Learning A–Z	level Z	Multi-level	N/A
Grade	5	Word Count	2,067
Lexile	1150L	Nonfiction • Informational	

Refer to the Focus Question on page 2 of this title to guide discussion and support additional learning connected to the text.

The idea of people keeping wild animals in captivity has been around for centuries. However, the reason for doing so has shifted over time. Read this fascinating account of how zoos began in ancient times, how they have changed over time, and how modern zoos are working diligently to save endangered species.

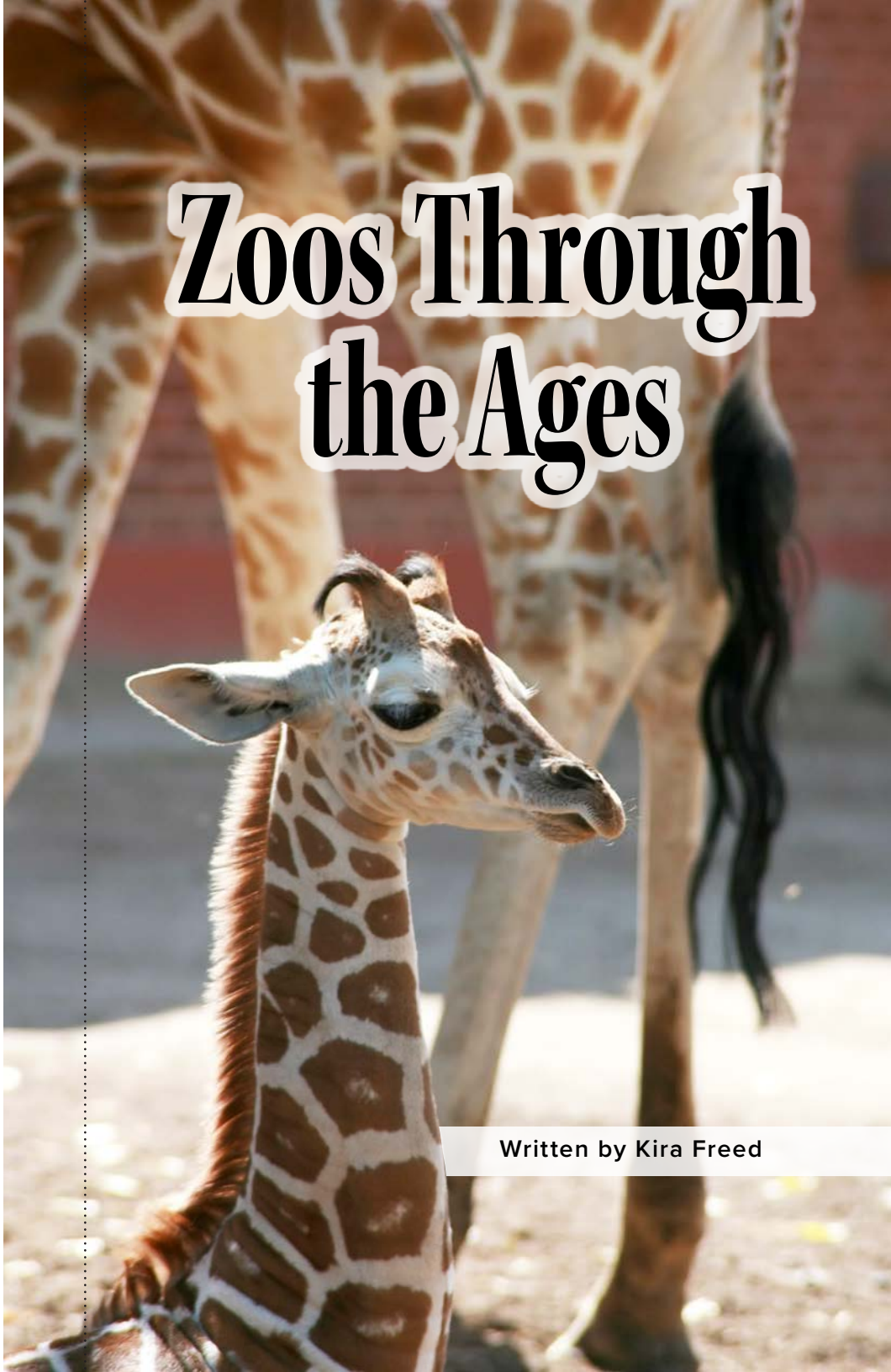
Photo Credits:
Front cover: © Robert Nystrom/123RF; title page: © Eric Gevaert/123RF; page 3: © Edyta Linek/123RF; page 4: © Mike Greenslade/Alamy; page 5: © iStockphoto.com/Snezana Negovanovic; page 6: © Gladiators Fighting Animals in the circus at Pompeii, Niccolini, Antonio/Bibliotheque des Arts Decoratifs, Paris, France/Archives Charmet/The Bridgeman Art Library International; page 8: © Mary Lane/Dreamstime.com; page 9: © Phillip de Bay/Corbis/Historical Picture Archive; page 10: © Doug Nelson/iStockphoto.com; page11: © Paul Chinn/San Francisco Chronicle/Corbis; page 12: © Kitch Bain/123RF; page 13: © Tim King/UPI/Landov; page 14: © Jonathan Lyons/iStockphoto.com; page 16: © Eric Gevaert/Dreamstime; page 17: © Amy Smith/iStockphoto.com; pages 18, 19: © courtesy of Reid Park Zoo, Tucson, Arizona; page 22: © Digitalpress/Dreamstime.com

