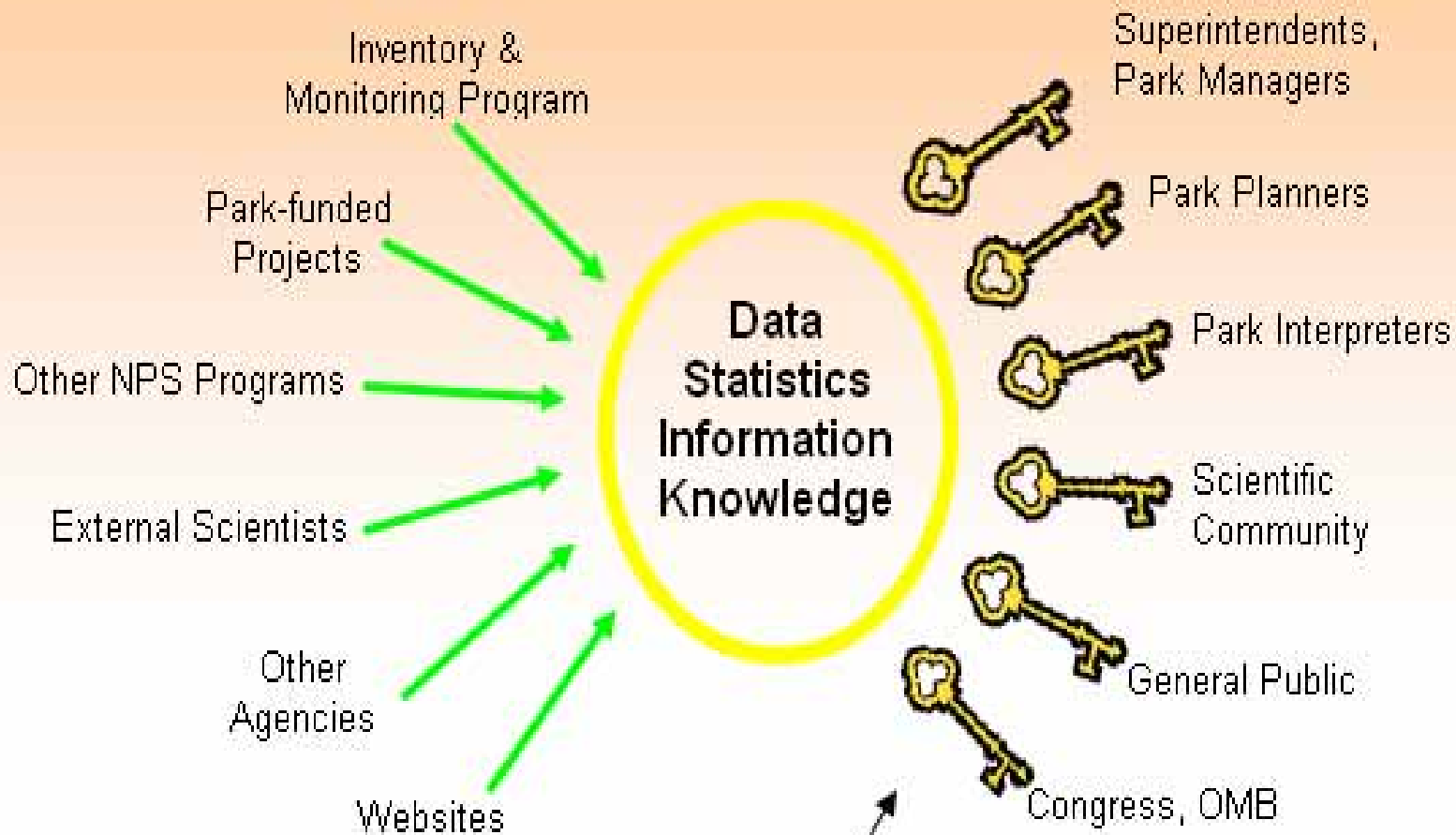


DATA SOURCES

END USERS



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



- 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 sophisticated 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



