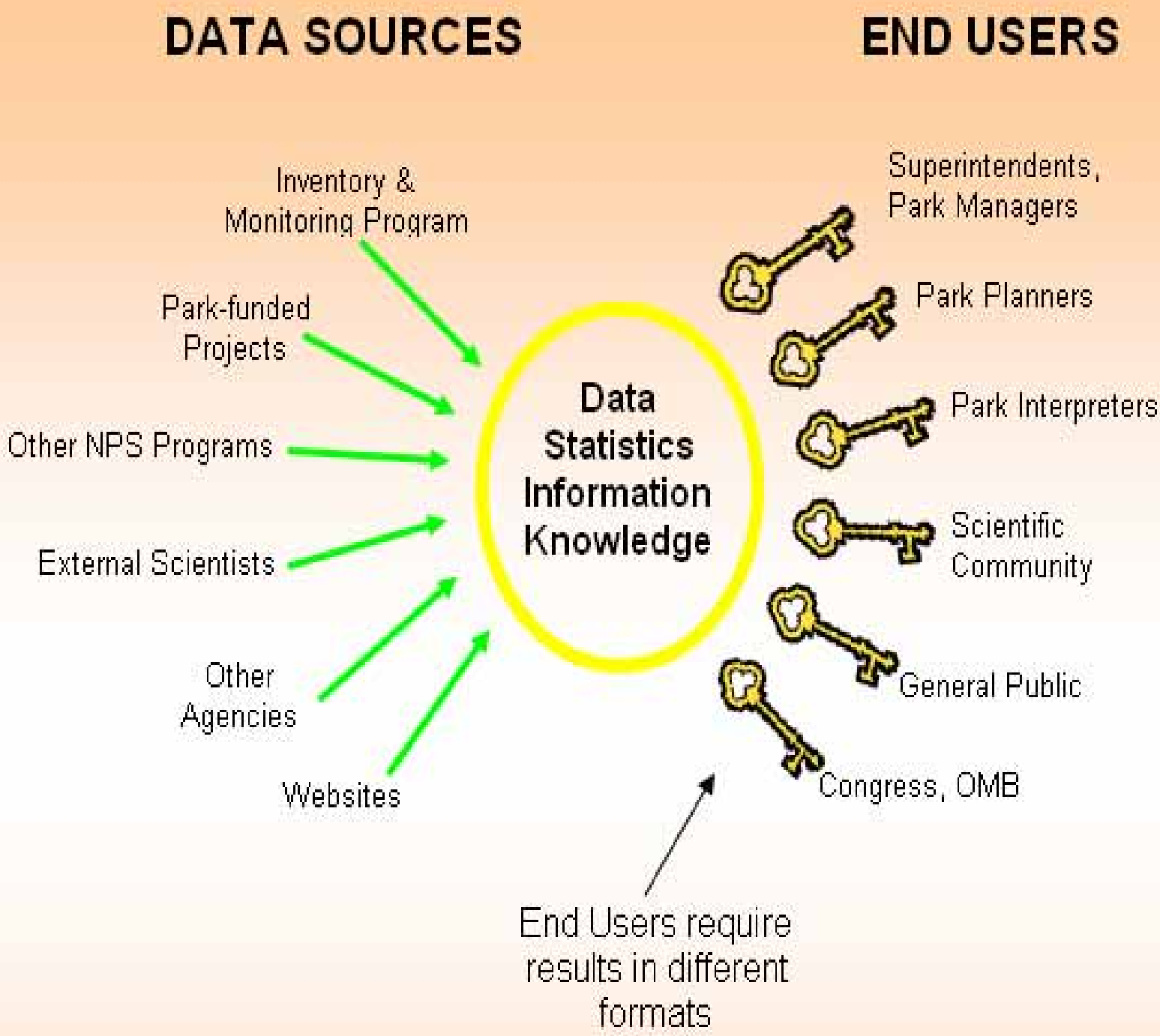
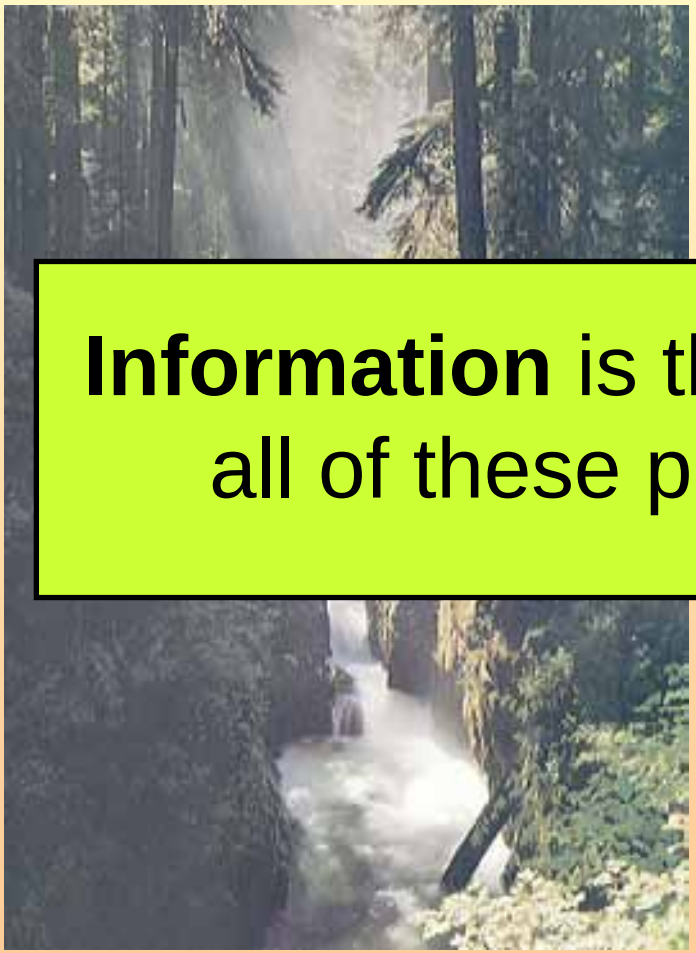

DATA SOURCES
END USERS
Inventory & Monitoring Program
Park-funded Projects
Other NPS Programs
External Scientists
Other Agencies
Websites
Data Statistics Information Knowledge
Superintendents, Park Managers
Park Planners
Park Interpreters
Scientific Community
General Public
Congress, OMB
End Users require results in different formats

NPS Advisory Board Report:

"A sophisticated knowledge of resources and their condition is essential. The Service must gain this knowledge through extensive collaboration with other agencies and academia, and its findings must be communicated to the public. For it is the broader public that will decide the fate of these resources."

