



Many interpreters or educators may feel reluctant to integrate climate change messages into formal and informal public programs out of fear that their leadership or management will not approve. For the National Park Service, interpreters have strong support from the highest levels of our agency and executive branch of the government, from our NPS National Leadership team, to the Secretary of the Interior and President Obama. NPS Director Jon Jarvis has given each employee of our agency a charge to engage in climate change response and to fulfill their role within our agency related to this issue. His supportive statements throughout many guiding documents can be used to help interpreters gain local support for incorporating climate change into their park's overall interpretive strategy.



Before beginning any climate change interpretation, it is a good exercise to reflect on these two questions. Continue through this presentation to explore these questions more.

September 2009 Secretary Salazar signed Secretarial Order 3289



DOI Bureaus:

NPS USGS
FWS BOR
BLM BOEM
BIA OSM

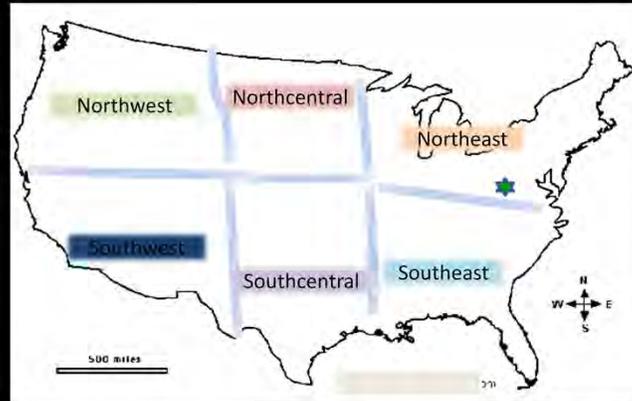
In September of 2009, shortly after Ken Salazar was sworn in as the Secretary of the Interior he signed secretarial order 3289. This order very clearly stated that climate change is a priority for all bureaus in the Department and that they should work together to compliment each other's efforts in addressing this issue. He tasked each agency with developing a climate change strategy that would articulate how they would respond to the impacts of climate change now and into the future.

Regional Climate Science Centers (CSC)