Microsoft Access - [SizeFreqSummary] Type a question for help

File Edit View Tools Window Help

Appendix G: Natural Habitat Size Frequencies Distributions

Page: G 1

2004 Natural Habitat Size Frequency Distributions
San Miguel Island - Wyckoff Ledge

<i>Tethya aurantia</i>		<i>Kelletia kelletii</i>		<i>Megathura crenulata</i>	
<10	0.0%	< 40	0.0%	<10	0.0%
10 - 19	0.0%	40 - 49	0.0%	10 - 19	0.0%
20 - 29	1.3%	50 - 59	1.4%	20 - 29	0.0%
30 - 39	7.8%	60 - 69	4.2%	30 - 39	0.0%
40 - 49	7.8%	70 - 79	31.9%	40 - 49	0.0%
50 - 59	7.8%	80 - 89	25.0%	50 - 59	0.0%
60 - 69	22.1%	90 - 99	29.2%	60 - 69	50.0%
70 - 79	24.7%	100 - 109	6.9%	70 - 79	0.0%
80 - 89	11.7%	110 - 119	1.4%	80 - 89	0.0%
90 - 99	6.5%	120 - 129	0.0%	90 - 99	0.0%
> 99	10.4%	130 - 139	0.0%	100 - 109	16.7%
(Cases) N=	77	140 - 149	0.0%	110 - 119	0.0%
mean	70	> 149	0.0%	> 119	33.3%
min size (mm)	23	(Cases) N=	72	(Cases) N=	6
max size (mm)	122	mean	84	mean	98
		min size (mm)	53	min size (mm)	63
		max size (mm)	115	max size (mm)	154
<i>Haliotis rufescens</i>		<i>Lithopoma gibberosum</i>		<i>Asterina miniata</i>	
<25	0.0%	<10	0.0%	<10	0.0%
25 - 34	0.0%	10 - 19	0.0%	10 - 19	0.0%
35 - 44	0.0%	20 - 29	0.0%	20 - 29	0.0%
45 - 54	4.2%	30 - 39	2.1%	30 - 39	1.4%
55 - 64	0.0%	40 - 49	20.8%	40 - 49	1.4%
65 - 74	0.0%	50 - 59	52.1%	50 - 59	15.5%
75 - 84	1.4%	60 - 69	25.0%	60 - 69	29.6%
85 - 94	1.4%	70 - 79	0.0%	70 - 79	33.8%
95 - 104	1.4%	80 - 89	0.0%	80 - 89	11.3%
105 - 114	2.8%	90 - 99	0.0%	90 - 99	1.4%
115 - 124	1.4%	100 - 109	0.0%		
125 - 134	4.2%				

Page: 1 1 1 1 1 1 1 1

Ready NUM



Data Flow behind "Trends" Figure

tbl_VegMonData	
*	
LocationID	
PeriodID	
SpeciesCode	
Plot	
1/100m	
1/10m	
1m	
10m	
Cover	



Core data table

qryint_CombinePeriodsTre1	
*	
Year	
LocationID	
SpeciesCode	
Plot	
MaxOfCover	

qryint_Guild3Tre	
*	
Year	
LocationID	
Guild	
GuildName	
RelativeCov	
RelativeFreq	

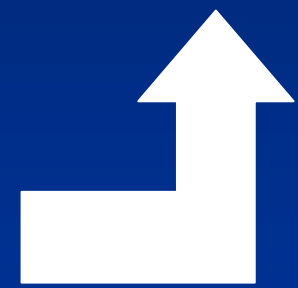
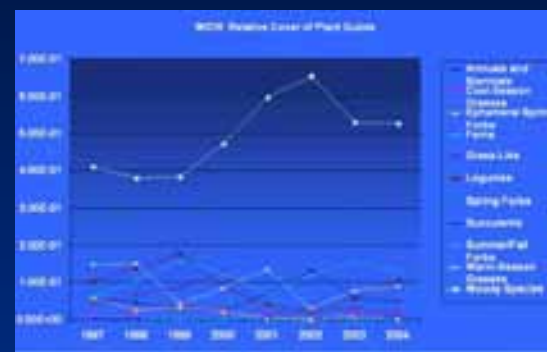
qryint_Guild1Tre	
*	
Year	
LocationID	
SumOfMidpointValue	
CountOfMaxOfCover	

qryint_Guild4Tre	
*	
Year	
GuildName	
SumOfRelativeCov1	
SumOfRelativeFreq1	
StDevOfRelativeCov1	
StDevOfRelativeFreq1	
FirstOfCountOfLocationID1	

qryint_Guild2Tre	
*	
Year	
LocationID	
Guild	
SumOfMidpointValue1	
CountOfMaxOfCover1	
FirstOfSumOfMidpointValue	
FirstOfCountOfMaxOfCover	

qrysum_Guild5Tre	
*	
Year	
GuildName	
AvgRelCov	
StDevOfRelativeCov1	
AvgRelFreq	
StDevOfRelativeFreq1	

