

WOLF CONSERVATION CENTER'S

JUNIOR MEXICAN GRAY WOLF BIOLOGIST

TRAINING GUIDE

Become a certified WCC Junior Mexican Gray Wolf Biologist! Children are encouraged to build upon their knowledge of Mexican gray wolves by completing the guide and sending it to the WCC wolf experts for approval. Upon completion, the child will receive a digital Junior Mexican Gray Wolf Biologist Certificate.



This guide contains:

-  Reading skill checks
-  Matching activities
-  Answer keys for parents
-  And more!

Name: _____



Email info@nywolf.org with the subject line "Completed Junior Wolf Biologist Guide" when finished!

MEXICAN GRAY WOLF HISTORY

The Mexican gray wolf is one of the most endangered mammals in North America, and is the most genetically distinct lineage of gray wolves in the Western Hemisphere. Their recovery is a bi-national effort between the U.S. and Mexico to restore the Mexican wolf to the wild in both countries. This breeding and management program is known as the SAFE program, which stands for "Saving Animals from Extinction." SAFE is designed to protect the long-term sustainability of captive-based animal populations, and prioritizes the release of captive animals to the wild.

Mexican gray wolves were common throughout their range in the southwest until the early 1900s. However, an increase in commercial cattle ranging operations led to a subsequent decrease in native prey, such as deer and elk, throughout the wolf's range. This change caused wolves to turn to livestock for food because their own prey had become scarce. In response, people began intensive efforts to eradicate wolves throughout the United States through trapping, hunting, and poisoning, carried out by both individuals and government agents. In return, they were paid bounties - money awarded to those who could prove they killed wolves.

This systematic slaughter of wolves drove the Mexican gray wolf population to near-extinction by the mid-1900s, and they were finally listed as an endangered species in 1976. In 1979, the U.S. Fish and Wildlife Service (USFWS) founded the Mexican Wolf Recovery Team in an effort to conserve the species in captivity through breeding programs and captive-to-wild releases into their historic range.

In 1998 after over twenty years of recovery efforts, three family groups of Mexican wolves (11 wolves total) were released into the wild into the primary recovery zone within Arizona's Apache National Forest. Later that year, two additional wolves were released, and then three more breeding pairs in 1999. Today in the U.S. there is a single wild population of about 196 individuals, living in Arizona and New Mexico.

