

2021



**LEVEL 2**  
**ZOO TEEN**  
**HANDBOOK**

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## Conservation & Education

*A connection that life depends on.*

**M**esker Park Zoo & Botanic Garden's **mission** is to foster the preservation of diverse species and living systems through active **conservation and education** in our community. In other words, we can adopt and support conservation measures that will reduce our negative impact and rather have a positive impact on these species and systems, but we can make an even bigger positive impact if we educate others on why and how they can do the same.

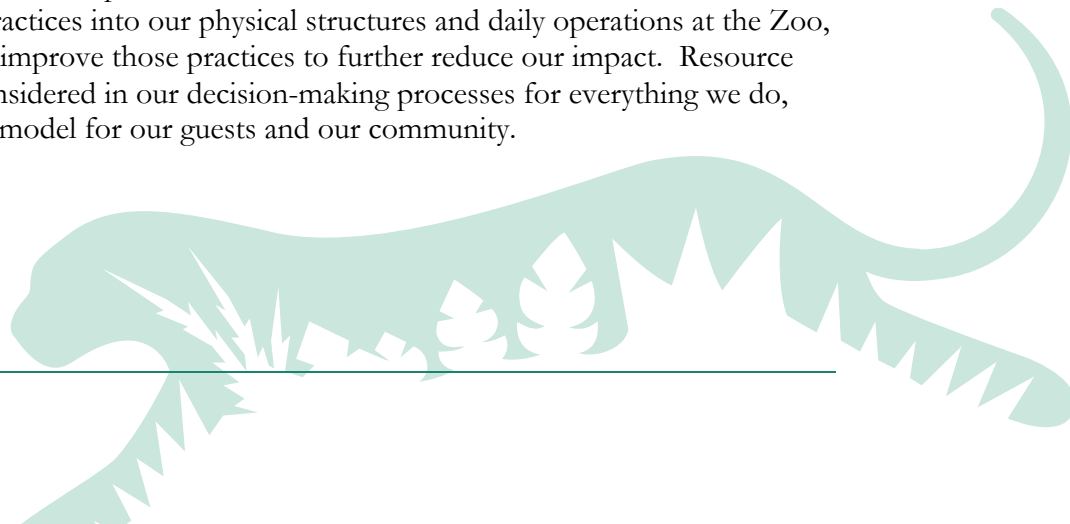
MPZ must be a leader in this endeavor. We must demonstrate our commitment to doing what it takes to preserve species and their habitats, both locally and globally. We must model environmentally responsible actions and attitudes to set the example for the rest of our community. We accomplish these through direct conservation projects "on the ground", by using green practices at our Zoo, and through educational outreach and programming for the public.

Every day people make choices and take actions that affect our wildlife and our environment. Every day YOU can influence them to choose good ones. As a MPZ Zooteen, you will need to understand our conservation practices and goals, and you will help us teach others how they can do their part.

### Conservation at the Zoo

*Conservation - the careful utilization and protection of a natural resource to prevent depletion, exploitation, destruction, or neglect.*

Mesker Park Zoo is committed to the wise use and conservation of energy, water, and other natural resources to reduce our impact on our wildlife and our environment. We have established many green practices into our physical structures and daily operations at the Zoo, and are always looking to improve those practices to further reduce our impact. Resource conservation goals are considered in our decision-making processes for everything we do, and we strive to be a role model for our guests and our community.



## AZA Conservation Initiatives

Mesker Park Zoo participates in and contributes to the following AZA (Association of Zoos and Aquariums) conservation programs.

### **SAFE: Saving Animals From Extinction**

Across the 229 AZA-accredited zoos and aquariums, we have more wildlife care experts, more animals and a greater opportunity to engage the public than any other entity. We have three-quarters of a million animals representing 6,000 species, with close to 1,000 of them endangered in the wild. AZA-accredited institutions are already investing over \$160 million annually towards field conservation to help save animals in the wild.



Through SAFE, AZA and its members will convene scientists and stakeholders to identify the threats, develop action plans, raise new resources and engage the public. SAFE harnesses the collective power of all AZA-accredited zoos and aquariums.

### **Species Survival Plan**

This icon is found on the signs and exhibits of species that are part of the Species Survival Plan. “The American Zoo and Aquarium Association's (AZA's) Species Survival Plan® (SSP) program began in 1981 as a cooperative population management and conservation program for selected taxa in zoos and aquariums in North America. SSPs were developed to manage the breeding of captive animal populations in order to maintain healthy, self-sustaining populations that are both genetically diverse and demographically stable. ... The mission of the program is to help ensure the survival of selected wildlife species into the future and to provide a link between zoo and aquarium animals and the conservation of their wild counterparts.” (Source: [www.aza.org/ConScience/#ssp](http://www.aza.org/ConScience/#ssp) May 2004)



## Conservation Education

Our ability to fulfill our mission would be seriously limited if the zoo's only efforts towards conservation were through our own direct actions. Reducing plastic use or breeding an endangered species in captivity are both worthwhile, but we must have an impact beyond our direct actions and physical borders. In order to have a greater impact we must inspire our community to make choices that will foster stewardship of our environment so all species have a world to live in.



**Conservation Education Programs are those that are specifically designed to both raise awareness about a conservation issue and promote conservation actions. They should always deliver a conservation message and inspire action.**

The Education Department provides a variety of interpretive and educational opportunities to the public, both at the zoo and out in the community. We utilize live animals, hands-on activities, demonstrations, biofacts and other tools to teach about plants and animals, ecological relationships, environmental issues, and the roles of zoos in conservation. These engaging experiences help people build an understanding of and empathy for wild animals and their natural world so that they might advocate for their care and protection. Our Volunteers are critical to these efforts. Volunteers, Docents (volunteer educators), and ZooTeens are all part of our team.

### Education

Education is the process of facilitating [learning](#), or the acquisition of [knowledge](#), [skills](#), [values](#), [beliefs](#), and [habits](#).

Educational methods include [teaching](#), [training](#), [storytelling](#), [discussion](#) and directed [research](#).

Education frequently takes place under the guidance of educators, however learners can also [educate themselves](#).

Education can take place in [formal](#) or [informal](#) settings and any [experience](#) that has a formative effect on the way one thinks, feels, or acts may be considered educational.

([www.wikipedia.com](http://www.wikipedia.com))

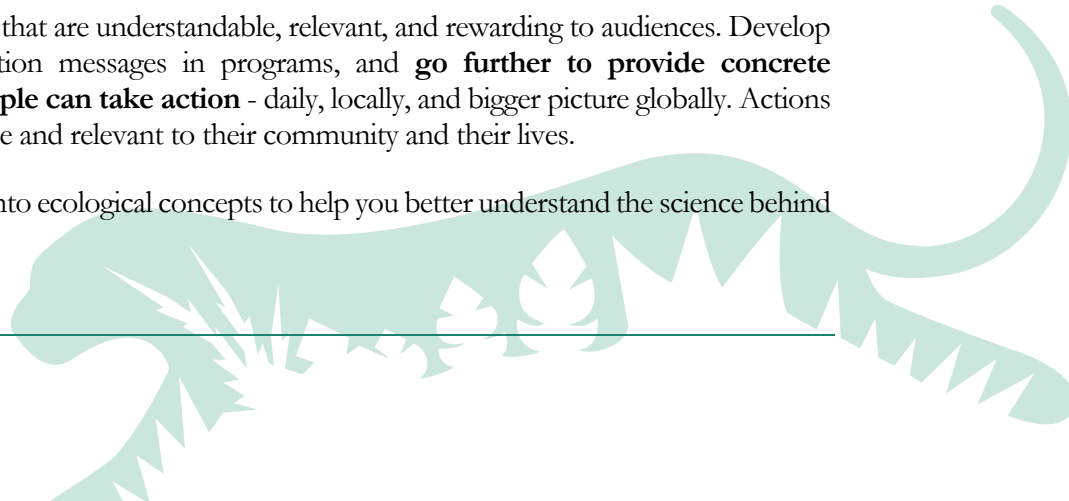
## Conservation Messages

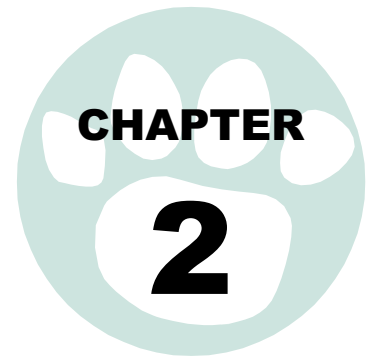
### What is a conservation message?

