Wisconsin Historical Society

ESRI Wisconsin Users Group
Green Bay, WI

presented by

Puneet Kishor

GeoAnalytics

Project Background

- WHS founded in 1846.
- Mandate –collect, maintain, manage and disseminate archaeological and historical data in Wisconsin.
- This project – One division, three sections.
  - Archaeology
  - Survey and Registration
  - Compliance
- Project started Fall 2000. First Phase completed December 2001.
- Second Phase a couple of years later (upgrades and enhancements)
- Third Phase finished earlier this year (digital images)

GeoAnalytics

Project Scope

- Goals of Project – modernization!
  - Migrate data to a new system
  - Create spatial data
  - Create web-based applications
- Project outcomes
  - Easy access to all data
  - On-line decision support for compliance
  - More options for data distribution to others

GeoAnalytics

Project Methodology

- Situation assessment, database design, technology acquisition, application use cases.
- Implementation of design and applications.

GeoAnalytics

The Situation

- Paradox on PCs
  - DOS or Windows 3.1 versions
  - 4 separate databases, few links
    - BAR (Bibliography of Archeological Reports)
    - AHI (Architectural Historical Inventory)
    - ASI (Archeological Site Inventory)
    - Compliance (a tracking database)
  - 4 applications by different developers, dates, functions, & levels of robustness
- Arch site and survey data drawn on USGS hardcopy quads

GeoAnalytics

GeoAnalytics

Additional issues

- Heavy workload due to compliance review mandates
- Inefficient or difficult access to data
- No spatial data for visualization, maps, analysis, etc.
- Difficulty with getting additional staff resources

GeoAnalytics

Situation Positives

- WHS provided training to staff
- High commitment to project
- Existing public access web site for AHI
- Existing access web site for three agencies to access ASI & AHI tabular and limited data.
- Patience

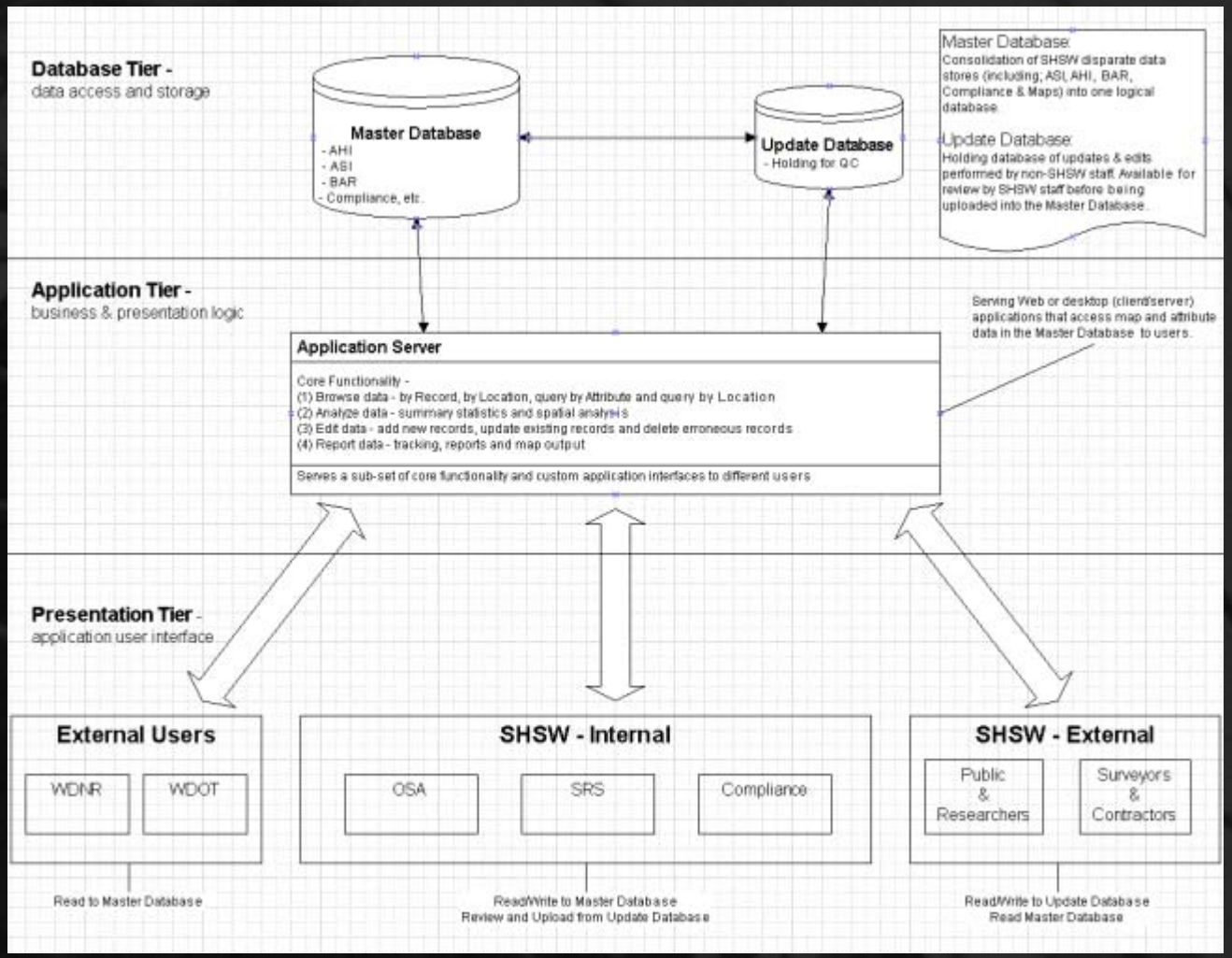
GeoAnalytics

Why modernize?

- Could have had new Paradox versions and programming with ArcView for spatial viewing
- However,
  - Want to eventually integrate all WHS databases into Oracle
  - Want remote user access to *both* tabular and spatial data

