



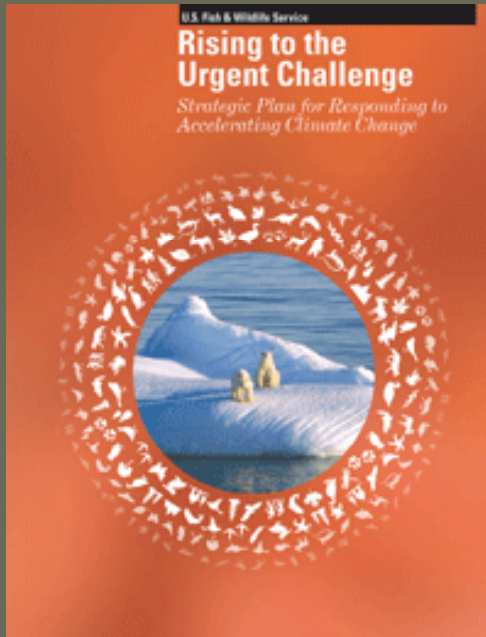
Climate Change and the Fish and Wildlife Service – Building Partnerships



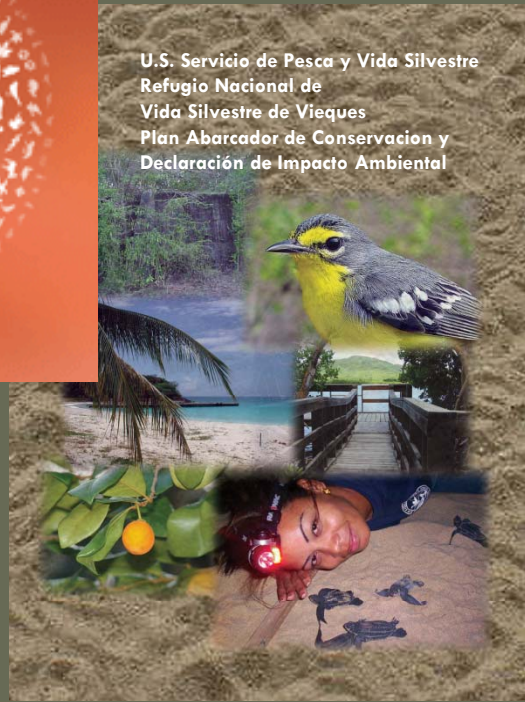
- *Fish and Wildlife Service approach to climate change*
- *Impacts and adaptation on Fish and Wildlife Service managed public lands*
- *Joining forces with other federal and local entities to develop the science necessary to respond to management needs on the ground*



Climate Change and the Fish and Wildlife Service – Building Partnerships



U.S. Servicio de Pesca y Vida Silvestre
Refugio Nacional de
Vida Silvestre de Vieques
Plan Abarcador de Conservación y
Declaración de Impacto Ambiental



Three key strategies:

- *Adaptation*
- *Mitigation*
- *Engagement*

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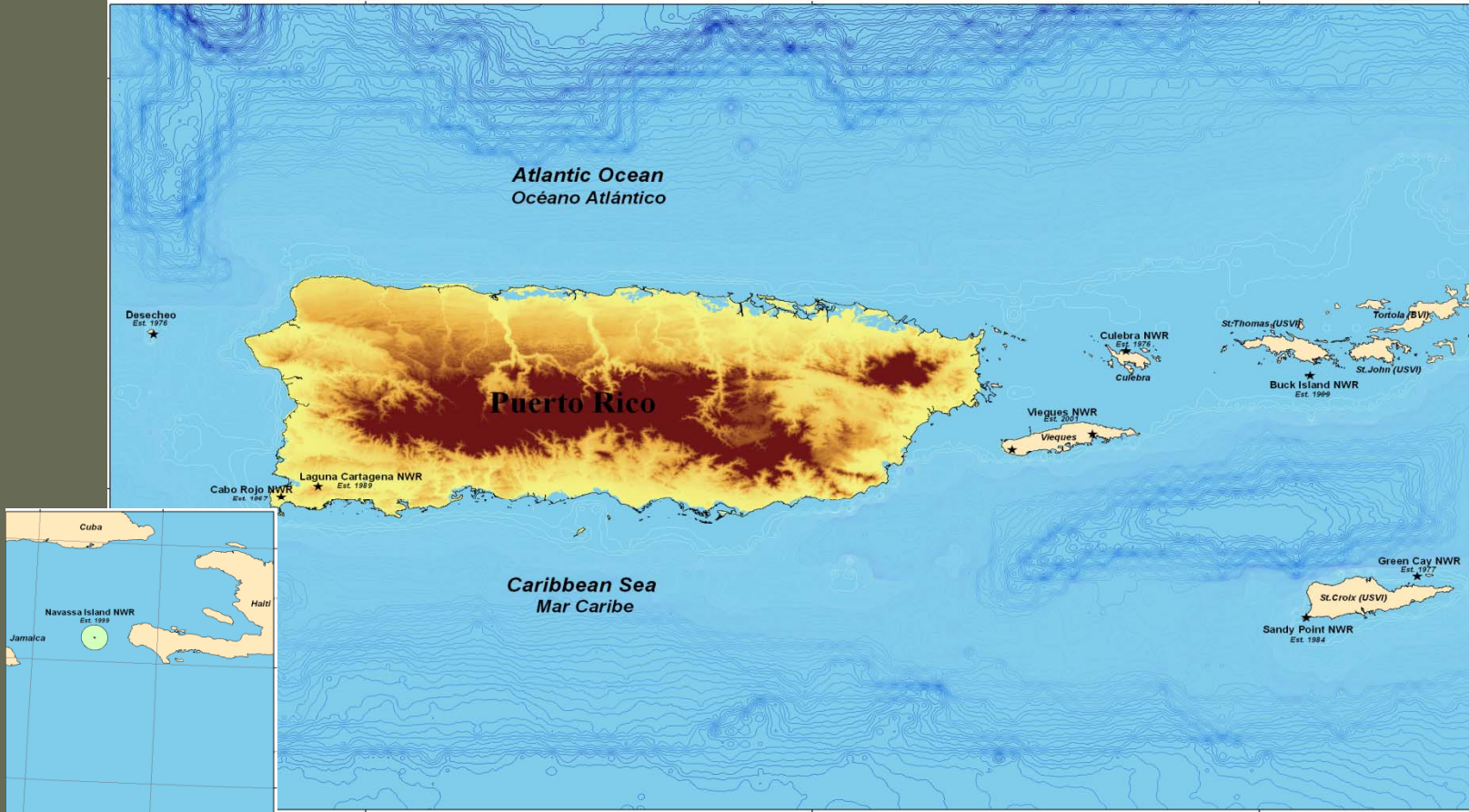
Caribbean Islands National Wildlife Refuges - Working with Partners



