

# Rehearsing the Future: Participatory Scenario Planning in the National Park Service

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Scenario Planning for Climate Change  
Adaptation Decision Making:  
The State of the Art

University of Arizona, March 31, 2015



# Geography & Context

## Context:

Meeting the mission of the NPS – *to protect natural and cultural resources for this and future generations* – requires new tools and an unprecedented level of collaboration.

## Scope:

- 29 workshops
- 19 case examples
- Park and landscape-level applications / training since 2007

## Range of Parks and Multi-jurisdictional Landscapes

**Glacier NP / Crown of the Continent**

**Rocky Mountain NP**

**Catoctin MP**

**Sequoia & Kings Canyon NPs**

**Arctic and Coastal Alaska (*all parks*)**

**Kaloko-Honokohau NHP**

**Pacific Islands (*W Hawai'i / E Maui*)**

**Joshua Tree NP**

**Pinnacles NM**

**Arid Lands (*Mojave*)**

**Wind Cave NP**

**Great Lakes (*regional and Isle Royale*)**

**Eastern Forests (*Shenandoah*)**

**Assateague Island NS**

**Atlantic Coast (*Cape Lookout*)**

**Greater NYC (*Gateway*)**

**Urban Parks (*National Capitol Region*)**



# Purpose and Anticipated Outcomes

Overall purpose is to enable park managers to consider climate trends and account for surprises in their planning; Anticipated outcomes are improved capacity to deal with uncertainty and more effective decisions that take climate change into account.

## Specific Objectives

- *Facilitate conversation* – Increase awareness and understanding of climate change impacts to parks and protected areas
- *Stretch thinking* and promote long-range decision making – alternative to linear planning process
- *Provide a structured process* for accessing the most relevant science – including what is known and what is uncertain
- *Rehearse options* – managers begin to be proactive instead of reactive
- *Train others* in participatory techniques to build a more informed workforce that is literate about climate change





# Audience, Partners, and Collaborators

- The primary audience is park planners and managers. Additionally, NPS has engaged several hundred individuals across many disciplines.
- Over 90 parks and more than 100 partner organizations have participated (*still compiling the complete list, which will be available at the Tucson meeting*).
- Leaders in the field of scenario planning who have participated include Global Business Network, University of Arizona and CLIMAS, and 5 other NOAA RISAs.
- Early funds came from the National Interagency Fire Center and the USGS Northern Prairie Wildlife Research Center. Beginning in 2010 the work is supported through the NPS Climate Change Response Program.

Scenario exercises are enhanced by diverse groups of partners and perspectives. We always try to ensure that participants include:

- ❖ Stakeholders: who is affected by the implications and decisions?
- ❖ Knowledge holders: who can provide expert analysis and local perspective?
- ❖ The ‘curious and creative’: who will offer some different, provocative ideas to challenge conventional thinking?



# Link to planning/decision making

Links have primarily been to park General Management Planning (ASIS, WICA) and Resource Stewardship Planning (PINN, CATO, JOTR, SEKI). Scenarios have also been used to inform decision-making, for example, wolf management at *Isle Royale NP* and fire management at *Sequoia & Kings Canyon*.

*Scenarios helped ASIS explain the need for flexible infrastructure*



*Bathhouses can be removed before storms*

*Scenarios helped ISRO understand the key issues in wolf management*



*Wolves are considered iconic species for the park*



*Oceanfront parking lot made of native materials*

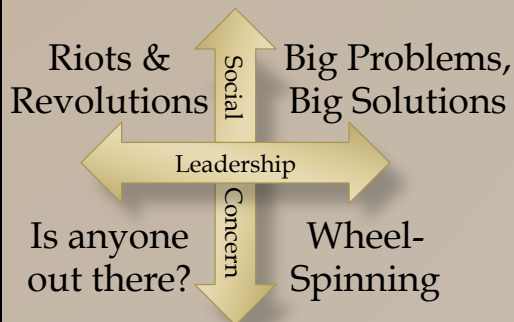


*Long-term research suggests wolf populations control moose, which in turn affect vegetation*

