



RACING
EXTINCTION

Working a
Turnaround
Preventing Extinction

Essential Questions

- How do scientists study extinction?
- How can awareness be raised about extinction and endangered species?
- What solutions can change behaviors to reduce or reverse impacts on endangered species and ecosystems?

Objectives

- Describe how scientists study extinction.
- Evaluate approaches to raising awareness about extinction and endangered species.
- Devise and analyze solutions that change behaviors that reduce or reverse impacts on endangered species and ecosystems.

What Would YOU Change?

Write down **one thing** about your surrounding environment you would change or improve.



Think of things that might annoy or frustrate you every day, such as noise or traffic.

Environmental Activists Video



Click image above to view video

What Do Activists Do?

Choose one of the activists you saw in the video.

- Write in your notebook a short passage summarizing how the activist has contributed to conservation.

Preventing Extinction

You will learn about past and present extinction rates and solutions to prevent species extinctions.

Comparing Past and Present Extinctions

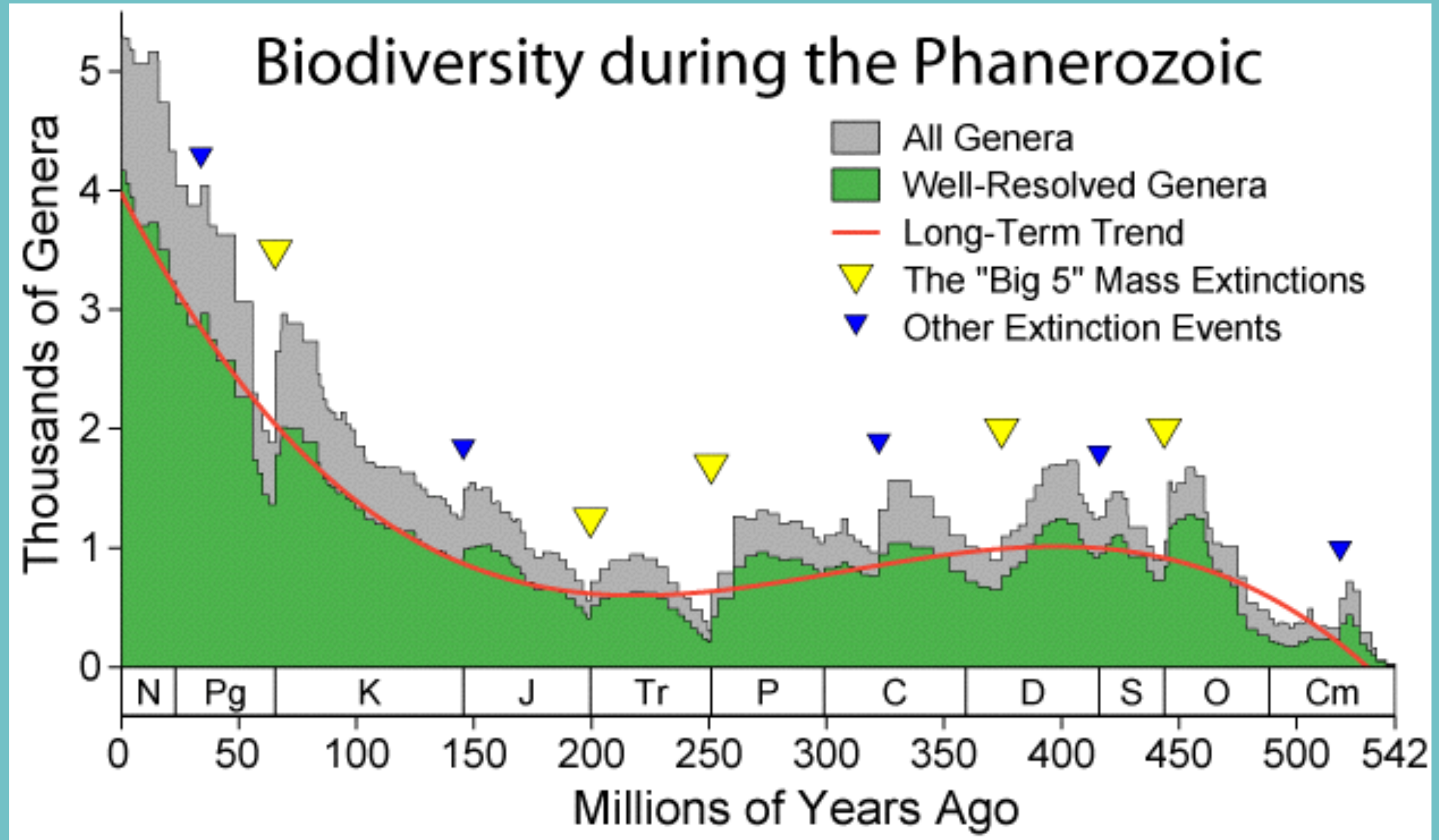
With your group:

Research online resources to explore how scientists compare past and present extinctions on Earth.