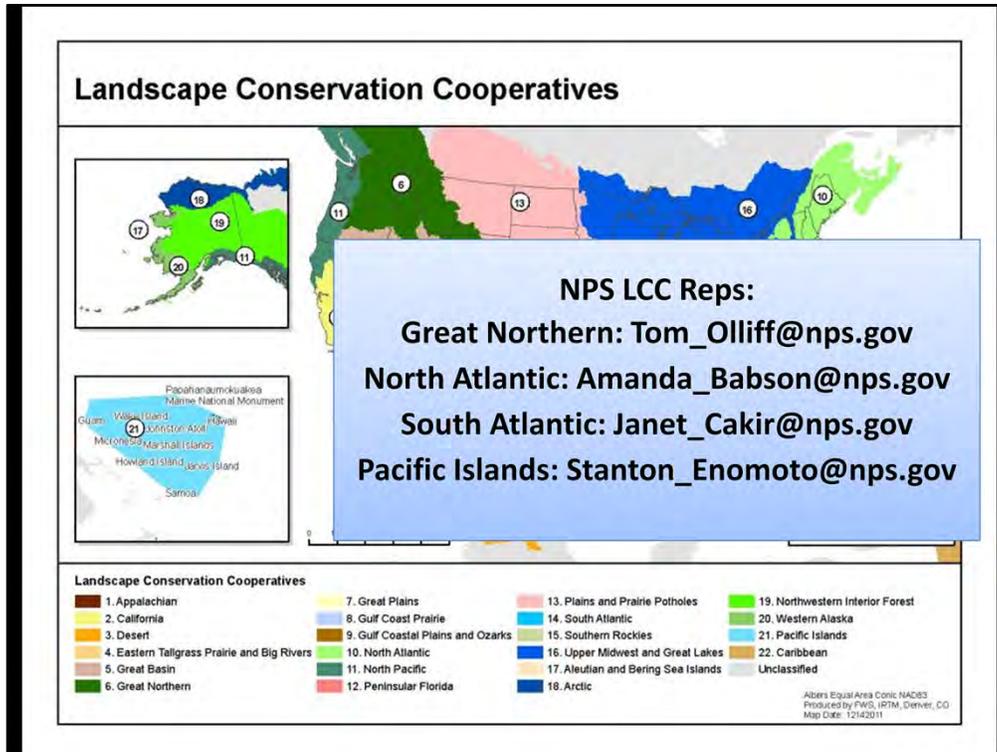
Alaska



Pacific Islands



Secretarial Order 3289 also established 8 Climate Science Centers (CSC), to conduct high-level climate science. Each bureau has been asked to provide a liaison to each CSC.



In addition to the CSCs, it also established 22 Landscape Conservation Cooperatives (LCC). These LCCs are where the climate science is being applied in real situations on the ground and in resource management in parks. Each LCC also has an NPS representative and four LCCs have hired a full-time NPS scientist. The staff in LCCs and CSCs work closely together so their work compliments the needs of both. Interpreters can contact their local CSC or LCC as a source of information when researching their local climate science.

CSC: <http://www.doi.gov/csc/index.cfm>

LCC: <http://lccnetwork.org/>

Climate Change Response Program

Contact Us

The Climate Change Response Program (CCRP) received its first year of funding in fiscal year 2010. Since then, a small team of approximately 20 staff has been assembled to address national initiatives on climate change. Many team members, while funded by the CCRP, work within other NPS programs, divisions, and directorates as a strategy to best share input across the service.

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<http://www1.nrintra.nps.gov/climatechange/contact.cfm>

Secretarial Order 3289 also provided the monetary support that established the NPS Climate Change Response Program. This program coordinates the national response on climate change issues of science, adaptation and communication. It is a small program, but staff is available to assist regions and parks. You can contact them from their “contact us” page on the intranet site.

<http://www1.nrintra.nps.gov/climatechange/contact.cfm>

**Climate change is
fundamentally the
greatest threat to
the integrity of our
national parks that
we have ever
experienced**

October 2009 NPS Director
Jon Jarvis testifies before
the Senate



A month after Secretary Salazar signed SO3289, NPS Director Jarvis, testified before congress specifically on how the NPS was planning to respond to climate change and why it was important for our agency.

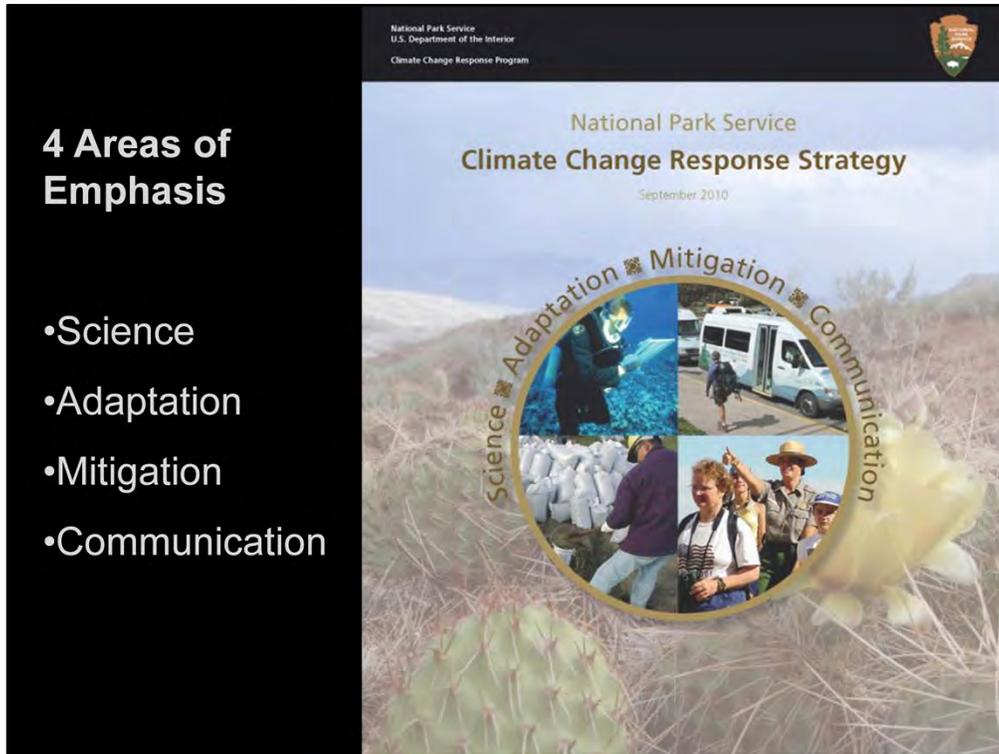
**The young employees I
have met who are just
starting in this wonderful
organization will be
dealing with climate
change their entire career**