Intermediate Queries



Summary query to "Chart" Report

Alan Williams' User Interface for Summary Operations Shenandoah NP prototype

Summary Operations

Summary Metrics Calculator

Metrics

1	TAXA	Number of taxa
2	EPTn	# E.P.T. (3 Orders)
3	EPTp	% E.P.T. (3 Orders)
4	Ep	% Ephemeroptera (Mayflies)
5	HYD	% Hydropsychidae/ Trichoptera
6	LEU	% Leuctra / Plecoptera
7	SDOM	% 5 Dominant
8	HBI	Hilsenhoff Biotic Index (HBI)
9	INTOLp	% Intolerant
10	SC	% Scrapers
11	SH	% Shredders
12	HAPT	% Haptobenthos
13	En	# Mayfly Taxa
14	INTOLn	# Intolerant Taxa
15	SDI	Simpson Diversity Index

Run Selected Metrics

Delete the data in the working table before running summary metrics (Recommended).

Working table:

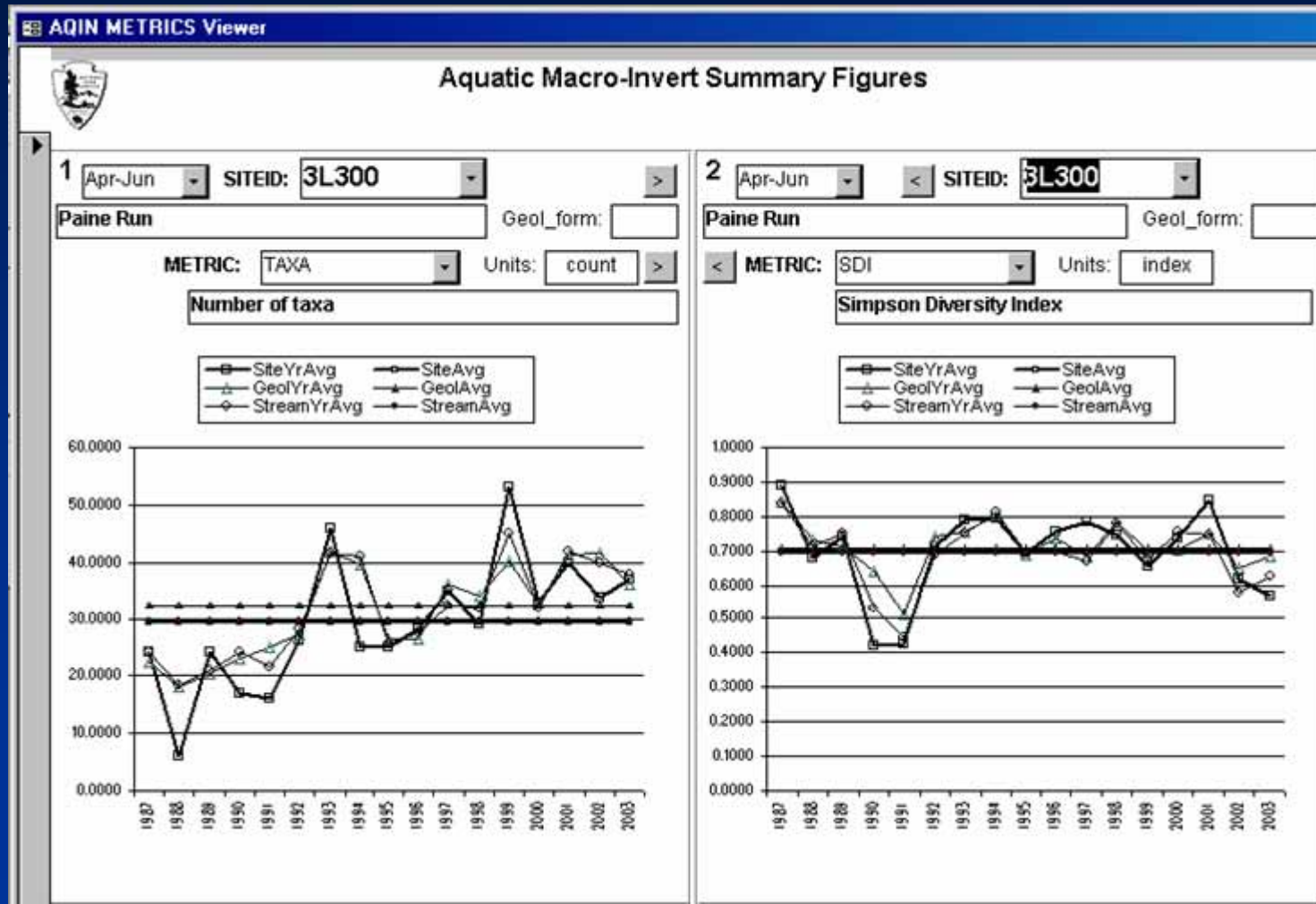
Delete the data in the MAIS working table before running summary metrics (Recommended).

