**Unit 7 Biosphere Under**

**Attack!**



During the passionate 1960’s, concern for wildlife, forests and fisheries generated a wave of eco-laws, including the ESA and the formation of the EPA. It is interesting to read about the passion involved with how these eco-laws came into being. If you have time, look up their history on the Internet. Regardless of their origin, you will be responsible for learning the intent of some bio-laws.

**Start studying for this exam NOW...there is too much information to wait until the last minute.** Make sure you know the laws and abbreviations for the different agencies/laws/etc.

There is **almost always at least 1 FRQ on the AP Exam from this material.**  Don’t just learn this material for the exam and then forget it. The material from this exam will be with us for the rest of the year, so learn it well now so you don’t have to go back and reread or relearn parts.

**Animals Under Attack (*Video 7.1 Biodiversity Importance and Loss due \_\_\_\_\_\_\_\_\_\_\_\_)* (pages 631-648, 135-136 wetlands in Textbook)**

* 1. **Biodiversity** / variation among organisms, it is estimated there are 5 – 10 million different species we have only discovered 1.75 million. (biodiversity is nature’s insurance policy)
	2. **Biodiversity Hotspot /** usually in areas of intense sunlight, high amounts of nutrients, complex food webs, and high primary productivity; a region with a significant reservoir of biodiversity that is under threat from humans *ex. the Philippines, the Caribbean, the Amazon*
	3. **Why Preserve Species?** / know at least TWO of these
		+ **Economic goods** / species provide food, fuel, lumber (housing), medicines (Everything you own!)
		+ **Ecosystem services** / photosynthesis, pollination of crops, soil formation, nutrient cycling, pest control, climate regulation, flood control, waste decomposition, etc. Estimated $33 trillion per year!
		+ **Recreation and ecotourism** / generates $500 billion worldwide *Ex. Male lion in Kenya generates $515,000 in tourist dollars but only $1000 if killed for its skin.*
		+ **Intrinsic value** / each living thing has the right to live, humans are not the only species on earth, without others we would not exist!
	4. **Biodiversity Rates on Islands are Influenced by** /
* Island size (bigger = better meaning higher biodiversity rates)
* Distance from mainland (closer to mainland is better meaning higher biodiversity rates)
	1. **Wetlands** **are defined as** / soil which is saturated with water for all or part of the year AND vegetation have adaptations that allow them to live under these conditions
	2. **Some Benefits of Wetlands/Mangrove Forests (tropical) are /** *Case Study: New York City Watershed in the Catskills (cheaper to restore watershed than build water filtration systems $1 billion vs. $6 billion)*
* Nurseries for fish/shellfish and migratory bird habitat
* Storm protection by absorbing excess water during flooding
* Acts as a filter by trapping/removing harmful pollutants from water
* Stabilizes the shoreline reducing erosion
	1. **Humans have Destroyed Wetlands by** /
	+ Draining them for agriculture and development (think Disneyworld)
	+ Oil spills/litter/sewage
	+ Drained them to reduce mosquito populations/malaria
	+ Conversion to commercial aquaculture facilities
	+ Dredging channels for recreation (boating/jet skiing) and shipping navigation
	1. **Why Species are Going Extinct /** remember the acronym ***H.I.P.P.C.O.***
		+ **Habitat Loss and** **Fragmentation** / number one reason: tropical deforestation is greatest eliminator of species followed by destruction of coral reefs, filling in of wetlands and plowing of grasslands
		+ **Invasive/Exotic Species** / they often can grow at an uncontrolled rate because they have no natural predators, disrupt the balance of the ecosystem and have no competition because they kill off many natural inhabitants. ***KNOW TWO EXAMPLES!*** *Kudzu vine (SE US for erosion control), Brown Tree Snake (kills birds in Guam) Zebra mussels (from E. Europe threaten native mussels in Great Lakes) Gypsy moth (eat American forests), Feral & outdoor pet cats—kill 568 million birds annually Fire ants (accidentally introduced into Alabama, spread into south US, resistant to pesticides)* *Python in the Everglades (were released in the Everglades and they have killed native species)*
		+ **Population Growth** / world's population estimated to double within the next 12 years, more people means increased use of natural resources, increase in habitat destruction and more waste generated
		+ **Pollution** / each living thing has the right to live, humans are not the only species on earth, without others we would not exist!
		+ **Climate Change** / if a species cannot adapt fast enough it will become extinct
		+ **Overharvesting /** overfishing and hunting/poaching. Trade in wild plants & animals generates $10-20 billion annually. *Examples: Live mountain gorilla ($150,000), Bengal tiger fur ($100,000), Amazon macaw ($30,000), Big horn sheep head ($35,000)*
	2. **Difference between Vulnerable and Endangered Species** /vulnerable means still abundant in its natural range but is declining and will likely become endangered *(ex. African Elephant, Polar Bear, Great White Shark)* while endangered means so few individuals are left that it could soon become extinct (Ex. California Condor, Orangutan, Tiger, Giant Panda) *See list at the end of facts must be able to give specific examples!*
	3. **Factors that make a species more vulnerable to premature extinction** /
* Low reproductive rate (K-strategists) *ex. Blue Whales, Giant Pandas*
* Specialized niches (specialists) *ex. Giant Pandas*
* Requires large territories *ex. California Condor, Florida Panther*
* Specialized breeding behavior or fixed migratory patterns *ex. Monarch Butterfly*
	1. **Differences between current mass extinction and mass extinctions of the past** /
* Caused by a single species, humans (Anthropogenic)
* Taking place in a few decades rather than thousands of years
* Natural rate of extinction, a small number of species become extinct each year (average rate is 3 - 14 species per year) we are currently 100 to 1,000 times the natural rate!
* If these trends continue, ½ of all current species will be lost by the year 2050. (Def a reason to go APE)

