

**EQ #4- WHAT IS THE
ENDANGERED
SPECIES ACT? IS IT
EFFECTIVE?**

**RULES PROTECTING PLANTS, ANIMALS AND THEIR
HABITAT**

TUESDAY 1/7

- Welcome Back from Break!
- Seating Chart & Pair Share
- Activity- Wildfires in Australia
- Begin EQ #4- What is the ESA?



PICK NEW SEATS

- Get your Name Plate and fold 3/4 once
- Find a NEW seat that is...
 - At least FIVE seats from where you last sat
 - Next to at least ONE student you do NOT know well

INTRODUCTIONS

- Interview your new neighbor and find out FIVE favorites (color, season, holiday, food, pizza type, sport, hobby, thing to do...)
- Share ONE of their favorites with class

THE ENDANGERED SPECIES ACT



U.S. Fish & Wildlife Service
Endangered Species Act
40th Anniversary
Protecting Imperiled Plants and Animals Since 1973

EXTINCT (ESA 1973)
 Carolina Parakeet • Dusty Seaside Sparrow
 Passenger Pigeon • Great Auk • Blue Pike

IMPROVING
 Indiana Bat • Polar Bear • Puerto Rican Parrot • California Condor • Bull Trout

RECOVERED
 Whooping Crane • Black Footed Ferret
 Wyoming Toad • West Indian Manatee
 Bald Eagle • Grizzly Bear
 Delmarva Fox Squirrel • American Alligator

WHAT IS THE ESA?



- Today we will learn about the ESA...
- When was the law passed, what does it do, who does it affect and why it is controversial?

FILM CLIP- ESA INTRO

- <https://www.cbsnews.com/news/on-the-brink-the-endangered-species-act/>

READ THE ARTICLE- ESA REPEAL

- Number paragraphs and underline important info as you read.
- 1. Why do some Republicans believe the ESA isn't working today? Be specific.
- 2. How would Republicans like the Act to change?
- 3. In what ways has the Act been successful? In what ways not?

WHAT IS THE ESA?

- The **Endangered Species Act** is a U.S. federal law passed overwhelmingly by Congress in 1973 and signed into law by P. Nixon.
- As a federal law, it applies to all states
- Its purpose is to protect plants and animals at risk of extinction



WHAT IS EXTINCTION?



- Extinction is the permanent loss of a species due to die off.



WEDNESDAY 1/8

- EQ #4 Notes- Why is the ESA needed?
Film Clip- *On the Brink*
- NewsArticle- Politics & the ESA
- Case Study- Whales & Trophic Cascades
- Draw a Whale & Trophic Cascade Flow Chart

WHY WAS THE ESA PASSED?



- Plants and wildlife have aesthetic, recreational, economic and ecological value
- Fossil records show extinctions have taken place on Earth forever.
- But by the 1970s, the rate of extinctions had dramatically increased to an estimated 100-1000 times their normal rate.

WHY WERE EXTINCTIONS ACCELERATED?

- Increased species loss is due to widespread human impacts
- Hunting, fishing, agriculture, pollution, *loss of habitat, land development & climate change



WHAT DOES THE ESA DO?

- The ESA was created to protect plant and animal species AND their ecosystems, too.
- The ESA lists species as...
- 1. Endangered= At risk of extinction
(This is more serious) OR
- 2. Threatened= At risk of becoming endangered

WHY DOES IT MATTER IF A SPECIES BECOMES EXTINCT?

- **Ecology-** Is the study of the relationship between living and non-living organisms in an ecosystem.
- The loss of one species can greatly affect the viability of other species and even entire ecosystems.
*And ultimately humans!