- Choose one of three methods to research in detail:
 - Fossil record
 - Species-area relationship
 - Endangered species lists

Increase in Biodiversity Over Geological Time

- How is **biodiversity** measured?
- Explain the letters on the X-axis.
- Describe the long-term trend.



Create a Concept Map

With your group:

- Create a concept map or infographic about either:
 - The fossil record OR
 - The species-area relationship OR
 - Endangered species lists
- Explain how scientists use their chosen method to compare past and present extinctions.

Create a Concept Map

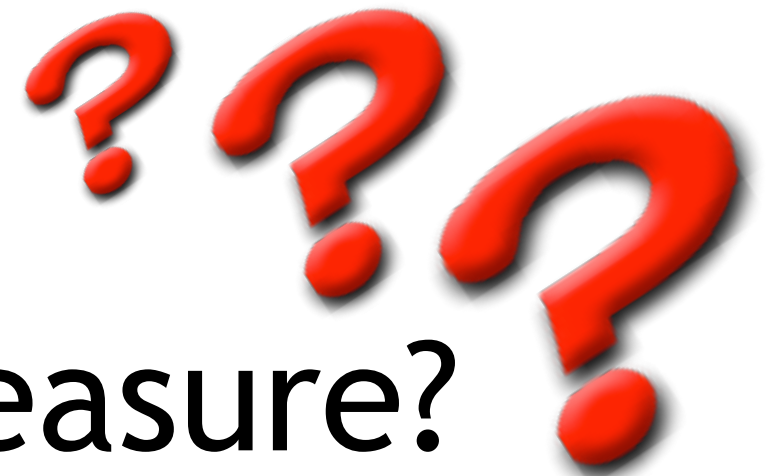


Focus on just one plant or animal group or biome:

- *Ecosystem (coral reef, rainforest)*
- *Taxonomic group (big cats, raptors, frogs)*
- *Individual species (manta ray, grasshopper sparrow)*

Pop Quiz!

What does **extinction rate** measure?



Answer:

Extinction rate is a measure of the number of extinctions over time. It can be measured in several different ways.

Watch Racing Extinction clips

With your group:

- Watch the additional Racing Extinction video clips to explore innovative approaches to solving the extinction crisis.
- Brainstorm solutions to the extinction scenario covered by their chosen research field.

Tip

During the brainstorm:

- *Try to devise new solutions not tried before*
- *Refer to your notes from Lesson 1 for more ideas and inspiration*

Photo Ark Video



Click image above to view video

Using Photography to Save Species Video



[Click image above to view video](#)

Amplifying the Extinction Crisis Video



Click image above to view video

Projecting Change Video



Click image above to view video

Converting Hunting Cultures to Tourism Cultures Video



[Click image above to view video](#)

How to Change Behavior?

With your group:

- After watching the Racing Extinction clips, choose your **best solution**. Be sure it considers impacts of individual behaviors and ways to change behavior.



Search online for examples of innovative conservation solutions.

Explain Your Solution

With your group:

Create a **multimedia presentation**
to explain your solution.



Choose multimedia that best explains your solution such as:

- *Digital slide show*
- *Video*
- *Web page*

Presenting Your Solution

Your new job!

- You are member of a PR team.
- Your client is a conservation organization.
- Your job is to present your solution as a pitch to a company making environmental films.

Tip

In your pitch, explain:

- *The importance of preventing extinction in your chosen ecosystem, group or species*
- *Why your solution is unique and innovative*
- *Why your solution will work better than others already underway*

Conservation in Action!

With your group:

Choose for a case study, a specific conservation approach or method, such as:

- Creating parks and reserves
- Working with local communities
- Reintroducing species
- Restoring degraded land
- Creating wildlife corridors

Conservation in Action!



- *Search the Guidestar website for lists of conservation organizations. Example search terms:*
 - *Wildlife conservation*
 - *Biodiversity*
 - *Ecosystems*
- *Be sure to research challenges and failed programs as well as successful programs.*

Nerd Word Alert!