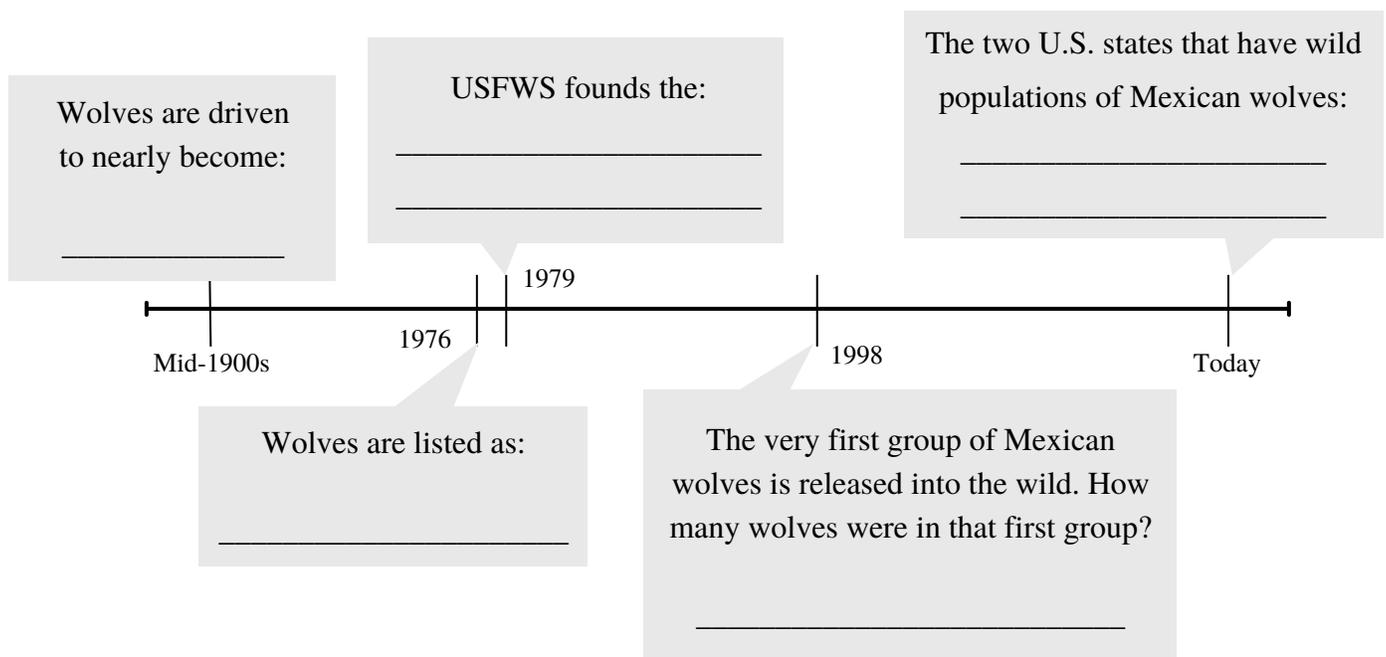
At present, wild Mexican gray wolves are designated a "Non-essential Experimental Population", which dictates some tricky management guidelines. One such rule allows for them to be legally killed if they attack livestock, despite their status as an endangered species. This wild population is also restricted to living within their limited designated recovery area. Should they venture beyond the area's boundary in search of new territory, they will be captured and relocated back to the recovery area or returned to captivity. This creates a number of barriers that inhibit a natural behavior for wild adult wolves: dispersal.

Despite some challenges, efforts are being made each year to release Mexican gray wolves into the wild where they belong. Captive wolves are considered as candidates for release based on two main factors: the wildness of their behavior and their genetic value - diversity of their gene pool is key to their continued recovery. The USFWS is working toward continuing Mexican wolf releases through various methods.

MEXICAN GRAY WOLF HISTORY

KNOWLEDGE CHECK

1. Which two countries collaborate on recovering the Mexican gray wolf population?
2. What does the acronym "SAFE" stand for?
3. What is a bounty?
4. What are some of the rules impacting wild Mexican gray wolves under their designation as a "Non-essential Experimental Population?"
 - a.
 - b.
5. Fill in this timeline of events for Mexican wolf recovery:



MEXICAN GRAY WOLF HISTORY

KNOWLEDGE CHECK - ANSWER KEY

1. Which two countries collaborate on recovering the Mexican gray wolf population?

The United States and Mexico

2. What does the acronym "SAFE" stand for?

Saving Animals From Extinction

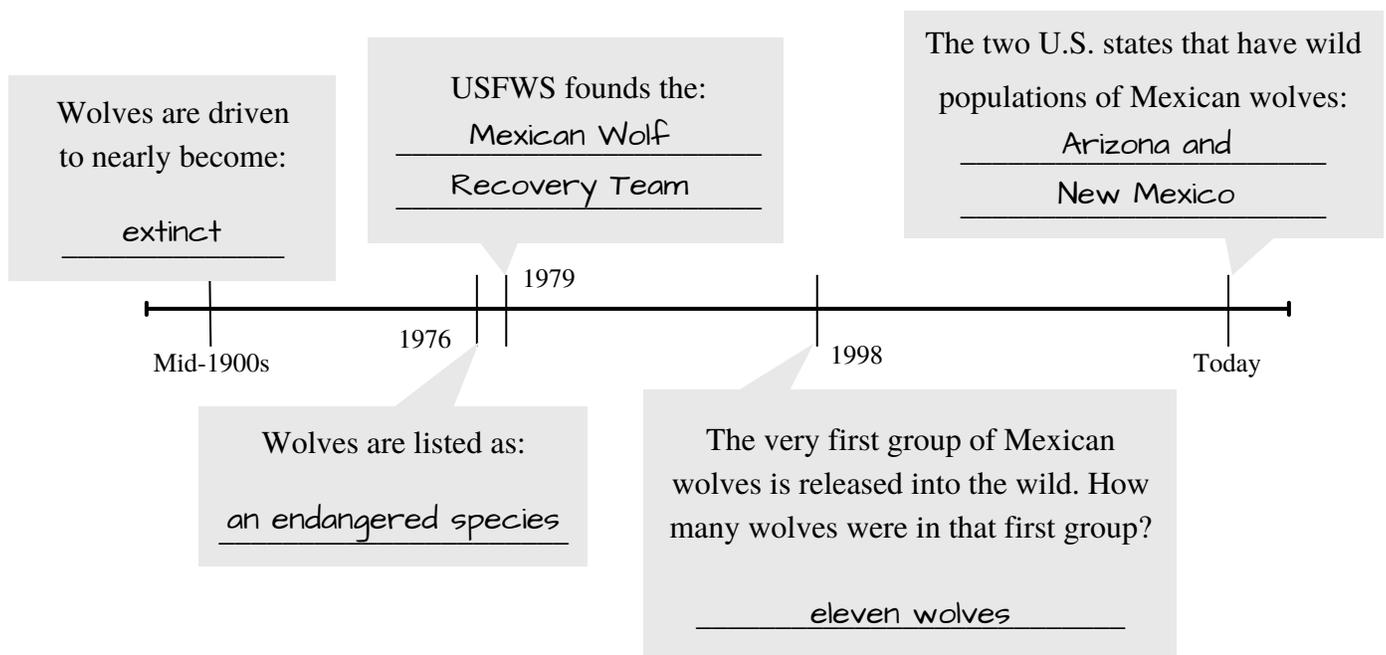
3. What is a bounty?

Money awarded to people who killed wolves

4. What are some of the rules impacting wild Mexican gray wolves under their designation as a "Non-essential Experimental Population?"

- a. *They can be legally killed if they attack livestock, despite their status as an endangered species*
- b. *Their dispersal is restricted to their designated recovery area. If they travel beyond the boundary, they will be captured and brought back to the recovery area or returned to captivity.*