FILM - ON THE BRINK

- 2400
- 2%
- Time
- Money
- critical habitat

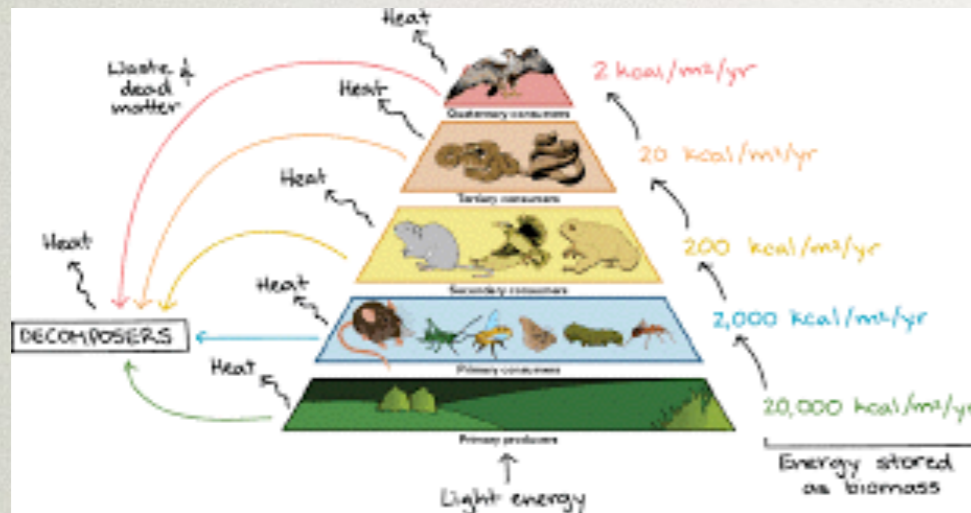
WHY PROTECT SPECIES?

- All species play a role in an ecosystem (predator, prey, pollinator...)
- The loss of a single organism can threaten the entire ecosystem
- **Trophic Level-** Describes where & how an organism gets its food / energy. (like the word “trough”)

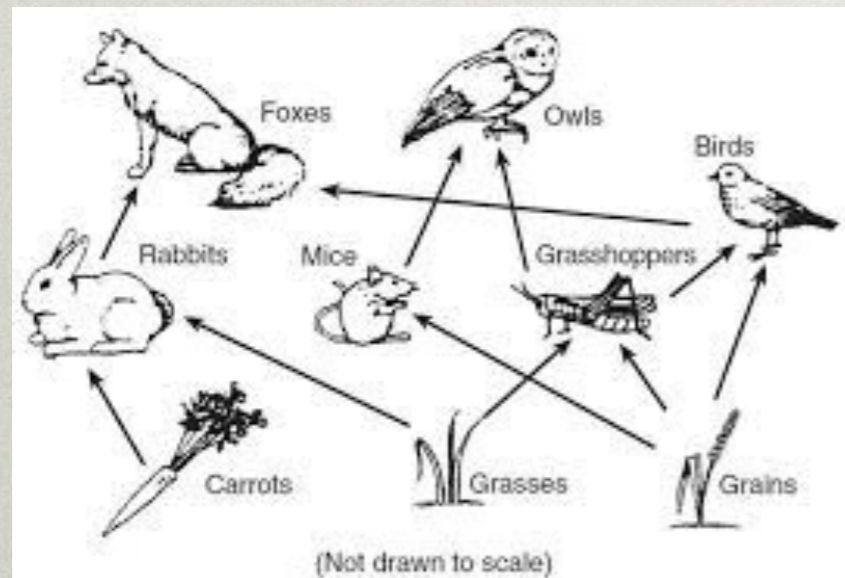
BASIC ECOLOGY TERMS

- **Producers / Autotrophs-** Are plants; they make their own food from sun.
- **Consumers-**
 1. **Primary-** Are herbivores (eat plants only)
 2. **Secondary-** Are omnivores (eat plants AND animals)
 3. **Tertiary -** Are top carnivores—
meat eaters; are predators

BASIC ECOLOGY



- Decomposers- Fungus, insects and bacteria break down dead biomass and recycle nutrients



THURSDAY 1/9

- Warm-Up ESA
- Trophic Cascades- What, how, effects
- Whale Flow Chart drawing

ESA WARM-UP

- 1. Why was the ESA passed into law in the US?
- 2. Distinguish between **threatened** and **endangered**.
- 3. Why is the law criticized by some?
- 4. What is a food web? Trophic level?
- 5. What trophic level is a plant? A deer?

