

A lush green forest scene. In the foreground, a spotted fawn stands on a large rock. To the left, two red squirrels peek out from behind a large rock. The background is filled with tall, thin trees and dense foliage. The entire scene is framed by a white, hand-drawn border.

Wildlife Station

- Biodiversity: Refers to the Variety of Species, their genetic make up and natural communities which they occurs.
 - Can be Broken up into 3 Major categories, Genetic, species, and community diversity.
- Genetic Diversity: Variety of Genes within and among species.
 - Genes define the traits and behaviors shared by species and explain differences found among individuals.
- Species Diversity: Most Measurable component.
 - Variety and abundance in a range.
 - People can make inventories of plants and animals. Volunteers across the state inventory and records species sightings and nesting areas.
- Community Diversity: Sometimes called ecosystem diversity.
 - Ecosystem is defined as a community of living organisms combined with their associated physical environment. Each ecosystem provides important home systems to proved specific species their needs.

A close-up photograph of a bee on a yellow flower, with the word 'Biodiversity' overlaid in a large, white, serif font. The background is a soft, out-of-focus yellow.


Biodiversity

Importance of Biodiversity

- The services provided by biodiversity are essential to our way of life. Everything is connected much like our own society.
 - Oxygen comes from plants, supports all life.
 - Leaves, trees, twigs, wildlife, and all other life is returned to the earth as organic matter.
 - Insects, worms, and bacteria breakdown organic matter turning it into soil for plant growth.
 - 30% of the world's medicines are designed from plants and animals.
 - Wetland ecosystems are natural filters for toxins and pollutants.
 - Estuary ecosystems act as seafood nurseries. Supporting sustainable aquatic ecosystems.
 - Forest ecosystems supply fresh water, erosion control, and carbon removal.



Importance of Biodiversity

- Each species has a role to play, a niche, each helps increase productivity of another.
 - Bee species support pollination, which support diverse plant life, which supports diverse wildlife.
 - Trees provide humans with wood products.
 - Natural water supply provides humans with drinking water.
 - Ecosystems support human food sources.
 - Even modern human conservation tactics now support wilderness ecosystems and biodiversity.
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Humans need Biodiversity to support our way of life

- Without healthy biodiversity in our ecosystems, we wouldn't know the life we are all accustomed to.
- It is important to manage our wildlife resources to make sure this ecosystem stays in balance.
- Too much hunting, or consumption of a resource can tip the scales.
- Important not to exceed the carrying capacity.





Wildlife Conservation and Endangered Species

Why We Practice Wildlife Conservation

- Wildlife began as a tremendous, bountiful resource for local populations in North America. Part of the reason settlers came to America.
 - As European influence spread to North America, it became a hunter's market.
 - Before we had steel and oil, wildlife was our biggest industry.
 - Fur and food. Survival and clothing. Fur was a massive industry.
 - Throughout the 1800's we began to completely deplete our wildlife resources.
- The 1800s were known as a "Market Hunting" era.





Wildlife practices

- The Huge losses of wildlife began to be seen and obvious.
- Policy makers in Washington D.C. knew they had to do something.
- Set limits on hunting and trapping, to sustain and conserve wildlife populations for the future.
- Hunting became a public Trust, Not a landowner loyalty.
- Soon Wildlife conservation had "Too many" Success stories to be ignored.



7 Tenants: North America Wildlife Conservation Model.

1. Wildlife resources are a public trust. Government manages wildlife, states enforce the regulations.
2. Elimination of the Game Market, put regulations on the selling of fur and meat products. No selling in unregulated underground markets.
3. Allocation of Wildlife by law. How many, what species, when and where you can hunt wildlife.
4. Wildlife killed only for legitimate purpose. Food, Fur, self defense.
5. Wildlife is an international resource. Due to migratory species, federal agencies began to cooperate on their wildlife taking rules and regulations. U.S. and Canada.
6. Science-based Decision Making. Science informs the decisions made on wildlife policy. Modern day we Tag wildlife to track and observe.
7. Democracy of Hunting. Laws offer the opportunity for all people to hunt and fish. Not just the privileged .

Theodore Roosevelt.

- After coming into Office in 1901..
 - The new President used his authority to authorize 150 national forest.
 - 51 federal bird reserves.
 - 5 National Parks.
 - 18 National monuments on over 230 million acres of public land.
 - Goes camping for 3 nights with John Muir at Yosemite.