5. Fill in this timeline of events for Mexican wolf recovery:

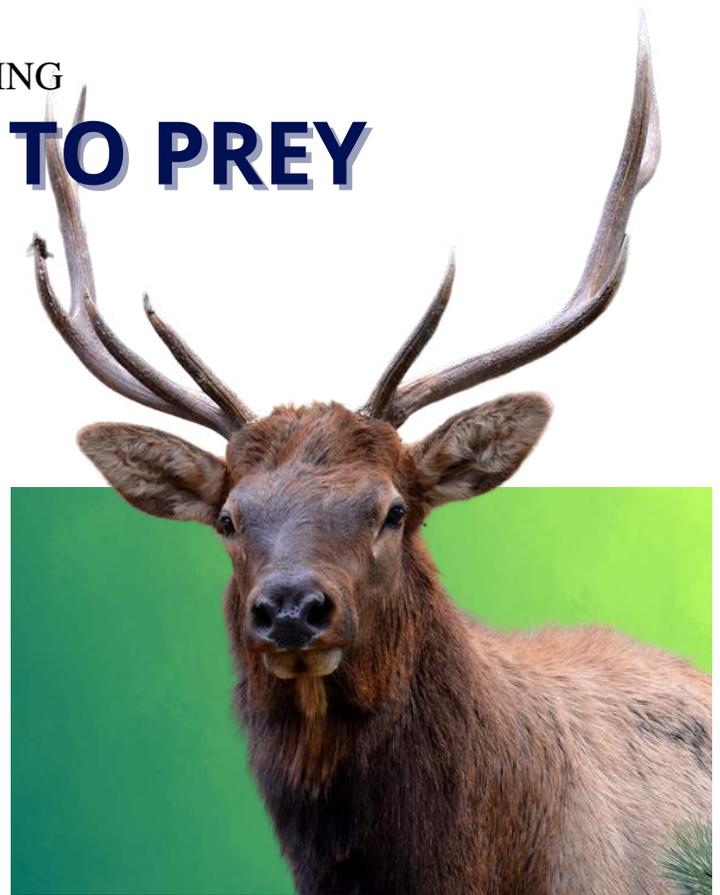


COMPARING PREDATOR TO PREY



MEXICAN GRAY WOLF FACTS

-  Scientific name: *Canis lupus baileyi*
-  Can run 35 miles per hour
-  Eat around 22lbs of food per week
-  Pack sizes average 4-8 wolves
-  Have about 4-6 pups per litter
-  Smallest subspecies of gray wolf
-  Communicate over distance by howling
-  About 241 in the wild in the U.S.



ELK FACTS

-  Scientific name: *Cervus canadensis*
-  Can run 45 miles per hour
-  Eat over 20lbs of food in one day
-  Herds can be 400 elk
-  Have 1-2 calves at a time
-  Largest land mammal in North America
-  Communicate over distance by bugling
-  About 1 million in the wild in the U.S.

HEIGHT

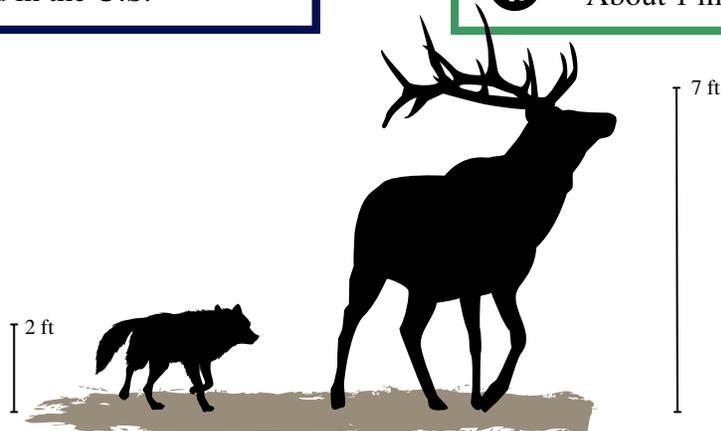
28-32 inches
at shoulder

LENGTH

4.5 - 5 ft from
nose to tail

WEIGHT

65-85lbs



HEIGHT

4.5-5 ft
at shoulder

LENGTH

7 ft from
nose to tail

WEIGHT

600-900lbs

COMPARING

PREDATOR TO PREY

KNOWLEDGE CHECK

1. What is the scientific name of the Mexican gray wolf? (Take note of capitalization)
2. The Mexican wolf can eat up to _____ lbs of food per _____ while the elk can eat over _____ lbs of food in just one _____.
3. Which of these two species has more offspring?
4. The elk's average weight ranges between:
 - a. 60-85lbs
 - b. 150-300lbs
 - c. 350-400lbs
 - d. 600-900lbs
5. A wolf's long distance vocalization is called _____, and an elk's long distance vocalization is called _____.
6. How many Mexican gray wolves are currently living in the wild?
7. The Mexican wolf is the largest subspecies of gray wolf.
TRUE (circle one) FALSE
8. Which was your favorite fact about Mexican gray wolves or elk?

COMPARING

PREDATOR TO PREY

KNOWLEDGE CHECK - ANSWER KEY

1. What is the scientific name of the Mexican gray wolf? (Take note of capitalization)

Canis lupus baileyi

2. The Mexican gray wolf can eat up to 22 lbs of food per week while the elk can eat over 20 lbs of food in just one day.

3. Which of these two species has more offspring on average?

Mexican gray wolves

4. The elk's average weight ranges between:

- a. 60-85lbs
- b. 150-300lbs
- c. 350-400lbs
- d. 600-900lbs

5. A wolf's long distance vocalization is called howling, and an elk's long distance vocalization is called bugling.

6. How many Mexican gray wolves are currently living in the wild?

Approximately 241 in the U.S.