A conservation message is a brief, values-based statement aimed at a target audience that captures a positive concept (think, feel, do). A message should move people from their starting point toward a desired behavior.

Zoos must select messages that are understandable, relevant, and rewarding to audiences. Develop and use explicit conservation messages in programs, and **go further to provide concrete suggestions for ways people can take action** - daily, locally, and bigger picture globally. Actions should be realistically doable and relevant to their community and their lives.

In the next chapter, we go into ecological concepts to help you better understand the science behind these messages.





## Ecological Concepts

*All life is connected.*

**E**ven the word ecology acknowledges the simple truth that all life is connected. It originated from the Greek oikos (house) and logi (study) and means simply the study of the house, and has come to mean the study of the planet and its inhabitants.



**Ecology –  
The study of how living things interact  
with each other and their environment.**

As you may imagine it is a very big field with many subspecialties and complex concepts. It would be utterly hopeless to require zooteens to know everything there is to know about ecology. What we can do is attempt to provide you with a very brief introduction to ecology concepts that you should understand when you interpret to guests at the Zoo.

In this chapter we will give you an overview of concepts in ecology that will be the most helpful to you as you interpret our plants and animals - what they are, where they live, what they eat, and how they compete and adapt - and as you deliver conservation messages to our guests at the zoo.

## Topics in Community Ecology

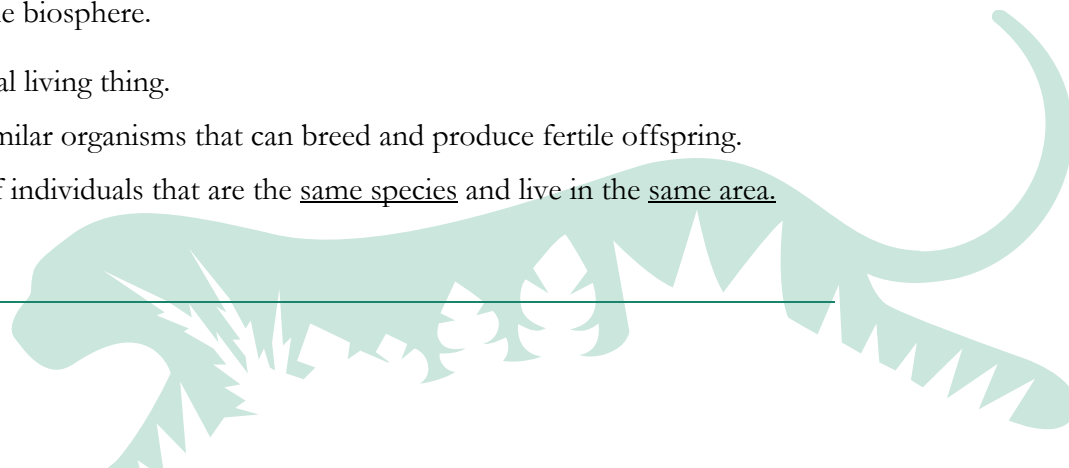
### Ecological Levels

Ecology can be studied in context of levels - from a single organism to the whole planet. These levels are presented below from smallest to largest. Each level is part of the next larger level, and all are part of the biosphere.

**Organism** – An individual living thing.

**Species** – A group of similar organisms that can breed and produce fertile offspring.

**Population** – A group of individuals that are the same species and live in the same area.

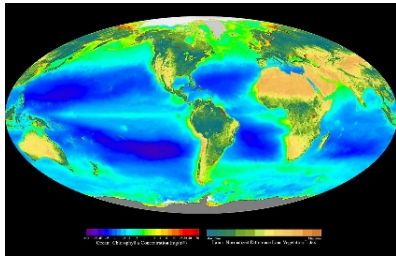


**Community** – A group of various species that live in the same habitat and interact with each other. (Tip – all the living things in an area)

**Ecosystem** – A biological community of interacting organisms and their physical environment. (Tip – all the living things and their environment)

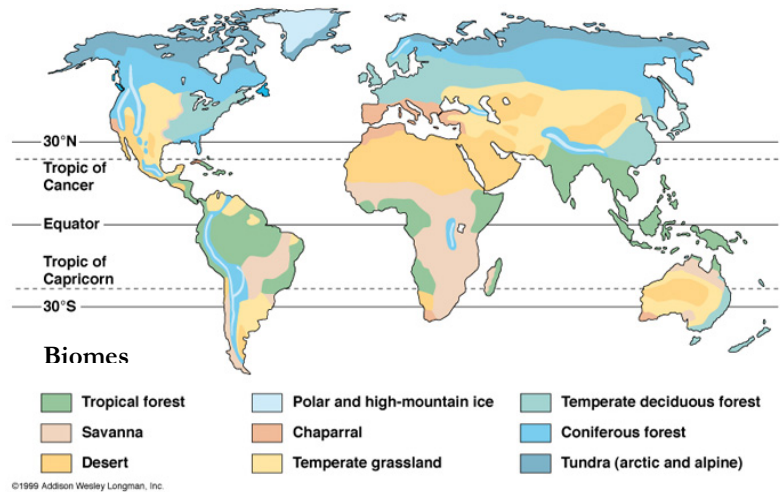
**Biome** – A large region characterized by a specific type of climate and certain types of plant and animal communities that can live there. (More on biomes will be detailed below.)

**Biosphere** – All interacting life on Earth and all parts of the Earth in which life exists, including land, water, and the atmosphere.



**Biosphere**

Sources: wikipedia



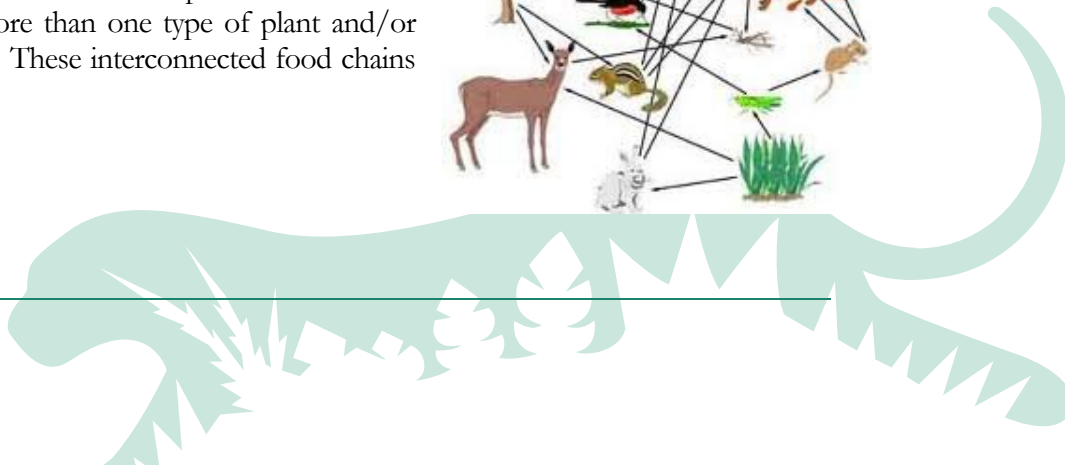
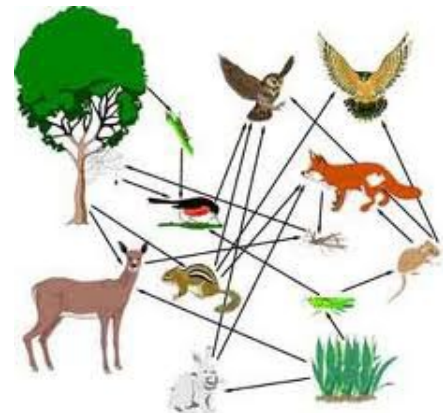
## Ecological Concepts

**Habitat** - The place where an organism lives. A habitat has the proper food, water, shelter, and space for the organism to get all it needs to survive.