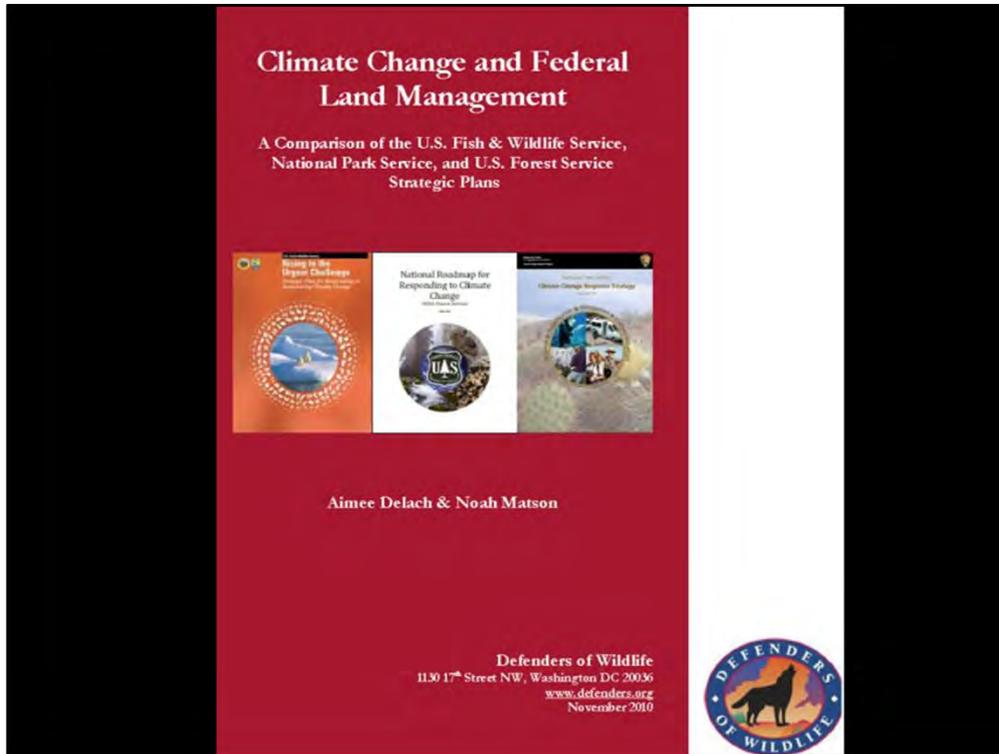
Addressing climate change is a permanent priority for the NPS and many of us will be addressing this issue for our entire career.