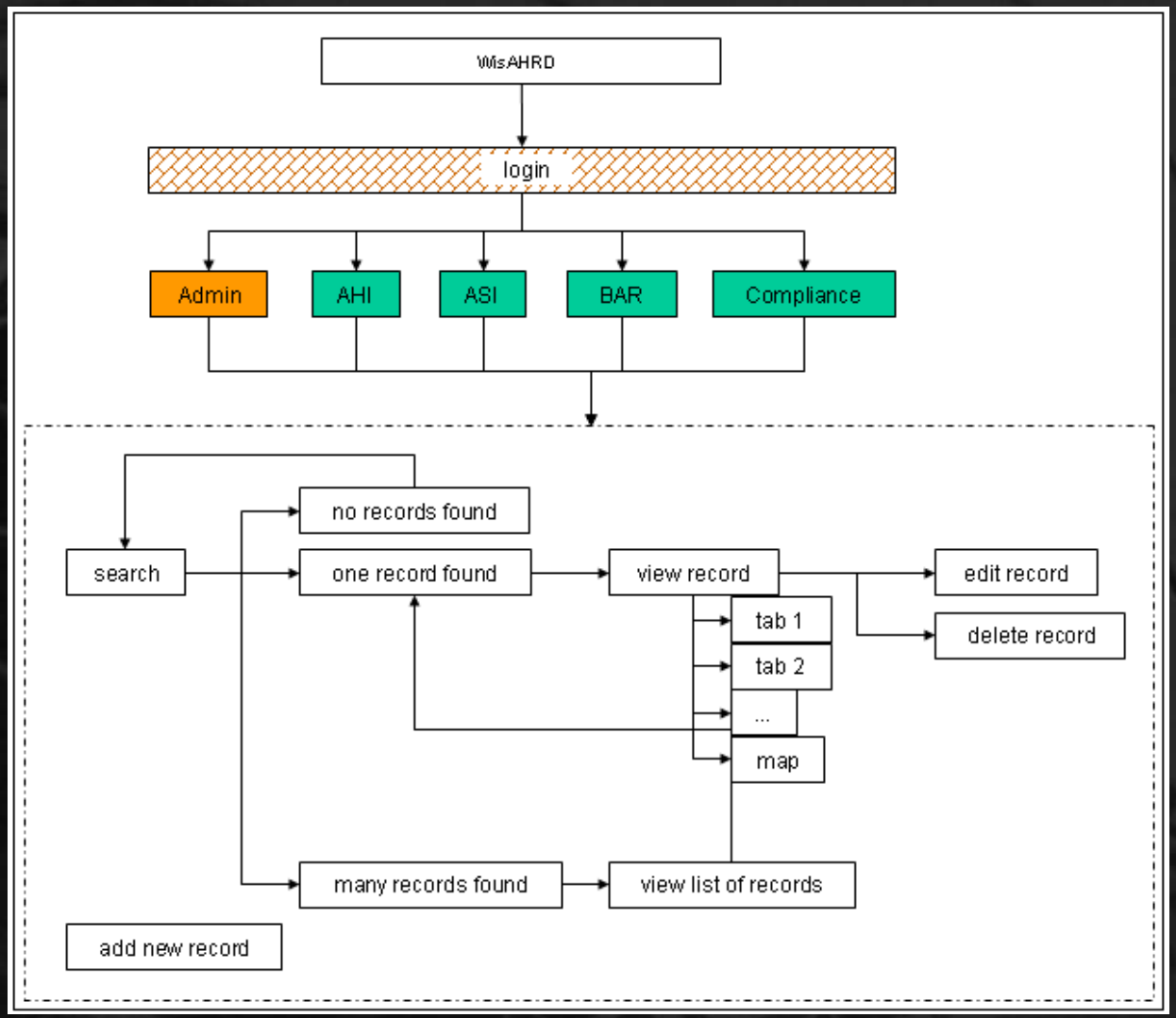
GeoAnalytics

Conceptual Design



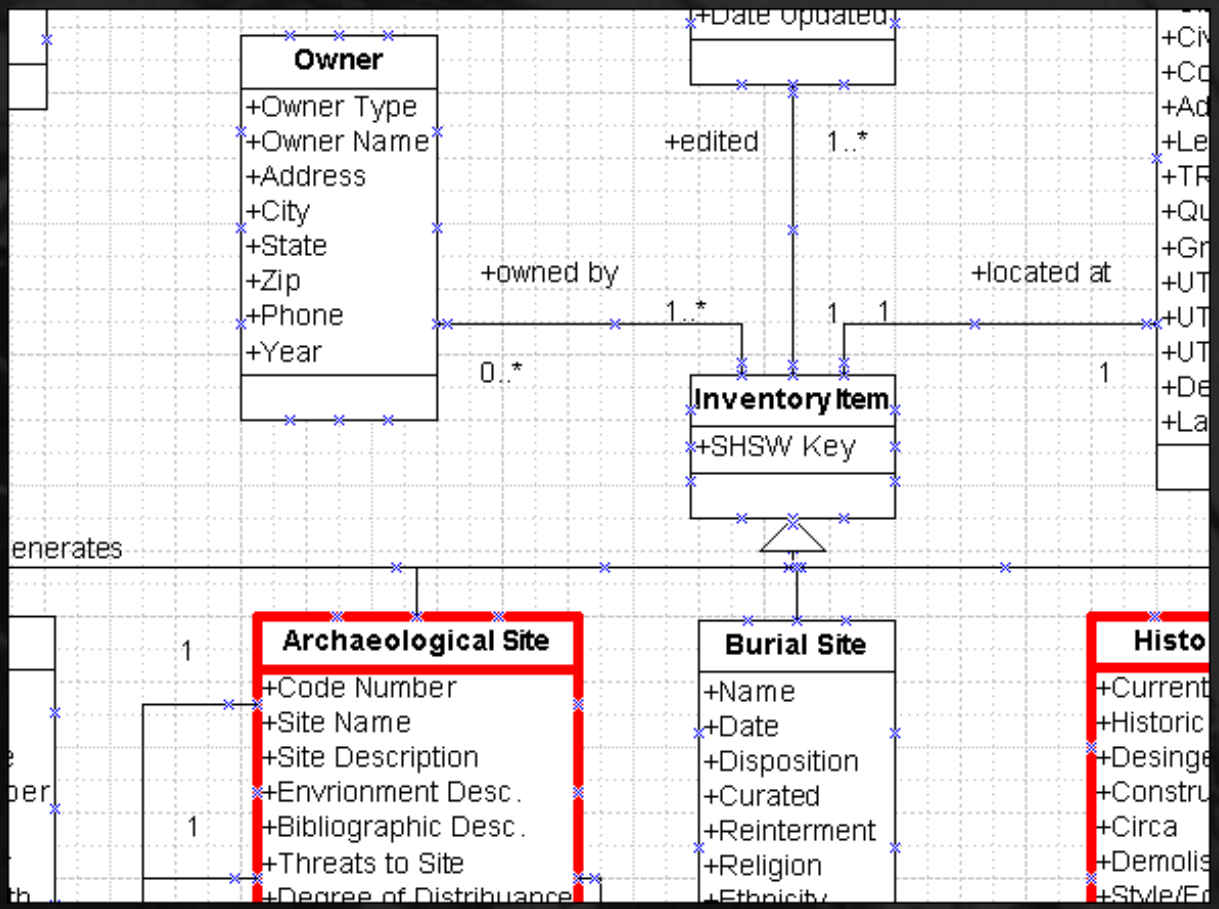
GeoAnalytics

Logical Design



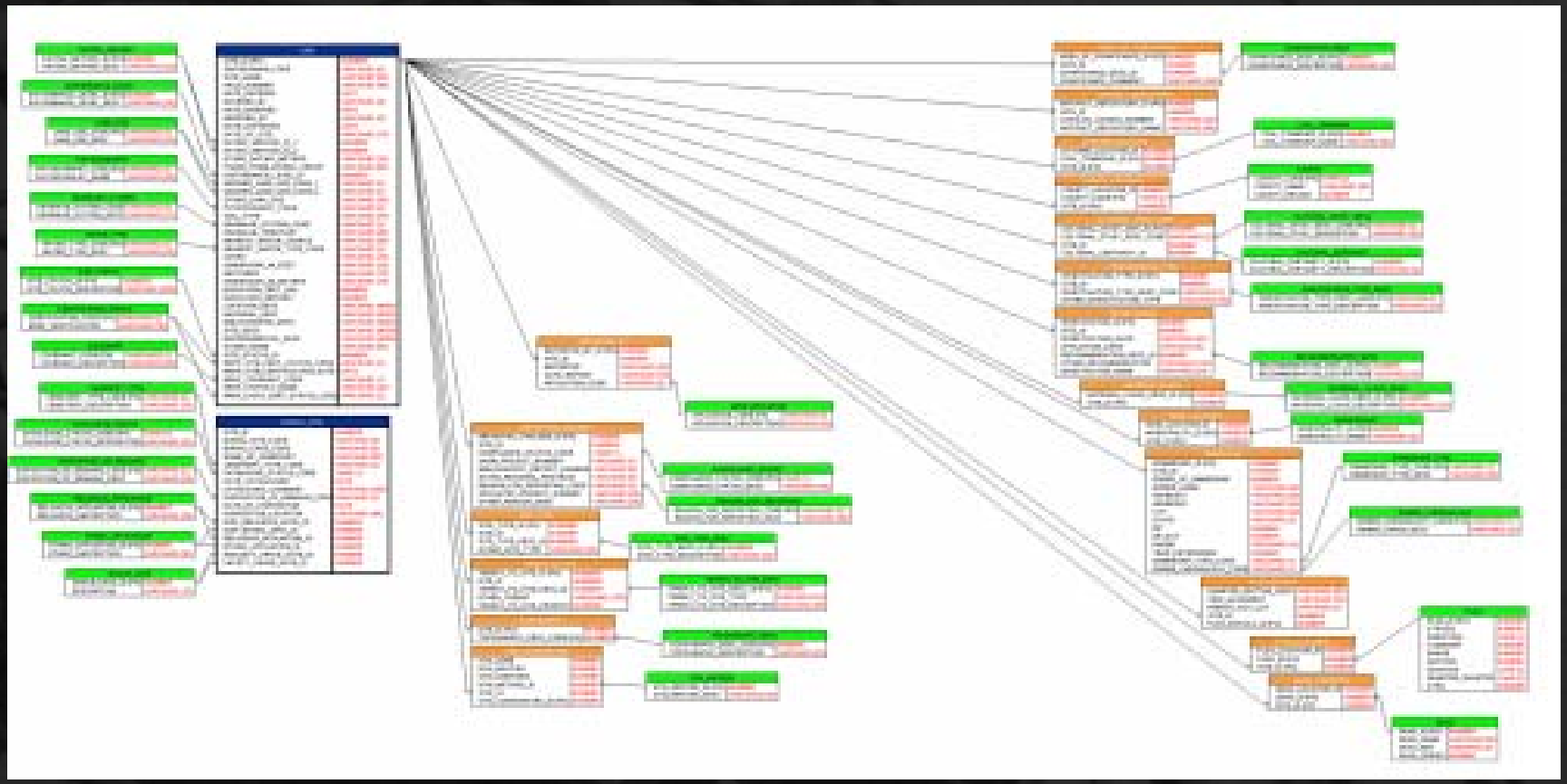
GeoAnalytics

Database Design



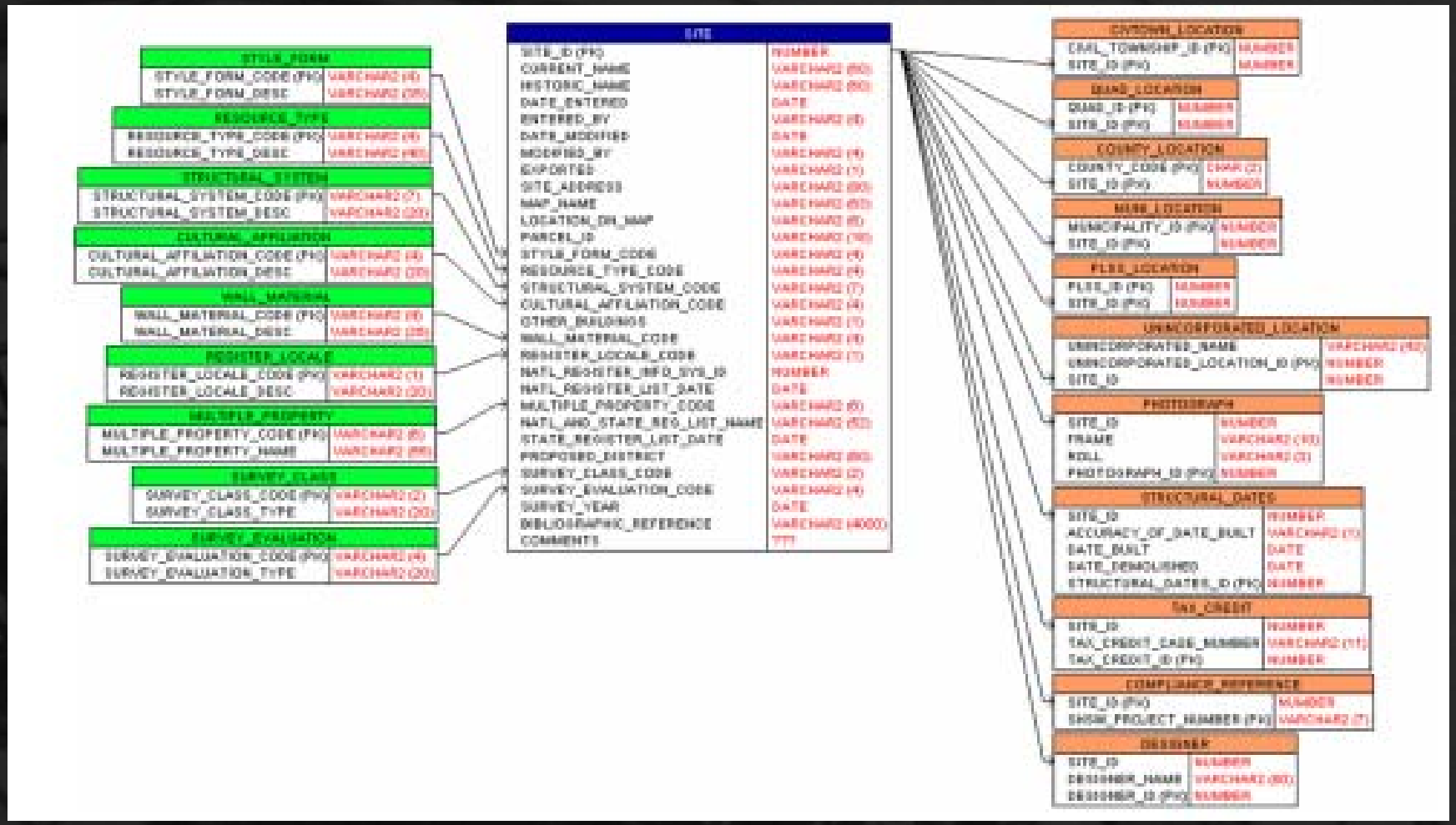
GeoAnalytics

ASI Entity Relationships



GeoAnalytics

AHI Entity Relationships



GeoAnalytics

Phase I - Outcomes

- Acquisition of software, hardware
  - Oracle
  - ESRI product suite: Arc 8, ArcView 3.2, ArcIMS, ArcSDE
  - Macromedia Cold Fusion
  - New servers, PCs, monitors, etc.
- High level database design, application outlines