**Niche** - The ecological role of an organism in its environment. You can think of this like its job - it sums up what it does, what it eats, how it reproduces, and essentially everything it does to survive.

### Food Web -

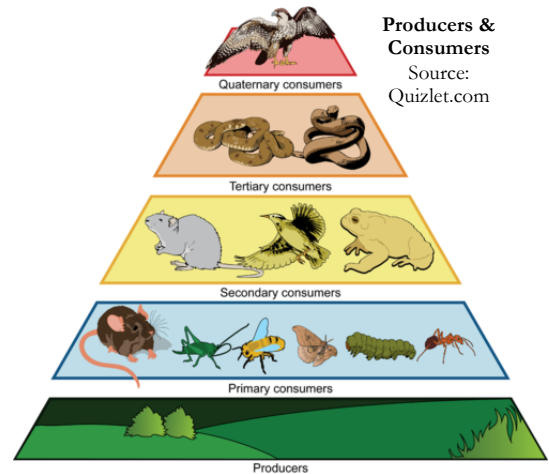
A food chain/web shows how each living plant and animal gets food. Some animals eat plants only (**herbivores**), some animals eat plants and animals (**omnivores**), and some animals eat only other animals (**carnivores**). A food chain always starts with a plant and ends with an animal. Animals are part of several food chains because they eat more than one type of plant and/or animal in order to survive. These interconnected food chains form a food web.



The following are roles of organisms in the food chain:

- **Producers** – An organism that can make its own food from the sun or a chemical energy source. Most are plants, but there are also some bacteria and protist producers. Producers are required as the foundation for the entire food web. They make energy (like sunlight) into a usable form for all other organisms.
- **Consumer** – An organism that survives by eating other organisms
  - **Primary Consumers** – aka Herbivores; eat plants (producers)
  - **Secondary Consumers** – aka Carnivores; eat primary consumers (herbivores)
  - **Tertiary Consumers** – aka\_top Carnivores; eat secondary consumers (carnivores)
  - **Scavengers** – a special kind of consumer that eats dead animals at any level
  - **Detritivores** – a special kind of consumer that eats detritus, which is organic debris on or in the soil - i.e. leaves on the forest floor.
- **Decomposers** – An organism that breaks down the dead remains of other organisms into its raw ingredients (i.e. nutrients & minerals).

A food web  
Source: Quizlet.com



Producers & Consumers  
Source: Quizlet.com



Decomposer  
Source: quizlet.com



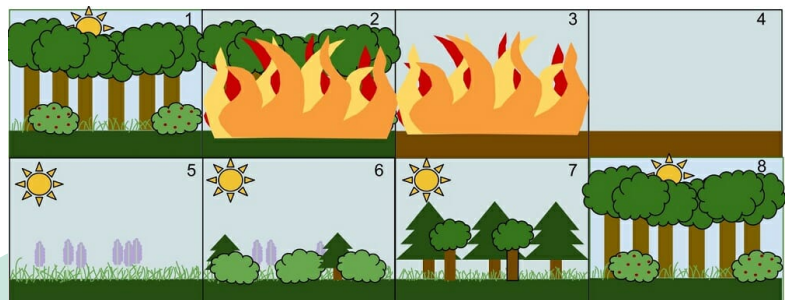
Scavenger  
Source: nationalgeographic.com



Detritivore  
Source: willyswilderness.org

**Succession** – The change in the living community over time that follows a disturbance in the environment, such as a wildfire, flood, tornado, or human activity.

- **Primary succession** – changes to an environment that was not previously inhabited by plants. Examples: volcanoes, rock, open water.
- **Secondary succession** – changes to an environment after the removal of an earlier community. Examples: a forest after clearcutting, a field after tilling, or an area after a fire. This is a much quicker process since there is already soil and neighboring communities to colonize it.



Secondary Succession  
Source: Biologydictionary.net



## Biomes

Biomes are the global regions which are described by their climate, fauna, and flora. The biome concept embraces the idea of community and of interaction among vegetation, animal populations, and soils. A biome (also called a biotic area) may be defined as a major region of distinctive plant and animal groups well adapted to the physical environment of its distribution area.

**Climate (predictable patterns of temperature & precipitation) determines where different biomes are found on the planet.**

Scientists differ on the exact number of biomes because similar biomes contain unique qualities that set them apart, but are not enough to distinguish them completely from the others. The major biomes and associated subdivisions are described below to help you better understand where our plants and animals live and why.

### Forest Biomes

Forest biomes represent the largest and most ecologically complex system. They contain a variety of trees, plants, animals, and microorganisms. Forests represent one-third of the earth's land surface, and are found on every continent, except Antarctica. The major attribute of the forest biome is its trees. Deforestation represents a great threat to the future of the earth's atmosphere, and the only way this can be avoided is by careful management of this resource.

- Tropical Rainforest – A very thick forest in the hot and humid tropics where there are constant temperatures, rainfall, seasons, and high biodiversity. (We will detail this more below.)
- Temperate Rainforest – A deciduous hardwood forest with moderate temperatures, ample rainfall, and distinct seasons.
- Chaparral – A tropical dry forest with small trees and bushes adapted to a moderate coastal climate.
- Taiga / Boreal Forest - A dry coniferous (evergreen) forest below the arctic and subarctic tundra regions.



**Forest**

Source: biologyonline.com

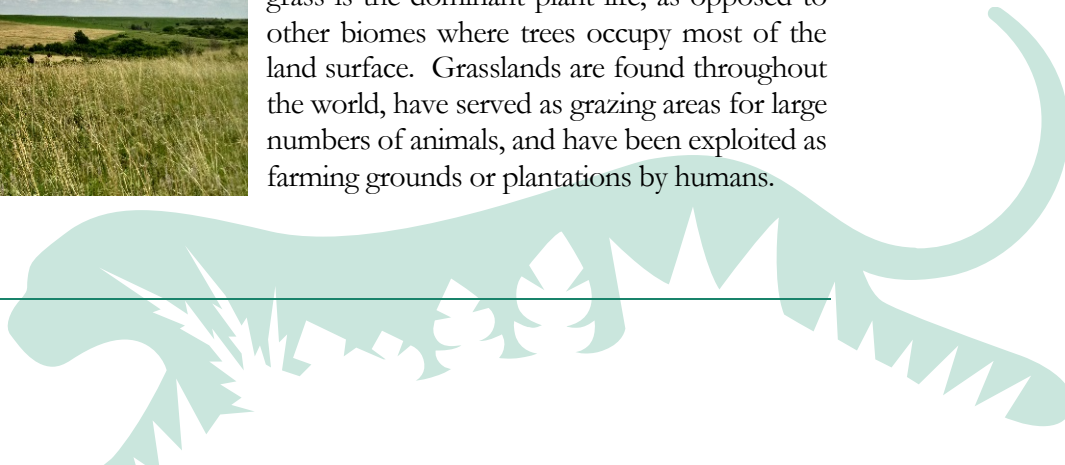


**Grassland**

Source: si.edu

### Grassland Biomes

Grassland biomes are unaltered areas where grass is the dominant plant life, as opposed to other biomes where trees occupy most of the land surface. Grasslands are found throughout the world, have served as grazing areas for large numbers of animals, and have been exploited as farming grounds or plantations by humans.





Source: biologyreference.com

### Desert Biomes

Deserts cover about one-fifth of the earth's surface, and are caused by extremely low rainfall. Several species of plants and animals thrive in this climate because they have been able to adapt to very little water availability and extreme temperature fluctuations. Examples include cold deserts, hot deserts, and coastal deserts.

### Tundra Biomes

Tundra, the ice desert, frozen prairie, the cold plains of the far north get their name from the Finnish word "tunturia", which means treeless land. The tundra biome is the coldest of all the terrestrial ecosystems. The soil is poor in nutrients, and has a permanently frozen sublayer called permafrost, which accounts for the sparse vegetation. However, the tundra is host to many plants and animals, and represents a testament to nature's adaptability. Examples include arctic and alpine (mountainous) tundra biomes.



