

# Forest Service Archaeology in the 21st Century: A Mobile, Web-based Unit for In-field Site Documentation

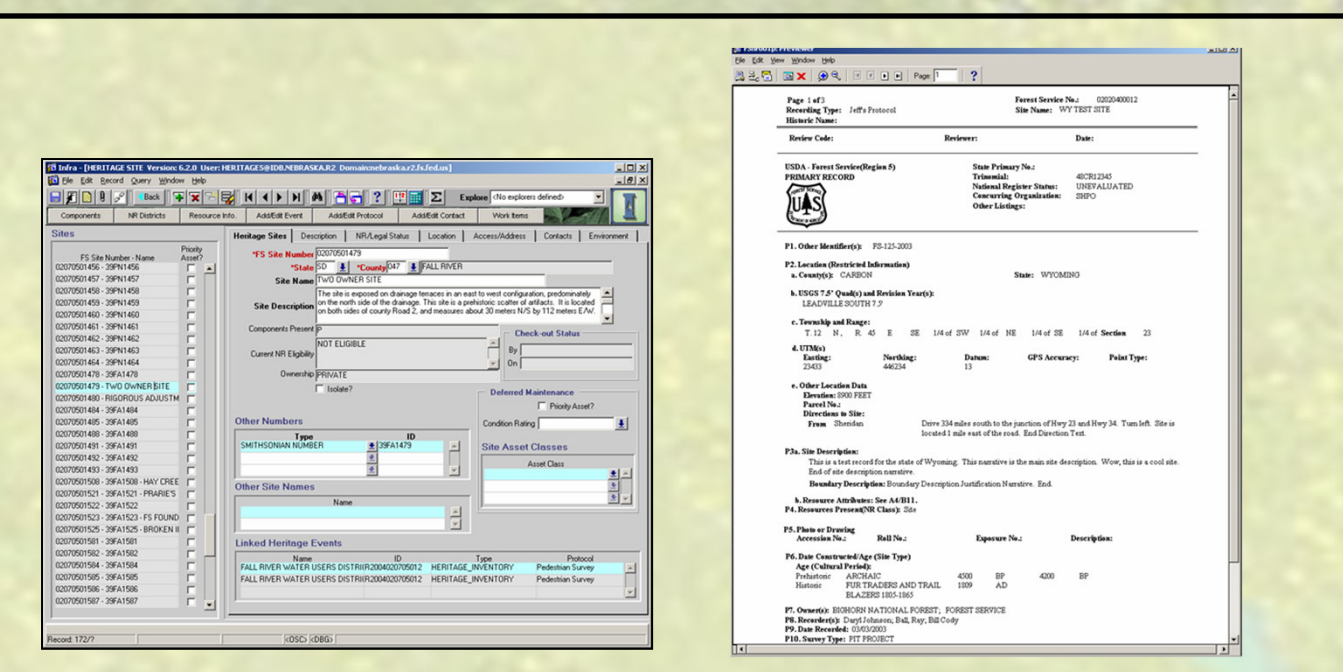
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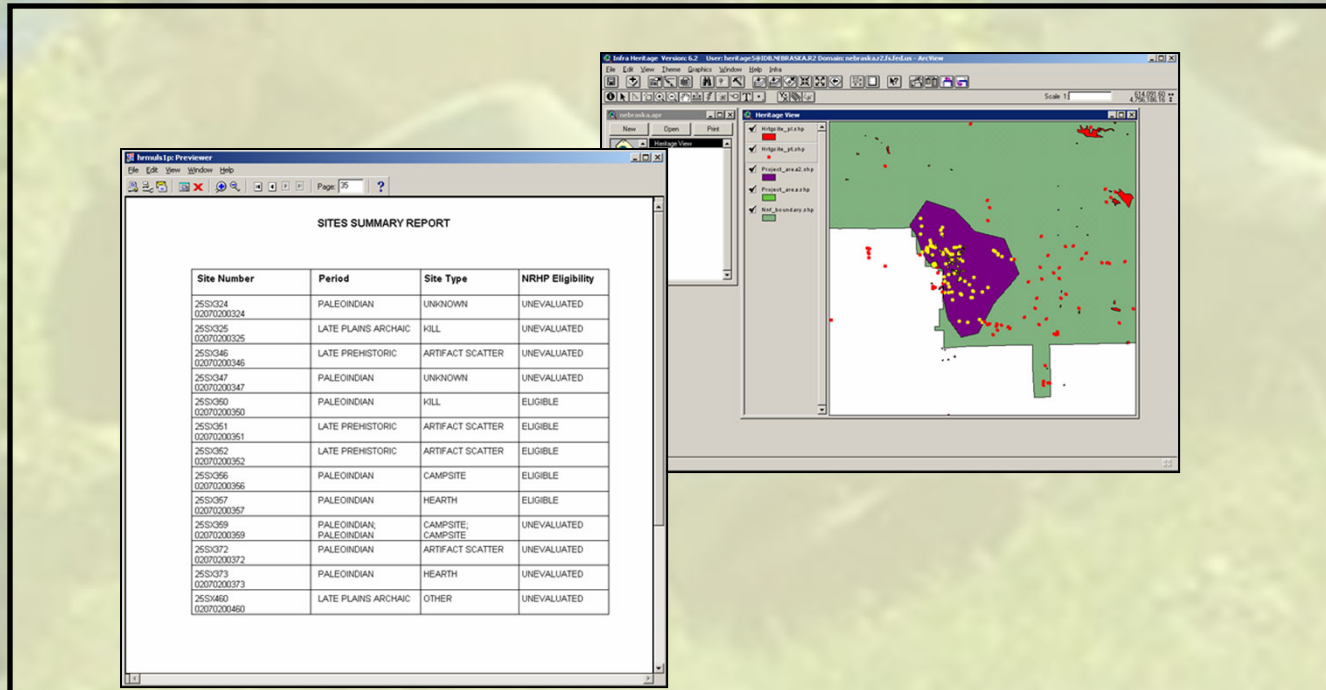
**Abstract**  
During the 2005 field season Colorado State University field tested I-Mobile (I-Web Mobile Application), a mobile database developed by the USDA Forest Service for GIS data acquisition in conjunction with Trimble GeoXT GPS system. I-Web is a scaled down version of INFRA, a relational database used by the Forest Service to track and manage cultural, biological, and natural resources. The benefits of I-Mobile include the ability to pull up site records in the field, monitor impacts on archaeological resources, and enter data directly onto forms linked to land units. I-Web provides researchers, resource managers, and project planners with an immediate awareness of archaeological sites in a project area. Downloading site information directly to the national I-Web database eliminates the redundancy of work (filling out paper in the field, transferring it to computer, sending it to the agency) and provides consistency in documentation. The use of a web-based interface and mobile application frees both the contractor and Forest Service employees to focus efforts on other issues, such as public outreach, research, and resource management. Illustrations of in-field archaeological research survey are presented.

