

Junior Explorer



U.S. Department of the Interior
Bureau of Land Management
Wild Horse and Burro Program

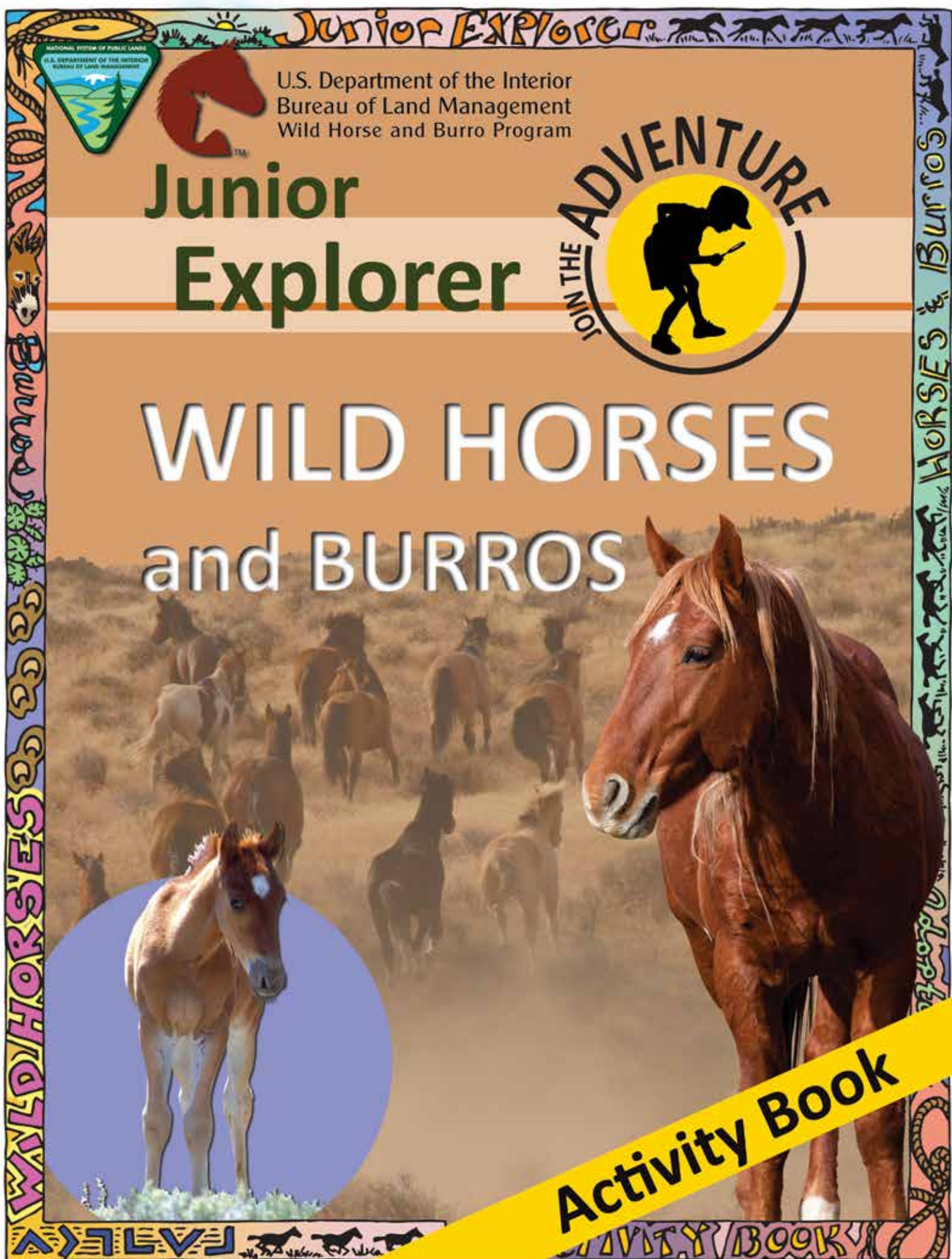
Junior Explorer



WILD HORSES and BURROS



Activity Book





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2013



Public Lands Belong To You!

The Bureau of Land Management (BLM) is a federal government agency that takes care of more than 245 million acres of land. Most of these lands are in the Western United States. These lands are America's public lands, and they belong to all Americans. These public lands are almost equal in area to all the land in the states of Texas and California put together.

The BLM manages public lands for many uses. The lands supply natural resources, such as coal, oil, natural gas, and other minerals. The lands provide habitats for plants and animals. People enjoy the big open spaces on the lands. The lands also contain evidence of our country's past, ranging from fossils to Indian artifacts to ghost towns.

Junior Explorers

The BLM's Junior Explorer program helps introduce young explorers like you to the lands and resources that the BLM manages. This "Wild Horses and Burros Activity Book" focuses on where wild horses and burros live, what they eat, and how they communicate. You'll also discover some ways that people have worked with horses throughout history. And you'll see how the BLM cares for wild horses and burros today.

