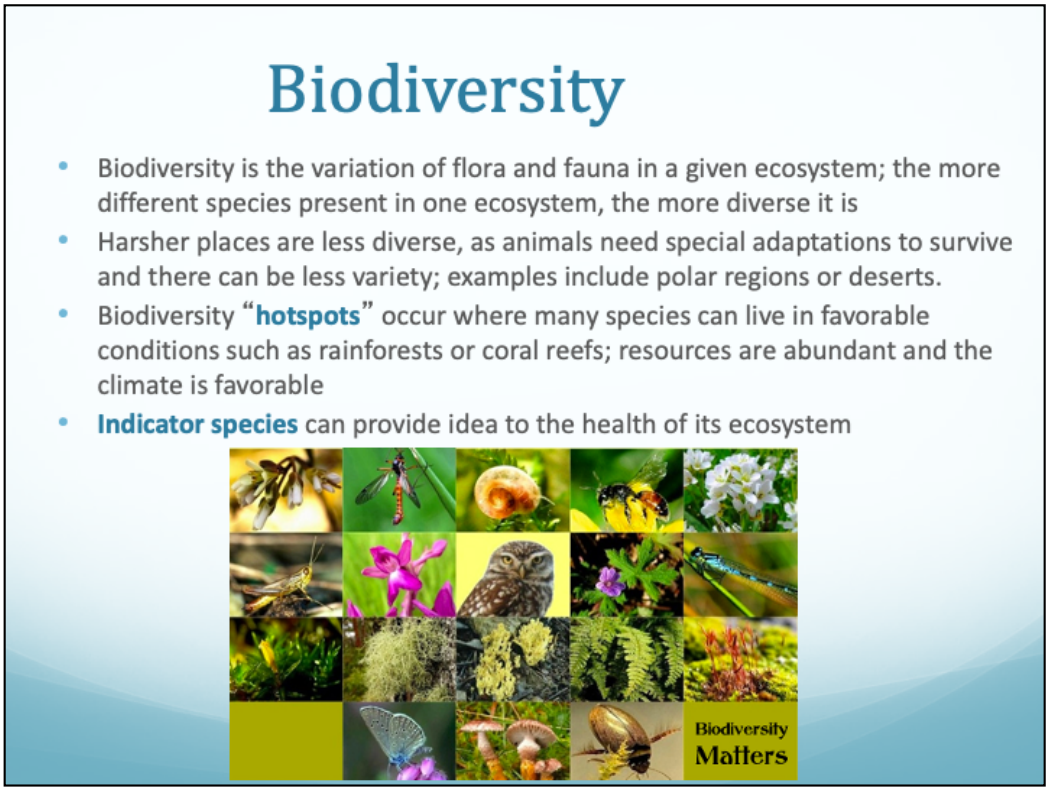
The Zoo is part of a growing community of conservation organizations, which includes the Association of Zoos and Aquariums (AZA) and institutions that participate in global conservation field work.



Biodiversity refers to all the different kinds of living organisms within a given area, including animals, plants, fungi and other living things. The greater the number of species and abundance of those species in an area, the greater is the biodiversity. Tropical regions support the greatest amount of biodiversity; temperate regions support less and regions of extreme cold and aridity support the least amount of biodiversity. Coral reefs support the greatest amount of aquatic biodiversity.

Ecosystems with greater biodiversity are stronger, more resilient and more resistant to the effects of disasters. Genetic diversity is another measure of biodiversity. Greater genetic diversity in plant and animals species can make them more resistant to diseases and allows species to better adapt to changes in their environment. Crops and livestock raised as monocultures lacking genetic diversity are susceptible to the catastrophic effects of disease. Lack of genetic diversity in the potato crops contributed to the spread of disease that wiped out most of the crop in Ireland in the 1800's, leading to the Irish potato famine. Diversity in the insect world is critical to maintaining a healthy balance of pollinators. Pollinators are vital to maintaining food webs that support agriculture, industry, sources of energy, pharmaceuticals, etc.

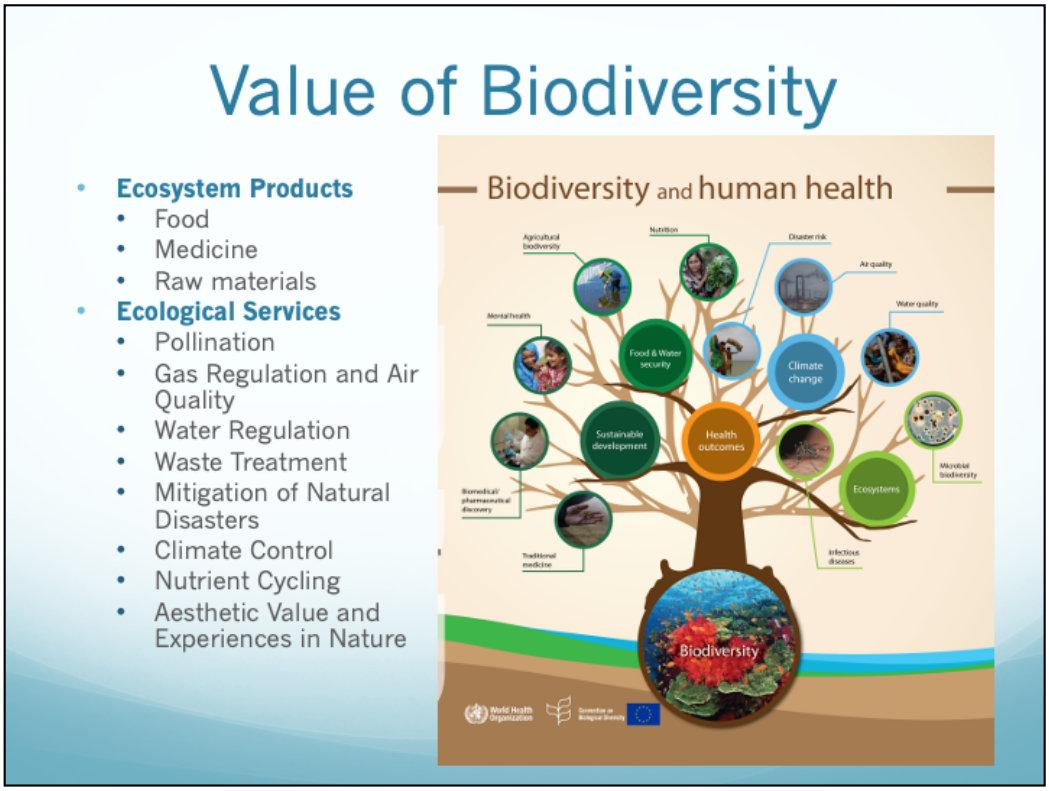
Biodiversity "hotspots" are distinct locations around the world rich in biodiversity, but threatened by extreme habitat loss. To qualify the area must contain at least 1500 endemic plants and have suffered a 70% loss of original habitat. There are 36 of these regions around the world. They occupy only 3% of the Earth's land surface, but account for 50% of the world's plant species and 42% of terrestrial vertebrate species. Continued habitat loss in these areas threatens life on Earth as we know it.