Working table:

Delete the previously calculated metrics before running them again (Recommended).

Summary table:

Data Summary Viewer Tool




Denali StatServer

Denali Ltem StatServer® - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Address <http://fmemd-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

Run Analytic: veg.cover.summary - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Address http://fnemd-1.iab.uaf.edu/statserver/vegetation/veg_cover_summary. Go

Summarize LTEM Vegetation Cover Transect Data

Index Help

Run analytic *veg.cover.summary*

Grid

<input checked="" type="checkbox"/> East Chitsia 1	<input type="checkbox"/> Primrose Ridge 1	<input type="checkbox"/> Upper Wigand Ck. 1
<input type="checkbox"/> East Toklat 1	<input type="checkbox"/> Primrose Ridge 2	<input type="checkbox"/> Wigand Creek 1
<input type="checkbox"/> Gorge Creek 1	<input type="checkbox"/> Rock Creek 1	<input type="checkbox"/> West Toklat 1
<input type="checkbox"/> Lower East Fork 1	<input type="checkbox"/> Rock Creek 2	<input type="checkbox"/> Rock Creek Supp 1
<input type="checkbox"/> Lower Stony Ck. 1	<input type="checkbox"/> Tributary Creek 1	<input type="checkbox"/> Alt. Teklanika 1
<input type="checkbox"/> Mid-Teklanika 1	<input type="checkbox"/> Upper Savage 1	<input type="checkbox"/> Alt. Teklanika 2
<input type="checkbox"/> Mid-Teklanika 2	<input type="checkbox"/> Upper Sushina 1	<input type="checkbox"/> Fuels Monitoring 1
		<input type="checkbox"/> Remeasured Points 1

Summary Type
Percent

Vertical Strata Pooling
None

Vertical Pooling Type
Sum

Species Pooling
None

Plot Pooling

<input checked="" type="checkbox"/> None	Break Points (e.g., 5 or 600 1000 1400)
<input type="checkbox"/> Elevation -----	N/A
<input type="checkbox"/> Slope -----	N/A
<input type="checkbox"/> Aspect -----	N/A
<input type="checkbox"/> Off-180 Aspect -----	N/A
<input type="checkbox"/> Equivalent Latitude -----	N/A
<input type="checkbox"/> Soil Depth -----	N/A
<input type="checkbox"/> Viereck Code	
<input type="checkbox"/> Ecoregion Code	
<input type="checkbox"/> Slope Position	
<input type="checkbox"/> Drainage Code	
<input type="checkbox"/> All	

Data file output format
Excel (.xls)

Standard Errors
Same File

Max Columns

Reset Form

Run Analysis

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
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

Inside Natural Resources
Rocky Mountain Network INTRA-net

National Park Service
U.S. Department of the Interior

INVENTORIES | MONITORING | DATA MANAGEMENT | CONTACTS | CALENDAR | ARCHIVE OF PUBLICATIONS | NEWS | RELATED LINKS | INTER-net | Home

Enter the data to search for in the field to the left then click Search. You must enter text in each field.