You can work through the activities on your own or invite a parent or an adult you know to join you. When you complete the activities, check them against the Answer Key on page 17. Then say the Junior Explorer pledge on page 15, sign the certificate, and you're on your way to exploring and protecting America's public lands. **Have fun!**





Did You Know?

More than 38,000 wild horses and burros roam across public lands in the Western United States. These animals were once domesticated or tame. Many early explorers and settlers in the region used horses or burros to get from place to place and to carry their belongings. Some of the animals escaped from their owners or were set free. The wild horses and burros of the West are descendants of these animals.

Wild horses and burros are protected by law as living symbols of our country's history. It's against the

law to harm them. The BLM plays a role in helping protect them. This booklet is full of fun activities that will help you learn more about this and about the wild horses and burros themselves. Because wild horses and burros have few natural enemies, their populations can grow so large that the land cannot provide all of them with the basic necessities of life. BLM employees monitor and manage these animals and their habitat to make sure there is enough food, water, shelter, and space for them and the other animals that share the rangeland where they live. The glossary on page 19 explains what certain words mean to help you better understand and appreciate the world of wild horses and burros.

Meet "Wild Horse Annie"



Photo by M. Pontrelli

Sometimes, one person really can make a difference. In 1950 Velma Johnston was a shy, middle-aged secretary from Reno, Nevada. One day, on her way to work, she noticed blood leaking from the back of a truck. She followed the truck to a factory where horse meat and other items were produced. Johnston was horrified by what she saw there, and she began a campaign for the humane treatment of the wild horses.

Johnston started a letter-writing campaign that generated more letters to Congress than any other subject but the Vietnam War. With her encouragement, thousands of schoolchildren wrote letters about their concern for the welfare of the wild horses.

Velma's opponents mockingly nicknamed her "Wild Horse Annie," but she welcomed the name and it stuck. Wild Horse Annie's efforts led to the passage of the Wild Horse Annie Act of 1959 and the Wild and Free-Roaming Horses and Burros Act of 1971. These laws protect wild horse and burro populations and are still in effect today.

Fun Facts

When you think about wild animals of the American West, you probably picture bears, mountain lions, elk, and deer. Yet by the late 1800s, more than 2 million wild horses and burros reportedly roamed the West. Of these horses, the “mustangs” owe their name to the Spanish word *mesteño* [may-stain-yo], which means wild or untamed.

Today, roughly half of the remaining 38,000 wild horses and burros live in Nevada.

There the BLM and the U.S. Forest Service manage approximately 19,000 wild horses and burros, on 17.5 million acres of land. Because wild horses and burros lack natural predators and receive federal protection, their populations continue to grow.

Wild horses live in groups called bands. A band of wild horses includes mares, foals, and yearlings. A stallion fathers the offspring and guards his group.

A horse can eat its weight in dry forage (grasses, shrubs, and forbs) every 2 months. In the Western rangelands, one horse might have to feed on 20 acres to find enough nourishment. That would mean eating about 18 football fields’ worth of forage every 2 months—and about 109 football fields’ worth each year! Now imagine more than 38,000 horses, each needing and competing for that amount of food.

The BLM works to ensure that the land can support healthy herds of wild horses and burros. It monitors the size of herds and studies how much vegetation and water is available to determine how many animals—wildlife, wild horses and burros, and livestock—the land can support. When the range cannot sustain all of the animals living upon it, the BLM offers some wild horses and burros for adoption. Since the BLM started this program in 1971, more than 190,000 horses and 36,000 burros have been adopted, most by members of the public who provide a good home.

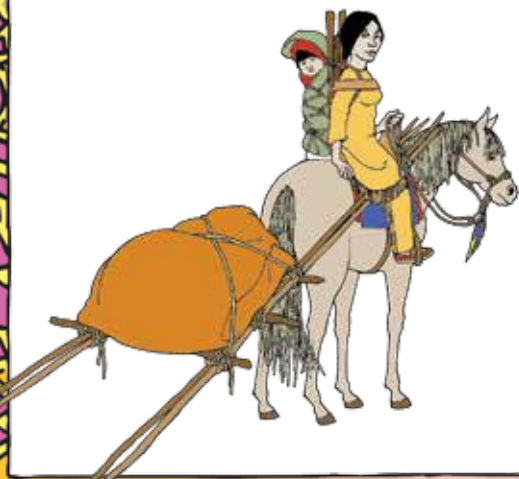
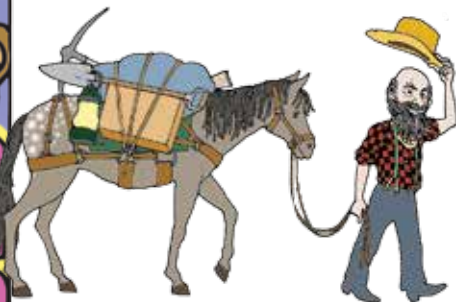


Horses, Burros, and Humans: A Long History

Spanish explorers and missionaries brought the first modern horses to North America in the 1500s. American Indians acquired horses from the Spaniards through trading and through capturing animals that had escaped. The Indians used the horses to help them fight battles, hunt, and transport goods.