7. The Mexican wolf is the largest subspecies of gray wolf.

TRUE

(circle one)

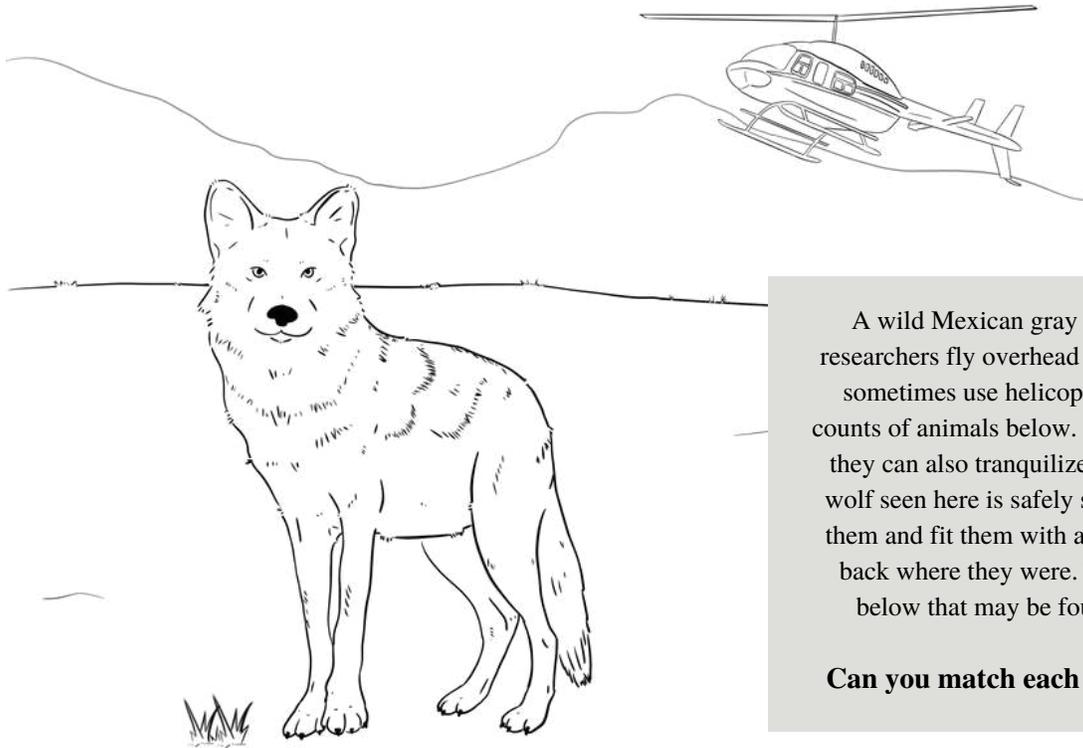
FALSE

they're the smallest!

8. Which was your favorite fact about Mexican gray wolves or elk?

No wrong answer!

