



# PETRIFIED FOREST NATIONAL PARK

## *CLIMATE FRIENDLY PARKS ACTION PLAN*

### 2014

#### **INTRODUCTION**

As participants in the National Park Service (NPS) Climate Friendly Parks (CFP) program, Petrified Forest National Park belongs to a network of parks nationwide that are putting climate friendly behavior at the forefront of park operations and resource management.

As part of this program, these parks have conducted a greenhouse gas (GHG) emission inventory, participated in a climate change and sustainability educational workshop, set climate change mitigation and GHG emission reduction goals, and integrated these actions into a park-wide Environmental Management System (EMS).



The EMS takes a systematic approach to identifying and addressing environmental impacts at the park. It also provides a framework for tracking environmental protection and sustainability priorities and details the implementation of these actions. By integrating CFP-related actions into the park's EMS, Petrified Forest is taking an integrated approach to climate change response and sustainable management of park resources.

#### **ENVIRONMENTAL POLICY & SUSTAINABILITY COMMITMENT STATEMENT**

Petrified Forest, while preserving these significant cultural and natural resources, will provide environmental leadership by meeting the highest possible standards for protecting environmental quality, maximizing resource protection and minimizing waste generation. A key to success is the education of staff, park partners, and the visiting public about the benefits of environmentally preferable practices, programs, products, and behaviors. Our goal is to become a leader in environmental stewardship of our cultural and natural resources.

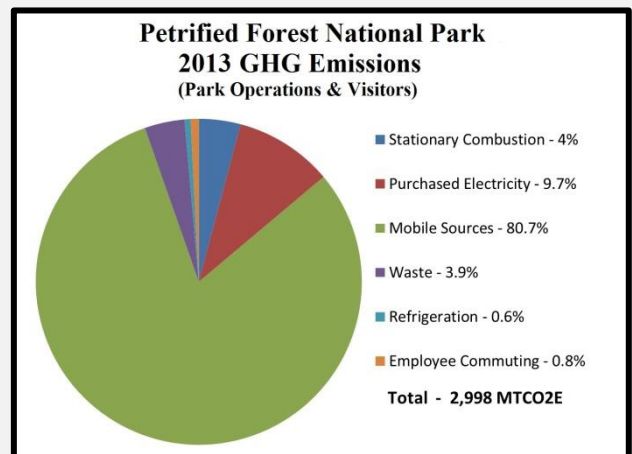
#### **ACCOMPLISHMENTS**

Prior to holding the CFP workshop, staff at the park already started to embark on our sustainability journey by embedding sustainability actions in our operations. As part of these efforts, the park has taken a number of actions that have reduced our environmental impact.

Sustainability Concern	Completed Actions
<b>GHG Emissions</b>	Conducted greenhouse gas emissions inventory to gain better understanding of where emissions are coming from as they relate to park operations (e.g., transportation, energy use).
<b>Energy &amp; Water</b>	Reduced electricity use by double-digit percentages each of the last two years.
	Some offices have replaced plastic blinds with thermally efficient blinds
	Replaced refrigerators, washers, dishwashers to Energy Star
	Replaced heating systems in Painted Desert Visitor Center and Painted Desert Inn; replaced cooling system in Painted Desert Visitor Center.
	Installed energy-efficient replacement glass.
	Portions of the 1937 water line supplying Rainbow Forest are being replaced. In 2013, the pipe broke seven times in seven weeks, losing tens of thousands of gallons of water.
	Solar powered photovoltaic system is being installed on covered parking areas within the park.
<b>Transportation</b>	Instituted an employee shuttle system from Holbrook.
<b>Waste</b>	The park established a universal waste storage area for batteries, florescent tubes, and ballasts.
	Eliminated oil changes in the park and having to handle used oil.
	Cleaned up lead from the shooting range; using green ammo only.
<b>Education / Communication</b>	Hosted a Climate Friendly Park workshop to discuss climate change issues and sustainability actions for Petrified Forest National Park and partners.