4 Areas of Emphasis

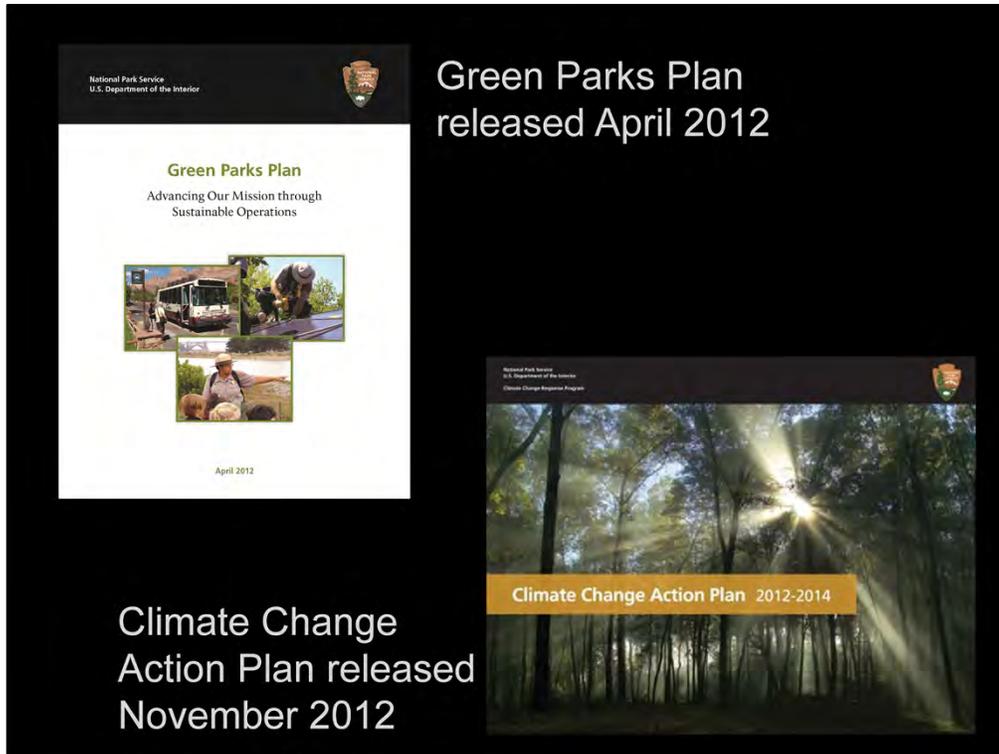
- Science
- Adaptation
- Mitigation
- Communication



Each bureau within DOI has now developed a climate change response strategy, the NPS strategy has four areas of emphasis – science, adaptation, mitigation, and communication.



Other organizations are looking to the land management agencies as leaders in responding to climate change. This independent report by the Defenders of Wildlife, compares the NPS climate change response strategy to that of the FWS and USFS. The NPS strategy led the pack in our goals for communicating this issue.



Since the Strategy was released the NPS has now released two follow on guiding documents – the NPS Climate Change Action Plan and the Green Parks Plan – both of which list very specific actions that programs, regions, and parks can take to address climate change.

Use SCIENCE to help parks manage climate change

- Conduct climate science within parks
- Monitor resources for climate impacts
- Identify species and resources most at risk



To begin to answer the question, “why does the NPS address climate change?” We will look at each of the four emphasis areas of the NPS Climate Change Response Strategy.

Science:

Climate scientists have an understanding of the big picture, but there is still a lot science doesn't know about specific impacts to parks. By conducting our own studies and encouraging other scientists to work in national parks and protected areas, we'll know more about what species are impacted, what resources are at risk, and the climate trends in our local area.



Coral bleaching in Virgin Islands National Park



CO2 monitoring tower at Everglades National Park

For example, the rate of coral bleaching in Biscayne NP or the potential for carbon sequestration in mangrove forests at the everglades are important scientific questions we are trying to answer to manage our resources more effectively within a changing climate.

What are some of the climate science questions for your park or area? Are you aware of any climate studies occurring at your site?