Editor's Note
Special thanks to Kristen Mueller of the Reid Park Zoo in Tucson, Arizona, for serving as a consultant for this book.

Learning A–Z

For more great books visit
www.learninga-z.com

© Learning A–Z, all rights reserved.



Zoos Through the Ages

Written by Kira Freed

stimulation *(n.)* page 10
something that provides sensory input and sparks interest

trial and error *(n.)* page 18
the process of experiment*ing* with many possibilities to find a solution

Index

Africa, 13
Alexander the Great, 5
Association of Zoos and Aquariums (AZA), 12–14
conservation, 9, 13, 16, 17
enrichment, 18, 19
founders, 15
Frederick II, 7
French Revolution, 8
gladiators, 6
funding, 20
genetic diversity, 14, 15
Jardin des Plantes, 8
red wolves, 14
Regent's Park Zoo, 9
Romans, 6
Species Survival Plan (SSP), 14–16
Tower of London, 8
training, 7, 19

For More Information

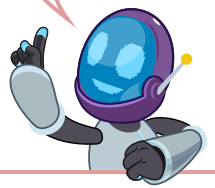
Visit www.aza.org to learn more about the work of the Association of Zoos & Aquariums. Visit www.aza.org/Cands/ and scroll down to "Find Species Survival Plan Programs" to learn which species have SSPs.

Zoos Through the Ages

Written by Kira Freed

Focus Question

How has the purpose of zoos changed over time?



Words to Know

befitted
captivity
enrichment
extravagant
founders
gladiators
intrusive
perception
respite
stimulation
trial and error

Glossary

befitted *(v.)* page 7
was appropriate for

captivity *(n.)* page 4
the state of being confined or without freedom

enrichment *(n.)* page 18
something that provides stimulation for the senses

extravagant *(adj.)* page 5
excessive, wasteful, or extremely expensive

founders *(n.)* page 15
the animals used to start a captive-breeding program

gladiators *(n.)* page 6
fighters in ancient Rome who fought in public to entertain other people

intrusive *(adj.)* page 19
related to something that disturbs, disrupts, or invades

perception *(n.)* page 17
the way in which something is viewed, understood, or interpreted by others

respite *(n.)* page 9
a short rest from something unpleasant or difficult

Conclusion

Today's zoos are extremely different from the private animal collections of rulers long ago. Over the centuries, increased knowledge has resulted in enormous improvements in the care of captive animals, the quality of their enclosures, and the environmental enrichment they receive.

Most zoos are taking educated, positive, and active steps to save animals from extinction as well as to educate the public about the importance of preserving wild habitats. The next time you visit a zoo, keep in mind that its animals are not just entertaining you. They are also reminding you of the amazing diversity of the natural world, which our involvement can help to protect and preserve.

Table of Contents

Introduction 4
Captive Animals Long Ago 5
The First Zoos 8
Shifting the Focus 11
Zoos as Conservation Centers 13
Zoos Today 17
Conclusion 22
Glossary 23
Index 24

The environmental design of modern zoos can provide opportunities to learn about animals and their natural habitats.

Introduction

When you visit a zoo, do you ever wonder how humans began to keep other animals in **captivity**? Have you noticed that some animals are kept in small cages, while others have more space to roam? If you've been to more than one zoo, you also might have noticed that some zoos are larger and more modern than others. Do animals at different zoos appear to receive different types of care?

Zoos have changed their practices over the centuries, and they continue to change today. Zoos vary greatly in size and in the amount of money they have for expansions and upgrades. We'll look at how zoos began and how their purpose has changed and learn about the history of keeping and displaying captive animals.

How Much Does It Cost to Feed Zoo Animals?*

Carnivores—lions and tigers

Meat (5 pounds a day) . . . . . .$50 per week per animal
Treats: bones and oxtails . . . . .$50 per week per animal

Herbivores—elephants and rhinos

Hay. . . . . .$50 per week per animal
Vitamin and mineral pellets. . . .$50 per week per animal

Herbivores—giraffes

Hay. . . . . .$25 per week per animal
Vitamin and mineral pellets. . . .$25 per week per animal

Herbivores—zebras

Hay. . . . . .$12.50 per week per animal
Vitamin and mineral pellets. . . .$12.50 per week per animal

Omnivores—polar bears

Meat, fish, fruit, & vegetables . .$200 per week per animal

Tortoises (many species)

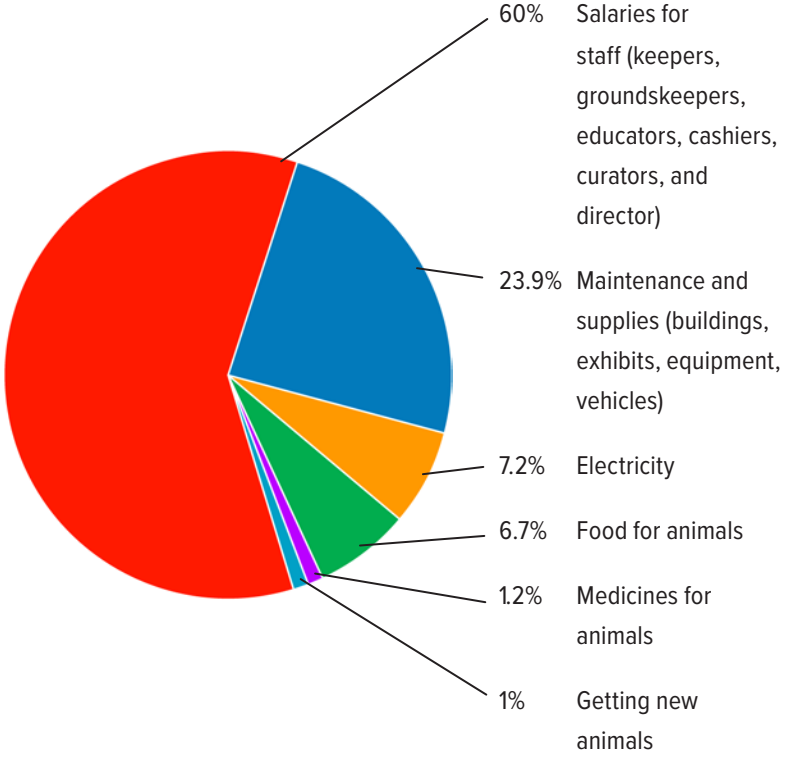
Dark leafy green vegetables. . . .$200 per week total for 50 tortoises

TOTAL = $168,000 per year for 500 animals

**All figures are estimates. This information was provided by the Reid Park Zoo in Tucson, Arizona.*

A constant concern at all zoos is where money is going to come from. It takes a huge amount of money to keep and care for zoo animals, maintain exhibits, and pay staff salaries. Zoos must always look for ways to pay for expenses. Every zoo has a "wish list" of projects, including updating exhibits and developing new ones.

