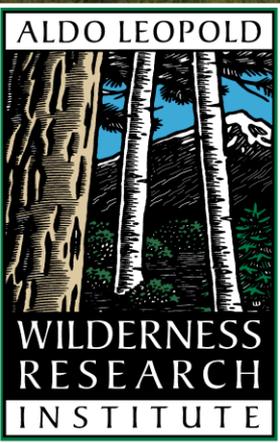


CONDUCTING SCIENCE IN WILDERNESS



Leopold Institute | 406-542-4190

<http://leopold.wilderness.net/>

Wilderness is an important resource for cultural and biophysical research



Oldest known human skeleton in the US,
Channel Islands National Park, CA



New dinosaur discovery, *Ziapelta sanjuanensis*,
Bisti/De-Na-Zin Wilderness, NM



Chert projectile points,
Western Arctic National Parklands, AK



Extinct grasshopper remains, Knife Point Glacier,
Absaroka-Beartooth Wilderness, WY

PRESERVING WILDERNESS CHARACTER

AND

FACILITATING APPROPRIATE SCIENCE

- How much science is happening in your wilderness area? Is it increasing?
- Who conducts the science - agency staff, external researchers, or both?
- How do you educate researchers on the relevant laws, policies, and permits?
- What is your process for evaluating proposals?
- How to track cumulative effects – administrative, commercial, visitor, scientific?

SCIENTIFIC ACTIVITIES RANGE FROM HAVING LITTLE IMPACT...



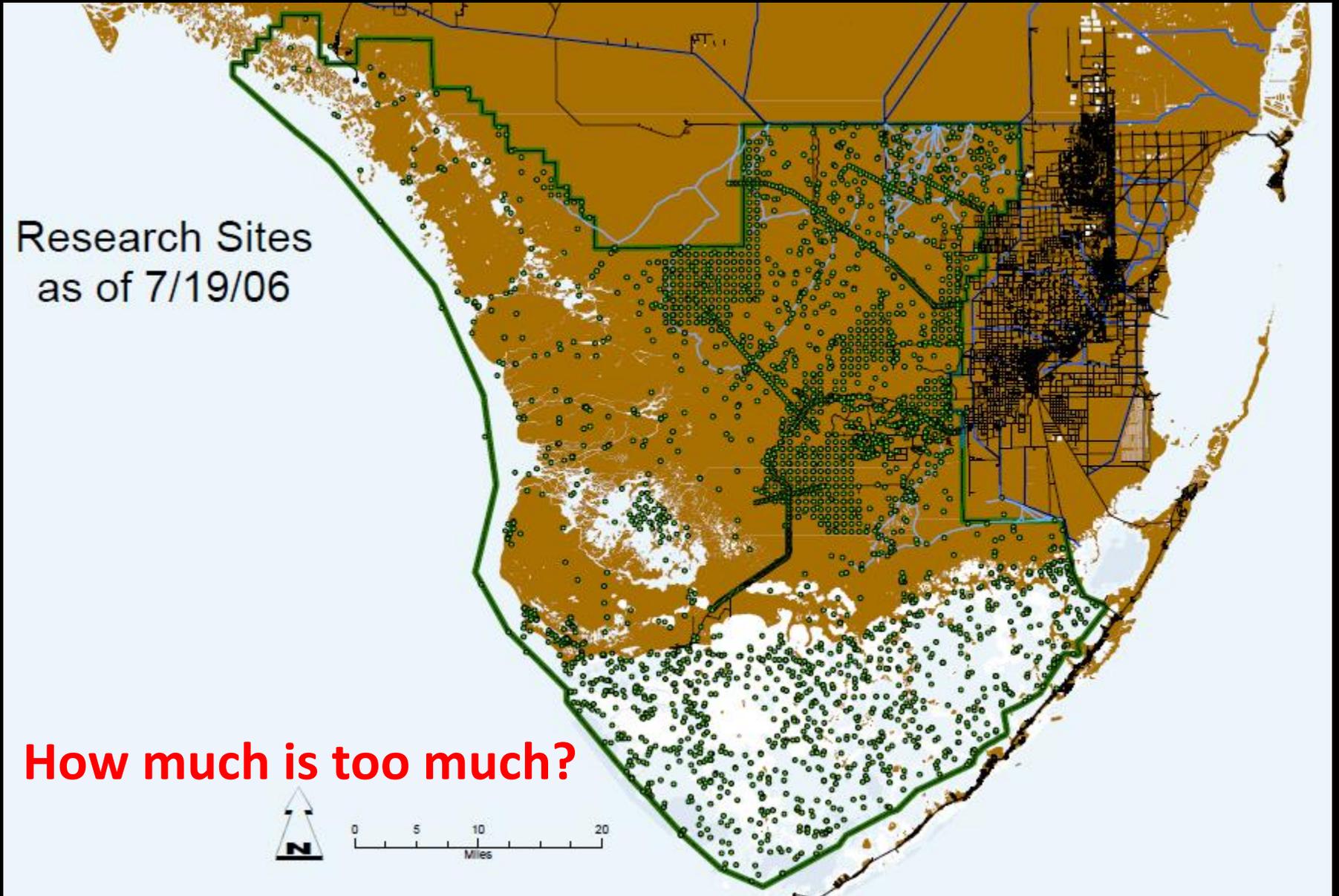
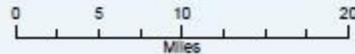
**...TO INTENSE SHORT
TERM, AND SOMETIMES
LONG TERM, IMPACT...**



...AND TO CUMMULATIVE IMPACTS

Research Sites
as of 7/19/06

How much is too much?



IS THERE A PROBLEM?

Lack of communication and a clear evaluation process causes misunderstanding and conflict

Jerry Franklin:

Eos, Transactions, American Geophysical Union, Vol. 75, No. 43, October 25, 1994, Pages 505, 506, 507, 508

Conflict of Values Necessitates Public Lands Research Policy

John Eichelberger and Allan Sattler



“Scientists...are often uninformed about regulations and unwilling to make necessary compromises to conform with wilderness values. Scientists can be arrogant and cryptic in their relations with managers...some may feel that research gives them a license to do whatever they please.”

“Managerial...attitudes toward research in wilderness are also problems...which may include hostility and disinterest, [and] apparently reflect a lack of appreciation of the potential value of scientific study.”

project occurred in 1985. The previous year, a 600-year-old rhyolite volcano. Obsidian
Novarupta was temporarily closed to whether drilling could be permitted in a na-
of a statement of objectives, a strategy, and integrated discussion of scientific in-
egy, and integrated discussion of scientific in-
Detailed studies. A

How does your unit evaluate wilderness research proposals?

A Framework to Evaluate Proposals for Scientific Activities in Wilderness



- Developed by an interagency team
- Pilot tested > 100 proposals
- NOT policy; is a decision support tool



United States Department of Agriculture
Forest Service



Rocky Mountain Research Station
General Technical Report RMRS-GTR-234WWW
January 2010

Wilderness.net

- > Management Tools
- > Research and Science
- Activities Toolbox

Contents:

- Laws affecting science activities in wilderness
- Agency-specific policies and guidelines
- Framework publication
- Worksheets and instructions
- Proposal evaluation tools

determine what types
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in Wilderness. In
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evaluated.

Proposal Evaluation Tools

Guidelines for scientists conducting research in wilderness

1. Education: assure that you understand the special requirements for working in wilderness and why these exist (5 issues to consider)
2. Communication: communicate as early as possible with the local managers about what you want to do (8 issues to consider)
3. In the field: you're working in a unique place that requires special skills, attitudes, and being considerate of other wilderness visitors (4 issues to consider)



Proposal Evaluation Tools

Quickly identify if proposed science activities are a concern or not



Typically OK, no or very minor concern with 4c or qualities of wilderness character; no further discussion needed



CAUTION, likely a concern with 4c or impacts to the qualities of wilderness character; more discussion needed



STOP, definitely a concern with 4c or impacts to the qualities of wilderness character; serious discussion needed



59 science activities are rated



Proposal Evaluation Tools

Quickly identify if proposed science activities are a concern or not

Possible Research Activities



Observing and recording, with instruments that are temporarily used only while the scientists are inside the wilderness, and nothing is left in the wilderness when the scientists leave

- Measure and record aspects of air, water, or soil
- Record animal occurrence and behavior
- Measure and record water flow, temperature, pressure
- Record the location, numbers, and behavior of people visiting the wilderness
- Use electronic equipment such as a laptop computer or hand-held data recorder
- Use a wheeled recording device to measure distance along a trail



Accessing a site inside the wilderness using non-motorized or non-mechanical means

- Walking
- Canoeing
- Skiing
- Using horses



Conducting a survey of visitors inside the wilderness

- Identifying visitor issues and concerns
- Measuring visitor preferences for management actions
- Assessing visitor reactions to user fees



Conducting an aerial survey inside the wilderness

- Radio tracking collared wildlife
- Counting wildlife
- Flying remote sensors



Accessing a site inside the wilderness using motorized equipment or a means of mechanical transport

- Bicycle
- Parachuting or paragliding
- Snowmobile or all terrain vehicle
- Helicopter or fixed wing aircraft



Killing organisms and leaving them inside the wilderness

- Use pitfall traps for small mammals or insects (discarding them after sorting and counting)
- Use rotenone or other chemical treatment in water to kill undesired fish
- Use herbicide to kill plants



Proposal Evaluation Tools

- Some projects are “slam dunks”
- Some projects need discussion and minor to moderate modifications
- Some projects raise major concerns and require serious negotiating with the possibility of rejection



Important Considerations - Wilderness Science

- Wilderness dependence and surrounding landscape (Why here, why now?)
- Impacts to each quality of wilderness character
- Relevance to wilderness stewardship
- Contributions to science
- Use of Minimum Tool or Activity
- Cumulative effects

Important Considerations - Wilderness Science

- Law and policy – rationale and conflicts
- Scales of research and outcomes (time and space)
- Stakeholder views and conflicts
- Uncertainties – implementation, outcomes, funding, access to data
- Communications plan – scientists, managers, public
- Post-study responsibilities

MANAGER RESPONSIBILITY

1. Use standardized and comprehensive process for evaluating research proposals
2. Provide scientists access to information about the significance of wilderness character
3. Communicate to scientists about the evaluation process and expectations for responsible behavior
4. Be tough: protect all wilderness values, including those of a “blank spot” and beware of “a death of a thousand cuts”

SCIENTIST RESPONSIBILITY

1. Learn about the unit process for evaluating research proposals
2. Understand that wilderness is not merely a place to conduct research
3. Talk with managers early and often about:
 - the research
 - its potential impacts to wilderness character
 - how to reduce and mitigate these impacts

Need Wilderness Science?

We welcome collaborations with managers at all agency levels!



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