GeoAnalytics

Phase 2: Spatial Data Creation

- WHS staff and LTEs participation
- General ArcView training for staff
- GA provided customized training in heads-up digitizing in ArcView 3.2 for all
- Archaeological data – polygon shapefiles for sites and survey areas
- Historic places data – geo-coding with QMS software into point features

GeoAnalytics

Database Migration

- Oracle 8.2
- 4 schemas, one for each application
- Share lookup tables, location tables
- Significant data scrubbing
- Changes in field values and definitions

GeoAnalytics

Application Development

- Four applications for business needs including a map component
  - Cold Fusion, ESRI ArcIMS
  - Basic CRUD functions
  - Very specific & complicated queries against multiple fields
  - Five applications created – ASI, AHI, BAR, Compliance, and an Admin module

GeoAnalytics

Implementation Gotcha's

- Training
- Data scrubbing
- Complicated business needs (e.g. queries)
- Software limitations
- Cultural and technological challenges

GeoAnalytics

Outcomes…..

- …for WDOT & other agencies– web access to generalized data for a first "cut"in compliance reviews.
- …for WHS – increased efficiency for compliance work, remote staff access to data, integration of data for all staff, map making capabilities.
- …for GeoAnalytics – increased knowledge on implementing the combo of Oracle, ArcIMS, and Cold Fusion.

GeoAnalytics

Technical Lessons

- Software version control important for functions and compatibility issues
  - CF 4.5 to 5 to 6
  - ArcIMS 3.0 and 3.1, to 4, to the latest version
  - Oracle 8.x to 10
  - IE and Netscape
- Prescribe minimum technology and user experience requirements for the applications

GeoAnalytics

Technical Lessons

- One application cannot serve all user needs or levels of experience.
  - Data analysts
  - Browsers of data versus editors of data
- Importance of saving, re-using programming code
- Thinking across applications when developing enhancements

GeoAnalytics

Non-Technical Lessons

- Process changes can be difficult.
  - From a personal data entry method to another
  - Work flow of data
  - Understanding the new system
- User needs change as more becomes possible with technology.
- User needs change as staff become educated on the new system
- Expectations change over time
- Continued mgmt and improvement require increased integration, future projections

GeoAnalytics

Non-Technical Lessons

- Elaboration of work plan to support system
- Policies surrounding user access / licensing
- Public Terminal vs. Remote Access
- Continued commitment to providing quality data - management

GeoAnalytics

Outcomes

- for WHS –
  - State-of-the-art database and work applications.
  - Integrated system.
  - Access to all data to all staff resulting in increased efficiencies (especially to compliance).
  - Capability for remote staff access to data.
  - Map-making capabilities.
- for Outside users –
  - Search / View / Print Full Site Records
  - View Maps from within applications, (no need for desktop GIS)
  - Dynamic, up-to-date - always hitting db directly

GeoAnalytics

Availability

- Public Terminal - Open since Dec. 2002,
  - User agreement
- Remote Access - April 2003
  - License agreement, associated fee

GeoAnalytics

Next Phase

- Image Linking project (partly funded through a Forest Service grant)
- Custom Mapping/Data Search Services (underway in May 2003)
- Integrating Shipwrecks database / GIS layer for shipwreck locations