ADAPT to an uncertain future

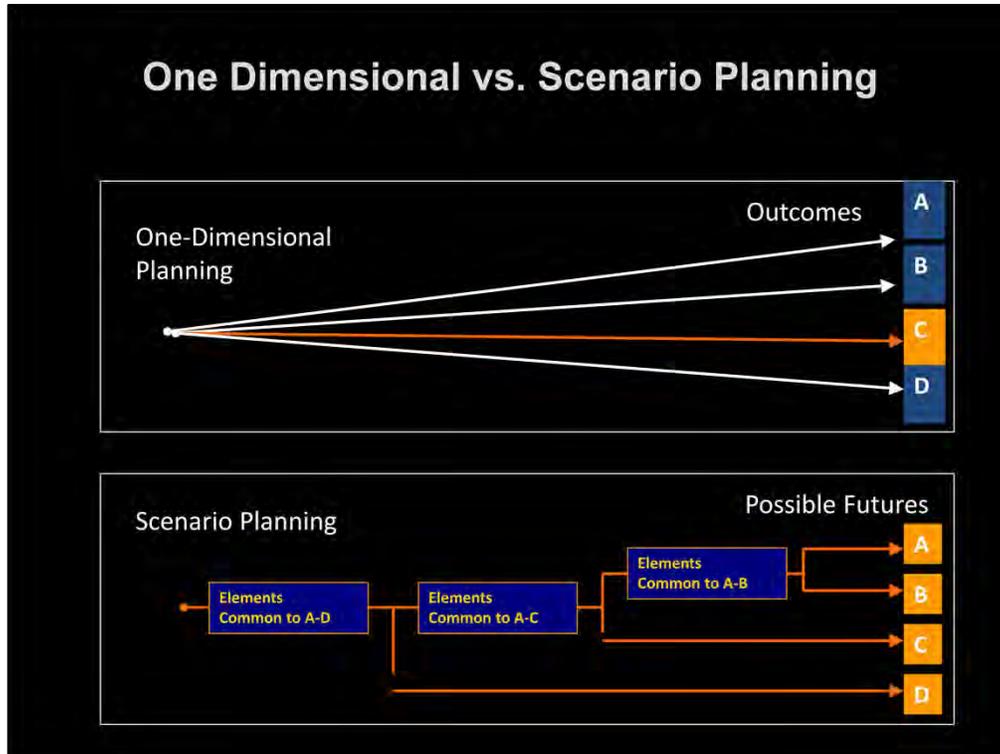
- Incorporate climate change into all levels of NPS planning
- Develop management strategies to increase the adaptive capability of park resources and facilities



Adaptation:

Many park resources and facilities will be affected by climate change. Resource and facility managers are now developing strategies or ways we can adapt our management so we can do the best we possibly can to preserve our resources and decrease the damage to facilities. Adaptation strategies allow us to begin to answer tough questions like if a species like the Joshua Tree migrates out of the park, how can we protect them if they are no longer on NPS lands? Or as new species find suitable habitat within parks, where they would be considered an invasive species, will we continue to preserve them?

One Dimensional vs. Scenario Planning



NPS uses scenario planning as a tool for developing adaptation strategies. A key way that this type of approach differs from traditional planning is in exploring and maintaining “multiple working hypotheses” for the future.

While in one-dimensional planning you choose a future that you are aiming for out of a range of possibilities, under the scenario planning approach, each possible future is considered equally likely to occur to maintain a multi-dimensional view of the future.

One benefit to doing this is to identify actions that are most beneficial under the widest range of futures.

Adapting our thinking about facilities in Everglades NP



A good example of adaptation that has already occurred is in the Flamingo area of Everglades NP. The Flamingo lodge was the only overnight facility in Everglades and it was devastated by two hurricanes in 2005. Since this entire area is at the coastline and only 3-feet above sea level, park management needed to consider climate change when deciding how to rebuild this facility. The park has now developed a plan that will be resilient with future sea level rise and increased storm events. They removed the old concrete and steel building and will replace it with a series of canvas and mesh eco-tents. These tents offer visitors a place to get out of the elements and spend the night in the park. They also can be taken apart easily and moved in the case of storm events or inching coastlines. This is a good example of the way of the future.