Source: Rethinking the National Parks for the 21st Century. A Report of the National Park System Advisory Board, July 2001

Issues and Tasks involved in Managing the Natural Resources of a Park "Know, Protect, Restore, Connect"



- Inventory, Monitoring, Research studies
- Invasive species (e.g., weeds, insect pests, diseases)
- Threatened & endangered species

Information is the common currency among all of these park stewardship activities

- Maintenance (e.g., trails, mowing, vegetation control)
- Law enforcement & visitor safety
- Acquire funding to make things happen
- Deal with politics & people dynamics – local, WASO, DOI, OMB

Park Management Informed by Scientific Information – Integration with other Park Operations

(Adapted from National Water Quality Monitoring Council)

- View monitoring as an information system
- Integrate natural resource information with other park operations
- Make information more useful and available for managers at local level
- Make data available to others for research, education; modeling, more sophistical analyses

>33% of resources dedicated to data management, analysis, reporting

Prairie Cluster Prototype Monitoring Program
A Network Success Story

Uses of Plant Community Monitoring Data
Prairie Cluster Monitoring Program

- GMP planning meetings at Pipestone and Wilson's Creek
- Cultural landscape report at Wilson's Creek NB
- Trail expansion planning at Effigy Mounds
- Prairie restoration seed mix at Scott's Bluff
- Adjust timing of prescribed fires at several parks
- Trailside interpretive signs at Pipestone
- Vegetation Mapping at Effigy Mounds
- "Road show" meetings with managers and interpreters

Reporting the Results of I&M Efforts

Making Data, Information Available for Decision-Makers, Scientists, Educators, and various Constituency Groups

- Annual Administrative Report and Work Plan
- Annual Reports for specific Protocols or Projects
- Inventory Project Reports
- Annual Briefings to Park Managers
- Analysis and Synthesis reports – trends
- Program and Protocol Review reports
- Scientific journal articles and book chapters
- Symposia, workshops and conferences
- Internet and Intranet Websites
- Interpretation and outreach

[latest plans for Natural Resource Technical Report Series]

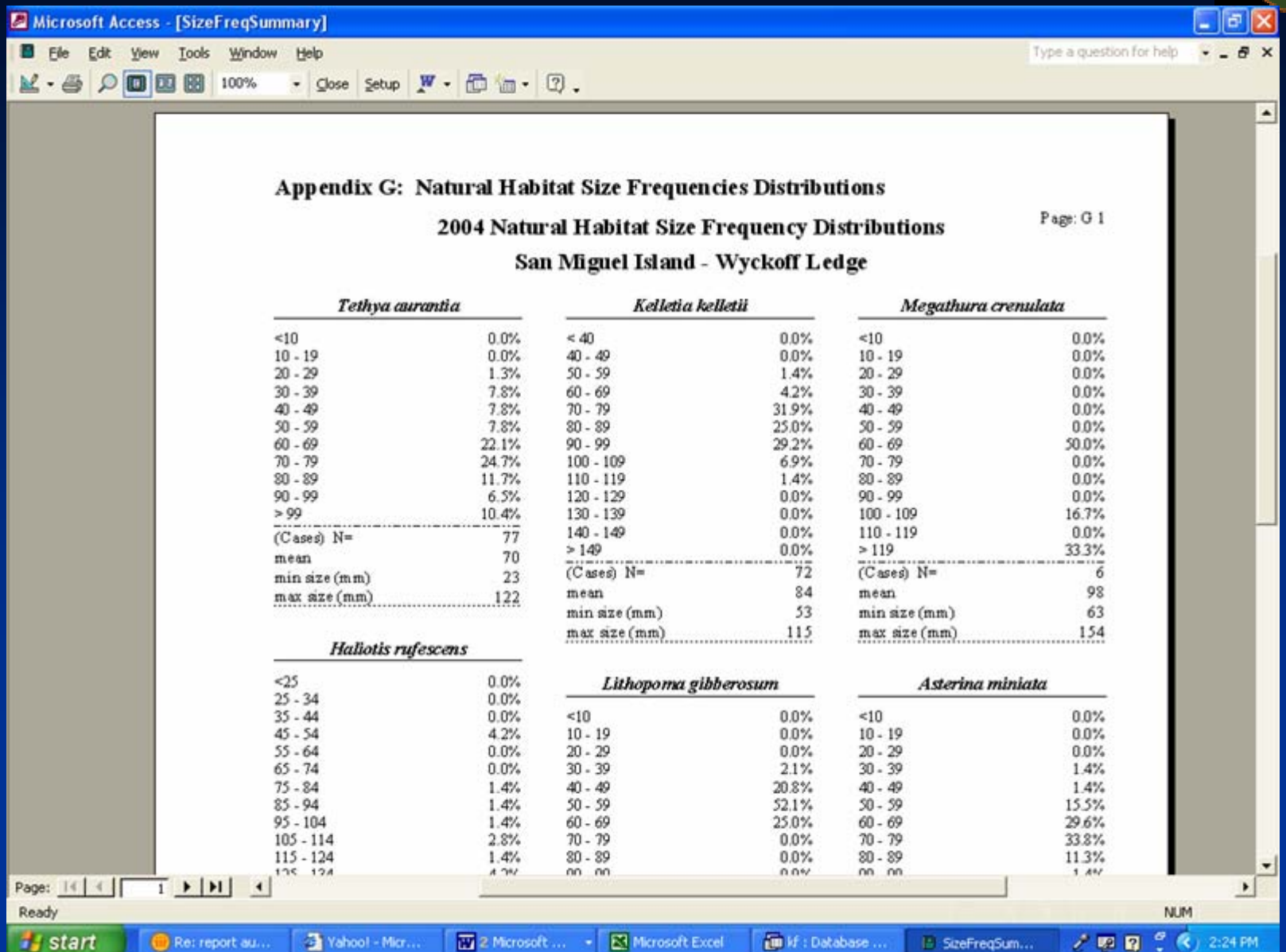
Data Management

Automated Data Summaries

Purpose:

To streamline annual reporting by building data summary routines into Access databases

CHIS - Annual Data Summaries



Appendix G: Natural Habitat Size Frequencies Distributions

2004 Natural Habitat Size Frequency Distributions

San Miguel Island - Wyckoff Ledge

Tethya aurantia	
<10	0.0%
10 - 19	0.0%
20 - 29	1.3%
30 - 39	7.8%
40 - 49	7.8%
50 - 59	7.8%
60 - 69	22.1%
70 - 79	24.7%
80 - 89	11.7%
90 - 99	6.5%
> 99	10.4%
(Cases) N=	77
mean	70
min size (mm)	23
max size (mm)	122

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	1.4%
60 - 69	4.2%
70 - 79	31.9%
80 - 89	25.0%
90 - 99	29.2%
100 - 109	6.9%
110 - 119	1.4%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	72
mean	84
min size (mm)	53
max size (mm)	115

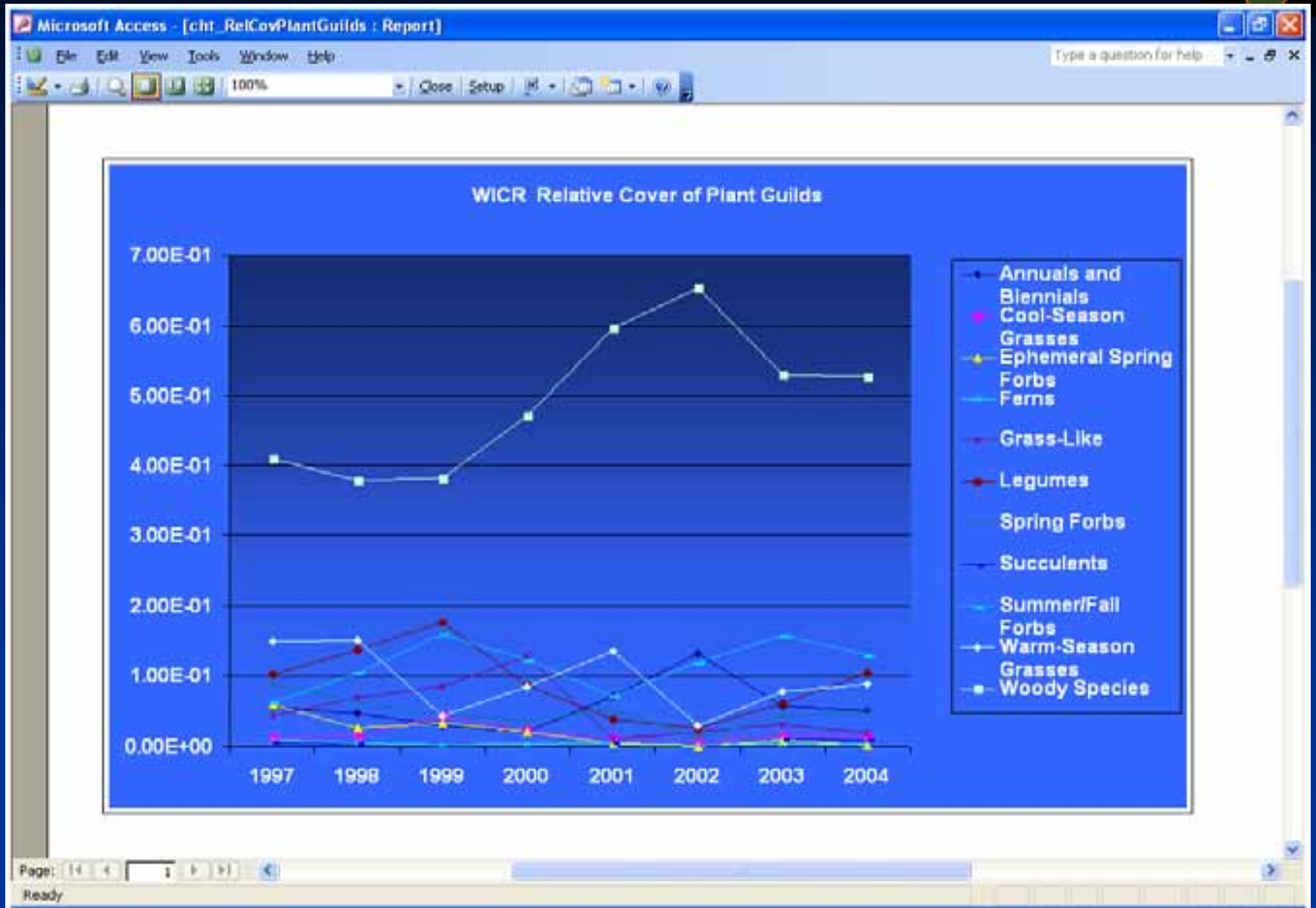
Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	50.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	16.7%
110 - 119	0.0%
> 119	33.3%
(Cases) N=	6
mean	98
min size (mm)	63
max size (mm)	154

Haliotis rufescens	
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	4.2%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	1.4%
85 - 94	1.4%
95 - 104	1.4%
105 - 114	2.8%
115 - 124	1.4%

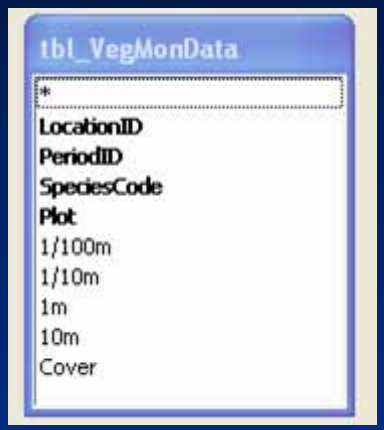
Lithopoma gibberosum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	2.1%
40 - 49	20.8%
50 - 59	52.1%
60 - 69	25.0%
70 - 79	0.0%
80 - 89	0.0%

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.4%
40 - 49	1.4%
50 - 59	15.5%
60 - 69	29.6%
70 - 79	33.8%
80 - 89	11.3%

Automated Data Summaries - Trends

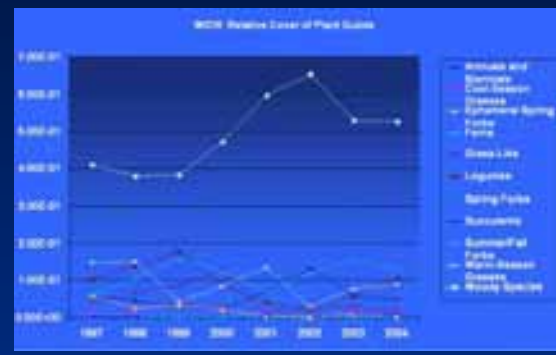


Data Flow behind “Trends” Figure



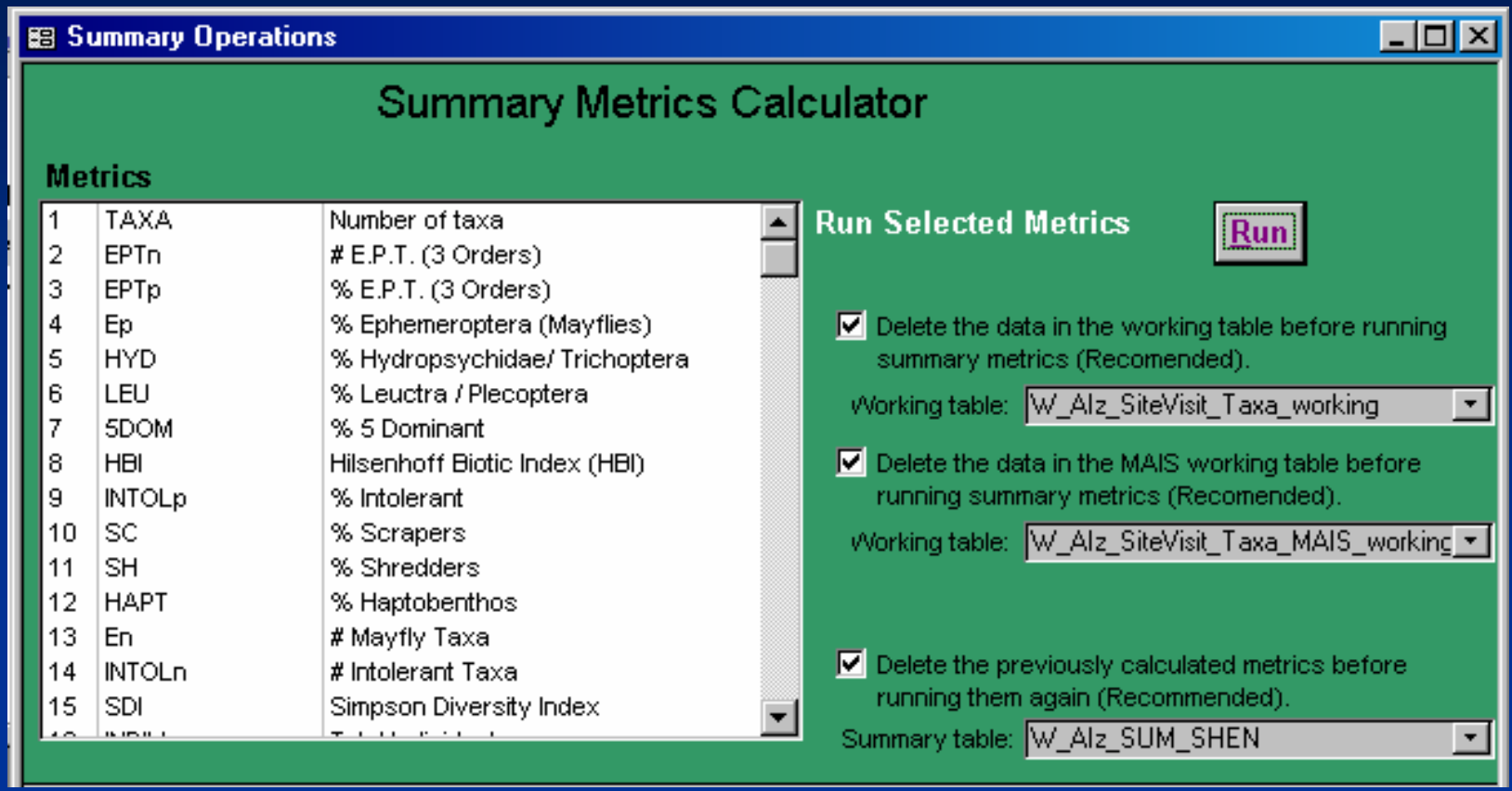
Core data table

Intermediate Queries

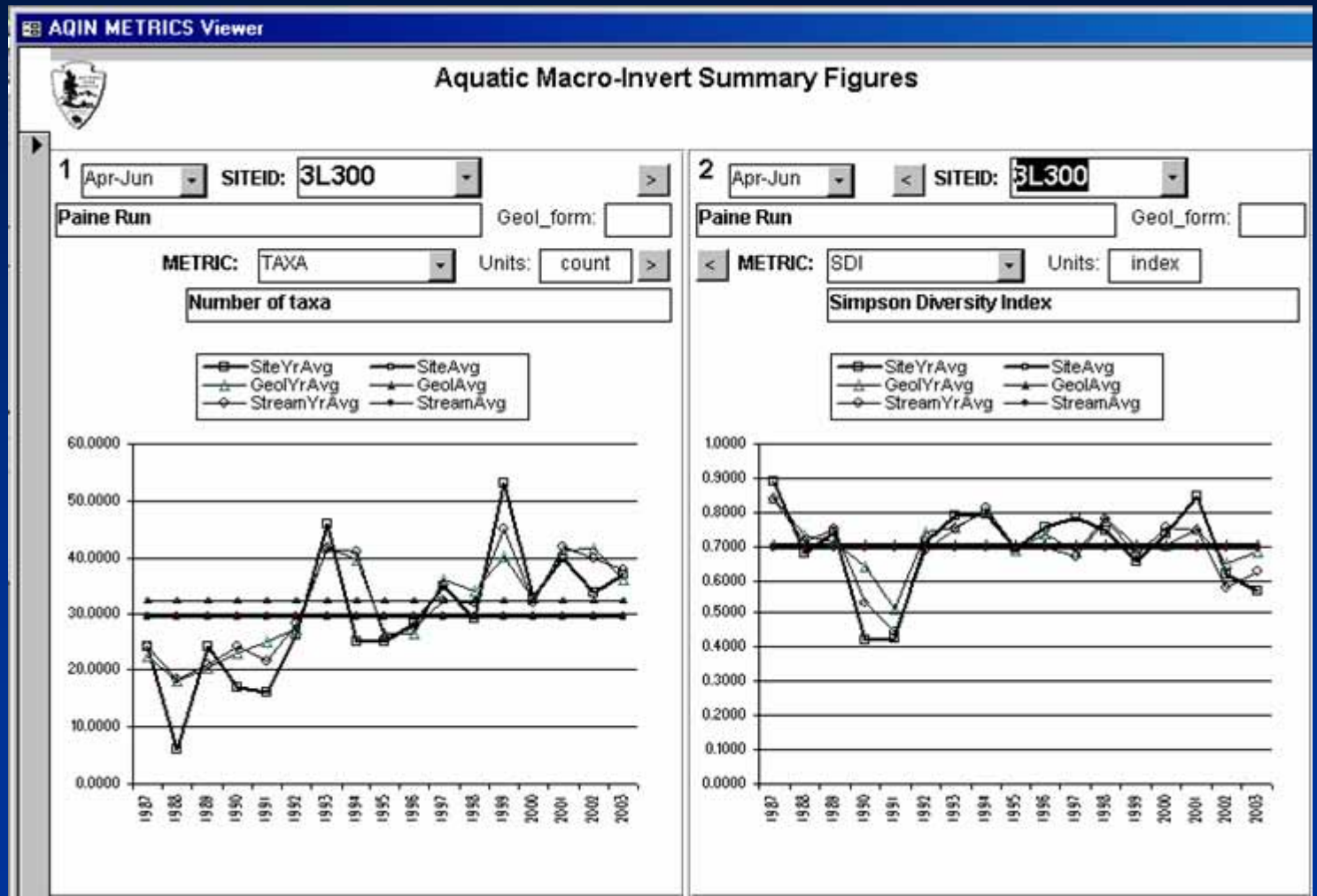


Summary query to “Chart” Report

Alan Williams' User Interface for Summary Operations Shenandoah NP prototype



Data Summary Viewer Tool



Denali StatServer