Theodore Roosevelt Conservation Partnership

- Modern Day Organization committed to advancing conservation legislature.
- Working on things like
 - Unlocking more public land.
 - Conserving more migration corridors for migrating species.
 - Investing in more conservation jobs.
 - Fighting CWD.
 - Modernizing bait fish management.
 - Boosting funding for conservation programs.
 - Restoring Mississippi river delta.
 - Conservation of the Colorado River.



Wildlife Diseases

- WNV- West Nile Virus
 - Often affects Birds. More Viral particles in their blood than mammals.
 - Infects over 250 bird species. Flu like symptoms in humans.
 - 30% of crows in USA carry the virus. Transmitted by mosquitos.
 - Mammals cannot transmit the disease and are considered dead-end host.
- CWD- Chronic Wasting Disease.
 - Often found in Deer and Elk.
 - Due to anormal Prion or (Proteinaceous infectious particle) in the brain.
 - Not recommended to eat meat if found. Spread through animal to animal, soil contamination, transportation of carcasses ext.
 - Not good to move any part of the carcass outside of hunting area. Exceptions are upper Canine teeth without soft tissue.
- EHD- Hemorrhagic Disease also known as (Bluetongue Virus BT)
 - Often found in white tail deer, most times transmitted by midges.
 - Damages blood vessels, causes weakness, respiratory issues, high fever, deeply swollen bluish tongue.



Endangered Species

Endangered Species: Categories and Criteria

	Population Reduction Rate	Geographic Range		Population Size	Population Restrictions	Extinction Probability (in the wild)
		Extent of Occurrence	Area of Occupancy			
Least Concern	A species that has a widespread and abundant population					
Near Threatened	A species that is likely to qualify for a threatened category in the near future					
Vulnerable Species	30-50% population decline	<20,000 km ²	<2,000 km ²	<10,000 mature individuals	<1,000 mature individuals or an area of occupancy of <20 km ²	at least 10% within 100 years
Endangered Species	50-70% population decline	<5,000 km ²	<500 km ²	<2,500 mature individuals	<250 mature individuals	at least 20% within 20 years or 5 generations
Critically Endangered	≥80-90% population decline	<100 km ²	<10 km ²	<250 mature individuals	<10 mature individuals	at least 50% within 10 years or 3 generations
Extinct in the Wild	Only survives in cultivation (plants), in captivity (animals), or as a population well outside its established range					
Extinct	No remaining individuals of the species					



What Does Endangered mean?



Why are so many Birds Endangered ?

DDT

- Dichloro-Diphenyl-Trichloroethane
- Developed in the 1940s to as a synthetic insecticide.
- Meaning it was used to kill insects which carried harmful diseases such as malaria and typhoid fever.
- Rooted from insect fight in Panama Canal.
- It was extremely effective as an insect killer and became widely used as a pesticide.
- What is a pesticide? A Chemical used to kill insects or other organisms to prevent the loss of agricultural crops.





DDT Continued

- In the 1950s–1960s DDT became widely used across the United States as the standard agricultural pesticide.
- In 1972, the EPA shutdown use of DDT forever.
- After the widespread reach of "Silent Spring" written by Rachel Carson, the Nation United to against the use of this chemical.

Silent Spring

- Released in 1962, Silent Spring brought massive amounts of attention to the issue with DDT.
- It focused on the widespread negative effects of the chemical use.
- Most notable the lack of songs being sung by the birds each spring.
- It was very quickly becoming clear the chemical was destroying the food chain and causing an extinction level threat to many bird species.
- The book received countless awards and is given credit for saving the American Bald Eagle from Extinction



Notable Endangered Species

• Sunda Tiger

- Critically Endangered
- Found in islands of Indonesia.
- Estimated to be fewer than 400 in existence.
- Loss of habitat, Deforestation causing species demise.
- Habitat loss affects prey as well, losing food resources as well.
- Poaching is an additional issue.
- In recent years law enforcement has been greatly ramped up to try and save this unique tropical tiger.



Giant Panda

- Vulnerable. (Likely to be endangered if changes aren't made soon)
- Currently 1864 exist in wild.
- Can Grow to 4 feet tall and 330 lbs
- Live in temperate forest high in the mountains of southwestern China.
- Each bear can eat 20-80lbs of bamboo daily.
- Considered an umbrella species, critical to the biodiversity of southwestern China.



Conclusion.



Wildlife conservation is a principle that can be applied to other forms of conservation as well.



Too Much consumption of a resource can yield total desecration of the resource itself.



Protecting our biodiversity leads to a future which can provide resources for generations to come. Sustainability.

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