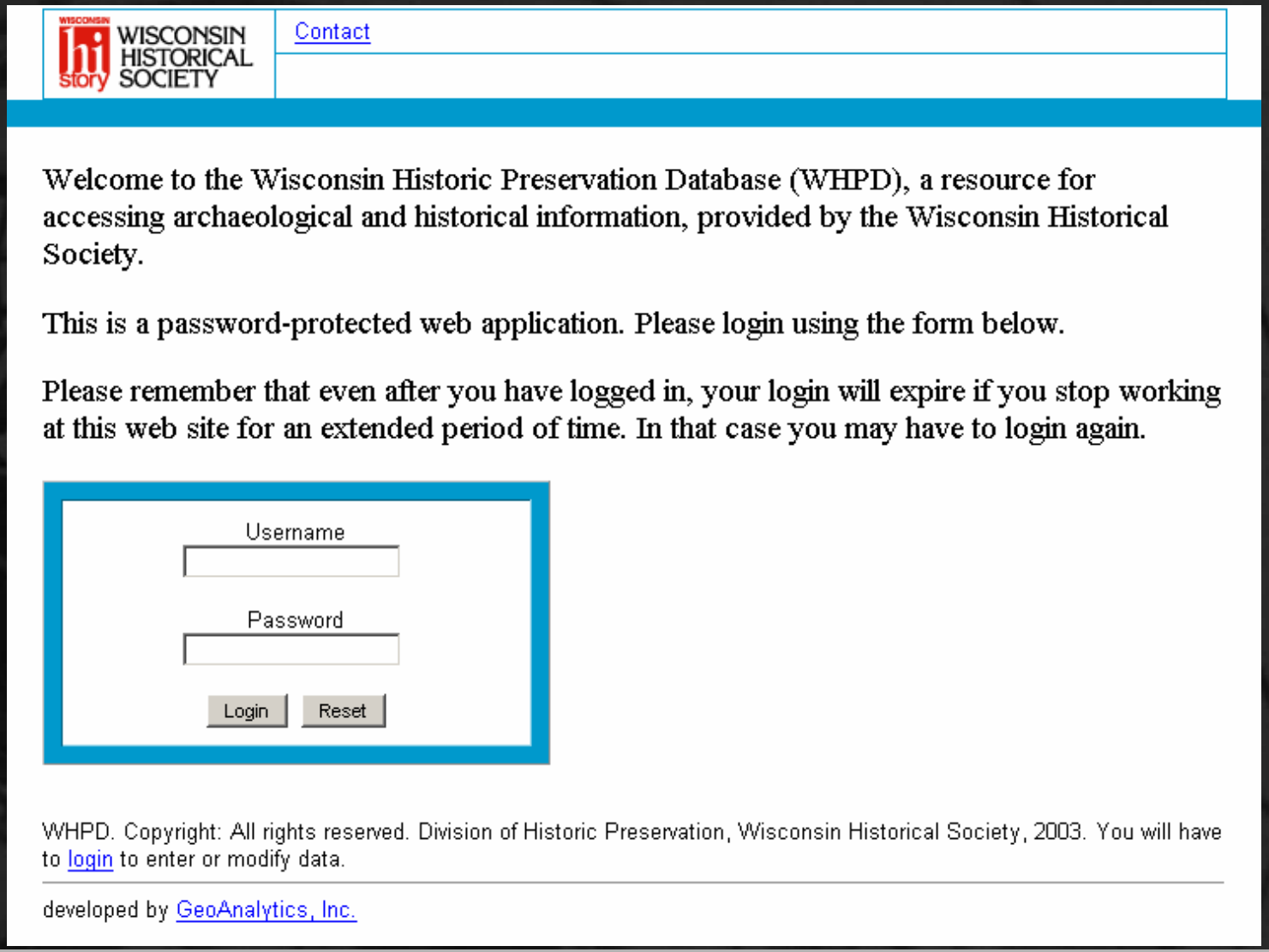
GeoAnalytics

Available GIS Layers

- 5 layers:
  - Archaeological Sites
  - Historic Cemeteries
  - Archaeological Districts
  - Survey Areas
  - Historic Properties
  - future - Complete shipwreck sites
- WHS - custodial responsibility, data provider
- Implications for Archaeology in WI?
- Applications for Arch Research?