**Tundra**

Source: study.com

### Aquatic Biomes

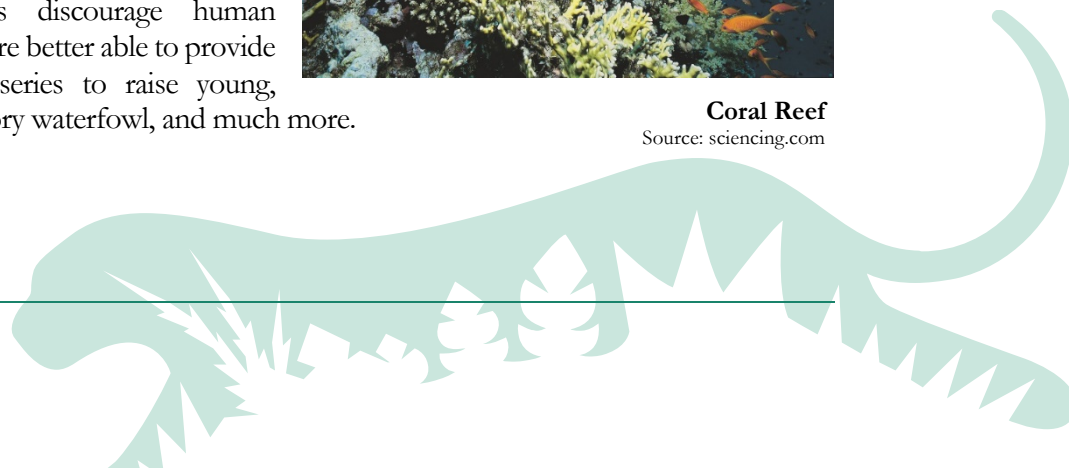
Water covers about three-quarters of the planet. Water ecosystems are the least understood because they are so vast and hard to access. The water in our vast aquatic landscape evaporates and provides rain, influencing much of our climate. From oceans to creeks, aquatic systems provide vast habitat to a variety of life forms, from algae to whales. Algae is a critical producer and foundation of the global food web, making sunlight energy available in a usable form to all other life. Algae also provides a great service, providing most of the oxygen and absorbing large amounts of carbon dioxide in the atmosphere.

Marine aquatic systems include oceans, estuaries, and saltwater wetlands. Oceans are the largest and most diverse of the ecosystems. Coral reefs in warm oceans are some of the most productive and biodiverse. Freshwater aquatic systems include rivers, lakes, and inland wetlands. Wetlands are biologically diverse ecosystems, teeming with life due to the high availability of nutrients, food, water, and shelter. Wetlands discourage human development, and so they are better able to provide wildlife with habitat, nurseries to raise young, resting grounds for migratory waterfowl, and much more.



**Coral Reef**

Source: sciencing.com



## Biome Study: Rainforests

Mesker Park Zoo has an extensive rainforest biome exhibit, an incredible man-made feat to have in the Midwestern US. To better prepare you to interpret in that part of the Zoo, we will provide a little bit more study about the rainforest.

### What is a Rainforest?

The tropical rainforest is the most ecologically rich of the world's biomes. Daylight in the tropical rainforest lasts for 12 hours, there is no winter, and it is consistently warm and wet. It is a biological hotspot, which means it contains a huge number of species per unit size. Although the vast majority of rainforests occur in the tropics, some occur as far north as Washington state.

Humans pose the biggest threat to the tropical rainforests, causing irreparable damage to the earth's atmosphere. Rainforests are being destroyed for commercial logging, agriculture, livestock, and development projects (dams, road systems, mining, and oil drilling). Approximately 80,000 acres of rainforest are destroyed each year, resulting in more than 50,000 species becoming extinct.

### Why are Rainforests so Important?

1. Rainforests help control the world's climate. The warm wet forest strongly influences the amount of moisture evaporating into the air. The clouds that cover the rainforest act as a cover around the equator to reflect the sun, mitigating temperature change. The rainforest canopies produce vast amounts of oxygen and absorb carbon dioxide. The rainforests are the "LUNGS" of the world.
2. The rainforests are by far the richest habitat on earth. There are as many as 30 million species of plants and animals or more than 50% of all life forms living in rainforests.
3. Indigenous peoples who have lived in rainforests for thousands of years know how early man lived and survived. They get everything they need to survive from the earth, and take only what they need – a lifestyle called subsistence. These people may be the only source of knowledge of how to live off the land, as most of it has yet to be written.
4. Rainforests are nature's pharmacy. In this vast reserve of natural resources are many answers to health ailments facing humankind. The U.S. National Cancer institute has identified 3,000 plants with anticancer properties, and 70% come from the rainforest.

5. Many food products are found in rainforests.

avocado

cola nut

bananas

corn syrup

brazil nuts

guava

allspice

ginger

cashews

kiwi fruit

cassava

macadamia nuts

chocolate

cinnamon

paprika

cayenne & black pepper

turmeric

passion fruit

coconuts

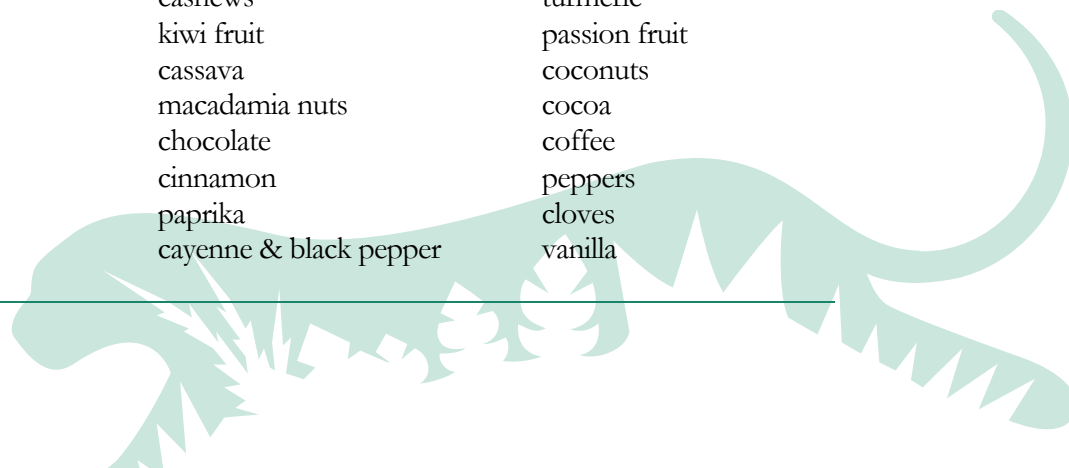
cocoa

coffee

peppers

cloves

vanilla



## Adaptation & Evolution

Millions of years of evolution has resulted in the astounding diversity of life forms on the planet today. However, many of those species are in danger of becoming extinct because they have not been able to adapt to the overwhelming human impacts to their environments. In order to understand why species are vulnerable to extinction, you should have a general understanding of how adaptation and evolution work.

All organisms must compete to survive. They must compete with their own kind, and all other forms of life looking to secure the same resources – food, water, nesting sites, mates, etc. Competition drives organisms to adapt to their always changing environment in order to survive. Those that adapt can evolve to become more fit for survival as a species.

- Competition – a natural phenomenon that occurs when two or more organisms actively demand or compete for the same natural resource in limited supply.
- Adaptation – an organism’s modification to its environment in order to improve its survival in that environment; a heritable physical or behavioral trait that improves its fitness for survival.
- Evolution – cumulative inherited change in a population of organisms through generations of time leading to the appearance of new characteristics or life forms; the change in the gene composition of a population over time.

Evolution is probably the single most misunderstood word in biology. I am sure you have heard people say (or said yourself) “I don’t believe in evolution.” It would be like saying “I don’t believe in change” or “I don’t believe in gravity.” It doesn’t matter whether or not you believe in change or gravity, they happen.

Changes happen in populations in response to changes in the environment every day. Green tree frogs adapt to global warming by expanding their range north, polar bears must change their feeding strategy due to melting oceanic ice, bacteria become resistant to frequently used antibiotics, and viruses mutate to increase their ability to spread from host to host.