Denali Ltem StatServer® - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Address http://fnemd-1.iab.uaf.edu/statserver/default.htm Go

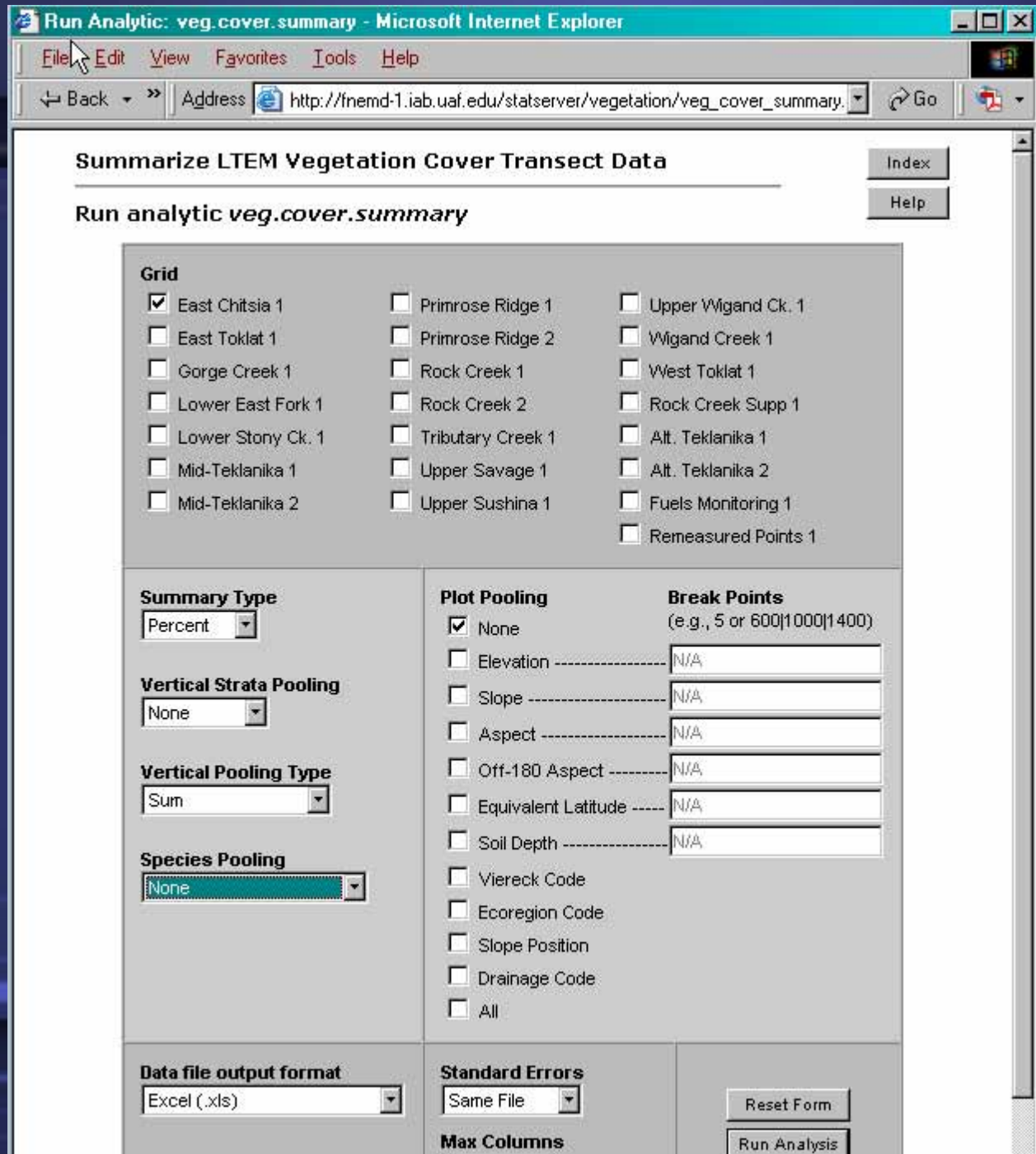
Denali LTEM StatServer®

Small Mammal	
voleplot	This analytic uses small mammal abundance data collected in Denali National Park from 1992-2000 to produce an abundance graph for two genera of microtines over time for a selected sampling plot. A table is also produced containing the abundance estimates and standard errors for the selected plot.