What adaptation techniques are being discussed for your park? Or what techniques do you think may work well at your site?

MITIGATE or reduce our carbon footprint

- Reduce the NPS carbon footprint to be energy neutral.
- Integrate climate change mitigation into all levels of NPS practices.



Mitigation:

It is important that we also reduce our energy use and mitigate our carbon emissions. The NPS has made this a priority and is already taking many steps to help park become energy neutral.



Using energy efficient light bulbs, solar energy, and recycling



Shuttle buses and hybrid and electric vehicles

Some ways we are doing this is to use more energy efficient light bulbs, use alternative energy sources like solar and wind, provide a recycling service for employees and visitors, use shuttle buses to transport visitors within park boundaries, and convert our fleet of vehicles to electric or hybrid vehicles. Just to name a few.

Make a list of the ways your park is currently mitigating its carbon footprint and what additional things can you do?

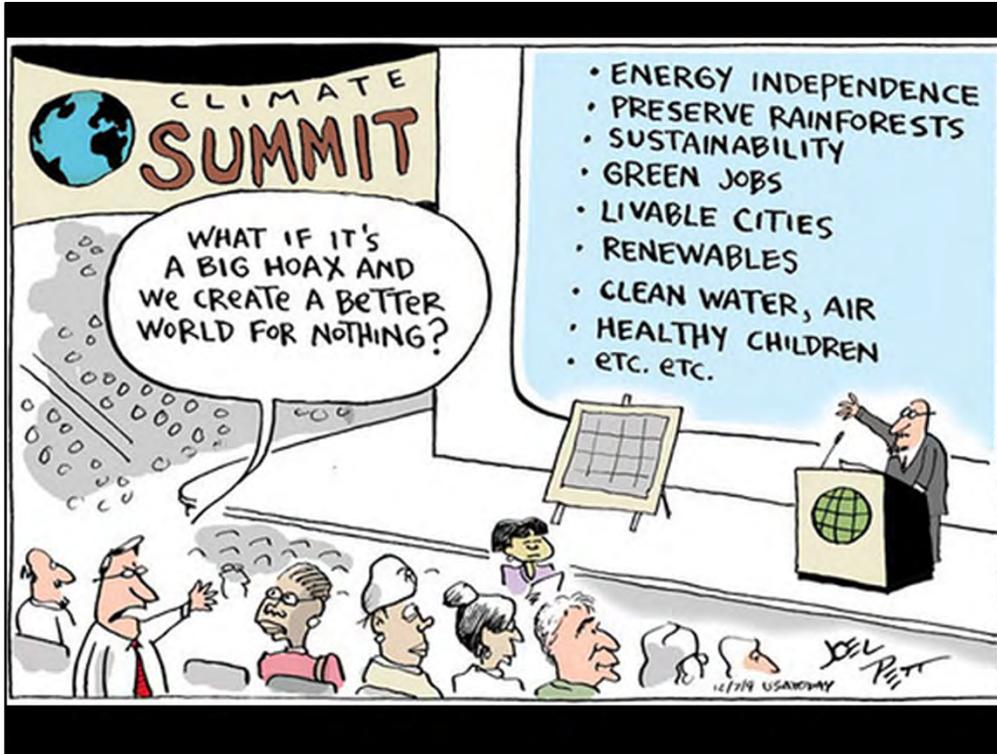
COMMUNICATE to our employees and the public about climate change

- Increase climate change knowledge and awareness within the NPS.
- Increase awareness about climate change impacts on NPS resources to our visitors and partners.



Communication:

The fourth area of emphasis in the NPS climate change response strategy is communication. This aspect is critically important to the success of the other 3 areas. The interpreters and educators within the NPS play a huge role in raising awareness about this issue internally and to our visitors and partners. As well as being a trusted source of information, you can provide places for safe collaborative dialogue for all visitors.