An **indicator species** serves as a measure of the condition or health of an environment and reflects the quality of the overall state of an ecosystem. Frogs are considered indicator species because their thin skin makes them very susceptible to changes in their environment, including increased toxic chemicals, radiation and diseases.

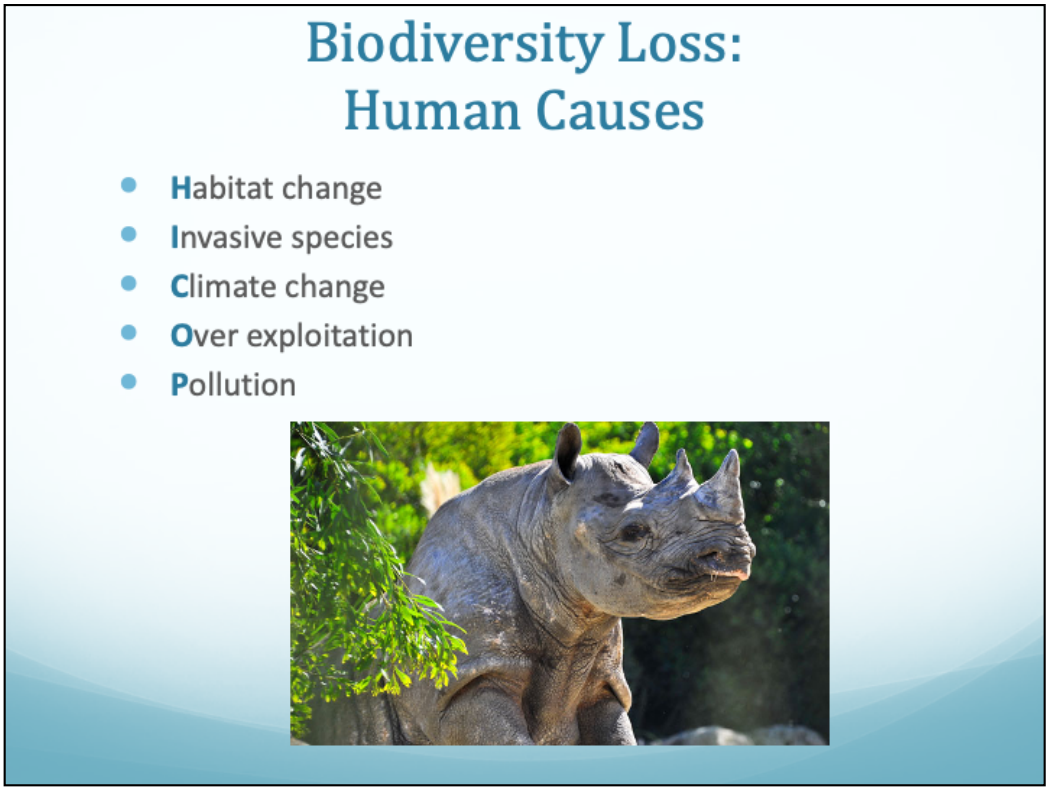
Variability is very important for species adaptation to changes, disease survival and resistance to catastrophic events. If living things are too alike, they become susceptible to extinction. Variety allows some individuals to survive and adapt.

Species diversity exists when there are many different species present in one ecosystem; **genetic diversity** exists if there is a variable amount of genetic representation among a species and not all individuals are closely related; and **ecosystem diversity** exists when there are a wide range of habitats or biomes in place over an area. To preserve diversity, you need to preserve all three. If you save areas where biodiversity is greatest (**biodiversity hotspots**), then you save most of the species.

California is the most biologically diverse state in the nation with the highest number of plant and animal species that are found nowhere else in the world. From the giant sequoia to the California poppy and the gray whale to the San Francisco garter snake, our state is home to thousands of species of plants and hundreds of animals – many of which are reptiles, amphibians, and insects.



Biodiversity has a fundamental value to humans because we are so dependent on it for our cultural, economic, and environmental well-being. Man is dependent on biodiversity for products such as wood, food, fibers to make paper, resins, chemical organic products, medicine and cosmetics. Humankind derives considerable benefits not only from the products of biodiversity but also from services of ecological systems, such as water purification, climate regulation, erosion control, and pollination. The term 'ecosystem services' is defined as 'the benefits people obtain from ecosystems', both natural and managed. Biodiversity boosts ecosystem productivity where each species, no matter how small, all have an important role to play. Some argue that it is our moral responsibility to preserve the Earth's incredible diversity for the next generation.



Human activities are mostly responsible for the present extinction rates. Human activities are causing changes at a faster rate than natural factors and faster than animal ability to adapt and therefore are causing higher extinction rates. Increased human population encroaches on habitats, destroying, fragmenting and degrading them. Roads & development cut habitats up into fragments, thus eliminating access to the entire habitat. There is a greater demand for natural resources. Agriculture, oil and gas exploration, commercial development or water diversion all change the environment which, as a result, may no longer provide the animals with needed food, water, cover, and places to raise young.

Introduced nonnative species may invade foreign territory and disrupt the habitat. They use resources that the other species depend on. Lacking natural predators in its new environment, too often the introduced species will out compete the native species and take over in the habitat.