Prospectors who went West searching for gold, silver, and other precious metals also relied on horses and burros for transportation.

Directions: The pictures on this page show a few of the ways that people have worked with horses over time. In what other ways do people work with horses? In the space below, draw your own picture or pictures of people with horses.



Roaming the Range: Where Do Wild Horses and Burros Live?

The wild horse and burro populations managed by the BLM live primarily in 10 Western States. The chart below shows how many wild horses and burros have been found in these different states as of 2011. Unscrambling the names of these states is your first challenge!

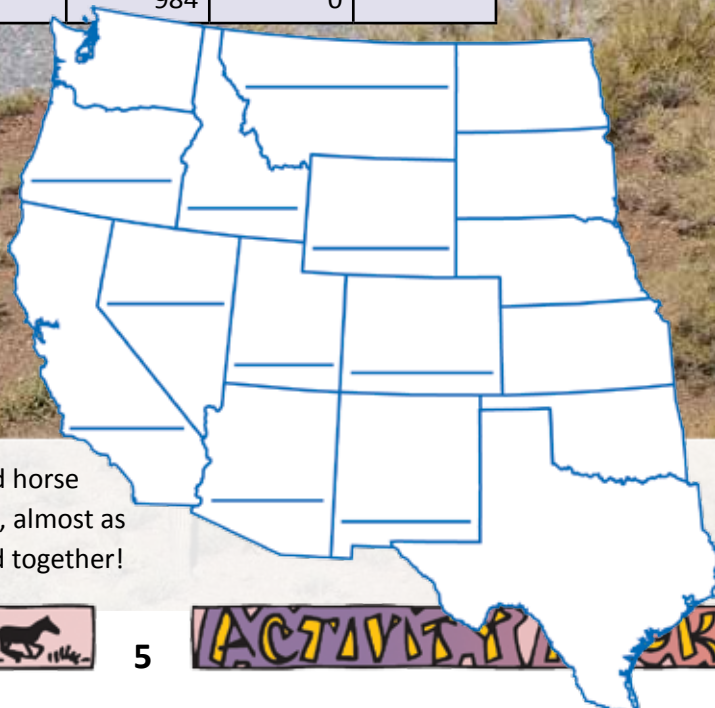
Directions: After you unscramble the state names, write them in the blanks on the chart and on the map where the states appear. Then, in the chart, calculate the total number of wild horses and burros in each state by adding the numbers shown. The first one has been done for you. Lastly, color the states according to the map Color Key to represent each state's total wild horse and burro population.

	State Name	Horses	Burros	Total
devaNa		17,710	1,347	19,057
gonerO		2,456	15	
antoMan		165	0	
myongiW		5,333	0	
nAarozi		434	2,761	
ewN oxeciM		63	0	
raiCnilofa		2,872	1,171	
hodla		500	0	
athU		2,497	189	
droloCao		984	0	

Color Key

Total Number of Wild Horses and Burros

Less than 1,000 yellow
 1,000 – 2,999 blue
 3,000 – 4,999 green
 5,000 – 10,000 red
 More than 10,000 . . . purple



_____ has a higher combined wild horse and burro population than any other state, almost as many animals as all the other states added together!

Sharing Space . . . and More

Most wild horses and burros in the United States live in Herd Management Areas. A Herd Management Area is a distinct area on public lands in the West. The wild horses and burros share these lands with native wildlife species and with domestic livestock, such as cattle and sheep. The plants that these animals eat provide them with energy. When the plants are hard for the animals to find, wild horses and burros must travel long distances to find food and so must eat more to obtain the energy needed for the journey.

The BLM is responsible for the health of the public lands and the health of the animals that live there. This includes making sure that all of the animals have enough to eat. To do that, the BLM monitors how much food is available in a Herd Management Area and how many kinds of animals may be competing for that food.

If the BLM determines there are too many cattle or sheep, the BLM can change the number of animals it allows ranchers to graze in that area. Sometimes, the BLM also removes horses and burros from an area if the health of the land or the health of the animals is threatened. But which animals—and how many—should stay or be removed? As you'll see, making such decisions is not easy.

The diets of wild horses, cattle, and mule deer vary for many reasons depending on the season and what plants are growing where the animals live. Grasses (such as wheatgrass), shrubs (such as winterfat), and forbs (such as fireweed) grow in many of the areas where wild horses live.

Directions: Look in the chart to see how many pounds (lbs) of plants, and what combinations of plants, these three different animals are eating on this day.