STUDYING WILD WOLVES

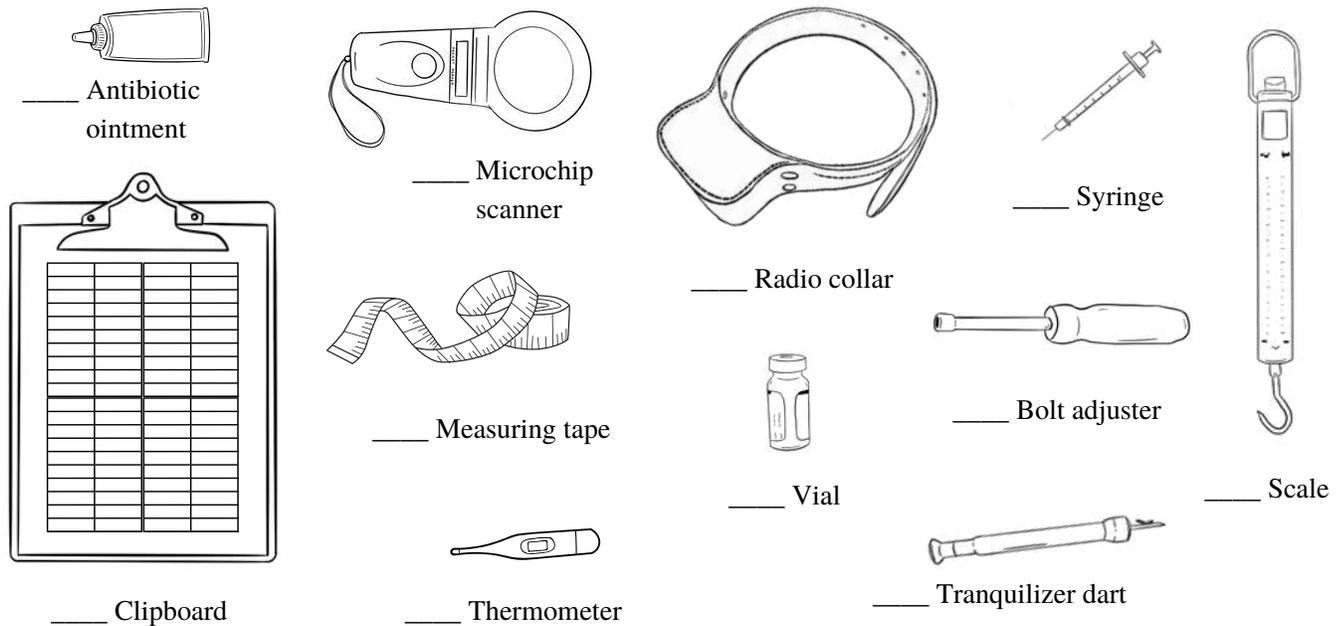


BONUS ACTIVITY

Color in this page for fun!

A wild Mexican gray wolf stands on the landscape as researchers fly overhead in a helicopter. Wildlife biologists sometimes use helicopters to obtain approximate aerial counts of animals below. From their vantage point overhead, they can also tranquilize animals on the ground. Once the wolf seen here is safely sedated, a researcher will examine them and fit them with a GPS collar before releasing them back where they were. Take a look at some of the items below that may be found in the researcher's field kit.

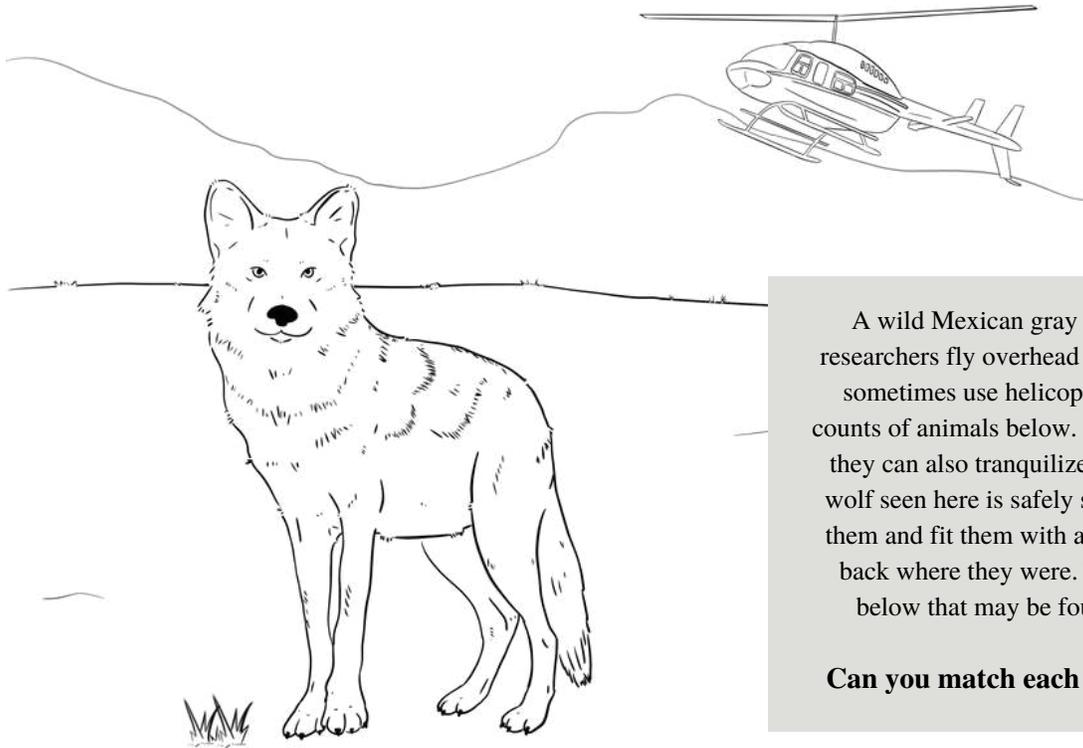
Can you match each item with its purpose below?