**(*Video 7.2 Urban Sprawl due \_\_\_\_\_\_\_\_\_\_\_\_\_\_)* (pages 343-350, 647, 654-655)**

* 1. **Urban Sprawl leads to Habitat Fragmentation which is** / when large areas of habitat such as a forest is divided by roads, suburban sprawl, farms, etc. creating “habitat islands” increasing *EDGE* EFFECT and isolating individuals from resources and potential mates *(ex. kola bears)*
	2. **What are the Causes of Urban Sprawl** / know at least TWO
	+ Increased used of/reliance on the automobile
	+ Desire for more property/yard
	+ Better schools
	+ Lower crime rates
	1. **What are some of the human health effect associated with urban sprawl?** / know at least TWO
	+ Increased incidence of asthma from more air pollution
	+ Higher rates of obesity, high blood pressure, and heart disease due to increased travel time to work and poor diets due the added stress/less time to cook nutritional meals
	+ Reduction in the spread of disease because it’s a lower population density than the inner city
	+ Higher rates of automobile injuries due to increased driving demands
	1. **What are some Examples of Smart Growth** / know at least TWO
		+ Subsidize mass transit to encourage less car use
		+ Build bike paths to encourage less car use
		+ Build higher density vertical developments which takes up less land area reducing habitat loss
		+ Create tax incentives/reduces taxes from living in the inner city
	2. **Ways to Reduce Harmful Effects on Wildlife from Urban Sprawl** / know at least TWO
		+ Create wildlife corridors/tunnels/overpasses between green areas
		+ Reduce highway speeds and add in “wildlife caution/crossing signs”
		+ Encourage carpooling because less cars equals less collisions
		+ Plan highways around existing migratory routes and prime habitats *(ex. pollinator gardens)*
	3. **Types of Hunting** /
		+ **Subsistence hunting** / killing animals for food and survival
		+ **Sport hunting** / killing animals for recreation (ex. North American Bison)
		+ **Commercial hunting** / killing animals for profit (ex. fur for products)
	4. **Sporting Hunting Pros** /
		+ Without regulated hunting, deer and other large game will exceed the carrying capacity of their habitat
		+ Hunting licenses provide money to buy, restore, and maintain wildlife habitats and support wildlife research
	5. **Sport Hunting Cons** /
		+ Surplus of game animals created by deliberately eliminating their natural predators. Instead we should reintroduce their natural predators
		+ Unnecessary pain and suffering to animals if they are not killed immediately