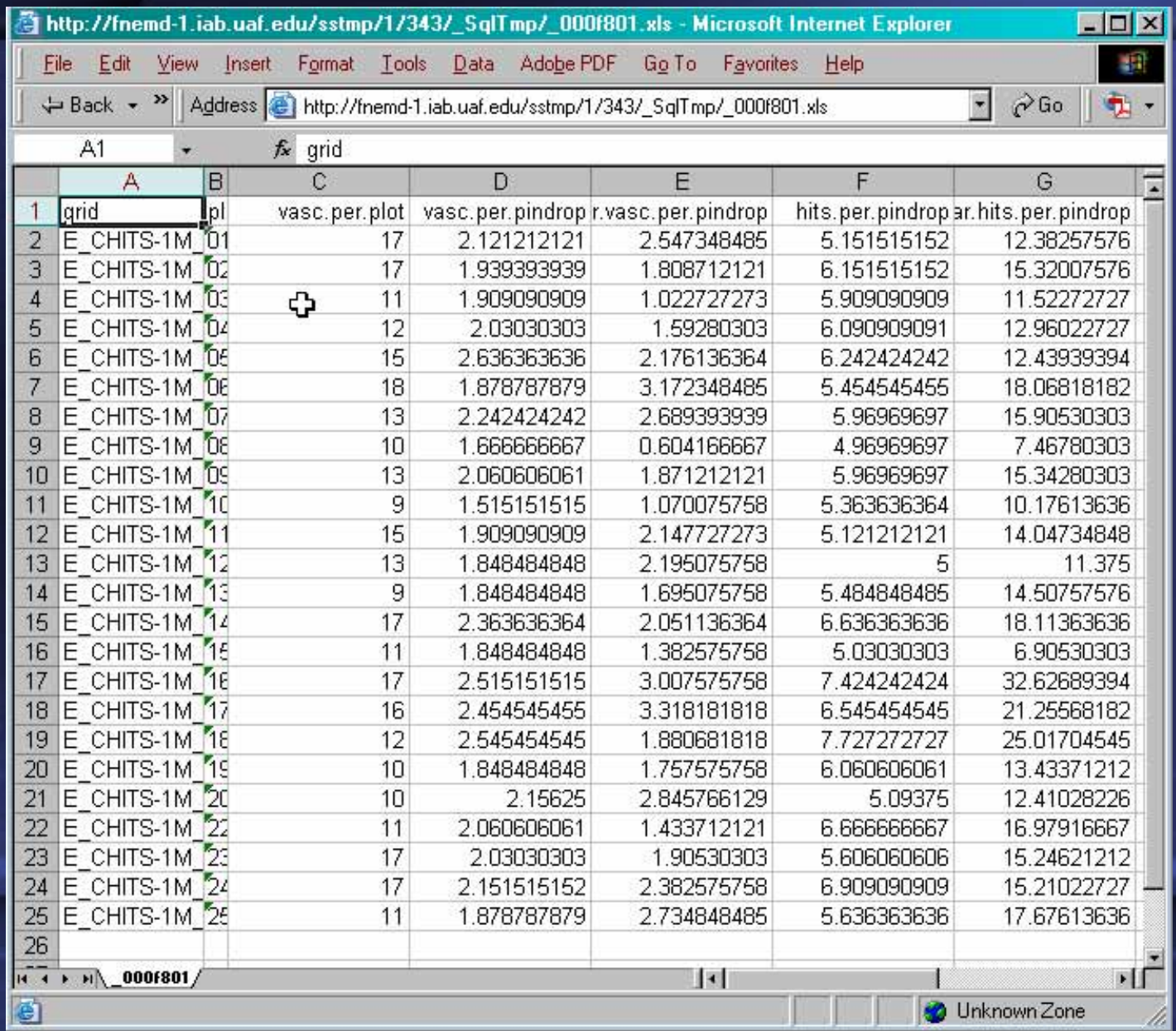
Vegetation (Login)	
Permission from NPS is needed to access these functions. Contact Carl Roland (Carl_Roland@nps.gov) 907-455-0672.	
veg.cover.summary	This analytic uses cover transect data to generate output files of summary statistics such as percent cover. The user can optionally pool by vertical strata within plots, by plot physical or biotic characteristics, by species groups, or any combination of the three.
cover.transect.summary	This analytic generates standard summary statistics from cover transect data: (1) Total number of unique vascular species encountered; (2) Mean number of vascular species found in each pin drop (with variance); (3) Mean number of hits in each pin drop (with variance); (4) Mean number of hits above 30 cm per pin drop (with variance). No options are provided.
quadrat.data.summary	This analytic uses quadrat data to generate output files of summary statistics for biotic and abiotic parameters. The user can optionally pool plots by physical or biotic characteristics.

Analytic Menu for Veg Cover

- Great input flexibility
- Eliminate illogical arguments



Excel Output Generated



http://fnemd-1.iab.uaf.edu/sstmp/1/343/_SqlTmp/_000f801.xls - Microsoft Internet Explorer

File Edit View Insert Format Tools Data Adobe PDF Go To Favorites Help

Back Address http://fnemd-1.iab.uaf.edu/sstmp/1/343/_SqlTmp/_000f801.xls Go

A1 grid

	A	B	C	D	E	F	G
1	grid	pl	vasc.per.plot	vasc.per.pindrop	r.vasc.per.pindrop	hits.per.pindrop	ar.hits.per.pindrop
2	E_CHITS-1M_01		17	2.121212121	2.547348485	5.151515152	12.38257576
3	E_CHITS-1M_02		17	1.939393939	1.808712121	6.151515152	15.32007576
4	E_CHITS-1M_03		11	1.909090909	1.022727273	5.909090909	11.52272727
5	E_CHITS-1M_04		12	2.03030303	1.59280303	6.090909091	12.96022727
6	E_CHITS-1M_05		15	2.636363636	2.176136364	6.242424242	12.43939394
7	E_CHITS-1M_06		18	1.878787879	3.172348485	5.454545455	18.06818182
8	E_CHITS-1M_07		13	2.242424242	2.689393939	5.96969697	15.90530303
9	E_CHITS-1M_08		10	1.666666667	0.604166667	4.96969697	7.46780303
10	E_CHITS-1M_09		13	2.060606061	1.871212121	5.96969697	15.34280303
11	E_CHITS-1M_10		9	1.515151515	1.070075758	5.363636364	10.17613636
12	E_CHITS-1M_11		15	1.909090909	2.147727273	5.121212121	14.04734848
13	E_CHITS-1M_12		13	1.848484848	2.195075758	5	11.375
14	E_CHITS-1M_13		9	1.848484848	1.695075758	5.484848485	14.50757576
15	E_CHITS-1M_14		17	2.363636364	2.051136364	6.636363636	18.11363636
16	E_CHITS-1M_15		11	1.848484848	1.382575758	5.03030303	6.90530303
17	E_CHITS-1M_16		17	2.515151515	3.007575758	7.424242424	32.62689394
18	E_CHITS-1M_17		16	2.454545455	3.318181818	6.545454545	21.25568182
19	E_CHITS-1M_18		12	2.545454545	1.880681818	7.727272727	25.01704545
20	E_CHITS-1M_19		10	1.848484848	1.757575758	6.060606061	13.43371212
21	E_CHITS-1M_20		10	2.15625	2.845766129	5.09375	12.41028226
22	E_CHITS-1M_22		11	2.060606061	1.433712121	6.666666667	16.97916667
23	E_CHITS-1M_23		17	2.03030303	1.90530303	5.606060606	15.24621212
24	E_CHITS-1M_24		17	2.151515152	2.382575758	6.909090909	15.21022727
25	E_CHITS-1M_25		11	1.878787879	2.734848485	5.636363636	17.67613636
26							