Pollution and climate change are both having profound effects on animal populations. Pollutants such as untreated sewage, mining waste, acid rain, fertilizers and pesticides concentrate in waterways and end up in the food web. Climate change can alter or eliminate access to needed resources, including water and food.

Finally, over-hunting and fishing are causing species to decline in number faster than they can regenerate.

A good way to remember this is the mnemonic – **HICOP**; **H**abitat change, **I**nvasive species (introduction of non-native species), **C**limate change, **O**ver-consumption or exploitation and **P**ollution.

A plant or animal that plays a unique or critical role in the way an ecosystem functions and whose removal would result in dramatic, cascading changes to the ecosystem is termed a **keystone species.** The keystone species might be a dominant predator, a pollinator, an animal or plant that supplies food to other species, an organism that acts as a home to other species, etc. Elimination of the keystone species might result in the collapse of the entire ecosystem.

The **IUCN Red List of Threatened Species** is compiled by the International Union for the Conservation of Nature and Natural Resource (**IUCN**). This list is the world's most comprehensive inventory of the global conservation status of biological species and serves as an important tool in the management of wildlife. Frequently updated, it provides a comprehensive list of animals, giving their conservation status, distribution, population and habitat information as well as current and proposed conservation measures.

The Red List defines the severity and specific causes of a species' threat of extinction. The Red List establishes a baseline from which to monitor the change in status of species and provides a global context for the establishment of conservation priorities at the local level.

Threatened species of the IUCN Red List are referred to as:

Vulnerable: Taxa believed likely to move into the endangered category in the near future if the causal factors continue operating.

Endangered: Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating.

Critically Endangered: Taxa in extremely high risk of extinction in the wild.

IUCN supports work to save wildlife on both the national and international levels.

You can go to their website: www.iucn.org

International trade contributes to endangerment of many animals.

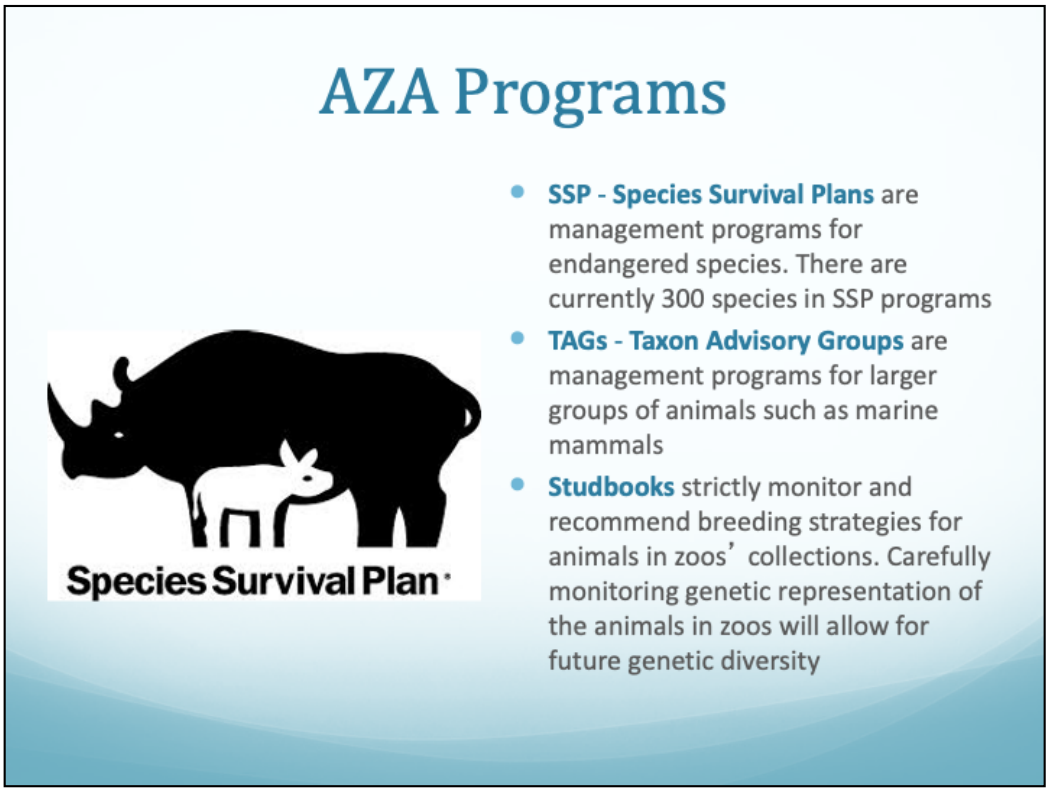
CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international trade treaty created by the United Nations whose purpose is to protect endangered animals and plants.. Its mission is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES provides framework for participation by governments in regulating trade in wildlife specimens and conservation efforts; governments adopt their own laws at the national level enforcing conservation. CITES also provides control of trade for selected species considered endangered.

Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.

Appendix II includes species not necessarily threatened with extinction, but whose trade must be controlled in order to avoid utilization incompatible with their survival.

Appendix III Identifies species that are protected in at least one country, and identifies countries that have requested assistance in controlling animal trade.

You can go to their website: www.cites.org



The Association of Zoos and Aquariums (AZA) is a non-profit organization that represents over 200 member facilities in North America and is dedicated to the advancement of conservation, education, science and recreation. It serves as an accrediting body for member zoos and aquariums, insuring they meet required standards of animal care. Member institutions are evaluated every 5 years in order to maintain accreditation.

The AZA requires its members to participate in conservation programs including SSPs and TAGs. Consequently zoos are encouraged to make conservation a significant part of their operations.

SSP - The Species Survival Plan was developed to insure the survival of selected species in zoos and aquariums which are endangered in the wild. SSP programs develop specific breeding and transfer plans (transfer of animals from one facility to another) that identify population management goals and make recommendations to ensure a sustainable, healthy and genetically diverse species population. SSP managed species at the zoo include the mandrill, North American river otter, eight lemur species, snow leopard, giraffe, lion, black and white colobus, Sumatran tiger, black rhino, Asian rhino, chimpanzee, western lowland gorilla, Francois langur, great hornbill, and West African crowned crane.