Each horse is eating:	Each cow is eating:	Each mule deer is eating:
20 lbs of wheatgrass	20 lbs of wheatgrass and 3 lbs of winterfat and 3 lbs of fireweed	3 lbs of winterfat and 4 lbs of fireweed

Now look at part of a Herd Management Area (shown on the next page). You can identify where the wheatgrass, winterfat, and fireweed are growing—and how much is there for the animals to eat—by matching the images to the Key at the bottom of the page.

How many pounds of each plant are available for the animals to eat in this part of the Herd Management Area?

_____ wheatgrass

_____ winterfat

_____ fireweed

Now you know two important pieces of information needed to manage the area: how many pounds of each plant these animals are eating today, and how many pounds of each plant are available for them to eat. Five different animal populations are depicted below. Circle each group that, on its own, would have enough to eat in this part of the Herd Management Area—that is, each group that would be sustainable.

Sustainable Animal Populations:

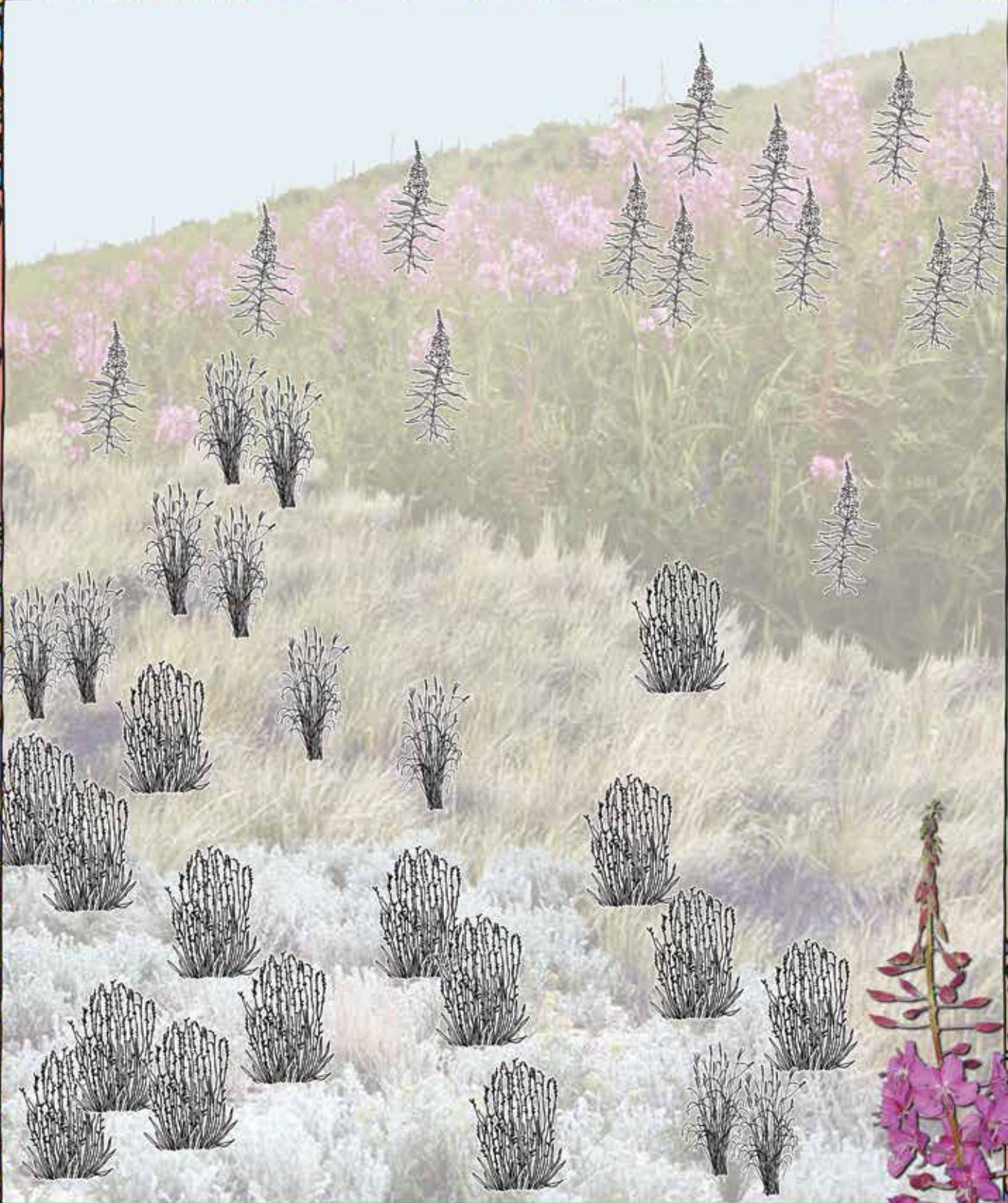
A	B	C	D	E
5 horses 30 mule deer	3 horses, 6 cows, 26 mule deer	2 horses, 2 cows, 15 mule deer	5 cows, 25 mule deer	3 horses, 2 cows, 20 mule deer

As you can see, there are many possible combinations of animals that could survive in this part of the Herd Management Area. BLM employees carefully study all of the possibilities and strive to make decisions that are best for the long-term health of the land and the animals that live there.