_000f801

Unknown Zone

Clear Advantages for I&M

- Ensure repeatability of analyses for reporting each year
- Helps protect against inevitable staff turnover
- Eases the analysis/reporting process

Document Distribution
Rocky Mountain Network

"Making data more available and usable for park managers; building institutional knowledge"

National Park Service
Nature & Science

National Park Service
U.S. Department of the Interior

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Vital Signs Monitoring

Discovering and protecting America's natural heritage

NPS » Nature & Science » Inventory & Monitoring » Vital Signs Monitoring

Nature & Science
I & M Home
Program Administration & Organization
- Program Goals
- National Framework
- 3-Phase Approach
- Meeting Notes & Presentations
- PowerPoint Gallery

Design & Technical Guidance
- Goals & Objectives
- Conceptual Models
- Vital Signs
- Sampling Design
- Protocols
- Data Management
- Reporting
- Technical Guidance

Other Important Links
- Monitoring Plans
- Key Documents
- Literature Cited
- Glossary
- Monitoring Intranet

What's new on the Monitoring Internet

Download "An Overview of Vital Signs Monitoring & its Central Role in Natural Resource Stewardship & Performance Management"

Download Vital Signs Monitoring Brochure

Program Administration & Organizational Framework
Justification for Integrated Natural Resource Monitoring
Legislation and Policy
Definition of Key Terms
  Glossary of Terms as used by NPS I&M Program
National Framework for I & M
  National and Regional Oversight
  Natural Resource Program Center & MTAG
  Basic Resource Inventories
  Prototype Monitoring Programs
  Vital Signs Monitoring Networks
Monitoring Planning & Design: The 3-Phase Approach
  Monitoring Plan Outline
  Monitoring Plan Checklist Memo
  Ecological Monitoring Framework
  Schedule - Network Due Dates for Phase 1, 2, 3
  Peer Review and Approval Process

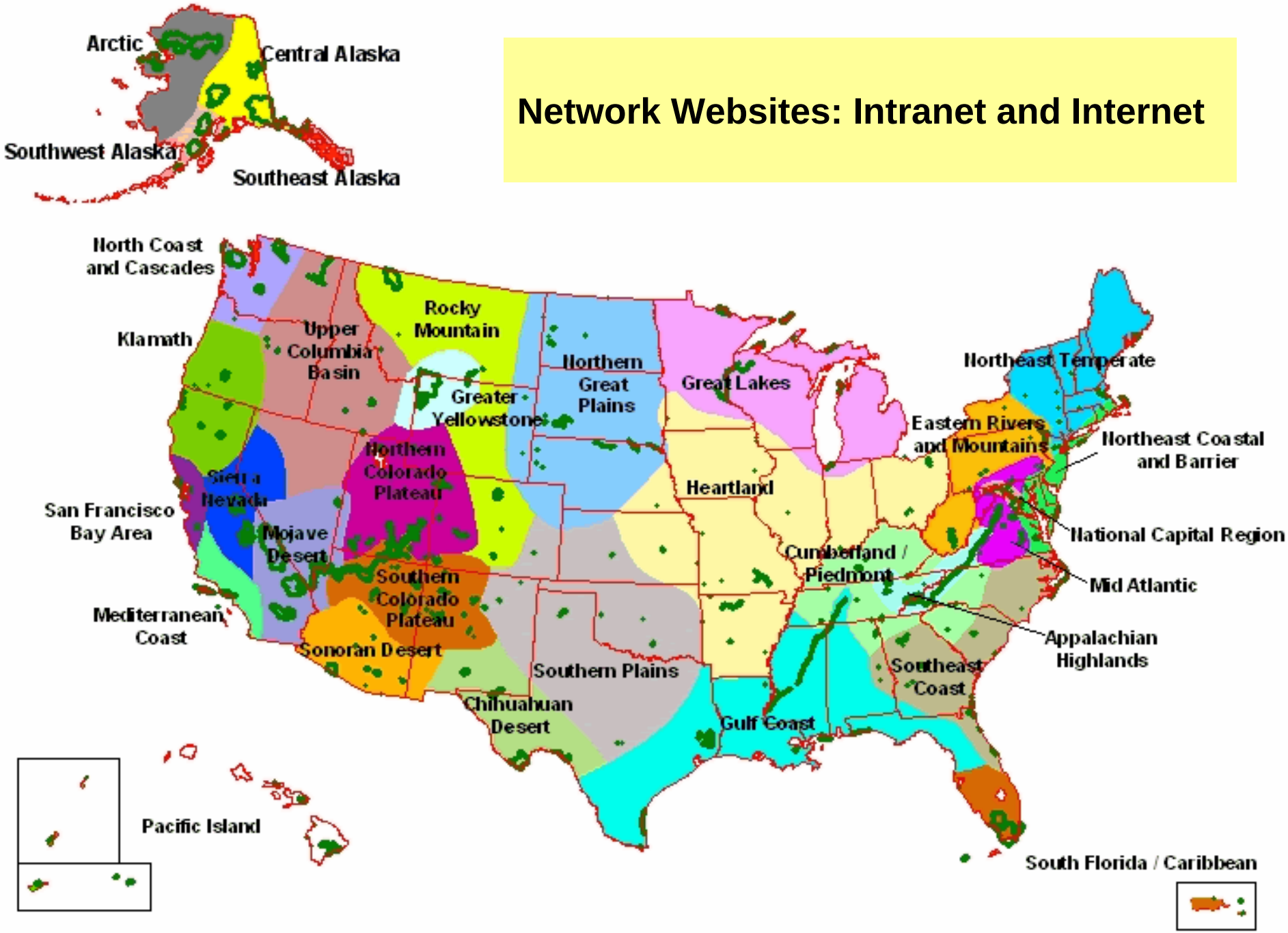
Other Links & Documents
List of Coordinators and Data Managers
Meeting Notes and Presentations
Literature Cited and Extended Bibliography
Download Documents for Designing a Monitoring Program