This cartoon gives hope for the future. The steps we are taking as an agency are moving us in the right direction and the choices we are making are aimed at the health and preservation of our resources.

Key Climate Change Messages



- Human activities are changing the Earth's climate.
- Climate change affects national parks and the treasures they protect.
- The National Park Service is addressing climate change.
- The choices you make today do make a difference.

These are the four key messages that serve as a foundation for communication efforts. These key messages show up in many of our educational products. They are the starting point to launch into climate change interpretation and discussions and are simple and clear so that they can be used by any NPS employee no matter what their role.

Watch NPS Leadership Video

Climate Change in National Parks: The Role of Interpreters

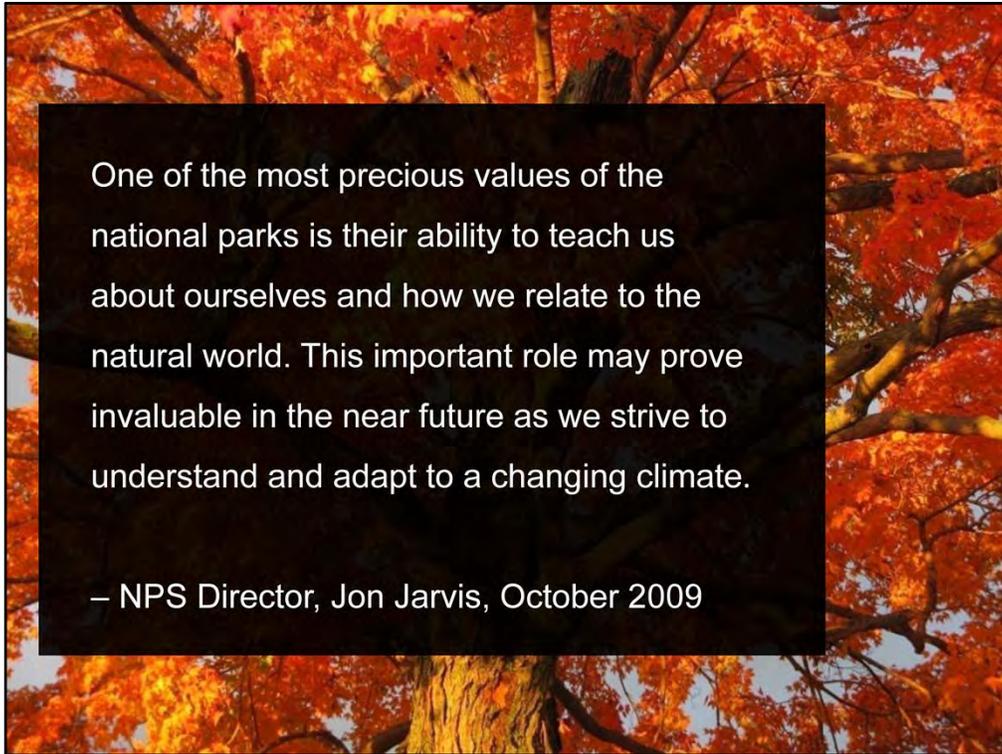
http://www.youtube.com/watch?v=wV_obr17hIM

In this video, members of the NPS Leadership team articulate their vision for the role interpreters play in climate change response.



Given the number of interpreters and educators in the NPS and our unique skill set, we can fill a big role in the national dialogue on climate change. The NPS has a number of inherent strengths for this task.

How is your park already interpreting climate change? Begin to think about new ways to incorporate this topic into your site's interpretive strategy.



One of the most precious values of the national parks is their ability to teach us about ourselves and how we relate to the natural world. This important role may prove invaluable in the near future as we strive to understand and adapt to a changing climate.

– NPS Director, Jon Jarvis, October 2009

And there is no better team of people, than interpreters to be that conduit between the natural world and climate change. Our leadership does indeed have our back and it is time that we begin to interpret this critical issue – if not now, then when?