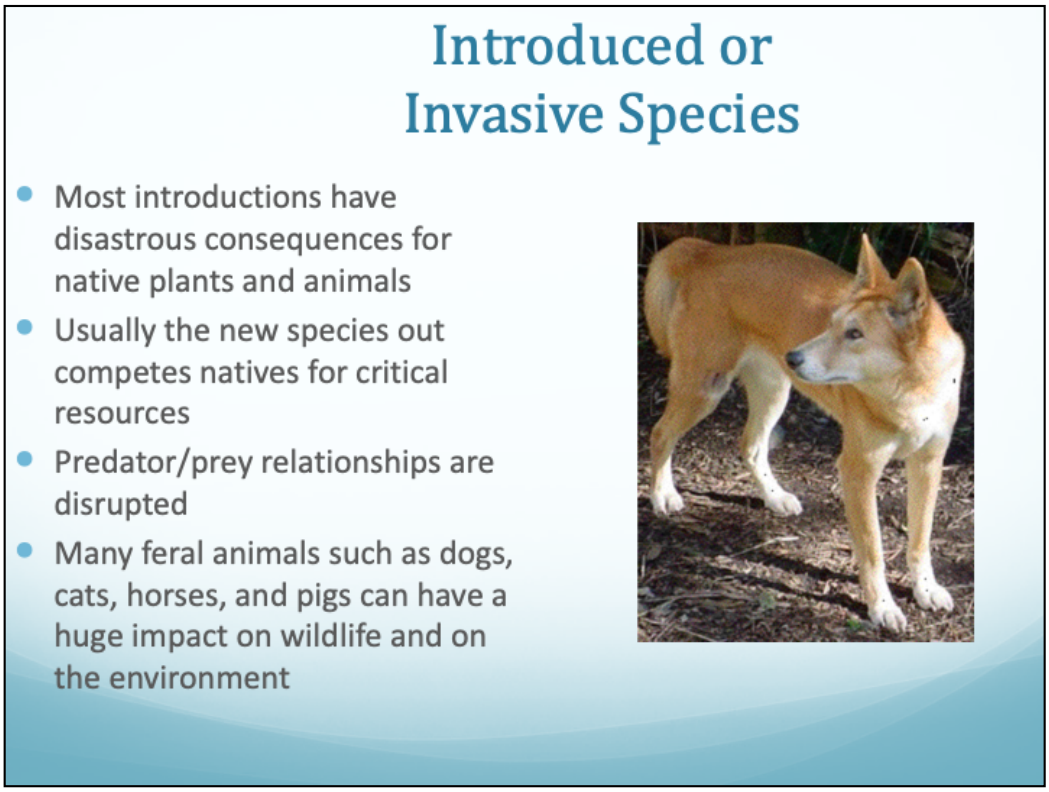
AZA Taxon Advisory Groups or TAGs examine the conservation needs of an entire taxa and develop plans for population management and conservation based on the needs of the species and the accredited AZA institutions.

AZA Stud Books are documents that trace the pedigree and demographic history of each individual in a population species. They track and manage individual animal care for AZA accredited institutions.

The Association of Zoos and Aquariums is assisting its members in collaborating on global conservation initiatives through **Saving Animals From Extinction** (**SAFE**). The Mission of SAFE is to combine the power of zoo and aquarium visitors with the resources and collective expertise of AZA members and partners to save animals from extinction. SAFE's vision is to save the most vulnerable wildlife species from extinction and protecting them for future generations. A key goal of SAFE is to increase public participation and public awareness of the need for conservation efforts and engage the public in those efforts.

In 2015, AZA SAFE focused on 10 species; included in these 10 species are species the Zoo has: western pond turtle, black rhino, and the western lowland gorilla.

The western pond turtle is the only native aquatic turtle on the west coast. The western pond turtles are hatched and raised at the Zoo and then released into their natal waters in Lake County. This project focuses on the threats and issues within its range.



Another way humans have influenced animals is by introducing species to non-native habitats. The introduction of non-native species can be deliberate or accidental. Plants or animals introduced deliberately have intended functions including pest control, provision of hunting game, a fur source or pet supply, agricultural planting for economic gain, or for ornamental qualities. Accidental introduction might include organisms unknowingly brought in by ships and/or their cargo.

The introductions can have varied effects. In some cases they are either beneficial, such as some agricultural plants or neutral. In some cases, though, the introductions have negative consequences for native plants and animals. The new species may out compete the native species by using critical resources available in an ecosystem. These introduced species may not have any natural predators to keep their numbers in balance. The predator/prey relationships may become out of balance; new predators can disrupt the delicate balance and species can be wiped out by predation. Many feral animals such as dogs, cats, horses and pigs can have a huge impact on wildlife and on the environment.

Australia is a prime example with rats and mice, dingoes and rabbits adversely affecting both native marsupial and bird populations. Plants and animals native to New Zealand have suffered even more devastating effects because of the introduction of non-native species, including rats, possums, stoats and weasels. The New Zealand government has embarked on an ambitious plan to eradicate all non-native species by 2050.

In Africa, forest is often referred to as 'the bush', thus wildlife and the meat derived from it is referred to as '**bushmeat**'. Traditionally, bushmeat has always been utilized by local villagers to feed their families, a sustainable, subsistence practice. However, with our increasingly globalized world, the demand for bushmeat in urbanized populations of Africa and around the world has created an unprecedented crisis for many critically endangered species, including chimpanzees and other great apes. The illegal hunting and selling of bushmeat has become a lucrative business for some and a way to subsidize meager income for others.

This threat to wildlife is a crisis because it is rapidly expanding to countries and species which were previously not at risk, largely due to an increase in commercial logging, with an infrastructure of roads and trucks that links forests and hunters to cities and consumers.

The bushmeat crisis is a human tragedy as well: the loss of wildlife threatens the livelihoods and food security of indigenous and rural populations most depend on wildlife as a staple or supplement to their diet. Bushmeat consumption is increasingly linked to deadly diseases like HIV/AIDS, Ebola, and Foot and Mouth disease.

Large mammals are the preferred game and face the first wave of local extinctions -- duikers, elephant, great apes. As large mammals become scarce, hunters turn to monkeys, reptiles and rodents, until a new ecological balance is struck.