Guidance for Designing an Integrated Monitoring Program
Introduction
Integration: Ecological, Spatial, Temporal & Programmatic
Establishing Monitoring Goals & Objectives
  Examples of Specific, Measurable Monitoring Objectives
Developing Conceptual Models of Ecosystem Components
Prioritizing & Selecting Vital Signs - What Should be Monitored?
Sampling Design Considerations - Where & When to Sample
Monitoring Protocols
  Required Content/Format of Protocols
  Protocol Development Process
  Guidance for Protocol Development Summary documents
  Protocol Database
  Protocol Examples from Other Programs & Agencies
  Download Example Protocol for Land Bird Monitoring
Data Management and Analysis
Reporting the Results of Monitoring
  Recommended Style for Literature Cited in Monitoring Plans
Technical Guidance on Specific Topics
  Air Resources
  Geologic Resources
  Water Resources
    WRD Guidance for Designing and Conducting Water Quality Monitoring
  Biological Resources
    Invasive Species
    Land Birds
  Remote Sensing and Landscape Dynamics

Network Monitoring Plans

http://science.nature.nps.gov/im/monitor

Network Websites: Intranet and Internet

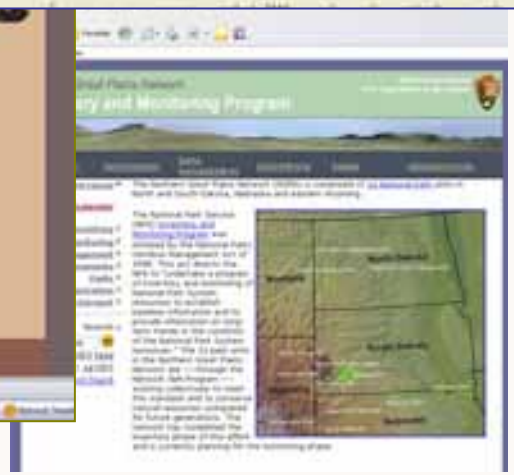



Inventory & Monitoring Program
North Coast Cascades Network


Inventory & Monitoring


About
Models
Data
Reports
NETN Mission


South Florida / Caribbean Network
Inventory and Monitoring Program
Welcome



National Park Service
Inventory & Monitoring Program

National Park Service
U.S. Department of the Interior

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Nature & Science
Inventory & Monitoring

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- Reports & Publications
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Parks: Nature & Science

Northern Colorado Plateau Network

NPS » Nature & Science » I & M » Networks » Northern Colorado Plateau

Northern Colorado Plateau Network
Inventory and Monitoring Program

The Inventory and Monitoring Program is a major component of the National Park Service's strategy to improve park management through greater reliance on scientific information.

NCPN Newsletter
[820k PDF File]

Nationwide, 270 national parks have been grouped into 32 Vital Signs Networks linked by geographic similarities, common natural resources, and resource protection challenges. The network approach facilitates collaboration, information sharing, and economies of scale in natural resource monitoring. The Northern Colorado Plateau Network encompasses 16 park units in Utah, Colorado, Wyoming, and Arizona.

The goals of Inventory and Monitoring networks are:

- inventory the natural resources and park ecosystems under National Park Service stewardship to determine their nature and status;
- monitor park ecosystems to better understand their dynamic nature and condition, and to provide reference points for comparisons with other, altered environments;
- establish natural resource inventory and monitoring as a standard practice throughout the National Park system;
- integrate natural resource inventory and monitoring information into National Park Service planning, management, and decision making;
- share accomplishments and information with others and form partnerships for reaching common goals and objectives. >> read more

Parks in this Network

Please select a park

Northern Colorado Plateau Network Map
National I & M Map

Quick Links

Link
Link
Link

Revised Network Template

Executive Briefs

Greater Yellowstone Monitoring

Executive Briefs

Greater Yellowstone Monitoring

print version

Whitebark Pine

Source GRYN

Last Update 12/04/2005

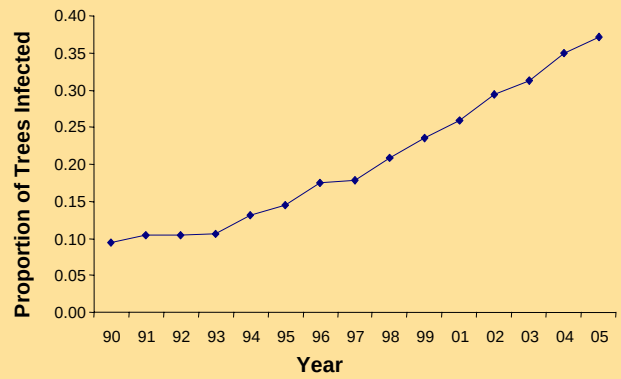
Click for (D) more detail. or (G) for graphic.

Importance

Whitebark pine is considered a "keystone" species in the subalpine ecosystem. (D) Its best known role in these ecosystems is as a high-energy food source for a variety of wildlife species, including grizzly bears. Dramatic declines of whitebark have been reported throughout its range (G) due to two major factors: 1) an introduced fungus, white pine blister rust; and 2) heavy mortality from endemic mountain pine beetle.

Status

- Thirty six of the 51 (71%) transects had some indication of blister rust. (G)
- Although blister rust was widespread, the infection severity was relatively low.
- The estimate proportion of trees infected with blister rust within the GYE to be 0.189 ± 0.05 SE, and most infected trees had ≤2 cankers. (D) (G)



Discussion

Our preliminary results indicate that the occurrence of white pine blister rust is widespread throughout the GYE, although in most cases, severity is at relatively low levels.

Additional Resources
Contact(s)
Reports
Learning Center
Links