

## Excerpt from “The Wolf Species Shake-Up”

By Laurel Hamers

Lexile Level: 950 (634 words)



Wolves are having an identity crisis. A new genetic analysis suggests that red wolves and eastern wolves aren't true "species." Instead, they seem to be blends of two other species, gray wolves and coyotes.

Gray wolves used to roam much of North America — until they were hunted almost to extinction. In 1973, a new law called the Endangered Species Act made it a crime to harm animals such as the gray wolf. That protection has helped gray wolves to bounce back. But their current range is still far smaller than it used to be.

Red wolves and eastern wolves look similar to gray wolves but are often treated as different species....

The new study looked at the entire genetic makeup, or genome<sup>1</sup>, of 23 wild canines from around North America. The researchers compared the genomes in these individuals to those from pure coyotes and Eurasian wolves. That let them figure out how much of each animal's genetic material came from wolves or coyotes.

---

<sup>1</sup> The complete set of genes or genetic material in a cell or an organism.

Red wolves have about 75 percent coyote genes and just 25 percent wolf genes, they found. Eastern wolves have about 25 to 50 percent coyote ancestry. The international team of scientists reported its finding online July 27 in *Science Advances*.

The new data mean that both red and eastern wolves have mated with coyotes in the past. Gray wolves also have some coyote genes. And eastern wolves and red wolves are just as closely related to gray wolves as they are to other members of their species...

Red wolves and eastern wolves probably first appeared when early settlers hunted gray wolves in the eastern United States, says Doug Smith. He's a biologist who leads the Wolf Restoration Program in Yellowstone National Park, Wyoming. Killing off some gray wolves made room for coyotes to move east. There they likely bred with struggling wolves. Mixing their genes with coyotes probably helped wolves survive when times were tough.

### **Labels and Laws**

What difference does all this make? Potentially quite a lot. And here's why.

Wolves in the United States are protected by different laws depending on where they live. Red wolves are listed across the whole nation as endangered with extinction. But gray wolves are only listed as endangered in some places. One such place is the upper Midwest. Elsewhere, it's legal for hunters to kill gray wolves. Genetic mixing between different kinds of wolves makes it even harder to create laws to protect them.

Red wolves and eastern wolves look slightly different from gray wolves because of their coyote genes. But "we don't find anything incredibly unique in the red wolf that you can't find in other canines," says Bridgett vonHoldt. She's a biologist at Princeton University in New Jersey. She also worked with Wayne on the new study.

Still, vonHoldt adds, red wolves are important to protect. “The wolf part of their genome might actually represent the last of the southeastern gray wolf,” she says. It’s a similar story for the eastern wolf.

Blended species like these are hard to label, Smith admits. Usually, when animals are defined as separate species, it means they have boundaries that keep them from mating with each other. “Nothing isolates a wolf,” though, says Smith. “They’re just so capable of moving around.”

So the blended genetics of these canines adds a new twist to an ongoing battle over wolf protection in the United States. How can we protect a group of animals that’s not its own species, but carries valuable genetic information?...

The only way to make sure wolf genes stick around in certain areas would be to ban the killing of both wolves and coyotes in those places, vonHoldt says. That would keep someone from accidentally killing a wolf that looks like a coyote. Such laws, however, would be nearly impossible to enforce, she adds...

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Standard RI.6.2

**I can explain how a central idea of the text is conveyed through key details.**

**1**  
DOK 1

Read the details listed in the left column of the graphic organizer below. Underline the animal(s) in the right column that the detail describes. **Some details will apply to multiple animals.**

The first one is completed as an example.

Detail	Animals			
Mix of coyote and wolf.	<u>Red Wolves</u>	Coyotes	<u>Eastern Wolves</u>	<u>Gray Wolves</u>
Listed as endangered, but only in certain areas of the U.S.	Red Wolves	Coyotes	Eastern Wolves	Gray Wolves
Listed as endangered across the entire U.S.	Red Wolves	Coyotes	Eastern Wolves	Gray Wolves
Appeared when gray wolves were over hunted.	Red Wolves	Coyotes	Eastern Wolves	Gray Wolves

**2**  
DOK 1

Which of the following captures the author's main idea about coyotes and wolves in paragraphs 1-7?

- Coyotes and wolves were friendly with one another, which is why they inhabited the same lands.
- All wolves were hunted to near extinction by the mid-1970's, which prompted the Endangered Species Act.
- Red wolves have the highest percentage of coyotes in their makeup; therefore, they should not be hunted.
- All the wolves we see today likely bred with coyotes at some point in history, ultimately making most wolves crossbreeds.

3

DOK 2

**Part 1**

Which of the following captures the main idea made in the “Labels and Laws” section of the article?

- a. The law protects all coyotes and wolves, so killing them is punishable.
- b. The law protects coyotes from going extinct because they are necessary to our ecosystem.
- c. Because coyotes and wolves crossbreed, it is tough to differentiate them under the law.
- d. Most wolves have a very low percentage of coyote in them, so hunting them is acceptable.

**Part 2**

Select the piece of evidence that **best** supports the main idea you chose in Part 1.

- a. “So the blended genetics of these canines adds a new twist to an ongoing battle over wolf protection in the United States.”
- b. “Killing off some gray wolves made room for coyotes to move east. There they likely bred with struggling wolves.”
- c. “The only way to make sure wolf genes stick around in certain areas would be to ban the killing of both wolves and coyotes...”
- d. “Wolves in the United States are protected by different laws depending on where they live.”

4

DOK 2

In 2-3 sentences, explain why the author, Laurel Hamers, mentions the genetic makeup of red, gray, and eastern wolves.

---

---

---

---

---

---