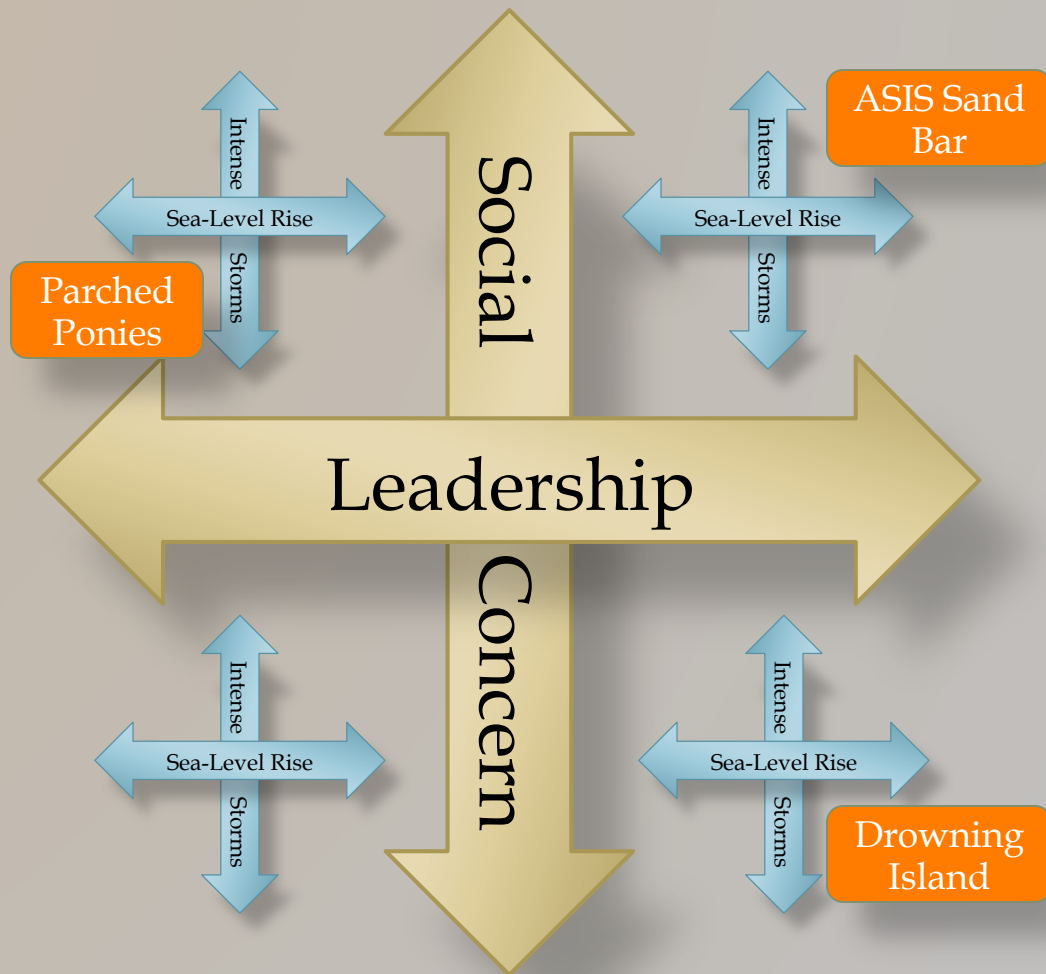
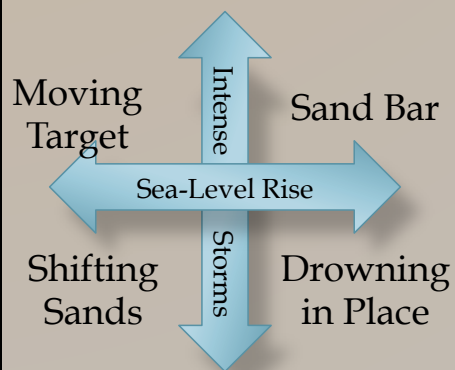
# Process Structure and Methods

We created “nested scenarios” by combining two different 2x2 scenario frameworks together, then choosing a small number of scenarios to explore in greater depth. This example from ASIS workshop.

## SOCIO-POLITICAL



## CLIMATIC



This core methodology was reflected in the structure of our training seminars. We subsequently developed a planning guidance document, available at:

<http://climate.calcommons.org/sites/default/files/CCScenarios-Handbook%20FINAL%20080113.pdf>



# Additional Methods

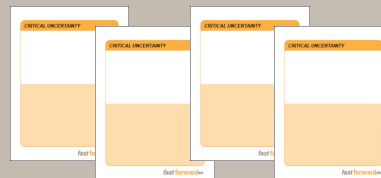
- Through repeated training, Park Service became familiar with 2x2 matrix and nested scenarios. This was a well-structured approach for creating multiple scenarios...but was sometimes seen as too mechanistic and time-consuming
- We explored three alternative participatory scenario creation methods and adapted them to suit the requirements of the Park Service:

## LEAST CHANGE



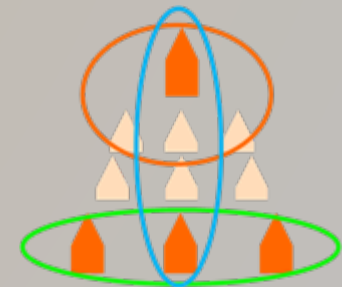
Create one initial scenario that represents the “least change” that models project. Relax projection assumptions in turn to create a set of more radical alternatives to the least change