**Preserving and Conserving Species (pages 344, 650-653 in Textbook)**

* 1. **Convention of International Trade in Endangered Species (CITES) /** is an international agreement signed in 1973 that regulated trade of threatened and endangered animals (live or dead), animal parts, and plants. Does not prevent the killing of these organisms, individual countries to determine that
* lists more than 800 species that cannot be traded
* limited effectiveness (difficult to enforce, convicted violators pay small fines, member countries can exempt themselves, much illegal trade occurs in countries that have not signed the treaty - 152 have signed)
	1. **Endangered Species Act** / is a US law pass in 1973, its purpose is to conserve threatened and endangered species *AND* their ecosystems on which they depend. Regarded as one of the strongest environmental laws in the world. Enforced by the U.S. Fish and Wildlife Service and the Commerce Department’s National Marine Fisheries Service (NMFS)
	2. **Dooms Day Vault** / a secure seed bank facility which preserves a wide variety of plant seeds in an underground cavern
	3. **Two Approaches to Species Conservation** /
* **Species Approach /** based on protecting individual endangered species by identifying them and breeding them in captivity and reintroducing them into their habitats **(problem = we protect only the “cute” organisms)**
* **Ecosystem Approach (National Parks, etc.)** /more effective than species approach, tries to preserve balanced populations of species in their native habitats and eliminate nonnative species, saves multiple species

**Forests Under Attack (*Video 7.3 Foresty due \_\_\_\_\_\_\_\_\_\_\_\_\_\_)* (pages 339-342 in Textbook)**

**Causes of Deforestation** /

* + - **Poor Farmers (Subsistence)** / slash and burn agriculture, around 50%, shade agriculture is better way: some trees are left to provide shade for shade loving crops like coffee and chocolate
* **Tree Plantations (like Palm Oil)** /areas that trees are planted in specifically to be harvested usually a monoculture; have much lower biodiversity than a natural forest 25%
	+ - **Logging** / using trees as a resource: lumber, furniture, and paper - approximately 25%

**What is the Main Reason Orangutans are Going Extinct?** / palm tree plantations are being planted in the place of rainforest for the manufacture of palm oil in many consumer products (shampoos, toothpaste, lotions, candies, etc.) by the name Sodium Lauryl Sulfate (SLS) destroying orangutan habitat (demand/buy SLS free products and save orangutans!)

**Ecological Benefits of Forests** /produces oxygen (lungs of Earth!), sequestering (storing) carbon, regulates climate, provide food and shelter for many creatures, recharge of aquifers, medicines, and controls erosion.

**Old-Growth Forests** / forests that have not been logged in recent history; logging was suspended in 1991 in National Forests on the West Coast to protect the Northern Spotted Owl which was harshly opposed by the timber industry (Save a logger…eat an owl)

**Clear-Cutting /** tree harvesting technique where loggers cut down all trees. It is very destructive because it destroys habitat, increases soil erosion dramatically, increases nitrate runoff into water bodies, increases turbidity clogging fish gills, increases water temp., all make it hard for an area to recover.

**Selective Cutting** /harvesting only mature trees of certain species and size. More expensive but less disruptive to wildlife than clear cutting

**Forest Stewardship Council (FSC) is** / a non-profit organization devoted to encouraging the responsible management of the world's forests, look for their label on paper/wood products

**Forest Fires Types** / (1) *surface fire* only burn low lying shrubs and ground cover while (2) *crown fires* burn extremely hot killing wildlife, can kill large trees and underbrush, therefore increasing soil erosion.

**How Have Humans Increased Severity of Wildfires?** / We have put out natural fires and allowed accumulation of combustibles (leaf litter, dead trees, etc.), increased tree density, increased “ladder” trees which allows fires to burn hotter, longer, and higher up the tree; ultimately killing trees instead of just charring their protective outside bark

**Biomes which Benefit from Fire** / evergreen forests, grasslands, and chaparral rely on fire to help some plants germinate (some pine cones open only when fire is present), remove ground cover to allow more sunlight, and return nutrients back into the soil.

**Oceans Under Attack (*Video 7.4 Fishing due \_\_\_\_\_\_\_\_\_\_\_\_\_\_)* (pages 372-373, 381-382 in Textbook)**

**Overfishing** / fishing a population faster than it can replace itself (fishery collapse by 2050 at current rate)

**Bycatch** / unwanted species caught (and most often killed) while attempting to catch another type of fish (25% of all commercial catch is unused)

**Sustainable Fishing Methods** / Harpooning and Hook-Line, these practices can be considered sustainable because only individual fish are targeted, limiting bycatch

**Commercial Fishing Methods** / know at least TWO of these:

* + **Trawling** / dragging a massive net across the ocean floor in an effort to catch bottom dwelling species such as shrimp, flounder, and cod. Highly destructive to all ocean floor life especially coral reefs and by-catch is an issue.
	+ **Long Line Fishing** / dragging a “long line” (miles long) with several thousand baited hooks attached to it. By-catch is a major issue catching sea turtles, sharks, and even seabirds
	+ **Driftnetting or Gillnetting** / setting large drift nets several miles long, as fish swim into the net they become entangled. By-catch is again a major problem with this form of fishing
	+ **Purse-seine Fishing** / using a large net to encircle entire schools of fish often spotted from above by aircraft. The large net has a drawstring which is used to capture the fish.

