



**Next Gen Science Standards:**

***Students who demonstrate understanding can:***

HS-ESS3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

**SCIENCE AND ENGINEERING**

5. *Using mathematics and computational thinking*  
6. *Constructing explanations and designing solutions*

**DISCIPLINARY CORE IDEAS**

ESS3.C: Human Impacts  
ESS3.D: Global Climate Change

**CROSS-CUTTING CONCEPTS**

4. *Systems and system models*  
7. *Stability and change*

**Instructional Objective(s):**

Students will be able to:

1. Give at least one example of how climate change is impacting wildlife.
2. State why National Parks are important to climate science.

**Prerequisite Concepts and Skills:**

Prerequisite Concepts

National Park Service background information

Vocabulary

thermoregulation, greenhouse effect, biological extinction, model, local, regional, renewable resources, nonrenewable resources, irreplaceable resources,

Materials and Resources:

Teacher	Students
Skype/facetime/google hangout with webcam Procedure 6.1 (NPS provided)	

Lesson Activities: 58 min

This lesson was created in partnership with the Teacher-Ranger-Teacher program through the National Park Service.

Teacher Activities	Student Activities	Time:
Introduction: 1. Display DoNow. 2. Take Attendance.	1. DoNow – Describe some ways animals will respond to climate change.	5 min
New Content: 1. Display a video: Options: 1. See if the park giving the virtual lesson has a podcast for you to watch. 2. Show a podcast from the list in extensions. 2. Monitor student progress. 3. Guide students in creating questions for skype session. 4. Set up video chat with NPS.	1. Watch the video <i>Pika in Peril</i> . 2. Discuss the video as a class. 3. With a partner, write 5 questions about the climate science being studied at a National Park. 4. Ask questions and record answers with NPS staff via video chat.	5 min 5 min 10 min 30 min
Wrap-up: 1. Monitor students as they complete exit tickets. 2. Dismiss students.	Exit ticket – Why are National Parks important to climate science and why is climate science important to the National Park Service?	3 min

### Organizational and/or Behavioral Management Strategies:

### Assessment and Evaluation:

### Extensions:

If you aren't able to schedule a virtual field trip, play NPS podcasts on climate change instead.

Phenology and citizen science at Great Smokey Mountains National Park

[http://nature.nps.gov/multimedia/CCRP\\_Phenology1/index.cfm](http://nature.nps.gov/multimedia/CCRP_Phenology1/index.cfm)

Cold Air Pooling at Devils Postpile National Park

<http://www.nps.gov/depo/photosmultimedia/videos.htm>

Pika in Rocky Mountain <http://video.nationalgeographic.com/video/news/animals-news/pika-in-peril-missions-wcvin/>

### Adaptations:

### Teacher Reflections: