

# National Park Service



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## LCCs and the National Park Service

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## Outline

- NPS Big Picture
- Park Science
  - Natural Resource Challenge
  - Inventory and Monitoring
- NPS Planning Process(es)
- Our Conservation Challenge
- How we're implementing LCCs/CSCs

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## How we fit together

- 392 Parks
  - 272 With Significant Natural Resources
  - Each has a different specific mission
  - National Parks, Historic Sites, Battlefields, Monuments, Seashores...
  - Bottom-up organization

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## NPS Regions

- 7 Regions, 3 in GCPO

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## NPS Mission

The service shall promote and regulate the **use** of parks, monuments, and reservations, which purpose is to conserve the **scenery** and the **natural and historic objects** and the **wild life** therein and to provide for the **enjoyment** of the same in such manner and by such means as will leave them **unimpaired** for the enjoyment of future generations.

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## NPS OMNIBUS MANAGEMENT ACT OF 1998

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“The Secretary shall undertake a program of inventory and monitoring of National Park System resources to establish baseline information and to provide information on the long-term trends in the condition of National Park System resources...”

“The Secretary shall ... assure the full and proper utilization of the results of scientific studies for park management decisions.”



## Natural Resource Challenge

- Restore NPS capacity to do science-based management
- Implement an Inventory and Monitoring Program
  - Ecological condition / health focused
- Do it for ALL parks with significant natural resources
- Actively engage external partners to do it
- Think long term
  - Long-term monitoring
  - Information management

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## I&M Networks

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## Inventories

- Natural resource bibliographies
- Base cartographic data
- Geology maps
- Soils maps
- Meteorological data
- Air quality data
- Water body location and classification
- Water quality data
- Vegetation maps
- Species lists of vertebrates and vascular plants
- Species distribution and status of vertebrates and vascular plants of management concern

# Overall Purpose of Vital Signs Monitoring:

Determine status and trends in the condition of selected park resources

The intent of vital signs monitoring is to track a subset of physical, chemical, and biological elements and processes of park ecosystems that are selected to represent the overall health or condition of park resources, known or hypothesized effects of stressors, or elements with important human values.