**Advantages of Aquaculture** / reduces the pressure that is places on natural fisheries by commercial fishing methods. Does not use vast quantities of fossil fuels. Produces a great deal of seafood in a small area, resulting in higher profits

**Disadvantages of Aquaculture** / Destruction of mangroves/wetlands which protects the coast. High volumes of fish in a small area are prone to diseases. High quantities of waste and water pollution degrading water quality for nearby sea life. Farms use grain to feed fish adding stress to our agricultural system.

**Magnuson - Stevens Act (1976) /** governs the management and control of U.S. marine fish populations, and is intended to maintain and restore healthy levels of fish stocks and prevent overharvesting

**Endangered Species Examples (On the “List”)**

1. ***Atlantic Salmon*** /interbreeding with competition from escaped farm-raised salmon from the aquaculture industry threaten the wild salmon population.
2. ***California Condor*** / reason for decline include lead poisoning from eating the carcasses of animals that had been killed, pesticides, habitat loss, and the decline of large and medium-sized native mammals due to encroachments of agriculture and urbanization.
3. ***Florida Panther*** / hunting and development that resulted in habitat loss and fragmentation
4. ***Grizzly Bear*** /conflictwith humans and development that resulted in habitat loss and fragmentation.
5. ***Gray Wolf*** / subject of predator eradication programs sponsored by the Federal government. Prior to Endangered Species Act of 1973, exterminated from lower 48 states except for a few hundred inhabiting extreme northeastern Minnesota, and a small number on Isle Royale, Michigan.
6. ***Whooping Crane*** /drainage of wetlands, conversion of grasslands to agriculture, and for hunting feathers.

**Success Stories of Those Who Go Off the “List”**

1. ***American Alligator* /** overhunting and destruction of habitat caused original listing, removed from the list of the endangered species by the Fish and Wildlife Service in 1987.
2. ***Bald Eagle*** / ingested DDT by eating contaminated fish. The pesticide caused the shells of the bird’s to thin and resulted in nesting failures. Loss of nesting habitats and hunting for feathers also contributed to the population decline. Reclassified from endangered to threatened in 1995.
3. ***Peregrine Falcon*** / ingested DDT by eating smaller birds, which had eaten contaminated prey. The pesticide caused the shells of the birds to thin and resulted in nesting failures. Removed from the list of endangered species by the Fish and Wildlife Service in 1999.
4. ***Gray Whale***/ the eastern Northern Pacific stock in gray whale has the distinction of being the first population of a marine mammal species to be removed from the List of Endangered and Threatened Species.

**Administration of Federal Lands Chart (pages 342-343)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Agency** | **Land Held** | **Primary Uses** | **Acres** **(in millions)** |
| **Bureau of Land Management**(Dept. of Interior) | National resource lands | Mining, livestock grazing, oil and natural gas extraction | 270 |
| **U.S. Forest Service** (Dept. of Agriculture) | National forests | Logging, recreation, conservation of watersheds, wildlife habitat, mining, livestock grazing, oil and natural gas extraction | 191 |
| **U.S. Fish and Wildlife** (Dept. of Interior) | National wildlife refuges | Wildlife habitat; also logging, hunting, fishing, mining, livestock grazing, oil and natural gas extraction (endangered species act enforcement) | 95 |
| **National Park Service** (Dept. of Interior) | National Park System | Recreation, wildlife habitat | 84 |

**PICK TWO INVASIVE SPECIES AND FILL IN CHART BELOW:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NAME** | **NATIVE HABITAT** | **INVADED HABITAT** | **HOW IT’S AFFECTING INVADED HABITAT** | **HOW IT GOT INTRODUCED** |
|  |  |  |  |  |
|  |  |  |  |  |

