RÉGION ACADÉMIQUE
PAYS DE LA LOIRE

MINISTÈRE
DE L'ÉDUCATION NATIONALE,
DE L'ENSEIGNEMENT SUPÉRIEUR
ET DE LA RECHERCHE

BACCALAUREAT GENERAL ET TECHNOLOGIQUE

EPREUVE SPECIFIQUE MENTION

« SECTION EUROPEENNE OU DE LANGUE ORIENTALE »
Académie de Nantes, binôme : Anglais/SVT

Thème A2 – diversification des êtres vivants

Galveston Island Canid

Question 1: Use the documents to explain how hybridization could be common in natural systems and how it could be the origin of this "new species": Galveston Island Canid.

Question 2: Is Galveston Island Canid really a new species?

Doc 1: Comparison of coyote *(C. latrans)*, red wolf *(C. lupus)* and Unknown Galveston Island Canid

A.

Unknown Galveston Island canids

B.

Coyote | Unknown Galveston Island canid | Red wolf

C.

Coyote | Unknown Galveston Island canids | Red wolf

https://www.mdpi.com

Doc 2: DNA of Red Wolves, Once Gone from the Wild, Discovered in Texas.

The wild population of the species was declared extinct almost 40 years ago, but now researchers have found their genes in a pack of canines near the Gulf coast.

The range of the red wolf used to extend from Mexico into the eastern US. But decades of hunting by humans, habitat loss, and other factors nearly wiped them out, and wild red wolves were declared extinct in 1980. Yet surprisingly, part of their genome is preserved in a pack of canines living on Galveston Island in Texas, researchers reported December 10 in the journal *Genes*.

"It's incredibly rare to rediscover animals in a region where they were thought to be extinct, and it's even more exciting to show that a piece of an endangered genome has been preserved in the wild," says one of the study's authors, Elizabeth Heppenheimer, in a statement.

In the 1970s, the US Fish and Wildlife service captured wild red wolves to start a captive breeding program. After red wolves were declared extinct in the wild, some of the animals bred in captivity were reintroduced to an area of North Carolina in 1986, but pack numbers have declined to about 40 animals, *The Associated Press* (*AP*) reports.

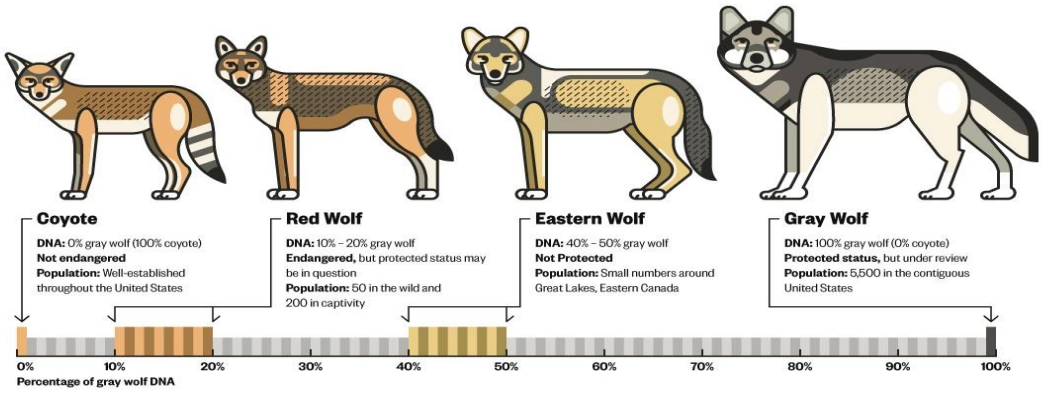
Based on genetic analysis, the canines seem to be hybrids of coyotes and red wolves. These canines prefer to mate with members of their own species, but when population densities are low they may interbreed.

These canines in Texas possess some genes not found in captive populations. Some scientists believe that the special DNA of these animals means that they deserve to be protected, the *AP* reports.

"When the Endangered Species Act was implemented in the 1970s, conventional wisdom was that hybridization between species—such as the wolf and coyote—was rare and to be avoided. But experts say the thinking on that has changed," writes the *AP*.

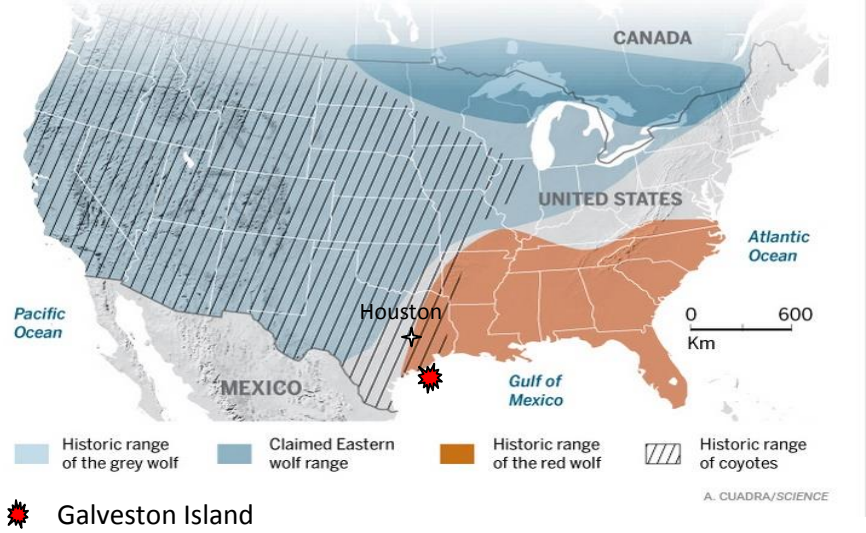
Jan 14, 2019, Carolyn Wilke, http://www.the-scientist.com

Doc 3: Percentage of DNA



http://l-dopa.com

Doc 4: A continent of canids



Galveston Island

http://www.sciencemag.org and https://www.dailymail.co.uk