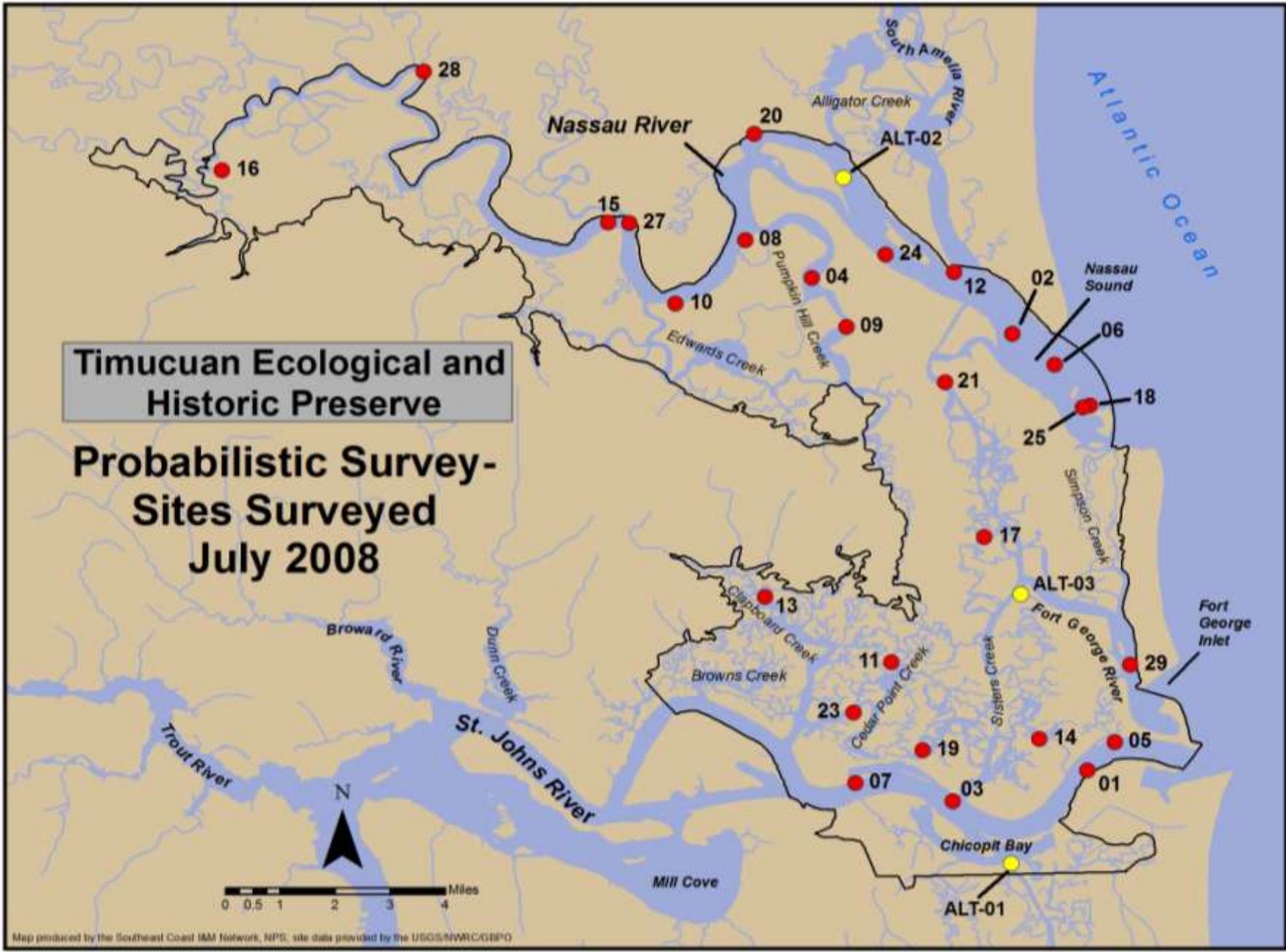


## The I&M Program does not...

- Do research
- Do management effects monitoring
- However...
  - Protocols can be used
  - I&M data can be used for hypothesis-generation
  - I&M monitoring can be used as reference stations (reducing costs of effectiveness monitoring)

**Timucuan Ecological and  
Historic Preserve**

**Probabilistic Survey-  
Sites Surveyed  
July 2008**



Map produced by the Southeast Coast IIM Network, NPS, site data provided by the USGS/NWRC/OBPO



## Expanded Science Capacity

- I&M Networks
  - Gulf Coast
  - Heartland
  - Southern Plains
  - Cumberland Piedmont
  - Southeast Coast
- Prototype I&M Parks
  - Mammoth Cave NP (cave systems)
  - Cape Cod NS (Barrier Islands)
- Science Learning Centers
  - Congaree NP
- CESUs
  - University of TN
  - University of Georgia
  - Texas A&M
- National NR Program Center
  - Data management, etc.
- Regional Aquatic Scientists
  - Wetlands Ecologist (Jean Lafitte )

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## Planning!

- General Management Plans
- Resource Management Plans
  - Vegetation Management Plans
  - Wildlife Management Plans
  - Off Road Vehicle MPs
  - Museum / Facilities / Visitor Use / Outreach...
- Resource Stewardship Strategies
- CC Adaptation Plans
- Science-Supported by
  - I&M Program
  - Resource Condition Assessments
  - CC Vulnerability Assessments



## Resource Stewardship Strategies

- New planning process to replace resource management plans as of 2001
- NPS's implementation of the DOI Adaptive Management Framework
- Integrates Natural and Cultural Resource Planning
- Still in pilot phase...
  - Two so far underway in the SE

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## Should look familiar

- Structured process
- Identify key resources and values
- Develop indicators, management targets, and standards
- Create and implement strategies to manage resources
- Research, Monitor, and Adapt