Author:

Title:

Park:

Category:

OR you can use the following.

Enter the part of a title that you wish to search for in the field then click Search.

Title:

If the **Author** field appears in **Bold** then the document has been posted to the online library within the last 30 days.

Author	Year	Title	Park	Category	ID
Agro Engineering, Inc	2003	Great Sand Dunes National Park And Preserve Land And Vegetative Cover Classification	GRSA	Information	476
Arno & Sneck	1977	A Method For Determining Fire History In Coniferous Forests Of The Mountain West	GRSA	Technical	518
Bramblett & Zale	2002	Fish Inventories in Four Park Units of the Rocky Mountain Network	GRSA	Inventory	525
Chaney et al	2003	Annual Performance Plan For Great Sand Dunes National Monument Fiscal Year 2003 October 1, 2002 to September 30, 2003	GRSA	Planning	532
Chatman et al	1997	Water Resources Management Plan Great Sand Dunes National Monument, Colorado	GRSA	Planning	149
Coffey	2004	Study Implementation Plan Elk And Bison Grazing Ecology And Management in Great Sand Dunes National Park And Preserve	GRSA	Planning	479
Cooper & Severn	1992	Wetlands of the San Luis Valley, Colorado: An Ecological Study and Analysis of the Hydrologic Regime, Soil Chemistry, Vegetation and the Potential Effects of a Water Table Drawdown	GRSA	Technical	477
Everett	1986	Proceedings-Pinyon Juniper Conference, Reno, NV, January 13-16, 1986	GRSA	Information	519

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



Nature & Science NPS

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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



Vital Signs Monitoring

Discovering and protecting America's natural heritage

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

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



Microsoft Internet Explorer

Inventory & Monitoring Program
North Coast and Caribbean Network

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Related Links

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North Coast Caribbean Network

The National Park Service Inventory and Monitoring Program was established in 1992 with a focus on completion of basic research inventories for all units with significant natural resources, and development of ongoing monitoring programs in selected parks and park systems.

The National Park Service Inventory and Monitoring Program is divided into the North Coast and Caribbean Network (NCCN) to address the inventory and management of the significant natural resources found within the boundary of these two parks.

The North Coast and Caribbean Network includes:

- Carriacou National Historic Site (CNS)
- Fort Jefferson National Monument, Dry Tortugas
- Florida Keys National Historical Park (FKNHP)
- Florida State Park System (FSPS)
- John Day National Monument (JDNM)
- North Carolina National Park System (NCCNPS)
- US Virgin Islands National Historical Sites (USVINS)

Microsoft Internet Explorer

South Florida / Caribbean Network
Inventory and Monitoring Program

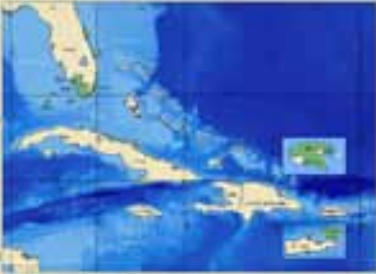
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Welcome

The National Park Service (NPS) entered a contract with the University of Florida (UF) to conduct the South Florida / Caribbean Network (SFCN) Inventory and Monitoring Program. The SFCN program will inventory and monitor natural resources in 107 managed lands with special attention being paid to threatened, sensitive plants, and species of special management concern.

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Inventory & Monitoring
Northwest Colorado Plateau Network

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Introduction

The Northwest Colorado Plateau Inventory and Monitoring Program is part of an effort in the National Park Service to develop a strategic research base for inventory and management of natural resources within the following Park System.

The National Park Service Inventory and Monitoring Program was established in 1992 with a focus on completion of basic research inventories for all units with significant natural resources, and development of ongoing monitoring programs in selected parks and park systems.



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National Park Service
Northeast Temperate Network
Inventory & Monitoring Program

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About Models Data Reports

NETN Mission

The Northeast Temperate Network (NETN) was established in 1992 to inventory and monitor natural resources in 11 parks located in the Northeast United States. The NETN program will inventory and monitor natural resources in 11 parks located in the Northeast United States. The NETN program will inventory and monitor natural resources in 11 parks located in the Northeast United States.