A change may appear in an organism’s lifetime, but if they have a genetic foundation and are passed onto the next generations – that is evolution. Significant changes happen over MANY generations, which may be just months for a bacteria to form resistance to a drug, to tens of thousands of years for a reptile to develop modified scales called feathers.

### **A Word About Creationism:**

**Whether you believe Genesis is the literal truth, an elegant analogy, or one of many creation stories is immaterial. We teach the science of biology and we can only deal in the realm of the measurable and observable. Therefore, please leave your personal beliefs at home when discussing adaptation & evolution with the public.**

**We do not discuss the origin of life or the origin of species in our interpretation, so hopefully our messages and your personal beliefs will not be in conflict.**

Evolution is the genetic change in a population over time. Genes that are favorable for survival, allow the organism to survive and reproduce, passing those genes on to the offspring. These genes are “selected” by nature, and are propagated to become more frequent in the population. Genes that are not favorable for survival die out of the population. Hence, genetic characteristics of organisms in a population change over generations of time. This is called evolution by natural selection.

**Individuals do NOT evolve - only populations can evolve when genes are passed to the next generation.**

## Domestication

We have several domesticated plants and animals on exhibit or in our Ambassador Animal collection here at MPZ.

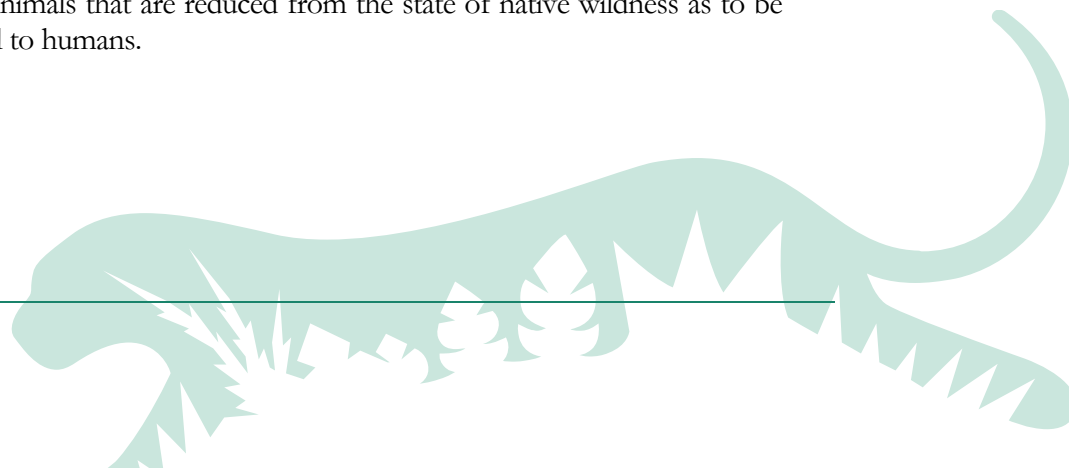
Domestication has resulted from artificial selection, a human-induced evolution that started about 10,000 to 12,000 years ago. Early humans supported themselves by hunting, fishing, and collecting (fruits, seeds, and plants). It is believed that a food supply shortage changed this method of survival. People settled down to one place and began the agriculture society. The cultivation of some wild seeds and domestication of some animals made these changes possible.

**The dog is considered the first domesticated animal.**

Certain animals had the temperament to remain close to humans. As a result, these animals received the benefits of a secure food supply and protection. Animals were domesticated for several reasons, including, food, companionship, religious reasons, labor, and for skins or furs (shelter and clothing). In addition, certain plants, seeds, and trees were domesticated for food, medicine, clothing (flax) and shelter.

### Levels of Domestication:

1. **Wild animals:** Those animals living in a natural state and not ordinarily tame or domesticated.
2. **Feral animals:** Animals or their descendants that have usually escaped domestication and become wild.
3. **Domestic animals:** Animals living near habitations of humans that are tame and useful to the lives of humans.
4. **Tame animals:** Animals that are reduced from the state of native wildness as to be tractable and useful to humans.



**Domestication Origins:**

Many animal species were domesticated and thrive today in the range of their wild ancestors, where they are adapted to ecological conditions. The first domesticated animals and their original environments are listed below:

Asia Grasslands		China/ India	Central Asia	N. America	S. American Highlands
Yak	Ox	Water buffalo	Horse	Turkey	Llama
Camel	Rooster	Chicken	Pig		Alpaca
Dog	Goat		Cattle		Musk duck
Zebu	Buffalo		Goat		
Horse			Ox		
Sheep			Donkey		

**Extinction**

Organisms that cannot adapt and evolve to changing conditions are likely to be in danger of extinction. Many species that live at our zoo are vulnerable, threatened, or endangered of extinction in the wild. These terms are defined for you below, in order of their severity of risk for the species.

- Least concern - a population of species that is not at risk of population decline.
- Vulnerable - a species likely to become endangered unless the circumstances that are threatening its survival and reproduction improve.
- Threatened – A declining population and likely to become endangered
- Endangered – In danger of becoming extinct
- Extinct – The disappearance of all members of a species from Earth
- Extirpated – Extinct in a geographical area (i.e. locally)

**Conservation status:**

The status of a species is based upon the research gathered by the International Union for Conservation of Nature and Natural Resources (IUCN) and published periodically in its Red List of Threatened Species™ (found online at [www.redlist.org](http://www.redlist.org)). The IUCN status bar on our exhibit signs at MPZ shows the risk of extinction that a species faces in the wild.



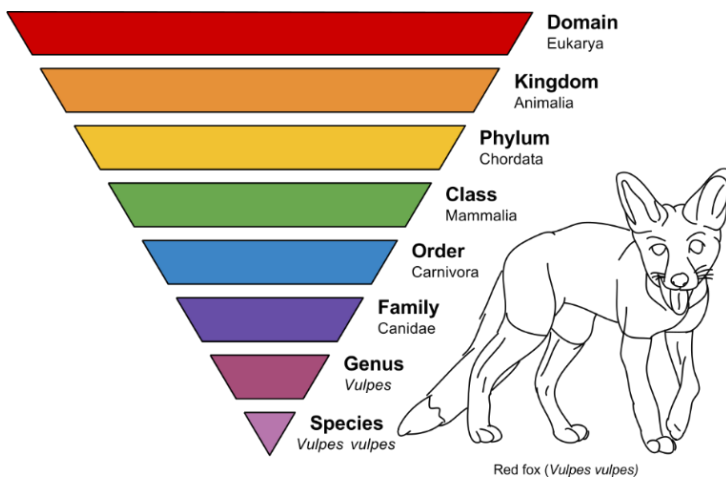
## Taxonomy

Our MPZ signs for plants and animals on exhibit include both common names and scientific names. Insight as to how they are named may be helpful for you as you interpret to guests.

### How do we name a species?

The field of naming and classifying organisms is called **taxonomy**. Organisms are named and classified based on their physical, developmental, and behavioral characteristics and their evolutionary relationship with other organisms. All species, living or extinct, are classified into groups with similar or closely related organisms, and then given names accordingly.

Organisms can have many common names, but those can differ between cultures, languages, and localities. So, organisms are also given a scientific name that is used universally by all scientists. Scientific names are Latin – a universally accepted language because it no longer has a home country. The scientific name is always a two part name written in italics, and contains both Genus and Species. For example, the common barred owl is *Strix varia*.