**USDA Forest Service Heritage Program**  
The USDA Forest Service I-Web is an integrated information management system that includes a Heritage Program component. The Heritage Program documents cultural resources on public land using State Historic Preservation Office (SHPO) standards.

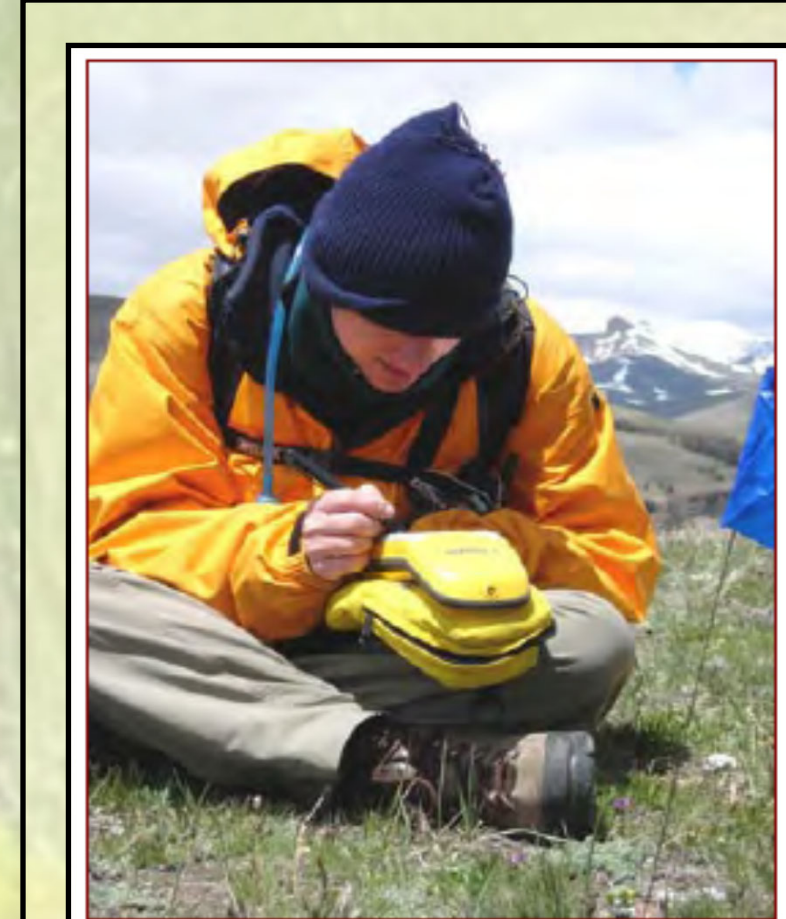
I-Mobile was uploaded to a Trimble GeoXT prior to beginning fieldwork. Allows users to do the following:  
•View and update previously recorded cultural resources  
•Create new site reports remotely