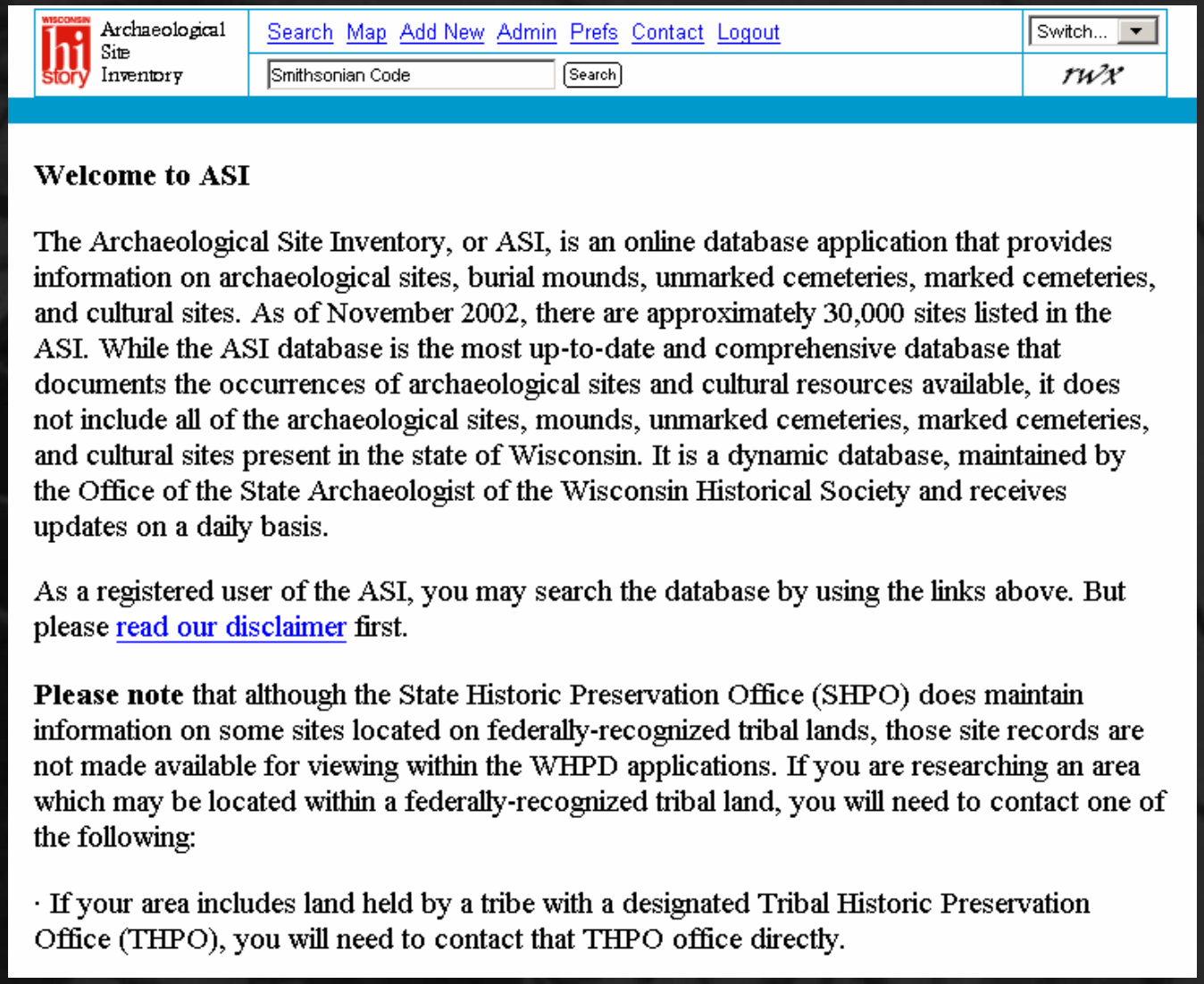
GeoAnalytics

Login



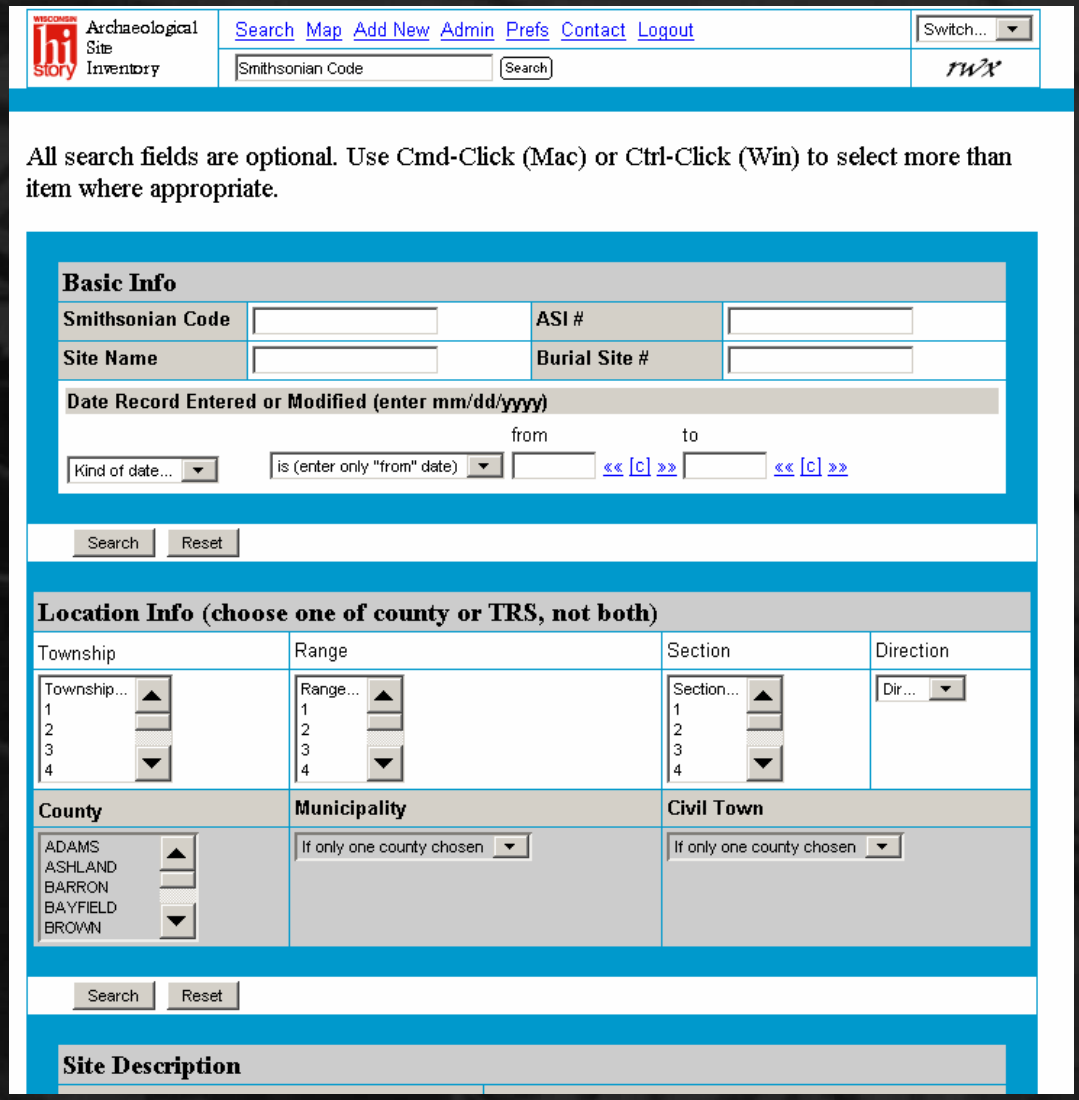
GeoAnalytics

ASI Welcome Screen



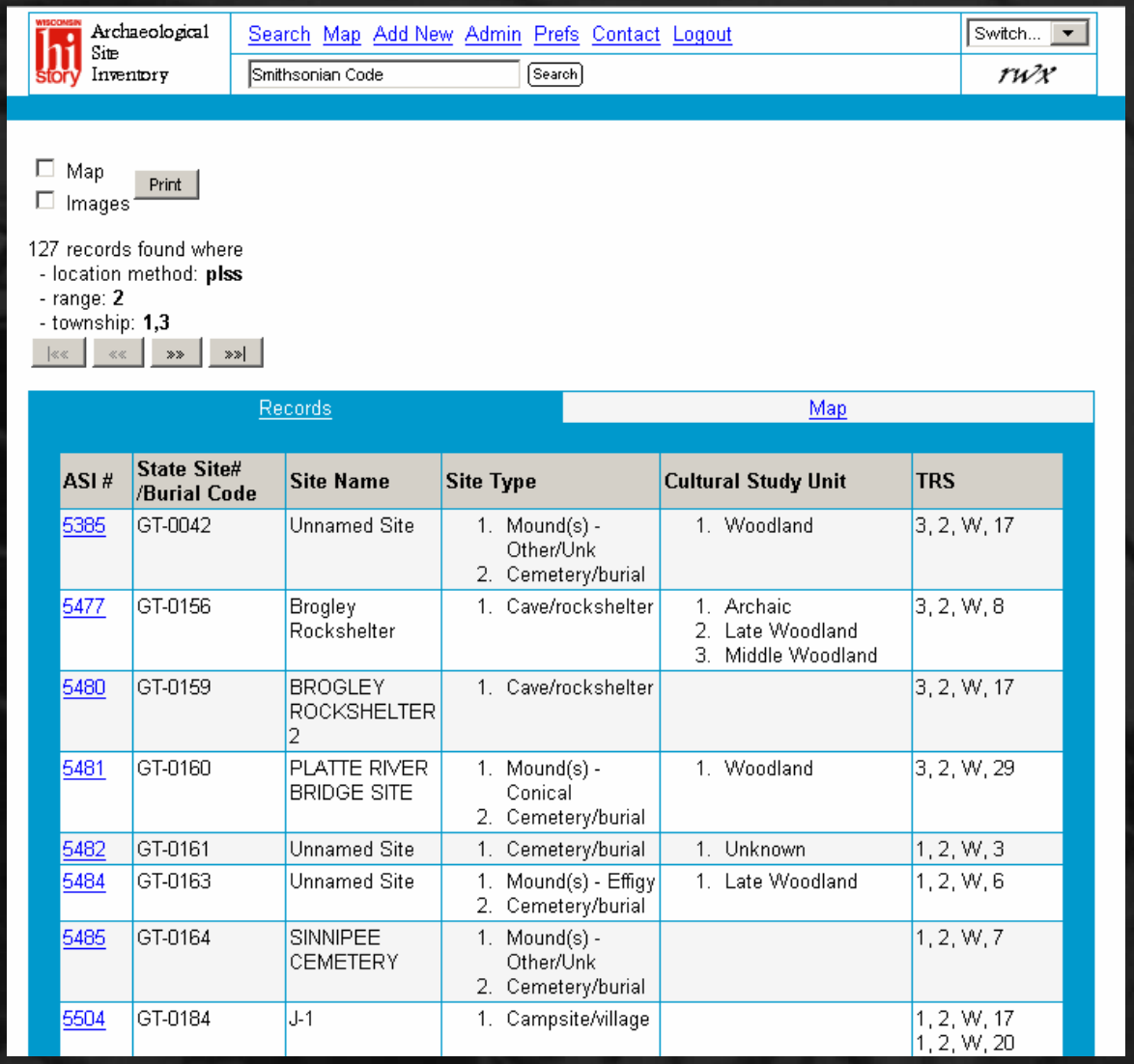
GeoAnalytics

Search Form



GeoAnalytics

Search Results



Archaeological Site Inventory

Search Map Add New Admin Prefs Contact Logout

Switch...