Addressing the bushmeat crisis requires a diversity of approaches, from conducting anti-poaching operations to educating children about the importance of biodiversity and sustainability. It also requires new approaches to finding ways that the local populations can secure sustainable sources of income, food and growth.

Conservation has to be integrated with the culture and needs of the people where it is being done. The native people know their forests but need training, leadership, and funding. If conservation could bring cash flow, the people would see the value of protecting wildlife, and if they were given the means to pursue an education in conservation, they would gain prestige and their local expertise would benefit their conservation effort.

Illegal wildlife trade involves the unlawful harvest and trade of live animals and plants or parts or products derived from them. Examples of products include skins, leather goods, souvenirs, food and traditional medicine as well as pets. This wildlife market is one of the most immediate threats to animals in many parts of the world.

The primary motivating factor for wildlife traders is economic. Illegal wildlife trade is driven by high profit margins and often the high prices that are paid for rare species. The wildlife trade is often unsustainable, harming wild populations of animals and plants and pushing them toward extinction. Interpol estimated the illegal wildlife trade is valued at between $10 billion to $20 billion per year, but because the illegal trade is done covertly, its actual value is difficult to assess. It is less difficult to assess its effect on the species involved. It is difficult to enforce or create protective laws in developing countries where funding for equipment, training and enforcement is scarce.

Efforts to stop or reduce illegal wildlife trade include hiring and training of rangers who protect wildlife, enforcing laws in existence that prohibit the trade and working with local and national governments to pass new laws that provide or increase protection. It is also critical to address the issue of communities struggling to overcome poverty and find ways they can use wildlife sustainably and to their benefit. Lastly, it is very important to persuade consumers to make informed choices when buying wildlife based products and to promote sustainable, legal practices with shopkeepers, manufacturers and suppliers.

CITES (**Convention on International Trade in Endangered Species of Wild Fauna and Flora**) is an agreement of nations that monitors international trade on species protected by it. (see CITES slide #5)

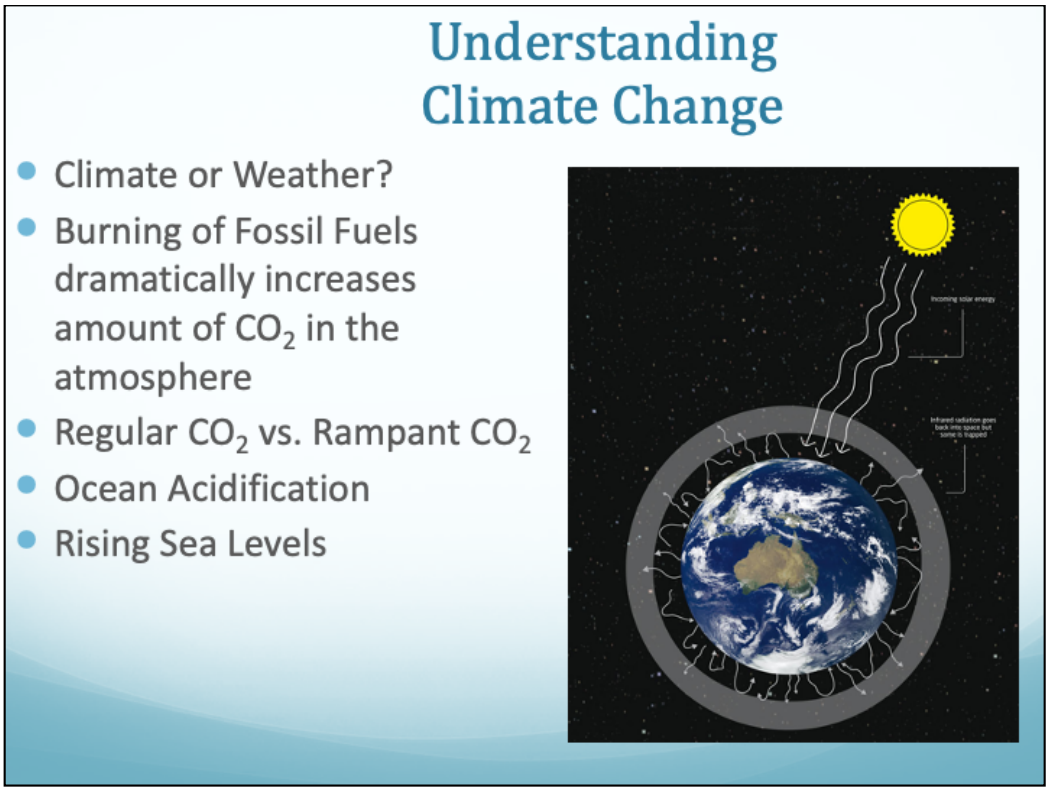
Palm oil is an edible plant oil which has become a common ingredient in many consumer products. Worldwide demand for palm oil has increased sharply over the last few years. Today, around 50 percent of the goods we use every day contain palm oil, from processed foods to candles, cosmetics and "biofuels". It has the highest yield of any oil crop and is the cheapest vegetable oil to produce and refine.

Though palm oil plantations represent a limited proportion of global deforestation in terms of area, they are a disproportionately large source of global warming emissions because they are often established on land converted from swamp forests. When these wetlands are drained, their carbon-rich peaty soils decay, releasing large amounts of both carbon dioxide and methane. Thus the expansion of plantations onto peat soils is an important source of the emissions that cause global climate change. The wide scale burning of fields and forests is a clearing practice that also releases large amounts of pollutants and carbon into the atmosphere. It must be noted that the forests that have been cleared to make way for palm oil plantations represent critical sources of carbon capturing – thus doubling the harmful effect.

Rain forest destruction that results in habitat loss is devastating to numerous animal species, making some critically endangered. Examples include the orangutan, Sumatran tiger and Sumatran rhino, all of whom have lost a very large percentage of habitat area. Over 80% of all palm oil comes from Southeast Asia.

Palm oil trees can be grown sustainably. Several organizations, including the U.N. and the RSPO (Roundtable of Sustainable Palm Oil) are funding palm oil farmers who agree to practice sustainable growing and clearing practices. These efforts along with support from consumers can have positive impacts on the problem. Organized consumers speaking with their pocketbooks can make a big impact.