WILD HORSES

GOING TO THE HORSES & BURROS



KEY



Wheatgrass
(10 lbs)



Winterfat
(10 lbs)



Fireweed
(10 lbs)



Brrr!! Freeze Mark Identification

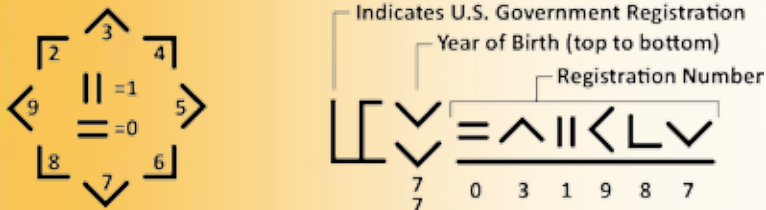
When the BLM gathers wild horses and burros for adoption, each animal receives its own identifying freeze mark. The freeze mark is created by clipping the hair on the animal's neck and applying the mark with a cold iron that has been chilled in liquid nitrogen. The procedure is painless for the horse or burro. Freeze marks use the Alpha Angle System of shapes and angles as a kind of code for recording the animal's identification number.

The diagram below reveals (on the left) which shape or angle is used for numbers 0–9. On the right it shows a freeze mark and what each part of the mark describes (such as year of birth). You can tell where the animal is from (registered) because each state has a range of numbers it uses (shown in the other table on the far right).



State	Registration Number Range
Arizona	80001–160000
California	160001–240000
Colorado	240001–320000
Idaho	320001–400000
Montana	400001–480000
Nevada	480001–640000
New Mexico	640001–720000
Oregon	0–80000
Utah	720001–800000
Wyoming	800001–880000
Eastern States	880001–880100

ALPHA ANGLE CODE FOR FREEZE MARK INTERPRETATION



Sample Decoded:

Registering Organization: United States Government
Year of Birth: 7 - 7 ⇒ 1977
Registration Number: 0-3-1-9-8-7 ⇒ 031987
State of Registration: Oregon

Directions: Decode the four freeze marks below to determine the year of birth, registration number, and state of registration for each wild horse.

- 1.
- 2.
- 3.
- 4.

Year of Birth	Registration Number	State of Registration
1.		
2.		
3.		
4.		



Actions Speak Louder than Words

Horses are social creatures. They communicate with each other, and with people, primarily through body language—such as kicking or stomping their feet, or moving their ears or head—and by making noises.

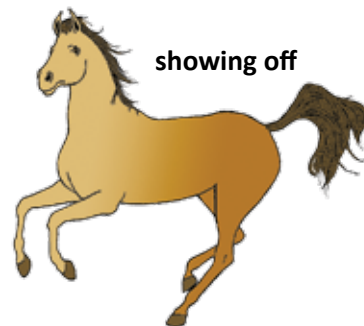
Directions: Some of the ways horses communicate appear in the list below. Can you find and circle each of these 12 words in the Word Find? *Hints: Words may be spelled normally or backwards; they may appear going up, down, across, or diagonally. Two-word phrases appear as one word.*

body language
ear movement
head movement
neck movement

neighing
squealing
snorting
vocalizations

foot stomping
kicking
scent sniffing
mutual grooming

showing off



angry



frolicking



attentive



Word Find

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

It's All Relative

Scientists classify animals according to their body traits. The more traits they have in common, the more closely the animals are related. Horses and burros are both mammals. They have hair and feed their young with milk. But, as you know, there are many other mammals. Which ones do you think are most closely related to horses and burros? It will take some "legwork" and "footwork" to find out! Start with these two lists of mammals:

Group 1	Group 2
h <u>o</u> rse	wh <u>a</u> le
c <u>o</u> w	ba <u>t</u>
li <u>o</u> n	do <u>l</u> phin
ze <u>b</u> ra	se <u>a</u> l
gi <u>r</u> affe	wa <u>l</u> rus

1. What do the mammals in Group 1 have that those in Group 2 do not? Unscramble the letters in bold to find out.



Scientists divide the mammals in Group 1 into two more groups, based on one particular trait they either do or don't have. These animals and others are listed below.

Group 3	Group 4
h <u>o</u> rse	li <u>o</u> n
co <u>w</u>	do <u>g</u>
s <u>h</u> ee <u>p</u>	bea <u>v</u> er
ze <u>b</u> ra	mo <u>n</u> key
gi <u>r</u> affe	ca <u>t</u>
rh <u>i</u> no <u>c</u> eros	ra <u>b</u> bit

2. What do the mammals in Group 3 have that those in Group 4 do not? Unscramble the letters in bold to find out.

Are you ready for more? Scientists take the mammals in Group 3 and classify them into two more groups, depending on whether they have one distinguishing characteristic. These animals and others are listed below.