Smithsonian Code Search

rwx

Map
Images Print

127 records found where
- location method: **plss**
- range: **2**
- township: **1,3**

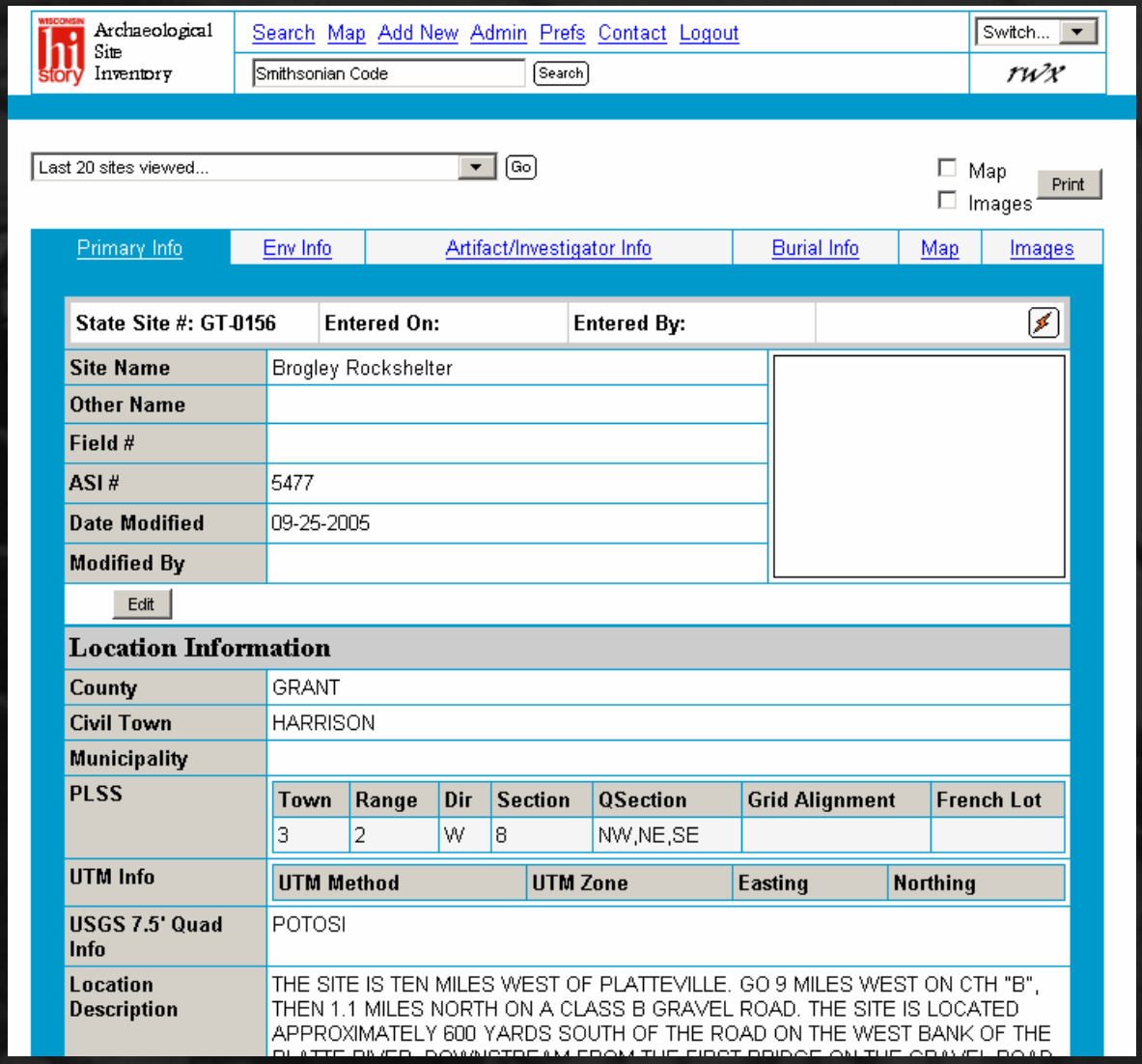
|« « » »|

Records | Map

ASI #	State Site# /Burial Code	Site Name	Site Type	Cultural Study Unit	TRS
5385	GT-0042	Unnamed Site	1. Mound(s) - Other/Unk 2. Cemetery/burial	1. Woodland	3, 2, W, 17
5477	GT-0156	Brogley Rockshelter	1. Cave/rockshelter	1. Archaic 2. Late Woodland 3. Middle Woodland	3, 2, W, 8
5480	GT-0159	BROGLEY ROCKSHELTER 2	1. Cave/rockshelter		3, 2, W, 17
5481	GT-0160	PLATTE RIVER BRIDGE SITE	1. Mound(s) - Conical 2. Cemetery/burial	1. Woodland	3, 2, W, 29
5482	GT-0161	Unnamed Site	1. Cemetery/burial	1. Unknown	1, 2, W, 3
5484	GT-0163	Unnamed Site	1. Mound(s) - Effigy 2. Cemetery/burial	1. Late Woodland	1, 2, W, 6
5485	GT-0164	SINNIPEE CEMETERY	1. Mound(s) - Other/Unk 2. Cemetery/burial		1, 2, W, 7
5504	GT-0184	J-1	1. Campsite/village		1, 2, W, 17 1, 2, W, 20

GeoAnalytics

Data



Archaeological Site Inventory

Search Map Add New Admin Prefs Contact Logout

Switch...

Smithsonian Code Search

Last 20 sites viewed... Go

Map Images Print

Primary Info | Env Info | Artifact/Investigator Info | Burial Info | Map | Images

State Site #: GT-0156	Entered On:	Entered By:	

Site Name	Brogley Rockshelter
Other Name	
Field #	
ASI #	5477
Date Modified	09-25-2005
Modified By	

Edit

Location Information

County	GRANT
Civil Town	HARRISON
Municipality	

PLSS

Town	Range	Dir	Section	QSection	Grid Alignment	French Lot
3	2	W	8	NW,NE,SE		

UTM Info

UTM Method	UTM Zone	Easting	Northing

USGS 7.5' Quad Info	POTOSI
Location Description	THE SITE IS TEN MILES WEST OF PLATTEVILLE. GO 9 MILES WEST ON CTH "B", THEN 1.1 MILES NORTH ON A CLASS B GRAVEL ROAD. THE SITE IS LOCATED APPROXIMATELY 600 YARDS SOUTH OF THE ROAD ON THE WEST BANK OF THE

GeoAnalytics

Images

Current Name	DANIEL M. PARKINSON HOUSE
Verified	N

Edit

7 images found of type All 1 to 6 are shown below.

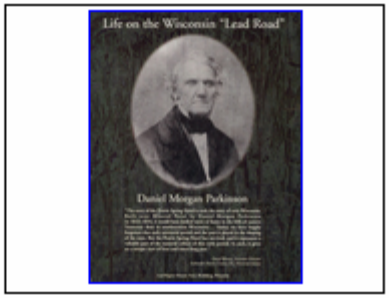
Before Restoration

East Elevation

Interior Door and Window

Floor Plan

Newspaper clipping



Biography of a Building (back cover)