### BASELINE GREENHOUSE GAS EMISSIONS PROFILE

Petrified Forest developed a greenhouse gas (GHG) inventory using the Climate Leadership in Parks (CLIP) tool. Total GHG emissions from 2013 for Petrified Forest is 2,998MTCO<sub>2</sub>E and includes emissions from park operations, visitors, and concessions. 33% of these emissions stem from park operations (e.g., purchased electricity) while 67% of emissions come from visitors (e.g., travel within the park). The largest single source of GHG emissions from park operations is purchased electricity, though mobile sources are the second highest source. Having this baseline helps inform the goals and targets we have set and the actions we are taking to meet those. It also helps us engage in the sustainability conversation with park visitors.



### GOALS & ACTIONS

As part of the CFP program, the park has identified a number of goals. To help meet these goals, the park will develop annual actions and track them through the EMS. A subset of the first year's actions are listed below. We will continue to chart our progress against the goals annually and refine our actions as part of our annual EMS review.

	GHG Emissions	Climate Change Response	Education
<b>Goal</b>	Reduce GHG emissions by 8% from baseline year of 2013 by 2020	Reduce energy and water use.	Educate visitors about climate change and sustainability practices.
<b>2015 Action Plan</b>	<ul style="list-style-type: none"> <li>Utilize thermal imaging camera from nearby park units to identify areas of where energy efficiencies could be increased.</li> <li>Develop a waste management plan to reduce waste generation and increase recycling within the park.</li> <li>Offer commercial tours which should reduce GHG emissions per visitor.</li> <li>Add hybrid and electric vehicles to the park fleet.</li> <li>Replace window units in AO/IT Offices with split system.</li> <li>Maximize Double-Sided Printing.</li> <li>Install water heater blankets.</li> </ul>	<ul style="list-style-type: none"> <li>Share energy reports with park staff increase awareness of energy consumption.</li> <li>Identify areas within the park where lighting can be reduced or moved to save energy.</li> <li>Developing foundation stabilization project for historic structures within the park.</li> <li>Pursue metering for water system end users</li> <li>Replace 6 miles of obsolete water line.</li> <li>Complete an Energy Audit of all Structures in the park.</li> </ul>	<ul style="list-style-type: none"> <li>Create signage to encourage energy conservation actions (e.g., turning off lights, closing garage doors)</li> <li>Exploring opportunities for partnerships focused on phenology projects within the park</li> <li>Hold a volunteer day and special park event during Earth Week in April.</li> <li>Educate visitors about their recycling options in the park and at home.</li> </ul>

**ROLES, RESPONSIBILITIES, & RESOURCES**

The superintendent, who is responsible for overall management of the park, will continue to encourage and/or require sustainable practices and continuous improvement in the park’s environmental performance.

The management team will continue to discuss sustainability and ways the park can improve its environmental performance at weekly meetings, establish annual EMS goals, and provide leadership for continuous improvement.

Park staff, including the “Green Team” (an interdisciplinary group of park employees that regularly monitors and updates sustainability goals for the park and volunteers) will work together to identify sustainability and climate change challenges, track progress toward achieving goals, and work to continually improve operations. Through their leadership, the park ensures that sustainability initiatives move forward and goals are accomplished.

**EDUCATION & COMMUNICATION**

By improving communication within the park, we are developing an environment that provides guidance and clarity while instilling ownership and support in accomplishing goals and initiatives. The park has increased communication amongst employees through all-employee meetings and regularly occurring park-wide emails highlighting sustainability tidbits.

We will improve the use of our website and social media feeds in communicating goals and accomplishments with the public as well as expanding our contact with visitors on issues surrounding climate change.



## CONCLUSION

The elements of our EMS form the foundation of the environmental protection, climate change response, and sustainability work that we will accomplish at Petrified Forest National Park. We hope that visitors will check back in with us and see how we progress as our program continues to evolve!

## CONTACTS

Climate Friendly Parks Program  
Email: [CFP@nps.gov](mailto:CFP@nps.gov)  
Website: [www.nps.gov/climatefriendlyparks](http://www.nps.gov/climatefriendlyparks)

Petrified Forest National Park  
Website: [www.nps.gov/pefo](http://www.nps.gov/pefo)

*By identifying a greenhouse gas reduction goal, climate change response/sustainability actions, and outreach initiatives related to sustainability and climate change and sustainability topics, Petrified Forest National Park is an official members of the Climate Friendly Parks Program. For more information about the program, please visit the CFP website or contact the CFP team (information above).*



9/4/14

CFP National Representative      Date



9/10/14

CFP Regional Representative      Date



8/26/14

Park Superintendent      Date