Expenses at a Zoo*



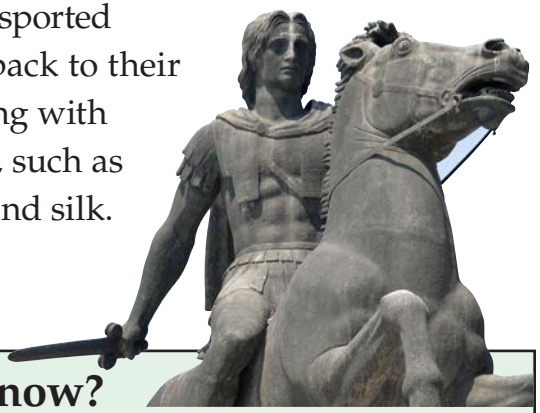
Expansions and improvements are separate expenses. A new exhibit can cost from $1 million to $10 million.

*All figures are estimates. This information was provided by the Reid Park Zoo in Tucson, Arizona.

Captive Animals Long Ago

Most of the great civilizations have kept wild animals on display. Long ago, only kings and other rulers could afford this privilege, so keeping animals became a symbol of wealth and power. Animals were given as **extravagant** gifts, similar to gold and gemstones. Rulers kept these exotic animals for their own enjoyment, so cages were designed for easy viewing, with little regard for the comfort and care of the animals.

As explorers traveled around the world, they discovered animals they had never seen before. They often transported these animals back to their homelands along with other treasures, such as spices, jewels, and silk.



Do You Know?

The renowned conqueror Alexander the Great (356--323 BC) kept a variety of animals, including bears, monkeys, and elephants. He left his collection to King Ptolemy I of Egypt. The Greek philosopher Aristotle spent time observing the animals' behavior out of curiosity. He wrote a book, titled *History of Animals,* in which he described several hundred vertebrate species.

Audiences in ancient Rome considered deadly fights between captive animals or people to be sport.

The Romans were known for their use of animals for what they considered popular crowd entertainment—and what animal-rights activists today would consider incredible cruelty. Roman leaders orchestrated fights between wild animals, such as lions and bears, as well as between **gladiators** and these animals. Countless numbers of animals died in what are now thought of as spectacles of torture and cruelty. Many of these animals were caught in the wild, while others were bred in captivity to ensure a steady supply for these brutal displays of ferocity and strength.

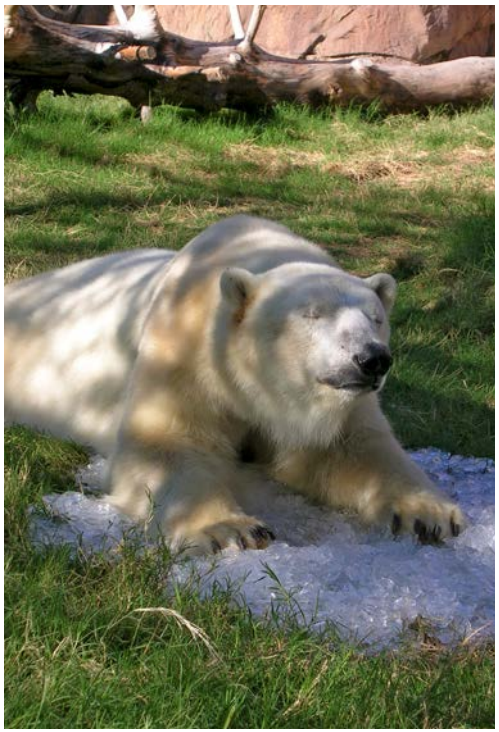
A zookeeper is training this lion to touch a "target."