Add New Image

GeoAnalytics

Images

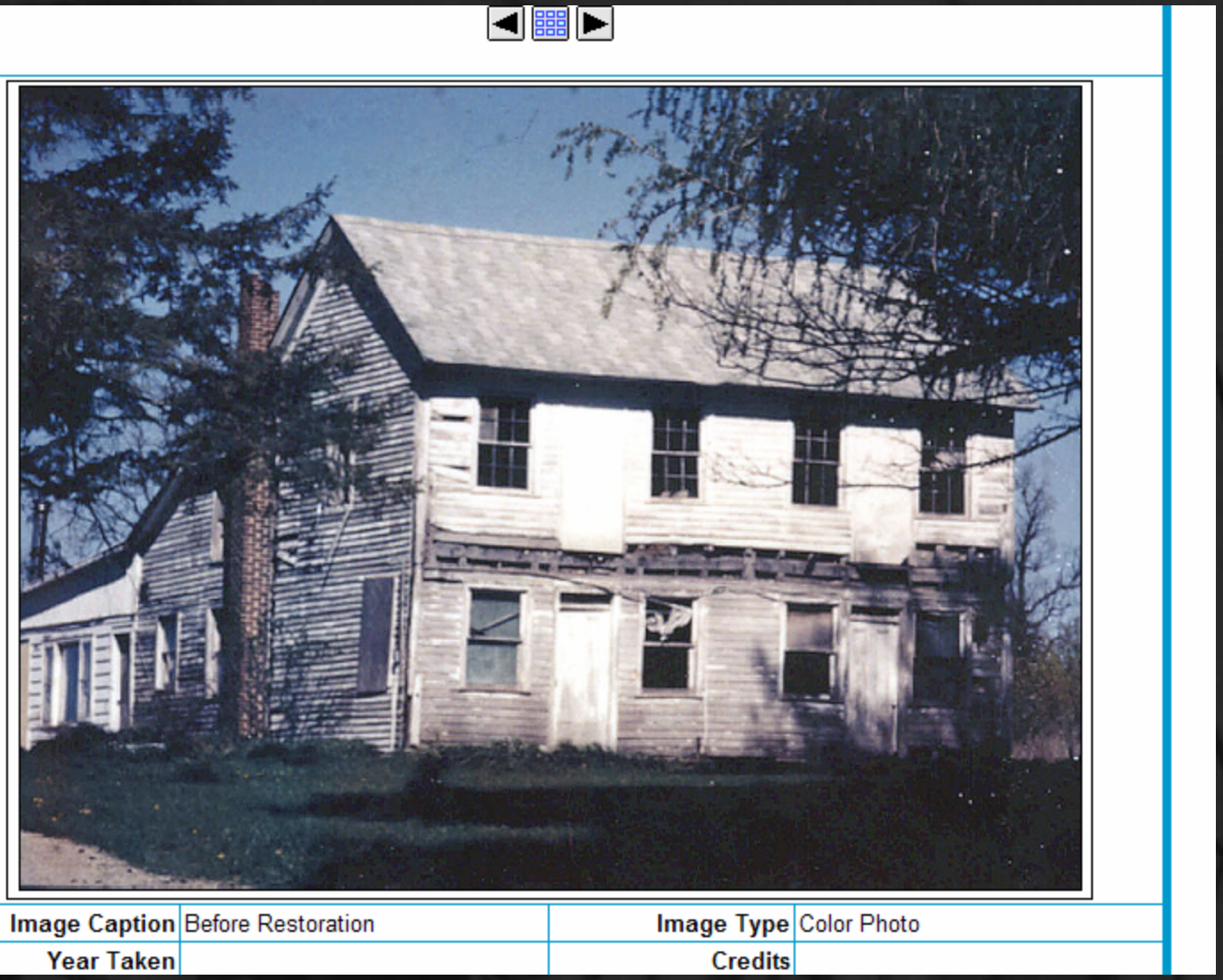
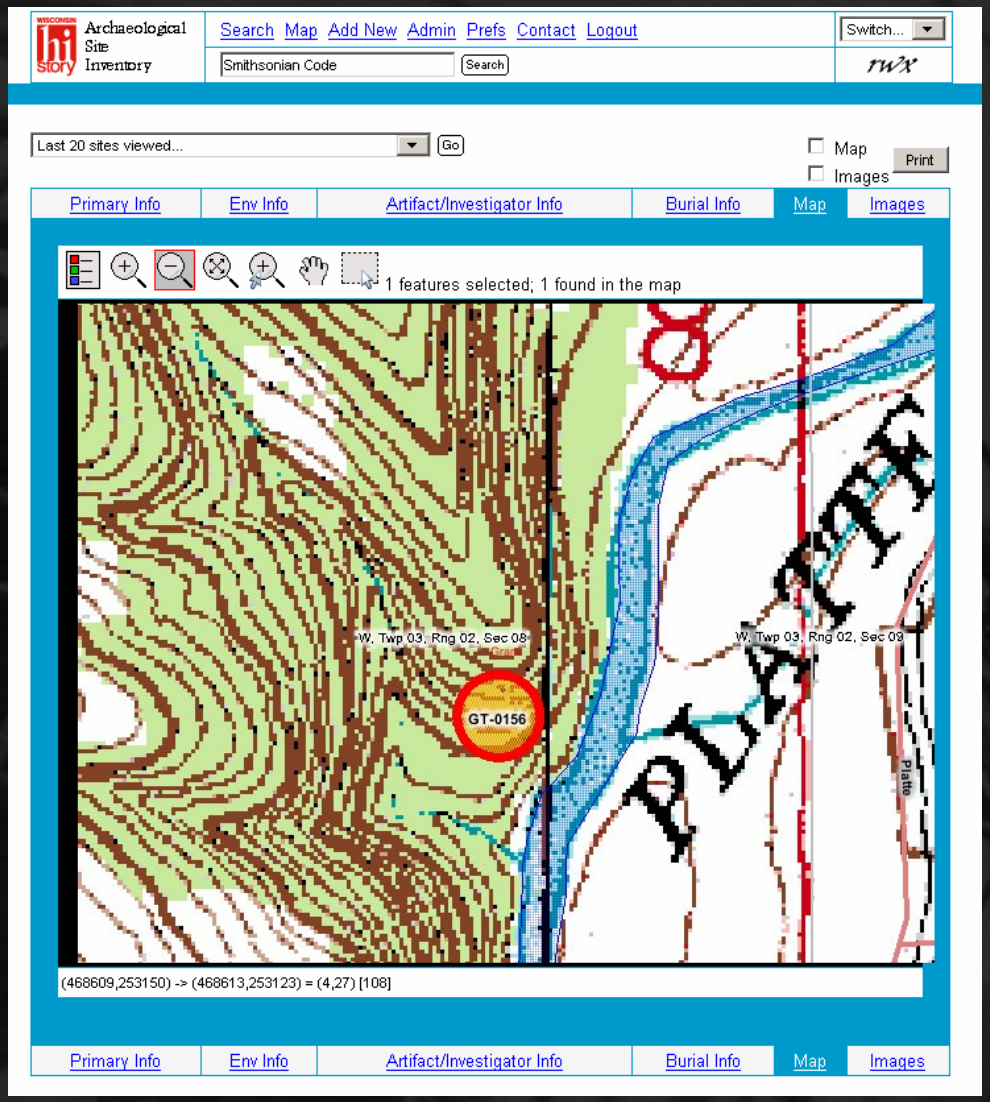


Image Caption	Before Restoration	**Image Type**	Color Photo
Year Taken		**Credits**	

GeoAnalytics

Map



GeoAnalytics

Puneet Kishor

pkishor@geoanalytics.com

1716 Fordem Avenue
Madison, WI 53704
Phone: 608.241.7100

GEOANALYTICS.COM

GeoAnalytics