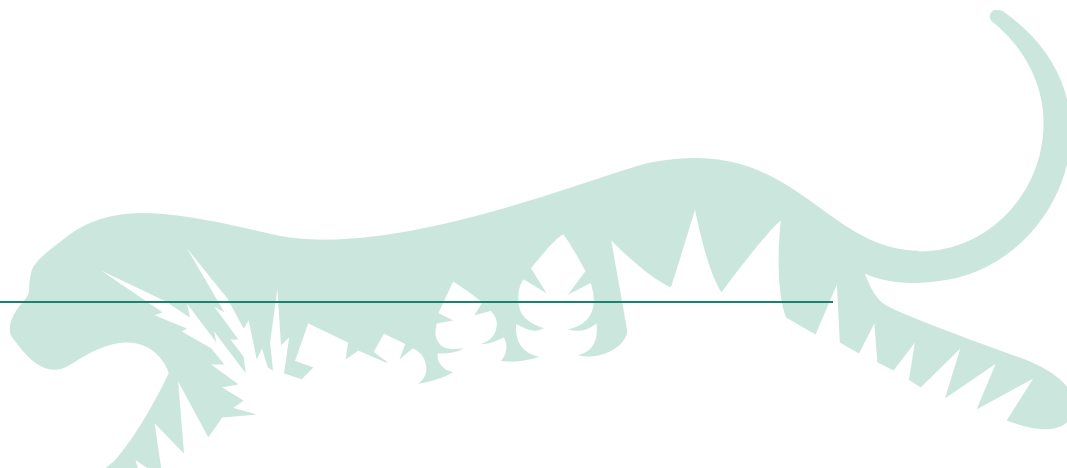


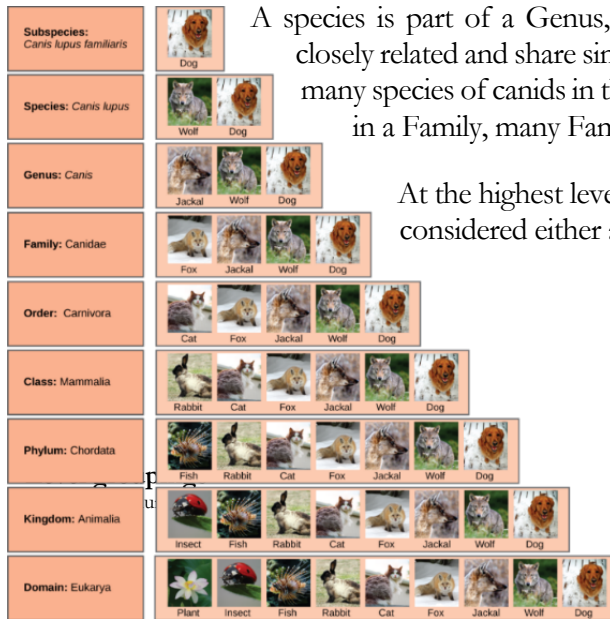
There are 8 levels of taxonomic classification, starting with species – the smallest and most specific group, up to domain - the largest, most inclusive group. The Genus and species is the most specific, and both are always given in naming an organism.

**Taxonomic Levels**  
<https://en.wikipedia.org/>

A good way to remember the order of the taxonomic levels is by creating or memorizing a memory aide for them. We have created one to help you:

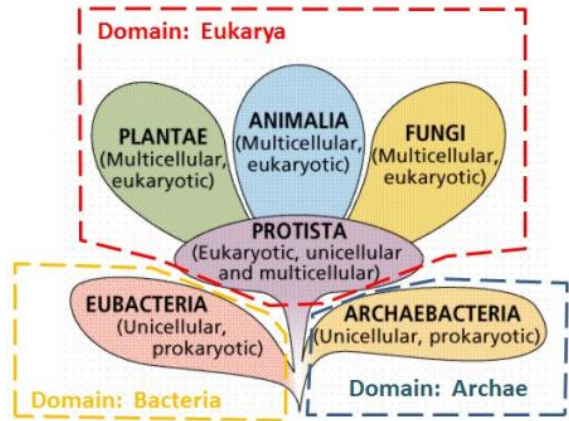
**D**o cents **K**now **P**retty **C**ool **O**bjective **F**acts and **G**ood **S**tories





A species is part of a Genus, and grouped with other species that are closely related and share similar characteristics. For example, there are many species of canids in the genus *Canis*. There are also many Genus in a Family, many Families in an Order, and so on.

At the highest levels, every living thing is basically considered either a bacteria, protist, fungi, plant, or animal.

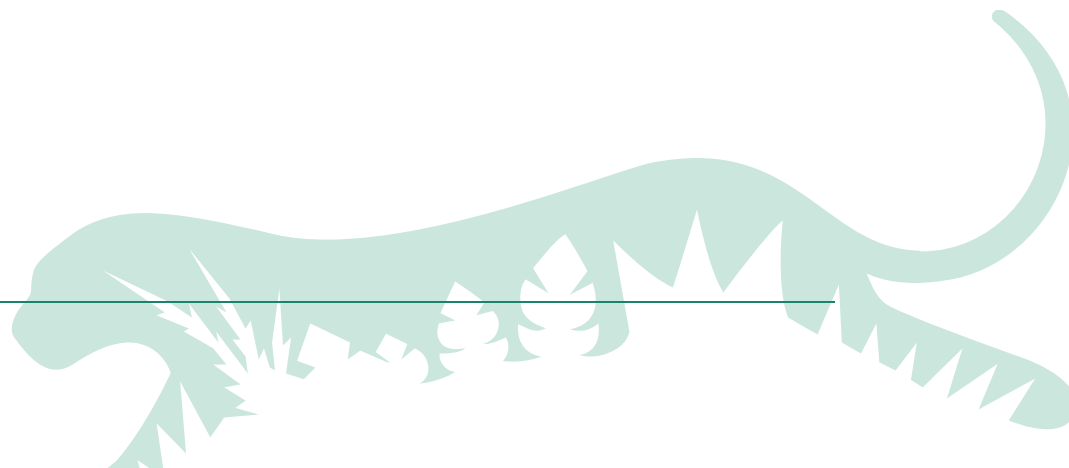


**Domains & Kingdoms**  
www.texasgateway.org

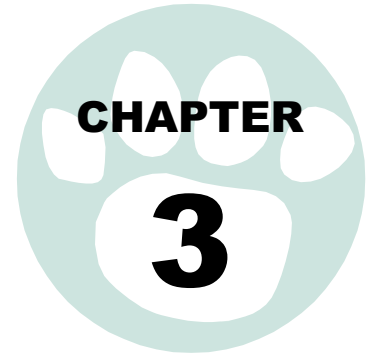
The taxonomic system is not static, but continues to change as new species are discovered and we gain more insight as to how species are related.

## Ecology Etc.

There are whole college courses on ecology, so this is just the tip of the iceberg. It is a fascinating topic, and we hope you will dive in to learn more as you volunteer at the Zoo.







# Interpretation

*Connecting people to the message.*

**E**ducation is teaching people about what we do. Interpretation is connecting people to care about what we do. It is the bridge between people knowing something, and people caring and doing something about it. Interpretation requires a human bridge between the information and the connection – it requires you.

Your job as a zooteen is to forge those connections with people. We want our public to not only understand the who, what, and where facts about our wildlife species, but more importantly we need them to feel connected to them, care about them, and take actions to protect them. We want to teach the public about the environmental issues we all face and the conservation actions that can solve problems, but we need them to feel like their actions matter and they can make a difference. We need this connection, because without it, we are just a walking encyclopedia of information with no consequence of impact.

In this chapter we will provide to you more insight into the practice of interpretation, and give you some tips to help you do it effectively.

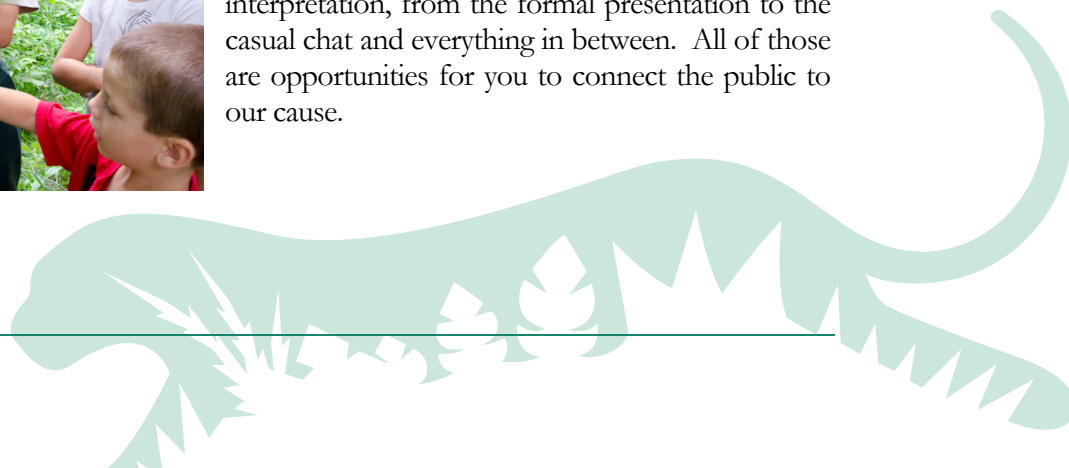
## What Is Interpretation?