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South Florida / Caribbean Network
Inventory and Monitoring Program

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Inventory & Monitoring

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- Monitoring
- Reports & Publications
- Site Map

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



Grizzly Bears

Yellowstone Cutthroat

Geothermal

Fire

Wolves

Bison

Elk

Lake Trout

Yellowstone Volcano

Climate

Land Use

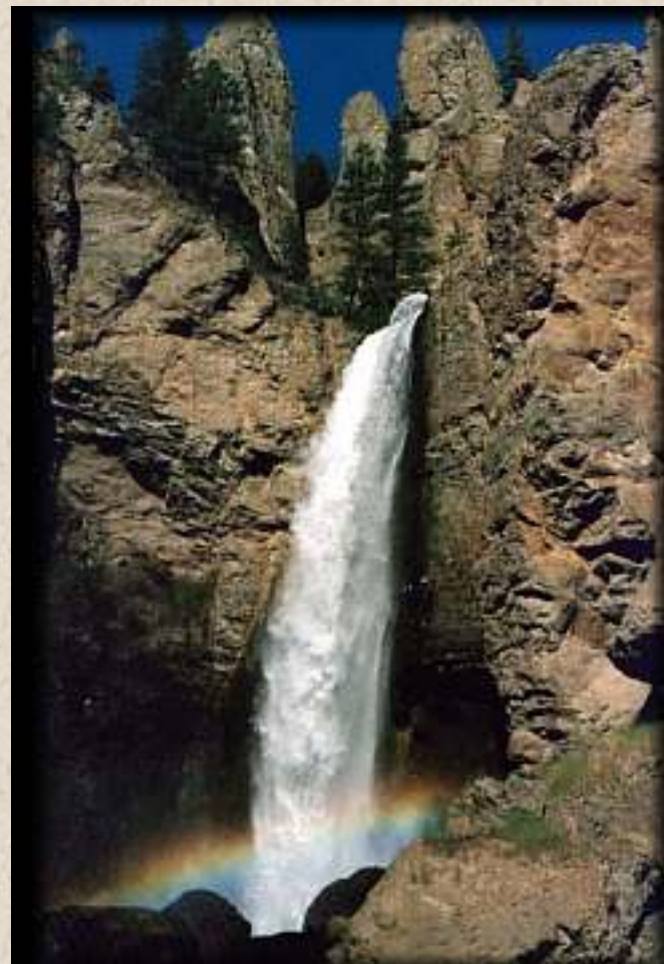
Whitebark Pine

Amphibians

Invasive Plants

Land Birds

Trumpeter Swans



Executive Briefs

Greater Yellowstone
Monitoring



- Grizzly Bears
- Yellowstone Cutthroat
- Geothermal
- Fire
- Wolves
- Bison
- Elk
- Lake Trout
- Yellowstone Volcano
- Climate
- Land Use
- Whitebark Pine**
- Amphibians
- Invasive Plants
- Land Birds
- Trumpeter Swans

print version

Whitebark Pine

Importance

Whitebark pine is considered a “keystone” species in the subalpine ecosystem. 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 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.
- 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.

Discussion

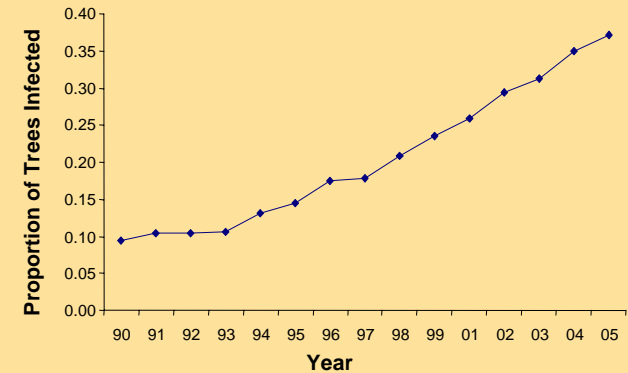
Our preliminary results indicate that the occurrence of white pine blister rust is widespread throughout the GYE, although in most cases, severity is at relatively low levels.

Source



Last Update
12/04/2005

Click for more detail.
or
 for graphic.



Additional Resources
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