CASE STUDY-WHALES

- How can the decline of one species affect others in unintended ways?
- Watch Case Study-How Whales affect Climate
- www.youtube.com/watch?v=M18HxXve3CM

HOW WHALES AFFECT CLIMATE

- Film Clip Q's-Trophic Cascades
- 1. What is a trophic cascade?
- 2. What did people expect would happen to fish and krill when whale populations declined?
- 3. What actually happened?
- 4. Why did this happen? Cite THREE behaviors and their effects.
- 5. How does whale behavior influence climate?

WHAT IS A TROPHIC CASCADE?

- A powerful effect on an ecosystem that is triggered by the addition or removal of top predators. (Example: Whales)



WHAT ARE THE EFFECTS OF TROPHIC CASCADES?

- Trophic cascades change the populations of predator and prey through the food chain,
- This, in turn, changes the ecosystem's overall structure & nutrient cycling.

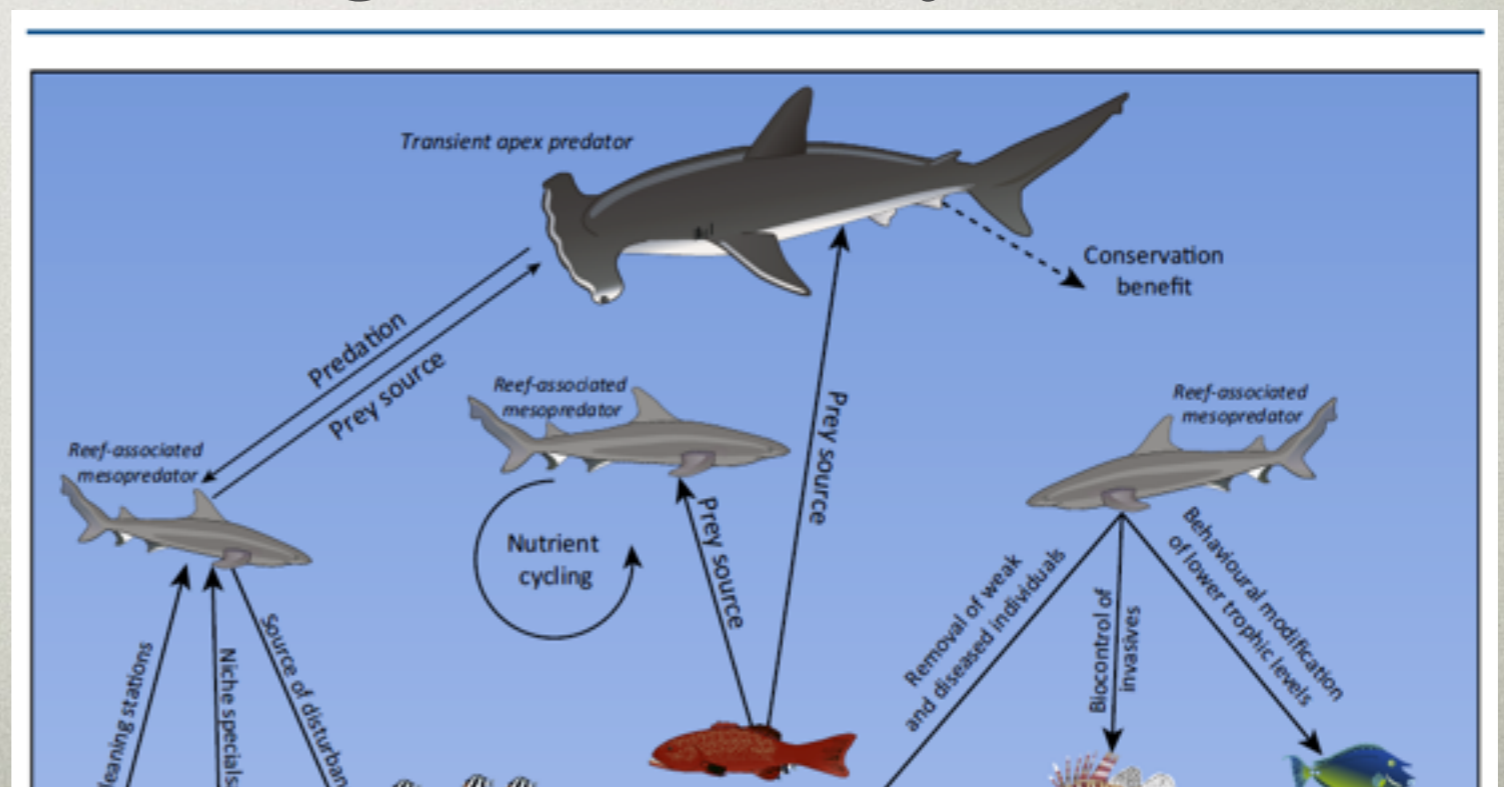
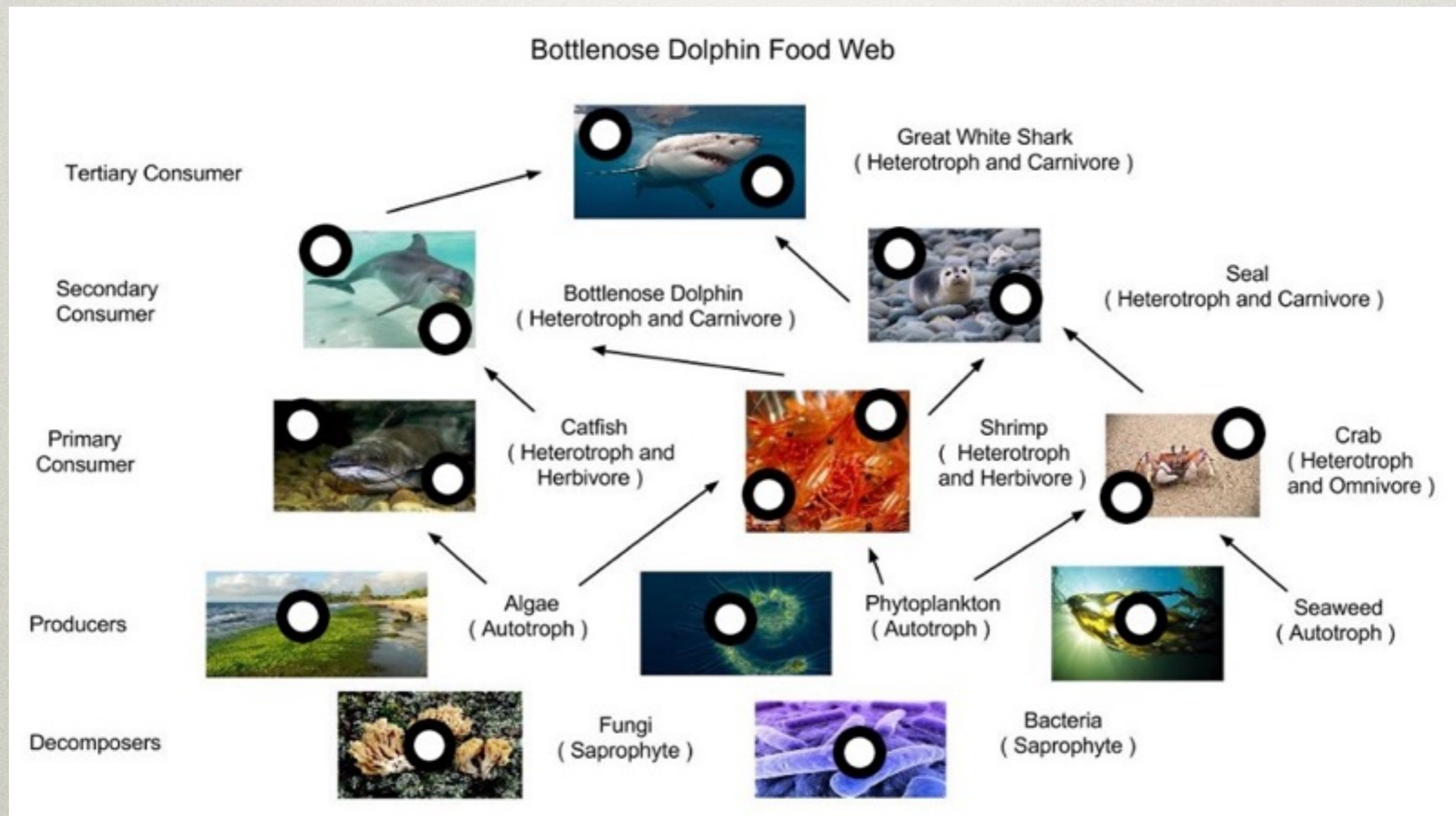