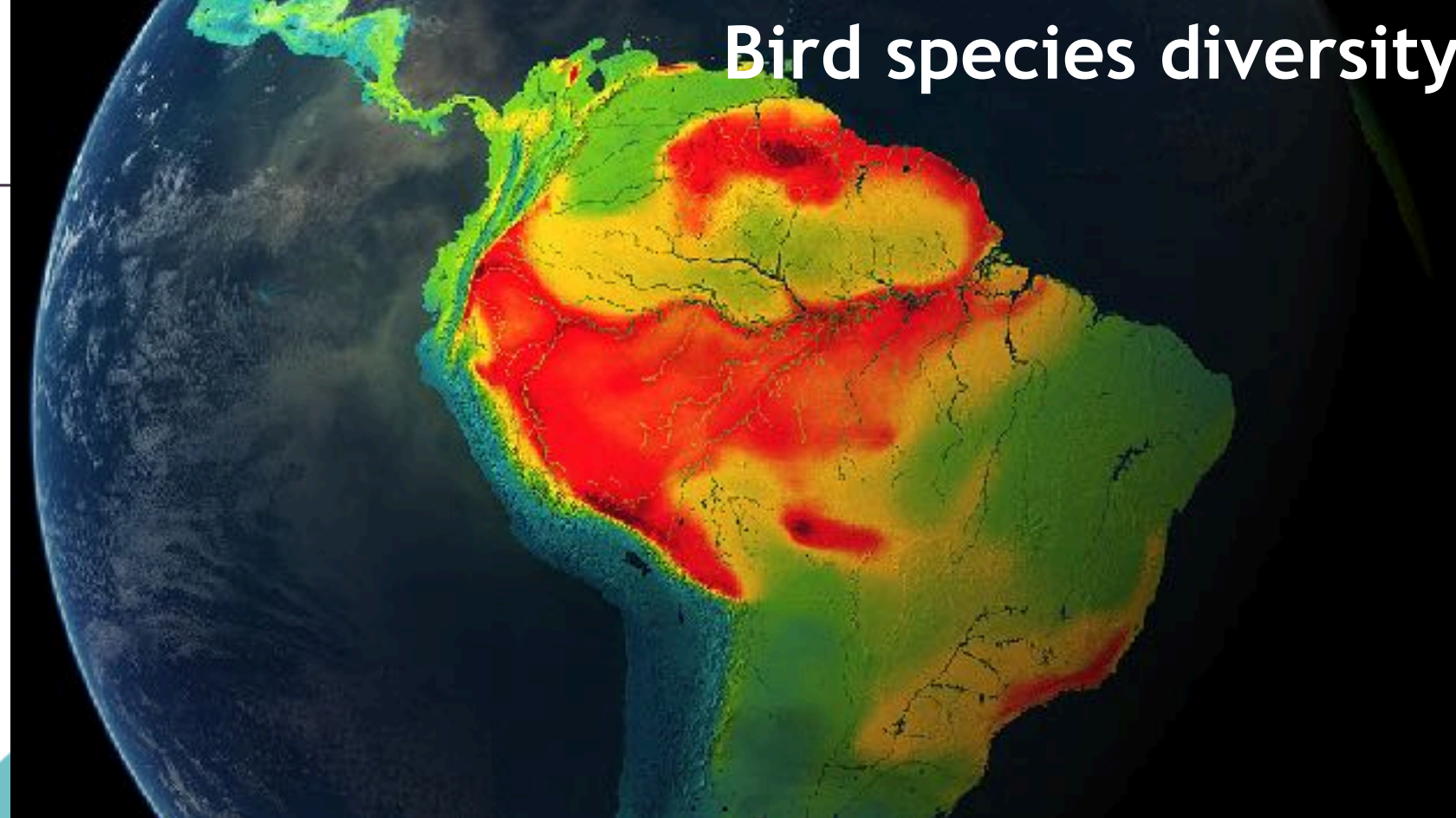


What does the term **biogeography** mean?

Answer:

Biogeography is a branch of biology that studies the geographical distribution of plants and animals.

Comparing high biodiversity areas with areas where habitat is most threatened helps scientists prioritize conservation decisions.



Concept Map!



With your group:

Create a **concept map** to illustrate your case study.



Include key concepts such as:

- *Program biogeographical information*
- *Program design objectives and outcome*
- *Cost-benefit analysis*
- *Program outcome*
- *Measures of program success*

Action Plan!

With your group:

Create a plan for **successful implementation** of your conservation solution.



Your plan should include:

- *Goals and objectives*
- *Why your solution is unique and innovative*
- *Feasibility, scope and chances for success*
- *Budget*
- *Schedule*

Evaluation

- Write a short passage explaining how and why scientists compare current and present extinction rates, summarizing the scientific consensus.
- Describe the importance of the fossil record, species-area relationship and endangered species lists to scientific understanding of current extinction rates.
- Write a short essay describing how you would promote awareness about elevated extinction rates.
- Describe three ways in which you would suggest to friends or family members behavioral changes that would help reduce extinctions.
- Present your group's solution to the class with the goal of persuading classmates that they should work together with you to implement your solution.

Follow-Up

- Aim for checkpoints at 60 days and 90 days. At each checkpoint, write up a report with answers to the questions:
 - Is your group in the process of implementing proposed solution?
 - How well is your implementation following the original plan?
 - Have you made significant changes to your original plan? If so, explain why.
 - What are your criteria for success?
 - What are the next steps for your team?

Resources

- *Nature*: [Methods of comparing present and past extinctions](#)
- Encyclopedia of Biodiversity: [Comparing Extinction Rates: Past, Present, and Future](#)
- U.S. Fish and Wildlife Service: [Endangered Species—Species Search](#)
- IUCN: [Red List](#)
- Kew Royal Botanical Gardens: [Endangered habitats](#)
- Solutions: [Facing Extinction: Nine Steps to Save Biodiversity](#)
- Earth Institute, Columbia University: [What You Can Do to Protect Biodiversity](#)
- SavingSpecies: [Science](#)
- BBC: [New York's Empire State highlights endangered animals](#)
- [Guidestar](#)