The definition provided by the National Association for Interpretation is: “Interpretation is a communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource.” (<http://www.interpnet.com>, 2004)



Source: Lavendermagazine.com

Interpretation happens when you interact with guests to help them with questions, talk to them about an exhibit, share an ambassador animal with them, engage with them at a station somewhere in the Zoo, or when you conduct a program for a school group. All of those are forms of interpretation, from the formal presentation to the casual chat and everything in between. All of those are opportunities for you to connect the public to our cause.



## You as an Interpreter

What does this mean for you, a Zooteen? Regardless of what task you are engaged in at the Zoo, you may be the only person they interact with while they are here. The impression they have of you is the impression they will have of the zoo as a whole, and we all want that to be a positive one. So, how can you make a positive impression on them?

- \* Be positive, enthusiastic, courteous and friendly! Say “hello”, smile, eagerly engage, and converse with them in a positive manner.
- \* Make a great first impression! It may be their only human encounter at the Zoo.
- \* Promote the exciting things happening at the Zoo. There’s a lot to be proud of!
- \* Know your subject – Study, do research, talk to people who know the information and have experience. Don’t be afraid to say “I don’t know” and help the visitor find the answer.



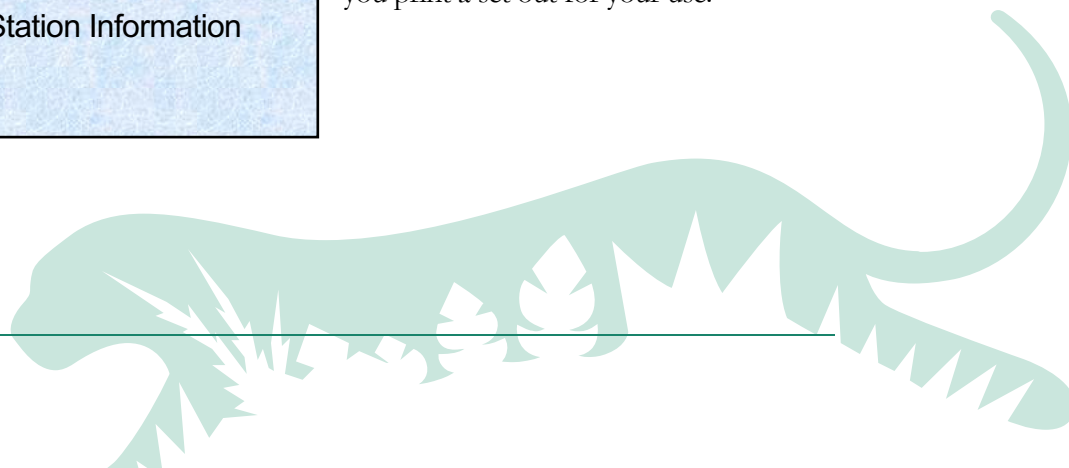
## Interpretative Resources

You should plan to seek out the knowledge necessary to make you a competent educator on any one topic before interpreting to the public. We are providing many interpretive resources for you to review or reference. Please read these as an extension of this volunteer manual to complete your Level 2 volunteer training. This content will be on your Level 2 course test.

### **MPZ Interpretive Resources:**

- Exhibit Animals List
- Biofact Interpretation Guidelines
- Contact Yard Guidelines
- Interpretation Station Information

These materials can be found on our website under “Volunteer Resources”, or you can find them onsite in the Docent resource bookshelf. The most up-to-date will always be available online, so check it for updates from time to time if you print a set out for your use.



## Effective Interpretation

An effective educator not only shares information with people, they also connect them to the topic, make them care about the message, and provoke them into action. Our goal is not just to teach about wildlife, it is to inspire people to care and act to save them. This is NOT an easy task. We must utilize interpretative techniques to make us more effective in achieving our mission.

The following are interpretation principles summarized from the 2020 AZA course Conservation Education: Effective Program Design. These principles are important to accomplish effective interpretation. Contemplate each one of these very carefully and let them sink in. Make it a goal to use them, and your efforts will have an impact.

### How do we reach our goal?

- Education is sharing information. Interpretation is **revelation** based upon the information.
- Education & interpretation should lead to **advocacy** and **inspire action**. We wish to influence daily actions, with the ultimate goal of **behavior change**.

### Why will people care?

- We must go beyond spewing information, and inspire them through profound experiences. People decide to connect and care when they have **profound moments**.
- You must **connect** the visitor to the topic or message to reach them. It must be **relevant** to them and their lives.
- We must teach the heart, not just the mind.

**Empathy** is vital to inspiring action.

- We must tell **stories**, not just facts.
- We must **feel** and **connect** to care.
- We must connect them to the **individual**. (Empathy does not work on the species or ecosystem level.)
- We need to use some **anthropomorphism**. (Naming an animal gives it a narrative and individualizes a species.)

### When will people act?

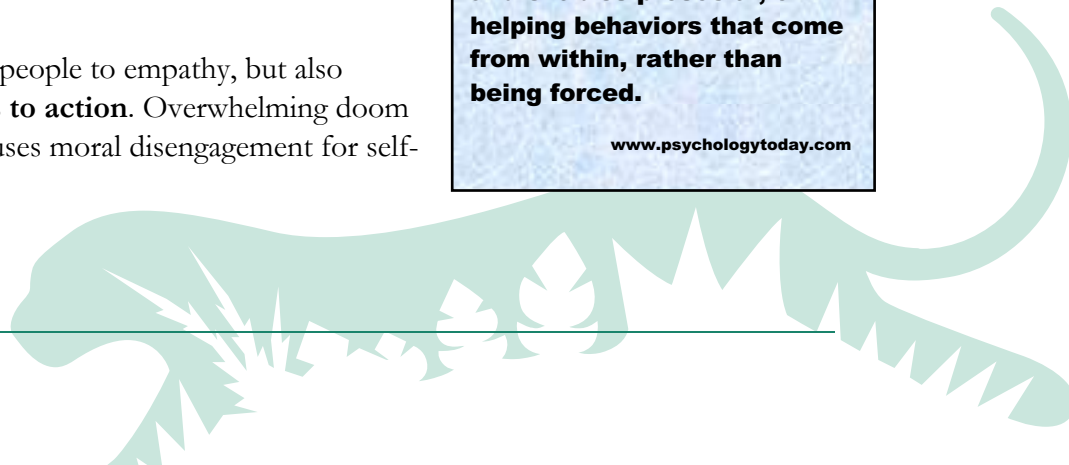
- We must lead people to empathy, but also **provide steps to action**. Overwhelming doom and gloom causes moral disengagement for self-preservation.

### **Empathy**

**is the ability to recognize, understand, and share the thoughts and feelings of another person, animal, or fictional character.**

**Developing empathy is crucial for establishing relationships and behaving compassionately. It involves experiencing another person's point of view, rather than just one's own, and enables prosocial, or helping behaviors that come from within, rather than being forced.**

[www.psychologytoday.com](http://www.psychologytoday.com)



### Our Interpretive Strategy

**Provide profound experiences that will promote connection to and empathy for nature, and will inspire actions to save wildlife and wild places.**



Source: <https://div.chslocal.com/>

## Interpreting to Your Audience

An interpreter must be able to connect to their audience to deliver a successful program. You will have to adapt your presentation to your audience to capture and keep their attention, engage them in your activities, and drive your message home.