## CARD-BASED



Use a set of two-sided cards that represent climatic and socio-political uncertainties. Combine 3 or 4 cards to create a multi-dimensional scenario. Use different combinations of cards to create a number of alternative scenarios

## INDUCTIVE



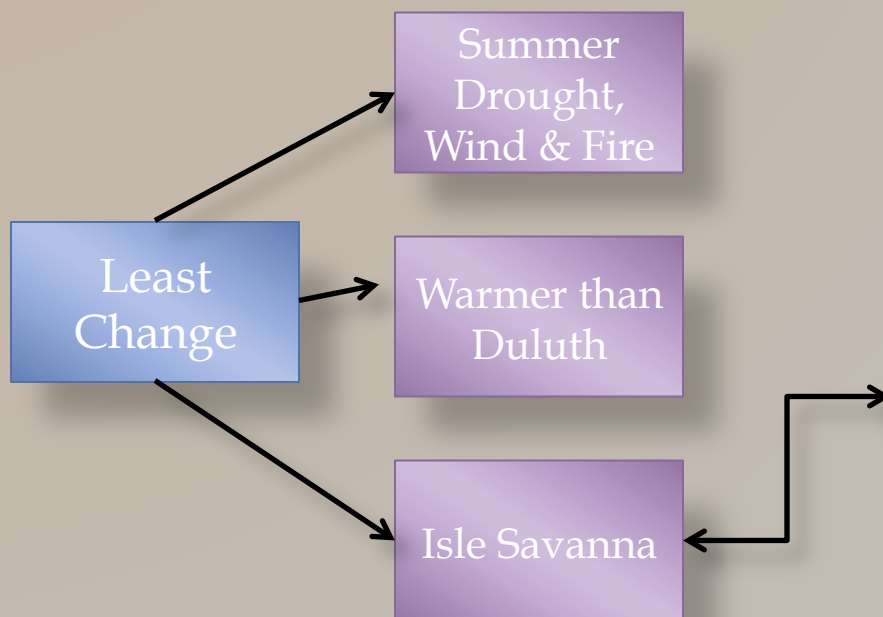
Participants generate scenarios by telling stories based on particular developments. We used it to describe threshold changes.





# Testing Management Options Against Scenarios: “Wind-tunneling”

## Wolf Management in Isle Royale



In this scenario, how would each of these management options work?

1. No intervention?
  - *Moose decline, wolves head towards extirpation*
2. Augment wolves?
  - *Moose decline very rapid*
3. Managed relocation?
  - *Introduce an island herbivore / wolf prey*
4. Restore pre-European conditions – woodland caribou
  - *Unlikely to succeed*





# Learning from Experience

1. Why are participatory scenarios valuable?
  1. “For some reason it [SP] allows people to get past whatever mental roadblock in their minds to start to pick apart complex issues like climate change” – Steve Gray
  2. “Before did the SP workshops, we just really struggled with conversations [about climate change]. SP really helped – it took us from being overwhelmed and gave us a framework. It made it somewhat manageable” – Jeff Mow
2. Scenario planning proved challenging for many, given the organizational culture of the Park Service: The typical culture is pragmatic and eager to move quickly to solutions. Conversely, it is sometimes reluctant to “suspend disbelief”, and less willing to carefully consider uncertainties and questions
3. Many scientists favored the 2x2 approach. It provides a structured set of steps, a sense of rigor to the process and a complete outcome (in terms of the matrix). Many managers favored alternative methods, especially the card-based approach. This encouraged quick-fire scenaric thinking, allowing teams to rapidly move to discussions about “what ifs”, implications and decisions.





# Overall Lessons

- Scenarios are a useful as an entry point to conversations. They allow important issues to emerge because they provide a structure and balance to discussions that challenges the conventional wisdom. However, they have proved less useful in ensuring specific actions emerge from those conversations.
- In our experience, it is important to acknowledge that participatory scenario planning can benefit the Park Service (and any organization) from three distinct viewpoints:
  - ❖ The scenarios created are products: frameworks that condense and simplify a lot of complex information.
  - ❖ Participatory scenarios is a step-by-step process for incorporating uncertainty into climate-related planning methods.
  - ❖ Using scenarios encourages a certain posture towards planning and decision-making. In this view, no matter what exact steps are used, or what precise scenarios are created, the most important outcome is “scenaric thinking” – a way of approaching complex challenges by acknowledging uncertainty and imagining (formally or informally) alternative future stories.