Other sensory enrichment may include stimulating the sense of smell with cooking spices. Sometimes zookeepers even place animal poop in an animal's enclosure—such as giraffe poop in a lion exhibit—as a type of enrichment.

Many zoos do some amount of behavioral training of animals—often as a way to enable staff to provide better care. For example, lions and tigers can be trained to touch a "target" or to put their tail through a fence. Later, they will accept an injection in the same manner. A baboon can be trained to present a shoulder for the same purpose. Such training can help zoo veterinarians provide better, and often less **intrusive**, care.

Zoo professionals put a great deal of effort into tools and activities that provide animals with stimulation. It has been proven that captive animals with habitat **enrichment** do much better than those without it. The goal of enrichment is to keep animals stimulated for as long a time as possible, and efforts involve a great deal of **trial and error**. Zookeepers may spend months developing a new form of enrichment and then discover that an animal has no interest in it.

Zookeepers often stimulate natural behaviors by using techniques such as hiding food in enclosures so that animals need to search and reach for it. Other forms of enrichment include things that stimulate the senses. Some zoos make frozen taste treats for their animals, including ratsicles and fishsicles.



Ice is a simple yet enjoyable type of enrichment for polar bears.

During the Middle Ages, most people paid little attention to nature. But by the 1200s, there was renewed interest in animal collections, and rulers often exchanged animals as gifts. Frederick II (king of Germany 1212–1220, Holy Roman Emperor 1220–1250) had an animal collection that included cheetahs trained for hunting. Frederick traveled with his animals, taking lions, elephants, camels, and other creatures on a trip to Germany for his wedding. As **befitted** honored guests at such an important event, the animals were decorated with ornaments, gems, and expensive cloth.

Animals on public display continued to be regarded purely as objects of curiosity. They were kept in small cages with metal bars and had no way to hide from people's view or retain their natural behaviors.

Thinking Critically

WHAT did people's treatment of animals long ago indicate about their beliefs regarding the importance of humans relative to other living things?

IN YOUR OPINION, how might these beliefs relate to how people treated each other long ago? How have these beliefs changed—or not changed—over the centuries?

The First Zoos

Beginning in the 1700s, the power and privilege of kings and queens declined, and common people came into decision-making positions. Many royalty-only rights changed, including the sole right to keep and study wild animals. During the French Revolution of the 1790s, a royal animal collection was relocated to a botanical garden in Paris known as the *Jardin des Plantes* (zhar-DAN day PLAHNT—Garden of Plants). This collection became the first known public zoological garden, or zoo.

During this same time period, circuses and traveling shows with exotic animals were popular throughout what would later become the United States. Touring displays of North American animals attracted curious crowds, as did mixed collections of minerals, fossils, and plants.

It's a Fact

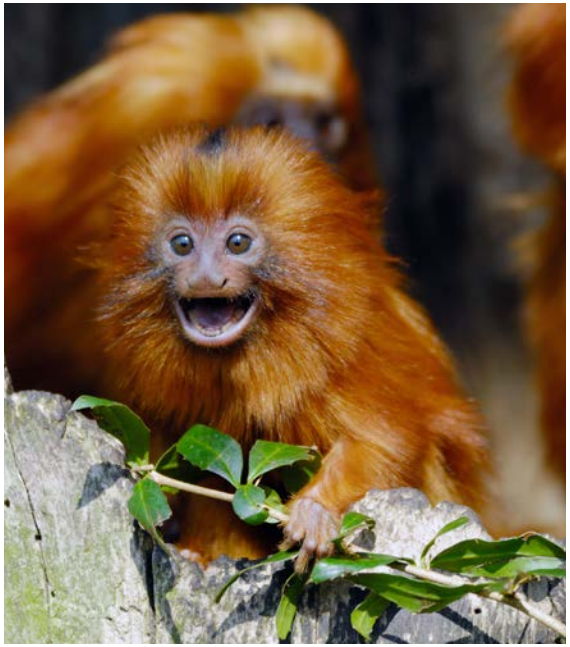
In the 1700s, London's citizens were allowed to visit the animal collection housed at the Tower of London. They had the option either to pay a small sum of money as admission or to donate a cat or dog as food for the bears or big cats.