CHART THE WHALES TROPHIC CASCADE

- Create a flow chart with text AND drawings that shows the behavior and effects of the whales behavior on the ocean ecosystem.
- You must show FOUR behaviors and/or their benefits on your chart
- Use color; do good work!

EXAMPLE



DRAW A MODEL / FLOW CHART OF WHALES & CLIMATE

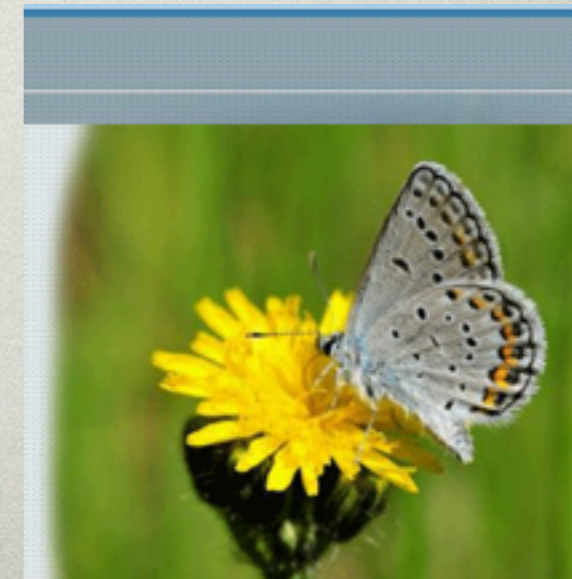
- Whales are over hunted / decline in # but so do the number of krill and fish normally eaten by whales. Why?
- Model the following whale behaviors and their effects.
- **Use these FOUR Steps-**
 1. Whales eat at the bottom of the ocean and surface to breathe. **Effect-** Mixing ocean layers; kicks up plankton.
 2. Whales create fecal plumes in photic zone of ocean. **Effect-** Nitrogen and Iron added for plant plankton.
 3. Plant growth increases in photic zone. **Effect-** More food for fish & krill; populations increase.
 4. More plants= more carbon stored. **Effect-** Less CO2 causing

FRIDAY 1/10

- What is a Recovery Plan?
- Spotted Owl Debate
- Work time on *How Whales Change*
Climate Flow Chart

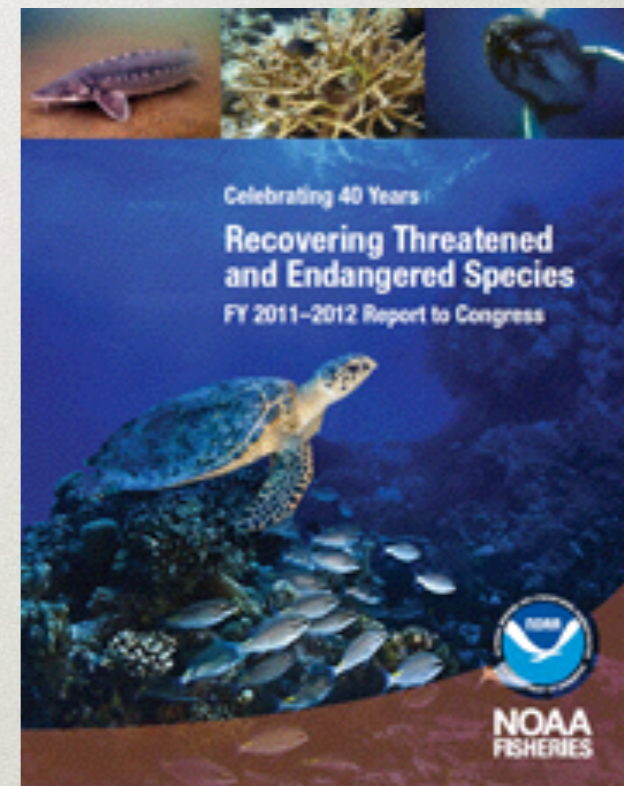
THE ESA- WHAT'S LISTED?