Group 5	Group 6
h <u>o</u> rse	shee <u>p</u>
<u>b</u> urro	co <u>w</u>
ze <u>b</u> ra	de <u>e</u> r
rh <u>i</u> no <u>c</u> eros	gi <u>r</u> affe
<u>t</u> apir	ca <u>m</u> el

3. Unscramble the letters in bold to learn what distinguishes Group 5 mammals from Group 6 mammals. There's a hint at the bottom of the page if you need it.



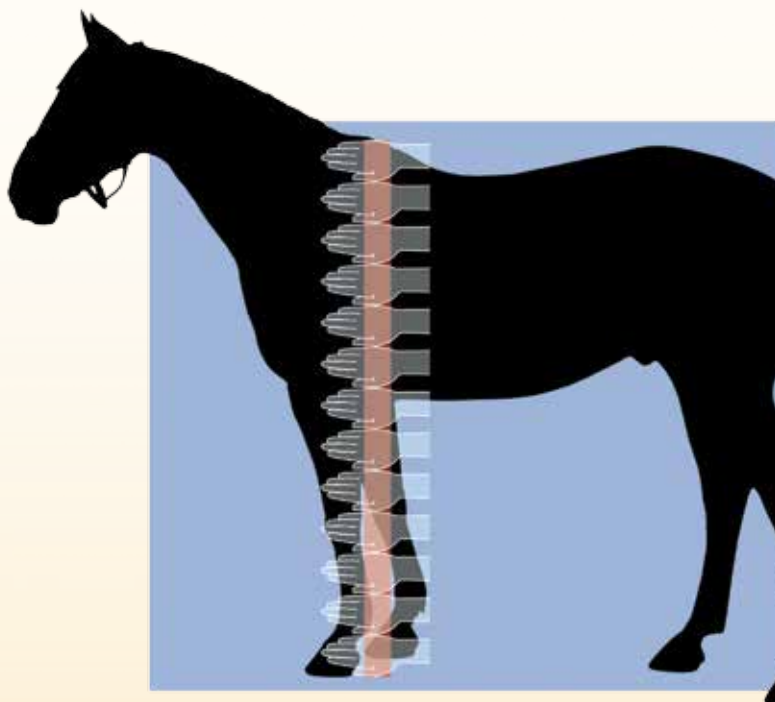
By the Numbers

“Hands” is a unit of measurement used to measure the height of a horse or burro. The height of an average wild horse is 13–15 hands (or, using a different unit of measurement, between 4 feet 4 inches and 5 feet). The weight of an average wild horse is 315–450 kilograms (700–1,000 pounds). The average burro has a height of approximately 11 hands (3 feet 8 inches) and weighs 227–273 kilograms (500–600 pounds). Information about height and weight is easier to understand and compare if you use consistent units of measurement—for example, **either** hands **or** feet and inches (but not both) and **either** pounds **or** kilograms.

Directions: Learn how to describe height and weight using different units of measurement by completing the table below. Use the following unit conversions to calculate the missing numbers.

Unit Conversions

- 1 hand = 4 inches
- 1 inch = 2.54 centimeters
- 1 foot = 12 inches
- 1 meter = 100 centimeters
- 1 kilogram = 2.2 pounds



	Height			Weight		Horse or Burro?
	hands	total inches	feet/inches	kilograms	pounds	
Lady	15 hands				968 lbs	
Willow			4 ft 8 in	320 kg		
Smokey	11 hands			240 kg		



Photo by John Wheland

Tips for Interacting with Wild Horses and Burros

Wild horses and burros live in many areas across the Western United States. Some of these areas include places where the public may view wild horses and burros in their natural habitat. By following the tips on this page, you can be a good steward to the animals.

Directions: Read each tip, and use the words listed below to fill in the blank(s). When you are finished, share these tips with someone you know. Many are good advice for viewing any kind of animal!

injured	feed	100
dogs	members	sunscreen
binoculars	water	quietly

1. Stay at least _____ feet away from wild horses or burros.
2. Try not to place yourself between _____ of a band or between adjoining bands.
3. Observe wild horses and burros _____, so wild behavior is not disrupted.
4. A good pair of _____ or a spotting scope is a must for observing animals.
5. Do not _____ or try to attract animals toward you.
6. Keep _____ under control, so they do not disturb or chase wild horses or burros.
7. Report sick or _____ animals to the BLM. Do not attempt to assist sick animals.
8. Always carry _____, warm clothing, _____, a hat, and maps.



Career Profiles

Working with Wild Horses and Burros at the BLM—There are many careers at the BLM that help support the Wild Horse and Burro Program. All of the employees in the program play an important role in taking good care of the animals and the land.

Wild Horse and Burro Specialists manage the wild horses and burros on the range. The specialists gather animals when necessary and find homes for animals through the adoption program. In some states the Range Management Specialist serves as the Wild Horse and Burro Specialist.