Post fieldwork, site data is downloaded into the Heritage Program module of the I-Web corporate database. Site forms can then be automatically generated.

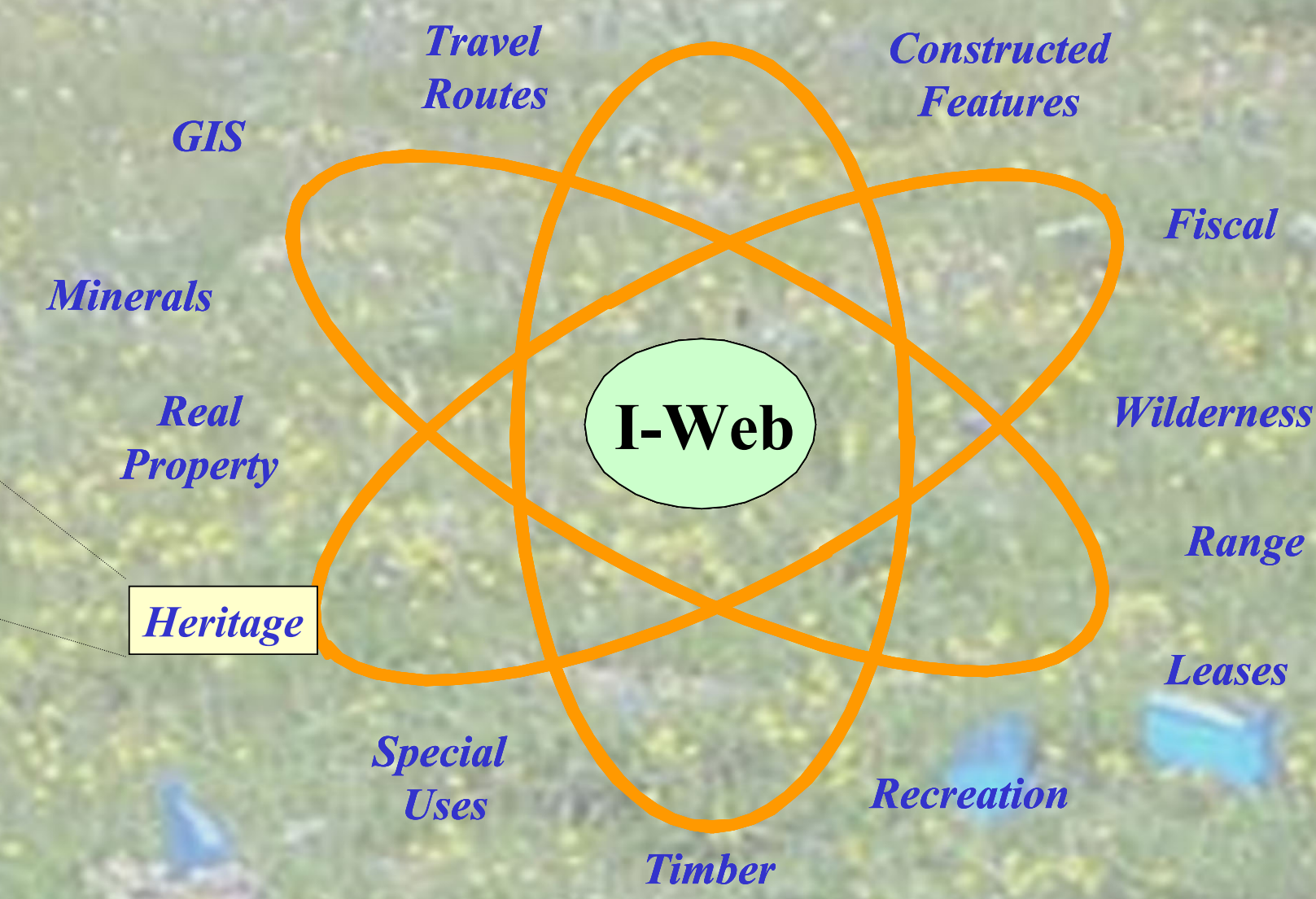


Users can generate a literature review of known sites in the project area and download selected sites into the mobile database.