### Best practices for connecting with any audience:

- Make eye contact & smile.
- Give them personal attention.
- Show enthusiasm.
- Find out what they already know.
- Ask questions.
- Use familiar examples & analogies.
- Make it personal & applicable to them.
- Involve them actively in the program.
- Use their interests as teachable moments.
- Talk to all ages at their level.

Each audience has its own characteristics and needs. You will want to be prepared for the diversity in your audience, and be ready to be flexible in how you deliver the program. You can customize the program “on the fly” as you are able to “read” the group for interests and abilities.

As you prepare your program for your audience, consider the developmental characteristics of children and the needs of special audiences using the charts below.

### How to Speak Kid

Preschoolers	Early Elementary	Upper Elementary	Mid / High School
3-4 year olds	5-7 year olds	8-11 year olds	12 years -adults
<i>Keep it short and active.</i>	<i>Make it apply to them.</i>	<i>Help them make the connection.</i>	<i>Let them lead the herd.</i>
<ul style="list-style-type: none"> <li>•Have a short attention span and can't sit still long.</li> <li>•Are egocentric – the world revolves around them. Follow their lead to engage their interests.</li> <li>•Must learn by doing. They learn through sensory exploration.</li> <li>•Are concrete thinkers - if they can't see it, touch it, or do it, it isn't real.</li> </ul>	<ul style="list-style-type: none"> <li>•Have slightly longer attention span.</li> <li>•Are still egocentric, the world still revolves around them but they have more context now.</li> <li>•They want to learn about what is close to home and are tuned into empathy.</li> <li>•They like to share what they've learned.</li> <li>•Still have difficulty with some abstract concepts, but are better at time, place, and distance.</li> </ul>	<ul style="list-style-type: none"> <li>•Want to dig in and are interested in learning about what applies to them.</li> <li>•Are able to use their real world experience to understand cause and effect relationships and form logical thoughts.</li> <li>•Have a much better understanding of abstract concepts.</li> <li>•Are able to classify things into series and groups, solve simple problems, and take simple actions.</li> </ul>	<ul style="list-style-type: none"> <li>•Want to be treated like young adults.</li> <li>•Question authority and scrutinize everything.</li> <li>•Are very concerned with what others think of them, want to belong and look “cool.”</li> <li>•Have a social consciousness and want to be part of a community and affect change.</li> <li>•Are able to understand abstract concepts, and predict cause and effect.</li> </ul>

## **Pointers**

### **Be A Role Model**

“Do as I say, not as I do.” This exhortation rarely works. You are the leader and the children will follow your example. Your attitude toward the environment will register clearly with them as you carefully replace a log rolled over for investigation, or pick up trash left by people there before you. How you feel about nature should and will come through to the children—when you stop suddenly to listen to a favorite bird song or pause to watch an ant laboring under a heavy load, or the way you handle the animal ambassador. Curiosity and caring are contagious.

### **Sense of Humor**

Children learn best when they’re having a good time: your playfulness and sense of humor will keep them on their toes. Children seem to relish corny jokes and ridiculous riddles—they will laugh at yours and feel great when you laugh at theirs. Keep some jokes up your sleeve for times when things drag a bit or children are restless. A witty remark can turn a mistake or a minor accident (like losing a shoe in the mud) into a comical situation. Laughter is good for the soul as well as for the brain.

### **Stage Fright**

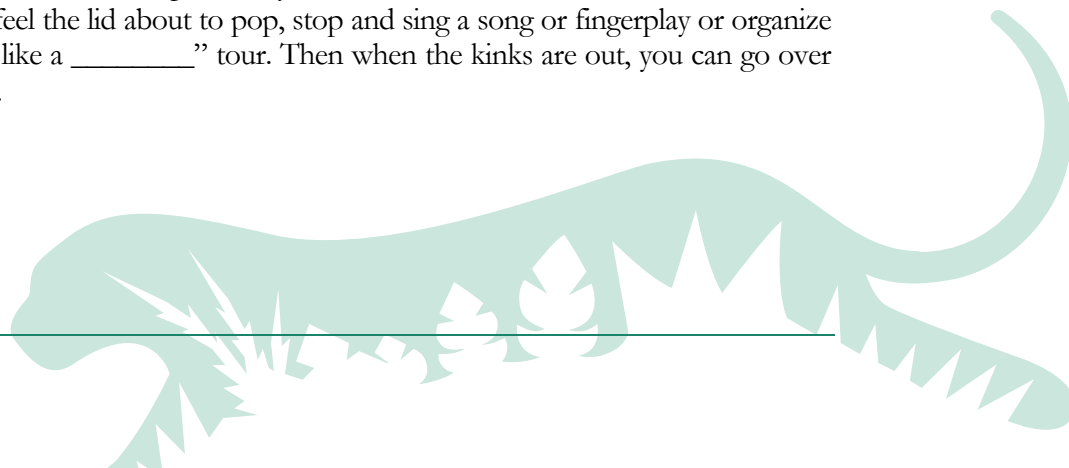
Most people are uncomfortable speaking in front of a group of people. The only way to lessen the fear and become more comfortable is to practice. Start small – focus on one animal at a time. You will then be talking about something you are very familiar with. When you start doing programs, remember that you are not alone. You and a partner are working together. You can split it up, so that you only have to talk for small periods of time. We promise: the more you do it, the easier it will become!

### **Expected Behavior**

As a volunteer, your job is to educate and entertain – not to discipline. We go into a program expecting the group’s chaperones to take care of any discipline issues that arise. However, if the adults are ignoring the program or problem, don’t be afraid to ask them for help. Teachers, parents, scout leaders and other chaperones are our allies in that they want their children to behave and gain from the experience. Besides, reasonable behavior translates into a lot more fun for everyone.

### **Running Wild**

Exuberance and pent-up energy, especially for children who have just emerged from a school bus or a classroom, can be channeled. Your plans may call for a sit-down discussion or a controlled scavenger hunt, but if you feel the lid about to pop, stop and sing a song or fingerplay or organize a red light game or a “hop like a \_\_\_\_\_” tour. Then when the kinks are out, you can go over your behavior expectations.



## Limiting Stories

Sometimes a question is asked because the child is curious to know the answer, but often questions are actually lengthy stories and anecdotes. Even carefully planned discussions with the children may open a Pandora's Box of tales from their own or their family's experiences. It feels mean to cut short a child's story, but children understand time limitations. If you explain there will not be enough time to meet or touch all the animals, they will be willing to move on. Tell the children they will have a chance to tell you after the program. Don't forget to give them a chance; often, however, they will have forgotten what they wanted to say.

## Noisy or rowdy audiences.

Sometimes the kids, or even the adults, are noisy and you can't hear yourself talk. Remind them that we can't get to all the exciting things in the program if they can't be attentive. Remind them that the animals need calm and quiet for the program. Ask them questions or give them something to do to interrupt and redirect their energies. Switch gears so they have to pay attention if they hope to keep up with the group. If they are restless, it is a sign they are bored and it is time to switch gears. Enlist teachers and chaperones to help with the children and the transitions.

## The {insert animal} pooped, peed, threw up, or farted loudly.

Never fails to get a laugh. Everybody does it. Brush yourself off (or not) move away from the smell and keep going. Hopefully your partner will start cleaning up while you finish your part of the talk. A sick animal is different, of course, but that is covered elsewhere.

## What if it goes horribly wrong?

One of these days it will go horribly wrong. When you combine public speaking, animals, and children you astronomically increase the odds that your plan will crash and burn. It happens to everyone, even people who carefully prepare, know their material, and have a plan. Don't worry about it. Pick yourself up, dust yourself off, and get back on that horse, so to speak. You at least learned what worked and what didn't, and you'll know better the next time. Lean on the staff Educators and the Docents. There will be a lot of experience and advice waiting there for you to gather from

## You can do this!

Being a good educator and interpreter takes time and experience. Use the information in this manual to build your knowledge of what and how to interpret to guests, and your experience will develop over time. Remember that you are a volunteer, that you will learn as you go, and that you will do the best you can. That is all that we can ask. In the end, you can and will help us in our mission of conservation & education, so we can ultimately save wild species and wild places. Thank you in advance for your contribution to this cause.