Fundamental Resources and Values	Desired Conditions for Resources & Values As stated in CHAT GMP 2008	Attributes	Beneficial Influences	Detrimental Influences	Indicators	Reference Condition	Management Target	Current Condition	Target Met?
<i>Chattahoochee River and its bed</i>	Surface waters and groundwater are protected or restored such that water quality as a minimum meets all applicable federal and Georgia water quality standards.	Surface Water Quality-River	Designated uses – drinking water and recreation  Designated secondary trout stream	Increasing human population  Increasing development  Urban runoff  Industry  Sewer overflow  Modified flow, low DO, and low temperature due to Buford Dam  Storm Water runoff	Total Fecal Coliform	<200 MPN/100 mL geometric mean, minimum 4 samples per 30 days, May-October; <1000 MPN/100 mL November-April <sup>1</sup>	Supporting designated uses	Unknown	Unknown
			Wetlands and floodplains  Clean Water Act  Executive Order 11514		<i>Escherichia coli</i>	<235 colonies per 100 mL for single sample Or <126 colonies per 100 mL geometric mean, minimum 4 samples per 30 days <sup>2</sup>	Supporting designated uses	91.5% compliant days (Medlock), 77.2% compliant days (Feces) <sup>3</sup>	Yes
			NPS Management Policies		Temperature	Secondary Trout Stream Classification = shall not exceed 2° F above 'natural' temperatures <sup>4</sup>	Supporting designated uses	<2° F above 'natural' temperatures	Yes
			State of Georgia Erosion and Sedimentation Act		Dissolved Oxygen	Secondary Trout Stream = 6.0 mg/L, minimum 5.0 mg/L <sup>5</sup>	Supporting designated uses	6.72 mg/L <sup>6</sup>	Yes
			Metropolitan River Protection Act		pH	6.0 – 8.5	Supporting designated uses	42% river miles compliant <sup>7</sup>	Yes
			Georgia Planning Act of 1989  NPDES		Non-point Source Pollution – o Nitrate (NO3) o Phosphorus (P) o Sediment o Organic Wastewater Contaminants (OWCs) o PCBs	o NO3 - <10 mg/L <sup>8</sup> o P - 0.64 mg/L monthly average after treatment <sup>9</sup> o Sediment – Turbidity Increase > 10 NTU <sup>8</sup> o OWCs – MCL <sup>8</sup> o PCBs – 0.0005mg/L	Supporting designated uses	o NO2/NO3 – 0.63 mg/l <sup>11</sup> o P – 0.03 mg/l <sup>11</sup> o Turbidity – 11.2 NTU <sup>11</sup> o PCBs – 75% river miles compliant <sup>12</sup>	Partial



## Conservation Strategies

- Integrate across programs / resources
- I&M program
  - indicator selection
  - Definition of reference conditions
  - Reporting on targets for non-projects
- Effectiveness monitoring by parks

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## Landscape Conservation Challenge

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- Natural Resources
  - Fish
  - Wildlife
  - Plants
  - Habitats



## Landscape Conservation Challenge

- Natural Resources
  - Fish
  - Wildlife
  - Plants
  - Habitats
  - Wilderness
  - Hydrologic Processes
  - Fire
  - Geologic Resources
  - Air Resources
  - Natural Sounds
  - Natural Light
- Cultural Resources
  - Natural History Collections
  - Archeological Resources
  - Paleo Resources
  - Ethnography
  - Visitor Use
  - Submerged resources
  - Cultural Landscapes
  - Biotic Cultural Resources



## Landscape Conservation Challenge

- Conservation design and implementation has to encompass full range of resources to be managed
- Most of what we manage requires a landscape-scale perspective
- Must be coupled with the human dimensions
  - Visitor use, expectations, resource values
  - Socioeconomic impacts of decisions
- Must incorporate effects of climate change

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## NPS LCC/CSC Initiative

- Implementing Climate Program
  - National program
  - Regional Climate Scientists
- LCC-level scenario planning / adaptation planning coordinators
- National-level integration of I&M programs between FWS and NPS
- Network I&M Program enhancement
  - Focus on coordinating monitoring and data management efforts within LCC framework
  - Networks selected by ecological theme
  - No new funding for GCPO networks (yet)

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## NPS Climate Scientists

- Serve as key liaison between I&M program and CSCs
- Participate in development of decision support tools
- SE position defunded this year (hopefully to be filled in FY2011)
- Originally to be located in Athens, GA



## Adaptation Planners

- Designated LCC-level NPS personnel
- Primary roles:
  - Facilitate inclusion of climate science in park planning
  - Contribute to bioregional and ecosystem level adaptation plans
  - Assist parks and partners in vulnerability assessments
- South Atlantic LCC getting one



## I&M Program Role

- Enhance programs to contribute to climate science efforts
  - More vital signs
  - Enhanced sampling designs
  - Coordination of methodology and data management across boundaries
- Pilot networks receiving 100-400K base increase
- All networks likely to report findings in climate change context



## Final Thoughts

- Conservation Science has long history of change in response to crisis
- Now facing two crises
  - Global Climate Change
  - Loss of connection between people and nature / history
- To solve the conservation crises of the 21<sup>st</sup> century we need to plan for addressing both



## The Opportunity...

- Think big on defining landscape conservation
  - Natural Resources
  - Cultural Resources
  - Connection of people to the landscape
- Plan for and encourage integrated, cross-discipline, coordinated adaptive management of all resources at the landscape scale