General site characteristics and location data were then entered directly into the mobile unit via the I-Mobile interface.

**Introduction**  
In the summer of 2005, the GRSLE Archaeological Field School at Colorado State University partnered with the USDA Forest Service to test an innovative approach to documenting cultural, biological and natural resources. I-Web Mobile Application (I-Mobile), developed by the Forest Service, is a mobile application designed to provide researchers, resource managers, and project planners the field with efficient yet flexible tools for recording natural resources in the field. Upon returning from, data stored in the mobile unit can be downloaded directly into the USDA Forest Service I-Web corporate database, greatly reducing post-processing time and the amount of paperwork generated in the field. Additionally, this approach serves to link national resource management and academic research goals through new technological approaches to data accumulation and sharing.



**Evaluation of I-Mobile**

- Simplifies and expedites the literature review process (for both researchers/contractors and Forest Service personal)
- Replaces the traditional paper site form with an automated site form generated from data entered in the field. After the site record is created, it is easy to add or attach additional information to the original .rtf file
- Lowers the potential for data misinterpretation and transcription errors in post-field data entry by enabling the recorder to enter data while at the site
- Speeds up the recording process by having pre-programmed 'fields' specific to each project
- Enables land managers to access information almost instantaneously
- Encourages a holistic view of land management by providing those in the field with a standardized tool for documenting relevant site observations across disciplines (archaeologists in the field, for example, could update range study photo points).
- Provides the Forest Service with consistent, standardized reporting of data without hindering specific academic research goals
- Improves the collaboration between the academic and resource management world

**Technologies used by CSU GRSLE Field School**

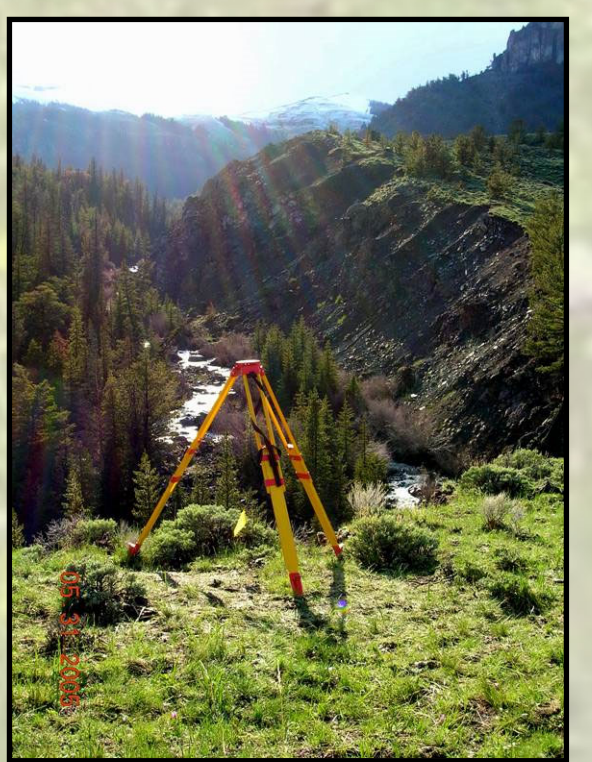
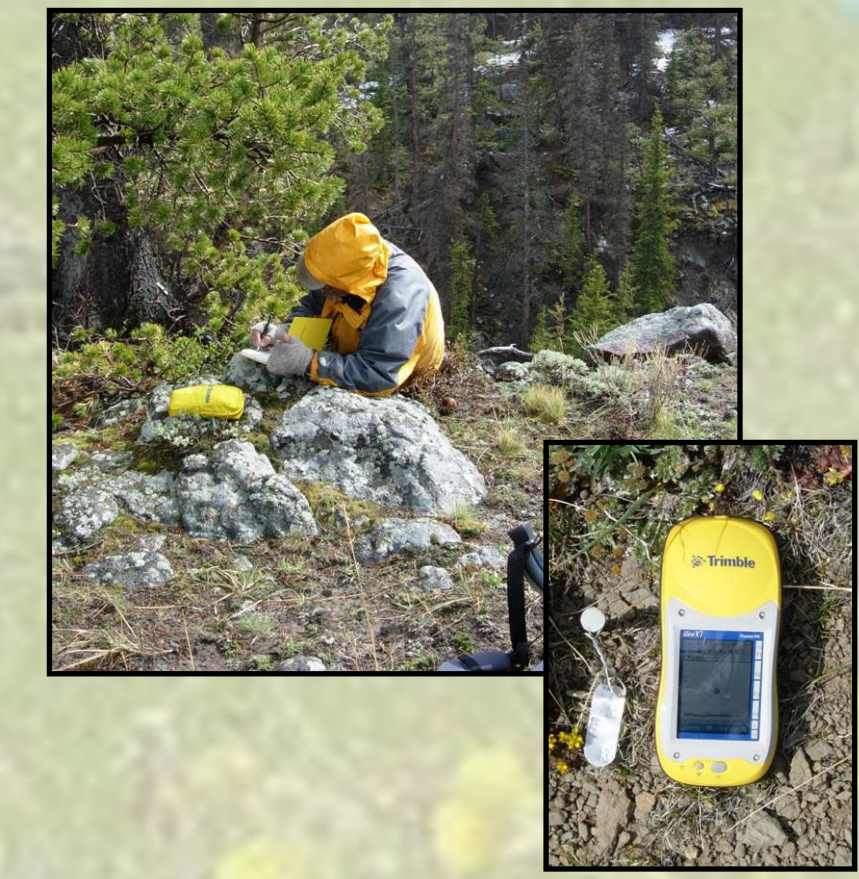