Keep your message to Zoo visitors simple - Using the palm oil production and deforestation crisis as an example: You can help save orangutans from extinction just by buying the right brands at the grocery store. They should look for the RSPO or other labeling indicating the product contains sustainably produced palm oil and boycott products without this labeling.



The terms climate and weather are often confused, but the big difference is time scale. Both these terms deal with factors such as wind, temperature, pressure, precipitation, and humidity, but weather is what happens every day. Climate is the long-term average (30 years) of weather.

Climate change is primarily a problem of too much carbon dioxide (CO_2) in the atmosphere. Plants photosynthesize by using CO_2, which is exhaled by animals during respiration. This **regular** CO_2 is part of normal life processes. The levels of CO_2 during these natural processes are in balance. There are other gases (i.e. methane) that are better at trapping heat but are less abundant in the atmosphere. Most importantly, CO_2 remains longer in the atmosphere. Methane remains ~10-12 years whereas the removal of CO_2 by natural processes will take thousands of years.

Carbon overload is caused mainly when we burn fossil fuels like coal, oil and gas or cut down and burn forests; burning of fossil fuels produces **rampant CO_2**. Sunlight passes through the atmosphere and warms the earth's surface. Some of this heat is radiated back to space. Most of this outgoing heat is absorbed by this rampant CO_2 and re-emitted in all directions, warming the surface of the Earth and the lower atmosphere. The build up of rampant CO_2 acts like a "**heat-trapping blanket**" that traps heat emanating from Earth; the more rampant CO_2, the thicker the blanket, thus more heat is trapped resulting in a greater warming effect. This "blanket effect" disrupts climates world wide.

This rampant CO_2 not only builds up in the atmosphere but also dissolves into the oceans resulting in a decrease of the pH and an increase in acidity. This changes the chemistry of the ocean and causes "**osteoporosis of the sea**", which prevents animals from building and maintaining the protective shells they need to survive; the change in chemistry is reducing the amount of calcium carbonate available to build strong skeletons and shells.

Melting of ice sheets and glaciers, combined with the thermal expansion of seawater as the oceans warm, is causing seal level to rise. As the oceans get warmer, the water expands (**thermal expansion**); about half of the past century's rise in sea level is attributable to warmer oceans simply occupying more space. With the persistently higher atmospheric temperatures, the land based glaciers are melting at an accelerated pace and receding, with the runoff water landing in the ocean, causing sea levels to rise even further. When sea levels rise rapidly, as they have been doing, even a small increase can have devastating effects on coastal habitats. As seawater reaches farther inland, it can cause destructive erosion, flooding of wetlands, contamination of aquifers and agricultural soils, and lost habitat for fish, birds, and plants. The ice-dependent and cold-adapted mammals are also losing their habitat. Sea ice is as important of polar ecosystems as soil is to a forest.

Global climate change has already had observable effects on the environment. In addition to the glaciers shrinking and the sea levels rising, ice on rivers and lakes is breaking up earlier, plant and animal ranges have shifted and trees are flowering sooner. Even though the Earth's average temperature has increased about one degree Fahrenheit during the 20th century, small changes in temperature correspond to enormous changes in the environment.

When talking to a visitor about climate change, instill in them the answers to: "**Why should we care?**" "**How does it work**?" and finally "**How do we improve the situation?**"

Throughout the Zoo you will find examples of green practices, including recycling, composting, electric vehicle charging stations, water refilling stations and a garden – Greenie's Conservation Corner – that demonstrates energy and water conservation and sustainable growing practices. Exhibits around the Zoo feature conservation messaging in both exhibit design and graphics.

The Zoo supports various local conservation initiatives and programs. These include creating successful breeding programs for bald eagles and condors and participation in the San Francisco Seafood Watch Alliance. Partnering with the Presidio Trust, Zoo teen and adult volunteers successfully completed a project to rid the Presidio's Mountain Lake of introduced invasive species and then restoring the native western pond turtle and the Pacific chorus frog to their natural habitat in the lake. In 2016, the Zoo initiated a project to capture and breed the San Francisco forktail damselfly, a local endemic species at high risk of extinction. The damselflies are released into the Mountain Lake area.

On the state level, the Zoo has been instrumental in working jointly with the National Park Service to establish and maintain a project to reintroduce California red-legged frogs, Yosemite toads and western pond turtles to Yosemite Valley with the goal of having self-sustaining populations there by 2020. The Zoo also initiated a program to help sustain the population of western pond turtles in Lake County.

The Zoo has worked with other agencies to re-introduce the mountain yellow-legged frog to its northern and central Sierra Nevada home range. This amphibian fell victim to disease and to predation by a non-native introduced trout species. Because amphibian species around the world are disappearing at an alarming rate, this project took on extra importance. Given a head start at the Zoo, the frogs are released into selected lakes and are now present in the Tahoe Basin for the first time in 40 years!

The California Conservation Corridor highlights some of the ways the Zoo is helping save species and protect California's wild places. California is the most biologically diverse state in the nation, with the highest number of plant and animal species that are found nowhere else in the world. From the giant sequoia to the California poppy and the gray whale to the San Francisco garter snake, our state is home to thousands of species of plants and hundreds of animals – many of which are reptiles, amphibians, and insects. All of California's species matter to their ecological communities and our state's identity. This is a great place to talk about conservation to zoo visitors.

The California Conservation Corridor teaches the visitor more about how the Zoo is helping to save species and what they can do to make an impact. The species that are highlighted are the forktail damselfly, San Francisco Garter Snake, red-legged frog and the western Pond turtle. Why do they matter? Visit the exhibit and find out. The docent program helped fund this exhibit.

On the international level the Zoo participates in global conservation field work that includes among others the Dian Fossey Gorilla Fund, the Jane Goodall Institute, the International Rhino Foundation and the Snow Leopard Conservancy. The Zoo participates in **Species Survival Plans** (**SSPs**). For a complete list of conservation information and organizations supported by the Zoo, visit sfzoo.org.