Zoos Today

Conservation is the main focus of most zoos today. Public **perception** has, to a large extent, not yet caught up with this shift in focus. Zoos put an enormous effort into educating the public about their valuable role as conservation centers.

At the same time, most people come to zoos at least in part to be entertained. Zoos must keep the public interested, so they are always working to develop new programs and exhibits. The recent addition of a giraffe-feeding platform at the Reid Park Zoo in Tucson, Arizona, has been wildly successful. Most of the program's profits go toward conservation projects around the world.

Hand-feeding a giraffe is an experience zoo visitors never forget.



The National Zoo in Washington, D.C., started the SSP for the golden lion tamarin, a small monkey native to Brazil. Reintroduction to boost the numbers of wild tamarins has been successful, and the zoo is working with Brazil to protect native tamarin habitats.

Species are selected for an SSP on the basis of their conservation status (endangered or threatened) and the availability of professionals to devote time to their care and study. Certain species, such as giant pandas and lowland gorillas, were also chosen because they are well known and inspire people to get involved in conservation efforts. More than one hundred SSPs exist at the present time. SSPs are a key way in which zoos stand at the forefront of wildlife conservation. They are the best hope for many species to avoid the fate of extinction. Each SSP has a continuing goal of education and a focus on increasing public awareness of the causes of the species' decline.

The small cages and viewing spaces of London's Royal Menagerie in 1816

The early 1800s brought the development of larger cities as well as the idea of setting aside natural areas to be preserved as recreational parkland. With more open space and greater interest in the natural world, more zoological parks and gardens were created—places where people could see a variety of animals and plants.

London's Regent's Park Zoo was established in 1828 for the purpose of studying captive animals and applying that knowledge to their wild relatives. It became the example for zoos that would be established in Europe and the United States during the rest of the century. Zoos rapidly gained in popularity, offering people a **respite** from the dirty, ugly cities of the time as well as close glimpses into the lives of wild animals.

Animals confined to small, barren spaces become unhappy and unhealthy.

The establishment of zoos did not guarantee adequate care for their residents, particularly not by today's standards. Little was known then about the nutritional and environmental needs of the animals, so their health often suffered. Social animals that normally lived in family groups were caged individually and felt stress from their separation. Because bare concrete cages could be hosed down easily, most animals had no objects or "furniture" to climb on except for sleeping shelves for big cats. Zoo animals had nothing to interrupt their boredom or provide **stimulation**.

Early zoos rarely displayed information about animals' places of origin or natural habits. Most interested visitors learned only the animals' names and feeding times.

Each animal carries genetic material common to its species—but it also has genetic material that varies. For example, the inherited genetic material of some individual hawks makes them a little faster than other hawks. The faster hawks are more likely to catch more food, stay healthier, and reproduce more. These inherited genetic variations within a species create what is known as *genetic diversity.* Genetic diversity helps a species adapt to changes and makes the species less vulnerable to eventual extinction.

For exactly this reason, SSPs do everything in their power to maintain genetic diversity. SSPs generally start with an extremely small number of animals because most have already died. The SSP for the black-footed ferret, a native of the Great Plains, was started with only seven **founders**, or original animals. The red wolf SSP only had fourteen founders.

The animals in an SSP are housed at a number of different zoos to ensure that an illness or disaster at a single zoo will not wipe out the entire breeding population. Animals are transported to different facilities for mating. A zoo professional keeps careful track of which animals have mated in order to maintain as much genetic diversity as possible.