**PICK TWO ENDANGERED SPECIES AND FILL IN CHART BELOW:**

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME** | **LOCATION OF HABITAT** | **REASON FOR ENDANGERED STATUS** | **METHODS OF CONSERVATION** |
|  |  |  |  |
|  |  |  |  |

**Case Study: BIG BAD WOLF** Date: **\_\_\_\_\_\_\_\_\_**

## **Ranchers: Wolf Trouble**

“We treat our herd as humanely as possible. It isn’t in our character to have our cows ripped apart and stand by while something kills them. This violates our way of life,” said Enterprise rancher Todd Nash at a recent meeting in Maupin. Members of the North Central Livestock Association, which serves Wasco and Sherman counties, nodded in agreement as Nash continued, painting a picture of what will likely become an all-too-familiar scenario in the region as wolves continue to move through and eventually settle in the area.

Nash has a 650-head herd and chairs the Wolf Committee for the Oregon Cattlemen’s Association, of which the North Central association is a branch. He told the 60 area ranchers gathered in mid-February to expect problems down the road as the wolf population in Eastern Oregon continues to grow and regulatory roadblocks make it difficult to hunt depredating packs.

**A brutal reality**

His presentation included graphic photos of cattle killed by wolves, including pregnant cows. Evidence at one kill showed that a cow had attempted to crawl away as her fetus – a delicacy for wolves – was eaten right out of her womb. “What would animal rights people say if we ripped our cattle apart?” asked Nash. “Yet they are not only willing for wolves to do that, but they don’t want us to even be able to defend our domestic animals from an attack.” During a late snowstorm, one Eastern Oregon rancher found wolf tracks on his porch in front of the kennel where the family dog spends the night, he said. Because the shelter was sturdy enough to thwart an attack, the dog was uninjured. If the pet had been on a chain in the open yard, Nash added, the rancher would not have been able to protect it from certain death. It is not allowable by state protection rules to even hit a wolf with a rock to drive it away, he explained. The most a landowner can do in that situation is throw a rock in the general direction of the wolf, or use some other non-injuring measure, to scare it off. If a wolf is caught in the act of biting, wounding or killing livestock, or a working cow dog, the animal can be shot under current rules, but that is an unlikely scenario given that wolves are secretive and hunt at night, said Nash. “Our reality is horrifying; it is a really frightening situation for a lot of people now,” said Nash, who has lost multiple cows and calves to wolves, and has suffered the economic and emotional toll of that predation.

**A long way from recovery**

Klavins noted that wolves were nearly wiped out of the lower 48 states by the 1930s due largely to the problems they caused for ranchers. In 1995, the U.S. Fish and Wildlife Service reintroduced 35 Canadian gray wolves into Yellowstone National Park and the same number in central Idaho. By 2011 the wolf population in those two states, plus Wyoming, Oregon and Washington, had topped 1,600 and the federal government dropped the Endangered Species Act listing for the Northern Rockies. Wolves remain on Oregon’s protected species list and the state Department of Fish and Wildlife manages eight packs comprising 64 wolves east of U.S. Highways 395, 95 and 78. Wolves are still federally listed to the west of that area and a no-kill rule is in place.

 “We’re a long way from meaningful recovery, but I generally think we’re doing things right in Oregon,” said Klavins. “There is huge support in this state for wolf recovery and I think we’re doing it in a way that also factors in the needs of ranchers.”

**A moving target**

State rules to allow the elimination of wolves that kill cattle are a “moving target” that is rarely attainable, he added. The landowner of a confirmed kill must prove that he or she tried to use nonlethal measures to thwart an attack, and no action can be taken until there are four confirmed kills by the same pack within a six-month period. After six months, the process starts anew. The state has also set a 45-day limit to complete any hunt that does take place. “I don’t know how much more you can do to protect your animals; these packs are dynamic,” he said. “When this was happening in Idaho, I thought it would never happen here but it did and now I tell ranchers across Oregon that it’s going to be them some day.” To date, four wolves have been killed by ODFW or authorized agents since 2009.

**Killing questioned**

Klavins said conservationists filed a legal challenge about five years ago against further killing of wolves and the current management plan is a mitigation measure. He said no party was entirely happy with the outcome of negotiations in 2013, but it is the most workable solution to the challenge. “The wolf plan allows us to kill an endangered species on behalf of the livestock industry and I think that’s significant,” he said. “For many, wolves are a symbol of freedom and hikers and campers want to hear their howls as part of the outdoor experience,” said Klavins. “We see a lot of wolf hysteria out there. There are a lot of people who want to vilify them.” Nash noted that it would be educational for hikers and campers to see the aftermath of gore left by a wolf pack that has literally torn a cow apart. “Wolf tourism should include dead and wounded game and livestock as well as the horrified look on the rancher’s face,” he said.