The Zoo's Conservation Partnership Program aims to develop a small number of long-term partnerships with other conservation organizations that will draw on the Zoo's intellectual resources. The Gorongosa Lion Project in Gorongosa National Park, Mozambique provides critical support for the protection of lions and other wildlife in a newly revitalized park following years of political turmoil and war.

Along with over 100 other institutions, the Zoo is actively supporting the 96 Elephants Campaign, so named in recognition of the fact that 96 elephants are killed every day. The campaign focuses on stopping the poaching of the animals and stopping the trafficking and demand for ivory.

Recent legislation on the state and national levels banning the commercial ivory trade is promising, but most be evaluated in terms of its short and long term impact on the trade and the demand for ivory.

The Zoo is also working with organizations to slow and hopefully halt the sale and trade of rhino horn, which has more commercial value per ounce than does gold. Currently two rhinos per day are poached in Africa and few rhinos survive outside of national parks and sanctuaries. We can encourage guests to actively support legislation

As a part of a growing community of conservation organizations, the Zoo participates in global conservation field work and supports conservation organizations financially. It also offers staff various opportunities to link with researchers, including Earthwatch Projects and attendance at conferences such as the **Wildlife Conservation Network** (**WCN**) Expo.

When communicating climate change or conservation issues, you do not want to present a "doom or gloom" situation; start with what is at stake to help stir visitors into civic action. For more effective message on why conservation is important, try beginning your conversation with one of two values, protection or responsible management:

- **Protection**: It is crucial for us to protect people, and the places we all depend on, from being harmed by the issues facing our environment.
- **Responsible Management**: By taking practical steps to address problems facing our environment today, we are acting in the best interest of future generations.

Conservation messages should be positive, relevant and appropriate to the age of the audience. A message should move people from their entry point toward a desired behavior.

- **Provoke:** Grab on to your audience by stimulating their thoughts, curiosity and feelings.
- **Relate:** Help the visitor relate the importance of our message(s) to their everyday lives.
- **Reveal**: Give visitors the answer or the "big picture"; explain the benefit of doing what you ask and connect that benefit to something the target audience wants.

Conservation messages should focus on one of the following goals: illustrating the impact humans have on the environment, fostering feelings of empathy toward and appreciation of other species, and conveying how individuals can help protect animals and the environment. How information is presented matters. Explaining and illustrating cause/effect relationships, rather than merely listing effects, is a better way to use information to increase knowledge. An understanding and acknowledgement of core values is required to productively channel knowledge toward attitude change and increased support for what you are conveying in your message. It is important that your audience know "Why it matters", "How it works" and What role they might play in addressing it".

"Think globally, act locally" urges people to consider the health of the entire planet and to take action in their own communities and cities.

Research the conservation message and identify a few reasonable action items; from there you can craft your message. First you want them to care about the endangered animal or conservation issue. Next you want to provide or suggest an easily doable action and finally explain what impact or results the action, if carried out, might have. The mission is to empower Zoo guests to care about the situation, hopefully enough to act, even though they might not fully understand it.

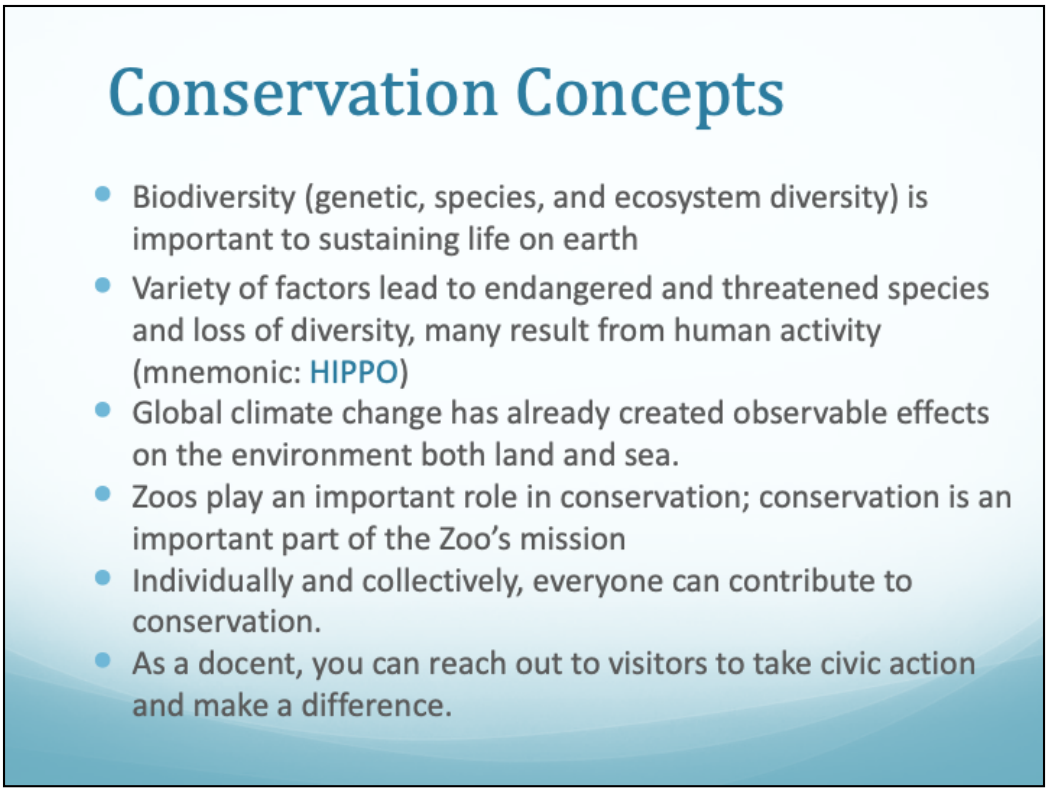
Example to use with Zoo guests: Most Zoo guests have cell phones and own a computer. Both of these contain precious minerals and metal that are mined in various places. One of these is coltan, which is mined in several countries, including the Democratic Republic of the Congo, home to many endangered species, including the mountain gorilla. Coltan is used in the manufacture of most electronic devices, including computers and cell phones. To accommodate the mining, forest habitat areas are destroyed and land critical to the animals and people living there is lost or is badly polluted. Additionally, when electronic equipment is disposed of in our local dumps, the toxic minerals pollute ground water and the soil, thus affecting communities where Zoo guests live.