- A.** Puts wolf to sleep (tranquilizes them) from a safe distance, such as in a helicopter!
- B.** Used to monitor the wolf's internal body temperature
- C.** Contains the drug used to tranquilize the wolf for handling
- D.** Monitors the wolf's location so biologists can learn about their movement and survival
- E.** Can be applied to the tip of the dart to keep tranquilizer from leaking out. Can also be used to heal small wounds

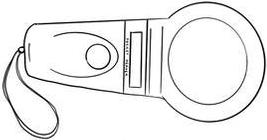
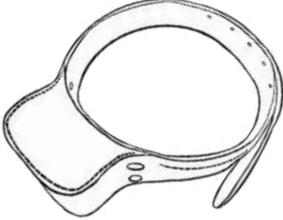
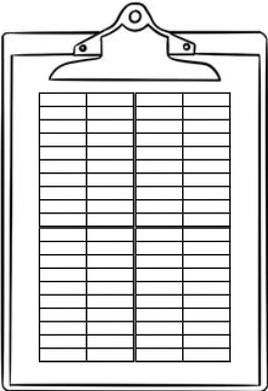
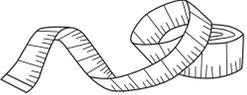
- F.** Used to obtain a wolf's weight
- G.** Place to record data during the handling of the wolf
- H.** Detects if the wolf has a microchip, indicating that they have been handled by researchers before
- I.** Used to draw blood or inject any additional sedatives or medications
- J.** Tightens fasteners on the radio collar to keep it secure

STUDYING WILD WOLVES



A wild Mexican gray wolf stands on the landscape as researchers fly overhead in a helicopter. Wildlife biologists sometimes use helicopters to obtain approximate aerial counts of animals below. From their vantage point overhead, they can also tranquilize animals on the ground. Once the wolf seen here is safely sedated, a researcher will examine them and fit them with a GPS collar before releasing them back where they were. Take a look at some of the items below that may be found in the researcher's field kit.

Can you match each item with its purpose below?

 <u>E</u> Antibiotic ointment	 <u>H</u> Microchip scanner	 <u>D</u> Radio collar	 <u>I</u> Syringe	 <u>F</u> Scale
 <u>G</u> Clipboard	 <u>K</u> Measuring tape	 <u>C</u> Vial	 <u>J</u> Bolt adjuster	
	 <u>B</u> Thermometer	 <u>A</u> Tranquilizer dart		

- A.** Puts wolf to sleep (immobilizes them) from a safe distance, such as in a helicopter!
- B.** Used to monitor the wolf's internal body temperature
- C.** Contains the drug used to tranquilize the wolf for handling
- D.** Monitors the wolf's location so biologists can learn about their movement and survival
- E.** Can be applied to the tip of the dart to keep tranquilizer from leaking out. Can also be used to heal small wounds

- F.** Used to obtain a wolf's weight
- G.** Place to record data during the handling of the wolf
- H.** Detects if the wolf has a microchip, indicating that they have been handled by researchers before
- I.** Used to draw blood or inject any additional sedatives or medications
- J.** Tightens elements on the radio collar to keep it secure
- K.** Measures the size of the wolf

YOUNG, WILD, AND FREE



Restoring wolves to the wild is a vital component of their long-term conservation. Not only do wolves have a crucial role in the ecosystem, known as their ecological niche, but Mexican gray wolves are particularly threatened by poor gene diversity. Releasing wolves into the wild provides the opportunity to improve the gene pool by introducing new individuals to the landscape in hopes that they will reproduce. Wolves can be released as family groups (a bonded adult pair with their offspring), as a breeding pair, as adult individuals, or as neonatal pups in a process called "cross-fostering."