Range Management Specialists manage the range plants on public land. The specialist must think about many different things to do this job well: What do cows, horses, burros, and other wildlife need to eat? What is the best way to protect the soil? The specialist works with ranchers, biologists, environmentalists, and others to create the right plans to keep the land healthy.

Facility Operations Managers manage the wild horse and burro short-term corrals. They make sure the animals are treated well, fed, watered, given vaccinations, and freeze marked. When the animals leave the short-term corrals, they go either to adoption events or to long-term pastures.

Wranglers work at the BLM facilities and humanely care for the animals. They are the BLM employees who feed, water, vaccinate, and freeze mark the animals.

Scott Fluer

Wild Horse and Burro Specialist
Lander Field Office, Wyoming
Years with the BLM: 22

"Horses have always been a part of my life, and my family's life. In fact, we currently own five mustangs."

Scott has also helped more than 4,500 wild horses and burros find homes at Wyoming adoption events during the last 16 years.

John Neill

Facility Operations Manager
National Wild Horse and Burro Center, Nevada
Years with the BLM: 20

"I have always enjoyed working with animals in the livestock industry. I am proud that I started out working as a novice horse wrangler and advanced through the program and now serve as the facility manager."



Junior Explorer



WILD HORSES

GOLOS & BURROS



Adoption



FLY



ACTIVITY BOOK



Bureau of Land Management Junior Explorer



As a Bureau of Land Management Junior Explorer, I promise to:

- do all I can to help preserve and protect the natural and cultural resources on our public lands,
- be aware of how my actions can affect other living things and the evidence of our past,
- keep learning about the importance of nature and our heritage, and
- share what I have learned with others!

Date

Explorer Signature



ACTIVITY BOOK

**Cut out and
save certificate**



Answer Key

Roaming the Range: Where Do Wild Horses and Burros Live? (page 5):

	State Name	Horses	Burros	Total
devaNa	Nevada	17,710	1,347	19,057
gonerO	Oregon	2,456	15	2,471
antoMan	Montana	165	0	165
myongiW	Wyoming	5,333	0	5,333
nAarozi	Arizona	434	2,761	3,195
ewN oxeciM	New Mexico	63	0	63
raiCnlofa	California	2,872	1,171	4,043
hodla	Idaho	500	0	500
athU	Utah	2,497	189	2,686
droloCao	Colorado	984	0	984

Map Colors:

Nevada: purple **Arizona:** green **Idaho:** yellow
Oregon: blue **New Mexico:** yellow **Utah:** blue
Montana: yellow **California:** green **Colorado:** yellow
Wyoming: red

Nevada has a higher combined wild horse and burro population than any other state, almost as many animals as all the other states added together!

Sharing Space . . . and More (page 6):

wheatgrass: 100 lbs winterfat: 150 lbs fireweed: 130 lbs

Sustainable Animal Populations:

A, C, D, E

Brrr!! Freeze Mark Identification (page 8):

Year of Birth	Registration Number	State of Registration
1. 1983	470692	Montana
2. 2005	183245	California
3. 1997	762153	Utah
4. 2010	354876	Idaho

Actions Speak Louder than Words (page 9):



It's All Relative (page 10):

- four legs
- hooves
- number of toes

By the Numbers (page 11):

	Height			Weight		Horse or Burro?
	hands	total inches	feet/ inches	kilograms	pounds	
Lady	15 hands	60 in	5 ft	440 kg	968 lbs	Horse
Willow	14 hands	56 in	4 ft 8 in	320 kg	704 lbs	Horse
Smokey	11 hands	44 in	3 ft 8 in	240 kg	528 lbs	Burro

Tips for Interacting with Wild Horses and Burros (page 12):

- 100
- members
- quietly
- binoculars
- feed
- dogs
- injured
- water, sunscreen





Glossary

band of horses: a group made up of mares, foals, yearlings, and one stallion

burro: another name for a donkey

domestic animals: tame animals kept and used by humans

foal: the offspring of a stallion and a mare—either male or female, and less than 1 year old

forage: food in the form of grasses, shrubs, and forbs

forb: an herbaceous plant other than grass

grass: an herbaceous plant, with jointed stems, slender sheathing leaves, and seedlike grains

habitat: the place where a plant or animal species naturally lives and grows

Herd Management

Area: places with adequate food, water, cover, and space to manage for healthy wild horse and burro populations over the long term

mare: a female horse old enough to mate

shrub: a low, usually several-stemmed, woody plant

stallion: a male horse old enough to mate

wildlife: animals living in a natural, undomesticated state

yearling: a young horse between 1 and 2 years old



Junior Explorer



WILD HORSES

BURROS HORSES & BURROS Adoption



ACTIVITY BOOK



BLM/WO/GI-12/015+1115
EE2038B

Volunteer Spotlight: Idaho 4-H Youth

After wild horses are gathered from one of Idaho's six Herd Management Areas, 4-H youth members partner with the BLM in training the young mustangs. For 6–8 weeks Idaho's 4-H youth work with the horses, showing them how to be led on a halter and helping them become very comfortable with people. This training helps the horses prepare for adoption and for living happy lives in their new environments.