- There are over 1400 plant and animal species listed as endangered or threatened today
- Many ecosystems have recovery plans in place to prevent their extinction.



WHAT IS A RECOVERY PLAN?

- A Recovery Plan outlines the steps that need to be taken to prevent extinction and remove threats to the specie.



WHY ARE RECOVERY PLANS CONTROVERSIAL?

- Recovery Plans
 - Count the number of the specie in the wild.
 - * Assess the risks to the specie.
 - * Often set limits on human activities that are threatening it
 - * Place restrictions on land /habitat
 - * Can require extra work and cost to carry out.

MONDAY 1/13

- Northern Spotted Owl Activity

ACTIVITY- N. SPOTTED OWL

- All- Read paragraphs 1-3
Underline answers to the following-
- 1. What habitat do spotted owls need?
- 2. What is causing their species loss?
- 3. How many were left (in 1990s)?
- 4. What is the main disagreement about?

ACTIVITY- NORTHERN NORTHERN SPOTTED OWL

- Split class in 1/2
- Environmentalists-Paragraphs 4-7 & 12
- Timber Industry- Paragraphs 8-11 & 13
- Underline BEST arguments from your section.

SPOTTED OWL DEBATE

- With a partner, choose and write up **THREE** best arguments on your sheet
- Find a partner from the **OTHER** stakeholder perspective; share arguments; write theirs on your sheet
- Which is the **BEST** point from **EACH** side? Discuss.

SPOTTED OWL DEBATE

- Now, explain / debate your perspective with a member from the other side
- YOUR REFLECTION- Are the limits on cutting in OGF to save the owl fair? Why / not? Explain YOUR thoughts.

Monday

- Wrap up notes for EQ #4 on ESA- Is the law effective? In what ways yes; in what ways no?
- Research listed species (use handout prompts)
- Start ESA Basics Poster

Warm-Up: Northern Spotted Owl

- 1. Where do Northern Spotted Owls live? Describe their habitat.
- 2. Describe ONE rule the ESA enacted to try to restore the habitat of the owl once it was listed as “threatened.”
- 3. How are other groups, besides loggers, affected by these types of rules? Give two examples.
- 4. Public land is open to all and can’t be privately owned. The federal government manages most **public land** (60%) in Oregon. Describe ONE way this is significant.

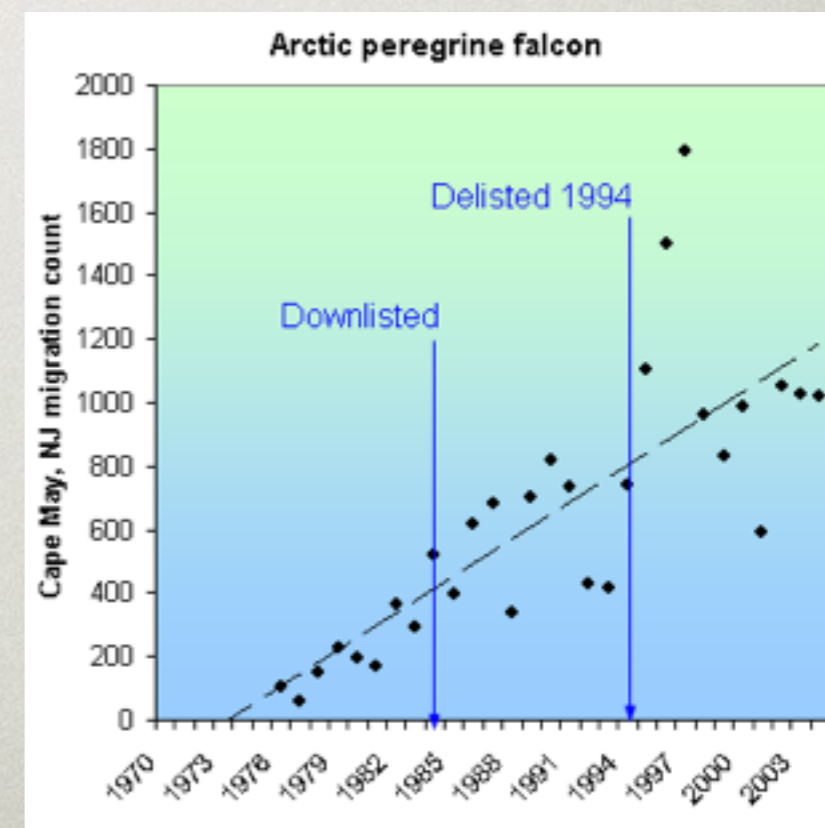
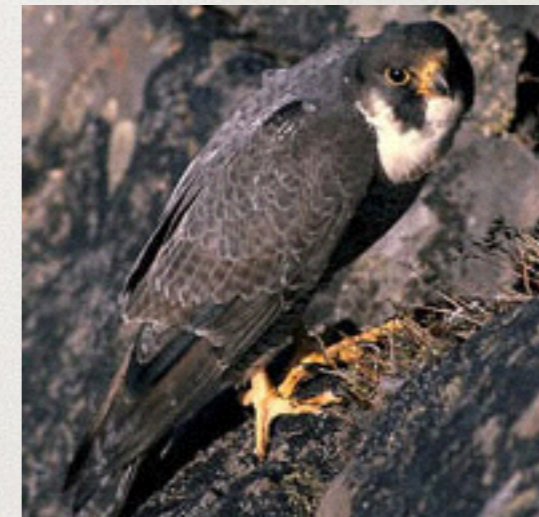
WHO ENFORCES THE LAW?