Cross-fostering is a coordinated event where captive-born pups are introduced into a similar-aged wild litter to be raised by surrogate parents. This type of release takes place before a wolf pup's eyes are open, typically when they are not yet two-weeks old. This makes their transition to a new family less stressful, and allows for their adoptive family to more readily accept them. Wolves are an altricial species, which means that at birth they are underdeveloped: they are unable to see, hear, or maintain their body temperature. They can't even go to the bathroom on their own! By contrast, a precocial species (like a deer), is able to walk or run almost immediately after they are born. They can also see, hear, and eat, though they do still depend on mom to protect them. Often, predator species are altricial and prey are precocial - after all, they need to be able to evade predators looking to eat them!

When a wolf pup is cross-fostered into the wild, they typically have to go a long distance from where they were born to reach their new homes. The Wolf Conservation Center has cross-fostered two Mexican wolf pups into the wild, and they were generously transported by volunteer pilots on private planes! The WCC's first cross-foster occurred in May 2019 with a robust female wolf pup named F1958. Interesting name, don't you think? This jumble of letters and numbers actually has a special significance to it. It is called an alphanumeric number and it tells us a lot about the individual wolf to which it is assigned. The letter at the start of the name will either be *M* or *F*, which indicates whether that wolf is male or female. If that letter is in lowercase, it means this is a juvenile wolf (a wolf under 2-years old). The number in the name is unique to that wolf, meaning no other Mexican wolf will share the same number. For example, in F1958's case, her alphanumeric number indicates that she is a female wolf over the age of 2, and that she was the 1,958th Mexican gray wolf in the recovery program. She received the nickname "Hope", because of the hope she represents for her species. The WCC's other cross-fostered pup was released in May 2022 and was nicknamed "Crumbo". We'll take a closer look at their alphanumeric number on the next page.



At the moment, the USFWS relies solely on cross-foster releases to improve genetic diversity and decrease extinction risks for wild Mexican wolves. Cross-fostering on its own cannot provide enough genetic diversity to the wild population, but it is nonetheless a critical step in protecting the future of wild Mexican wolves.

YOUNG, WILD, AND FREE

KNOWLEDGE CHECK

1. What are the four ways that wolves can be released into the wild?

a.

b.

c.

d.

2. What is an ecological niche?

3. What does it mean to be an altricial species? Can you think of another example of an altricial animal?

4. Crumbo's alphanumeric number is f2736. What three things can you learn from this name?

a.

b.

c.

5. The WCC nicknamed the two cross-fostered pups Hope and Crumbo. What would you nickname a wolf pup if you could choose their name?

YOUNG, WILD, AND FREE

KNOWLEDGE CHECK - ANSWER KEY

1. What are the four ways that wolves can be released into the wild?

- a. Family groups
- b. Breeding pairs
- c. Adult individuals
- d. Cross-fostered pup

2. What is an ecological niche?

A species' role in the ecosystem

3. What does it mean to be an altricial species? Can you think of another example of an altricial animal?

Altricial animals are undeveloped at birth: they can't see, hear, maintain body temperature (thermoregulate), or go to the bathroom on their own.

4. Crumbo's alphanumeric number is f2736. What three things can you learn from this name?

- a. Crumbo is female
- b. She is a juvenile (under 2 years old)
- c. She was the 2,736th Mexican gray wolf in the recovery program

5. The WCC nicknamed the two cross-fostered pups Hope and Crumbo. What would you nickname a wolf pup if you could choose their name?

No wrong answer! 😊