What can Zoo guests do? They can make sure that they recycle their electronic equipment with reputable recycling companies. The precious metals and minerals reclaimed through recycling can be used again, this reducing the need for additional mining, directly benefiting people, animals and the environment both locally and around the world – a real win/win.

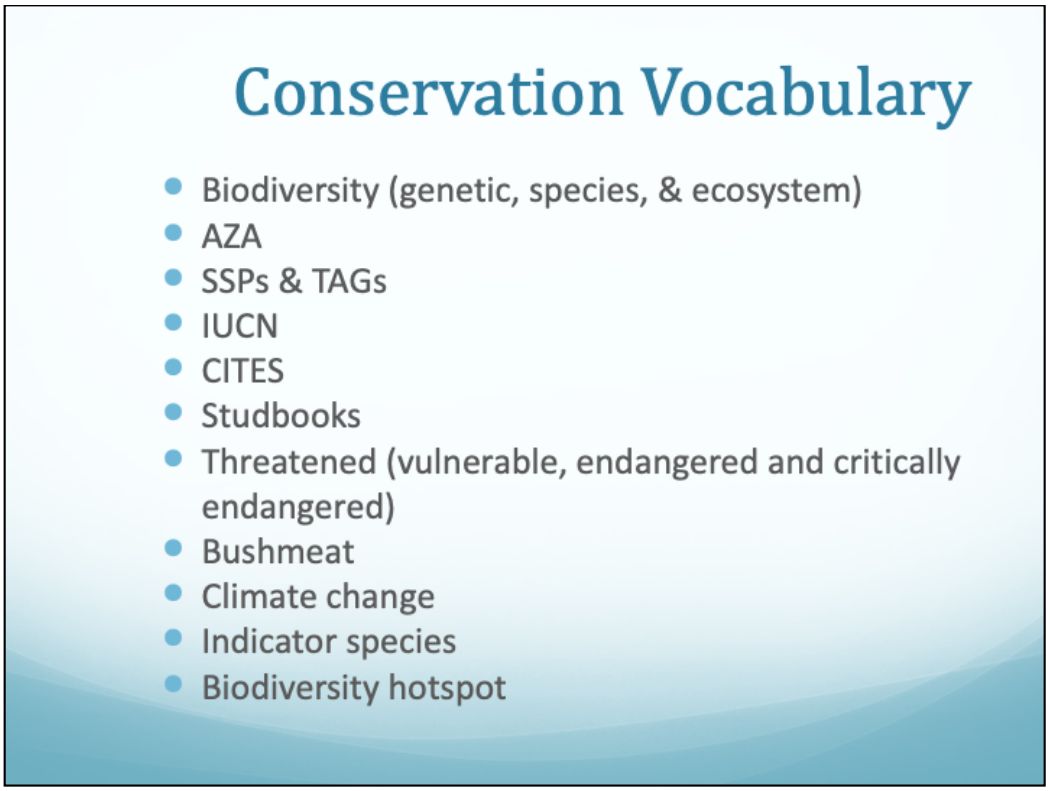
Provide the visitor with a variety of realistic solutions they can apply to the problem. (See Disney's 7 guidelines to Wildlife Conservation Action in the Docent Notebook touring folder for other ideas) For example:

- Reduce consumption: conserve water and energy, turn off lights when not in use, turn off water when brushing teeth, take shorter showers, plant native drought tolerant plants, repurpose materials or reuse by bringing to thrift shops, walk or ride your bike, recycle newspapers, glass, cans etc., don't buy things you don't need
- Education yourself and others on conservation issues
- Volunteer and/or contribute to conservation organizations
- Look for and purchase eco-friendly products
- Choose your pets wisely: make sure you can take care of them and don't release unwanted pets to the wild; avoid purchasing exotic pets
- Purchase sustainable items: use Monterey Bay Aquarium's Sustainable Seafood Watch Guide in choosing fish, avoid consuming slow growing hardwoods, non recyclable plastics and petroleum made products.

Ask Zoo visitors how they practice conservation and what ideas they might have.



Corresponds with pages 26-29 of Zoology Study Guide and Shifting the Balance Touring Guide in the Docent Notebook and the SF Zoo website.



Definitions:

AZA: **Association of Zoos and Aquariums** accredits zoos and aquariums that have met rigorous standards.

Biodiversity: the variety of different types of life found on Earth. It is a measure of the variety of organisms present in different ecosystems

Biodiversity hotspot: a biogeographic region with significant levels of biodiversity that is under threat from humans.

Bushmeat: wild animals hunted for human consumption.

CITES: The **Convention on International Trade in Endangered Species of Wild Fauna and Flora** is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

Climate change: a long-term change in the Earth's climate, especially a change due to an increase in the average atmospheric temperature.

Critically endangered: taxa facing a very high risk of extinction in the wild.

Ecosystem diversity: variety of ecosystems in a given place; the diversity of a place at the level of ecosystems. The term differs from biodiversity, which refers to variation in species rather than ecosystems.

Endangered: Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating.

Genetic diversity: the total number of genetic characteristics in the genetic makeup of a species.

Indicator species: a species whose presence, absence, or relative well-being in a given environment is indicative of the health of its ecosystem as a whole.

IUCN: The International Union for the Conservation of Nature and Natural Resources maintains the **Red List of Threatened Species** which is used for guiding conservation action and policy decisions.

Keystone species: a species whose impact on its community or ecosystem is disproportionately large relative to its abundance; many other species may depend upon its abundance as prey for their survival.

Studbooks: a record of the lineage of a wild animal bred in captivity; it is an animal's family tree.

Species diversity: the effective number of different species that are represented in a collection of individuals.

SSPs: Species Survival Plans are management programs designed to ensure the survival of threatened or endangered species that live in zoos or aquariums.

TAGs: **Taxon Advisory Groups** examine the conservation needs of an entire taxa, and develop recommendations for population management and conservation based upon the needs of the species.

Threatened: when discussing IUCN categories, the term *threatened* is generally used to refer to three categories: Critically Endangered, Endangered and Vulnerable.

Vulnerable: taxa likely to become endangered unless the circumstances threatening its survival and reproduction improve.