The BLM has numerous volunteer opportunities in all of its programs for children and adult volunteers. For more information, please visit www.volunteer.gov or www.blm.gov/volunteers.

Ready for More?

Interested in learning more about wild horses and burros or the BLM? Visit either of these BLM sites for more information!

www.blm.gov
www.blm.gov/education

Questions about
wild horses and burros?

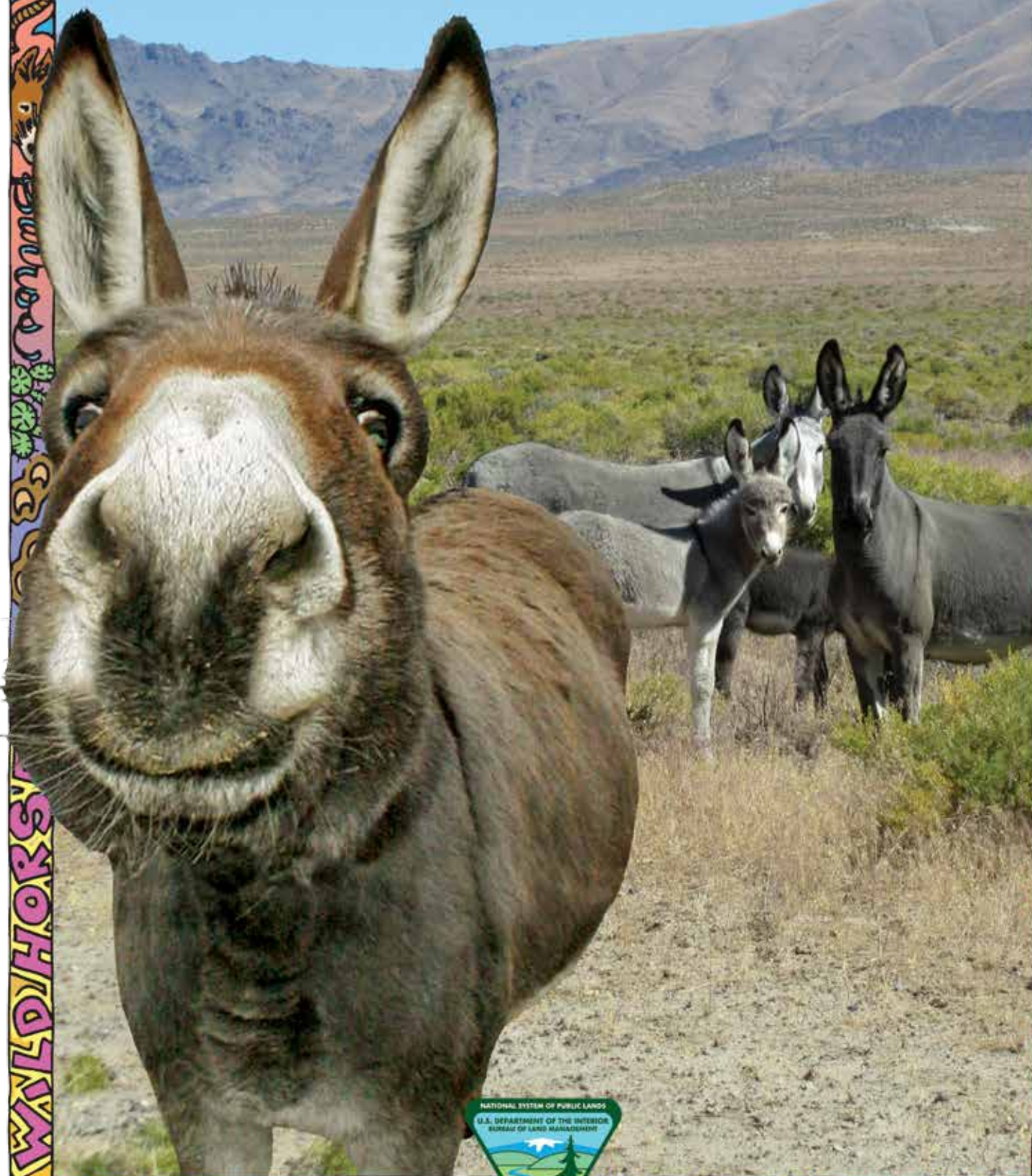
Contact knowledgeable BLM staff by

E-mail: wildhorse@blm.gov

Phone: 866-4MUSTANGS (866-468-7826)



Junior Explorer



GOLOS & BURROS HORSES & BURROS

Adoption

WILD HORSES



ACTIVITY BOOK