Climate Change and the Fish and Wildlife Service – Building Partnerships



Caribbean Islands National Wildlife Refuge Complex *Refugios Nacionales de Vida Silvestre del Caribe*



Caribbean Islands National Wildlife Refuges – Working with Partners



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Loss of important migratory shorebird habitat at the Cabo Rojo salt flats portion of the Cabo Rojo National Wildlife Refuge – rains/storms of September, 2008



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Healthy cactus -

- Increased fire frequency due to extended droughts and increased fuel loads
- Outbreaks of pest species such as the Harrisia cactus mealy bug
- Erosion of beaches affecting sea turtle nesting habitat and infrastructure



Cactus infected with Harrisia mealy bug



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Why are the impacts of climate change on natural areas important to people?

- **Provide supporting services such as the production of oxygen, nutrient cycling**
- **Provide provision services such as food, water, medicine, wood**
- **Provide regulating services such as aesthetic, spiritual, education, and recreation**





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Adaptation:

- Working outside our boundaries to protect additional land to accommodate the shifting needs and migration of species and habitat
- Development of corridors between protected areas to allow for migration between areas



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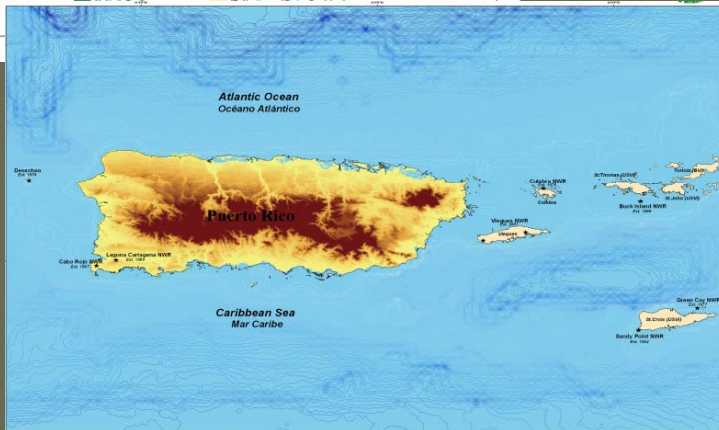
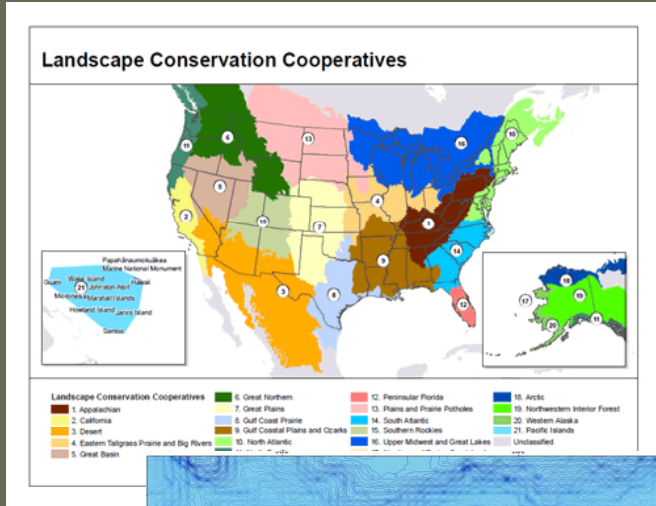
Develop mechanisms to make areas more resistant to the effects of climate change:

- **Create wider firebreaks in the face of increasing drought and fuel loads**
- **Evaluate and correct run-off caused by increased intensity and frequency of storms and urban development**
- **Review planting strategies and species composition of reforestation efforts.**





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Landscape Conservation Cooperatives

- *Alliance of federal, local, and nongovernmental partners that will work together to develop the science needed to answer management needs.*
- *Identify duplicate efforts and available science*
- *Identify similar needs and join resources to conduct science*
- *Identify sources of funding*
- *21 in the nation with the Caribbean being the 22nd*