One of the most important modern-day activities of many zoos is participation in Species Survival Plans (SSPs). This captive-breeding program, developed by the AZA, focuses on the survival of many animal species in danger of becoming extinct in the wild. Coordinated by zoo professionals, it involves many zoos working together.

The primary goal of a Species Survival Plan is to maintain a healthy, genetically diverse population of an endangered species. Genetics is the field of science that studies how similar traits are passed on from one generation to the next. Every cell in an animal's body contains genetic material that functions like a blueprint for body structures as well as many distinct natural behaviors.

Do You Know?

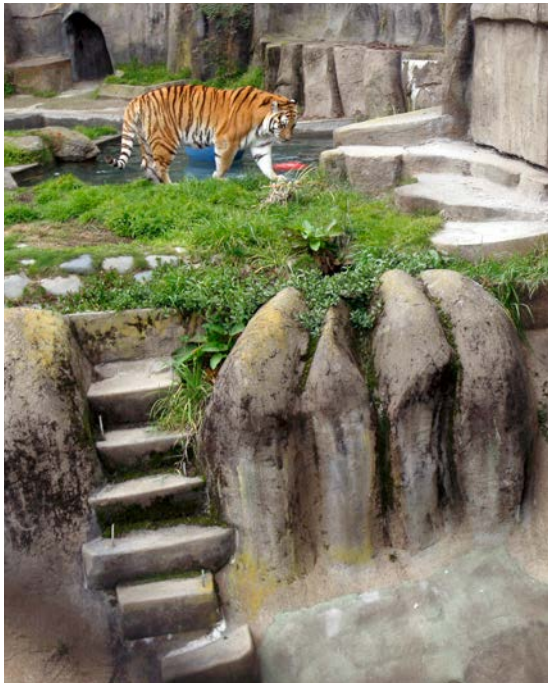
Red wolves, the rarest members of the dog family, almost became extinct before biologists began to breed them in captivity. Red wolves were introduced in North Carolina's Alligator River National Wildlife Refuge beginning in the late 1980s. As of June 2007, more than 200 red wolves also lived in 39 captive breeding centers. Owing to the efforts of many people, red wolves are on the road to recovery.

Shifting the Focus

Over time, it became harder to obtain animals from the wild. Governments of foreign countries began to consider their wildlife as valuable natural resources that should be purchased. Also, some sought-after animals had already been trapped and hunted to near-extinction.

These changes put pressure on zoos to take better care of their animals, since they were not so easily replaced. Zoos shifted their focus from pure entertainment to the health requirements of their residents as well as captive breeding programs.

Research revealed that zoo animals were more likely to breed if they were healthy and if their space felt similar to their natural home.



The new tiger compound at the San Francisco Zoo provides more room to roam, run, and climb in safety.

The 1960s were a decade of many changes in thinking and values in the United States. One positive change was the greater importance placed on the natural world. In the 1970s, various organizations put pressure on zoo managers to improve animal care. Some believed that all zoos should be closed and captive animals freed. During this time, the Association of Zoos and Aquariums (AZA) clarified the importance of wild animal collections in educating the public and advancing our scientific knowledge. Also during this time, zoos began cooperating with each other. As a result, captive animals received better care; lived in less stressful, more natural environments; and bred with greater success.

Captive breeding of giant pandas is always challenging, but the program at the San Diego Zoo has maintained continual success.

The scimitar-horned oryx, a type of antelope, exists only in zoos. A former inhabitant of northern Africa, it is now extinct in the wild.

Zoos as Conservation Centers

In recent years, zoos have taken on a new role. As humans continue to multiply, we destroy more and more natural habitats in our efforts to obtain food, building materials, and land to live on and farm. These practices have resulted in some animal species becoming extinct in their own natural environments and surviving only in zoos. For some of these threatened species, zoo captive-breeding programs—and, when possible, reintroduction into protected wild places—are the best hope for these animals to continue to live.

The AZA places increased emphasis on education, conservation, and scientific study above the entertainment value of zoos. Zoos will need to keep pace with changes in attitudes, technology, and the environment to fulfill their mission.