- **GPS**  
Using Garmin Rino 110s, A GPS waypoint was taken for each artifact location and noted in the PDA data form.
- **PDA**  
Dell Axims and I-PACS were used in the field to collect additional data for academic research. A standardized data form was created in Excel and uploaded onto all PDAs. The form ensured greater consistency in data collection while allowing multiple groups to record information on individual artifacts.
- **Digital Calipers**  
The width, length, and thickness of each artifact was recorded using digital calipers and recorded in the PDA data form.

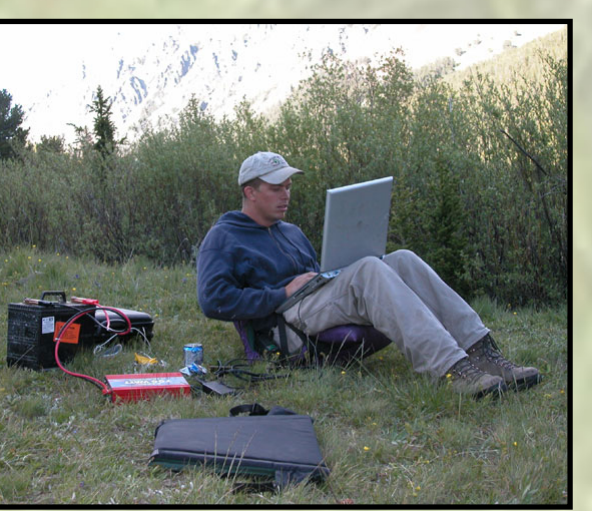
• **Excel Pocket Workbook**  
Standardized in-field form used to record artifact attributes

SITE	GPS #	EASTING	NORTHING	ELEVATION	PDA FILE	SURVEY TYPE	CLASS	ELEMENT	PORTION
MATERIAL	COLOR 1	COLOR 2	INCULSIONS	HEAT TREATMENT	LENGTH	WIDTH	THICKNESS	CORTEX	COMMENTS

• **Trimble**  
I-Mobile was uploaded to a Trimble GeoXT prior to beginning fieldwork. General site characteristics and location, as specified by the State Historic Preservation Office, were then entered directly into the mobile unit via the I-Mobile interface. After the completion of fieldwork, site data was downloaded to the USDA Forest Service I-Web corporate database.



• **Total Station**  
Sub-centimeter accuracy in mapping artifacts and site topographic relationships



• **Laptop**  
At the end of each day, while still in the field, the GPS and I-PAC data was downloaded to a laptop. This allowed for waypoints to be linked with the information recorded in the I-PACs and later associated with I-Mobile data.