then flushes the water out.



Bill Gozansky/Alamy
A flamingo dips its beak into the water to feed.

Flamingos truly are what they eat. Their signature hue comes from chemicals that produce a pink *pigment* (coloring agent) in the invertebrates and algae that the birds subsist on. Researchers recently learned that flamingos also apply to their feathers a pink secretion from the *uropygial gland*, which is located under their tails. That “makeup” waterproofs the feathers and enhances their color, says Arengo, making the birds appear more attractive to mates.



Ben Mangor/SuperStock; Kevin Schafer/Corbis
Flamingos stand on one leg when it's cold, hugging the other leg to their bodies for warmth, say researchers at St. Joseph's University in Philadelphia. As the temperature drops, the leg rises.

Flash Mobs

Other than their color, what's most striking about flamingos is their intensely social nature. They gather in flocks that can number in the tens of thousands. Such numbers offer the birds data and security. “When they are feeding, they may be gathering information from other flamingos about where the good places to feed are. Because their food is distributed in

patches, many flamingos can feed in that patch. When the food runs out, they move as a group to another patch," says Arengo. "There could also be safety in numbers. When they are in a group, the probability of one being singled out by a predator is lower."

Groups of flamingos also engage in elaborate collective displays that look like the dance numbers on *Glee*. "The birds march together, flag their heads back and forth, do a ritualized false *preening* [grooming] behavior and a wing salute. It seems highly choreographed," explains Arengo.

"Several flamingos will begin the initial behaviors. Others will join in, and they escalate and add other behaviors to the sequence."

The routines are courtship rituals, says Arengo. Flamingos seem to be attracted to others whose movements are similar to their own.

Shy Of Humans

Arengo admits that flamingos can be difficult to study. "They are quite sensitive to human disturbance," she says. "You can't walk among them. If you get too close, they will walk away and even fly."

Still, they never stop intriguing her: "Why do they choose to feed in a particular place? How long do they stay there? And when do they move to find another location?"

Then there's the simple pleasure of observing such beautiful animals. "Every time I see them, I'm absolutely amazed," Arengo says. "They're the coolest-looking bird in the world."

Name: _____ Date: _____

1. According to the passage, how many flamingo species inhabit the world?
 - A three
 - B four
 - C five
 - D six

2. How does Felicity Arengo describe flamingos?
 - A as being very dainty and delicate
 - B as looking dainty but being rugged
 - C as looking tough but being delicate
 - D as being tough and rugged

3. Which of the following conclusions about flamingos is supported by the passage?
 - A They are very independent and prefer to be alone.
 - B They have a higher survival rate by living in groups.
 - C They only live in groups when the temperature gets cold.
 - D They would have fewer predators if they weren't so social.

4. Read this sentence from the passage: "That 'makeup' waterproofs the feathers and enhances their color, says Arengo, making the birds appear more attractive to mates."

In this sentence, the word **enhances** means

- A covers in a disguise
 - B gathers for warmth
 - C makes more intense
 - D removes from view

5. Which statement best describes the central idea of the passage?
 - A The Caribbean flamingos of Mexico are one species of flamingo.
 - B Flamingos keep astonishing the scientists who observe them.
 - C All flamingos are filter feeders and need water to find food.
 - D Flamingos get their pink pigment from the foods they eat.

6. Where does the world's largest flamingo population live?

7. According to the author, most Americans never encounter flamingos in the wild. Why might that be? Please cite evidence from the text.

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

According to Felicity Arengo, flamingos perform collective displays that are as elaborate _____ the dance numbers on *Glee*.

- A for
- B as
- C and
- D yet

9. Answer the following questions based on the sentence below.

When Felicity Arengo was a graduate student, she was inspired to make flamingos the focus of her research due to a trip she took to Mexico.

Who? _____

(was) What? _____

When? when she was a graduate student

Why? _____

Where? _____

10. **Vocabulary Word:** rituals: repeated behaviors in reaction to specific situations.

Use the vocabulary word in a sentence: _____