- The federal government must work to carry out and enforce the law. States help, too.
- The US Fish and Wildlife Service (FWS) oversees terrestrial (land) and fresh water plants & animals
- The National Marine Fisheries Service (MFS) oversees ocean wildlife and salmon.



HOW EFFECTIVE IS THE ESA?

- The ESA has had mixed results — few delistings / recoveries but also few extinctions.
- The law is controversial as it is costly and imposes limits.
- What do you think?



EVALUATING THE ESA'S EFFECTIVENESS

- Read the article. Mark it up.
- In what ways has the ESA been effective? In what ways, ineffective?
- Pair share with a partner—What did you underline?

IS THE ESA EFFECTIVE?

- No!
- **Poor results-** Only 1% of the listed species have recovered enough to be de-listed.
- **Money wasted-** Millions have been spent on recovery efforts that haven't worked.

IS THE ESA EFFECTIVE?

- YES!
- Supporters of the ESA point out that very few species have become extinct once listed by the Act.
- **91% of listed species listed** have increased in number or remained stable since the ESA passed.
- Full recovery is NOT the only goal and shouldn't be the only measure.

WHAT ABOUT THE WORLD?



- Convention on International Trade in Endangered Species (CITES) is a Treaty signed by 175 nations in 1975.
- It bans hunting, capturing and selling of threatened and endangered species
- Not all countries have signed and some who have signed don't follow rules for all species.
- Turtles, sharks, elephants, tigers and rhinos all are protected.

REFLECTION

- Write a response in your INB on the LEFT side that answers the prompt-
Has the ESA been effective?
*Cite THREE BEST reasons you read (this should be hard evidence) to support your answer.

RECOVERED SPECIES

- See Recovered Species- [http://
www.cbsnews.com/pictures/species-
saved-by-the-endangered-species-
act/](http://www.cbsnews.com/pictures/species-saved-by-the-endangered-species-act/)

ACTIVITY- ESA SUCCESS STORIES

- Now find out about some of the ESA success stories-species that have recovered.
- **Get a computer and a handout.**
- Answer the questions on the handout

ESA FAQ's

- Get a handout and create a POSTER that answers the Q's.

WHAT IS THE ESA?



Create a FOLDABLE on the ESA

1. What is its main purpose of the ESA? Who carries out the law?
2. Define Endangered & Threatened.
4. How are species listed? How many are listed?
5. What are “candidate species?”
6. Define a “take,” “recovery,” and “Recovery Plan.”
7. What is “critical habitat?”
8. Two fun facts- you pick these!