1. What federal agency is mentioned in this article responsible for the reintroduction of gray wolves to Yellowstone and is listed in the chart on page 6 of this packet?
2. Using your verbal quizzes, what federal law does this agency enforce?
3. List the three other agencies from the packet and what lands they oversee.
	1.
	2.
4. What is the only situation in which a rancher can shoot at or kill a wolf in the state of Oregon?
5. Imagine you were a rancher and your livelihood depended on your livestock. You do not like killing animals because you believe all life has a right to live. Your herd needs to eat at a new pasture daily. Come up with a nonlethal and economically viable method to protect your herd. Describe it below:

**Project: Invasive/Endangered Poster** Date: **\_\_\_\_\_\_\_\_\_**

**Choose a Species:** The only requirement for choosing a species is that it must be a species that is invasive or currently list as an endangered species. It can be any species in the entire world. The following are species identified as being invasive/endangered, but you do not have to choose one of these. There are be others but ***let me know before you choose a different one***. GO HERE: http://www.arkive.org/endangered-species/

Go to [www.nyis.info/](http://www.nyis.info/) for a list of invasive species in New York

|  |  |
| --- | --- |
| **Endangered Species** | **Invasive/Exotic Species** |
| Florida Manatee | Hemlock Woolly Adelgid (*Plant*) |
| California Condor | European Gypsy Moth (*Long Island*) |
| Florida Panther | Zebra Mussel |
| Siberian Tiger | Round Goby |
| Giant Panda | Sea Lamprey |
| Black Rhinoceros | Asian long-horned beetle (*Long Island*) |
| Golden Lion Tamarin | Chinese Mitten Crab |
| African Elephant | European Starling |
| Polar Bear | Brown Tree Snake |
| Snow Leopard | Burmese Python |
| Kemp’s Ridley Sea Turtle | Africanized Bee |
| Northern Spotted Owl | Red Lionfish |
| Ghost Bat | Emerald Ash Borer |
| Whooping Crane | Spiny Water Flea |
| Mountain Gorilla | Green Mussel |
| Brown (Grizzly) Bear | Kudzu (*Plant*) |
| Blue Whale | Purple Loosestrife (*Plant*) |
| Brown Spider Monkey | “Rock Snot” Didymo (*Plant*) |
| Piping Plover (*Long Island*) | Water Hyacinth (*Plant*) |

**The product:**

**Option 1:**

1. A **“WANTED” poster** for your species.

You must include:

* + NAME / ALSO KNOW AS (common name / “criminal” name)
	+ PICTURE – photograph (color would be nice)
	+ IDENTIFYING CHARACTERISTICS – key features to look for when identifying the criminal
	+ LAST SEEN – where did the species originally come from?
	+ SUSPECTED HIDEOUTS - include a map of the U.S. with its current distribution shaded; description of preferred habitat
	+ CRIMES COMMITTED by your species (crimes must be specific to your species and not general to all invasive species)
	+ REWARD for elimination of your species (think ecologically, economically, socially, politically – again, be specific for your species)
	+ METHOD OF CONTROL (if there is one, if not state they is no way to currently control it)

**Option 2:**

1. A **“MISSING” poster** for your species.

You must include:

* + NAME (common name of organism)
	+ PICTURE – photograph (color would be nice)
	+ CURRENT STATUS OF ENDANGERMENT (Endangered/Threatened) and when was it placed on the Endangered/Threatened list
	+ CURRENT ESTIMATION OF THE SIZE OF YOUR SPECIES POPULATION
	+ IMPORTANCE OF YOUR SPECIES (environmental and/or economic)
		1. Ex. is an important producer in its ecosystem; used to produce cancer medicine?
	+ RANGE OF HABITAT (map of range is ideal)
	+ REASON WHY ITS ENDANGERED
	+ WHAT SHOULD BE DONE TO SAVE YOUR SPECIES? (IN YOUR OPINION)
	+ WHAT IS BEING DONE TO TRY AND SAVE YOUR SPECIES?