Archaeological GIS data in Wildland Fire Situations

Situation and directions

for

Fiscal Year 2008

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Goal of this presentation and paper

- Bring three communities together as a team
- Take advantage of technological and available spatial data advances
- Define relationships and roles among the team

Past decade

- Formation of Archeological Spatial Data bases
- Increases of GIS technical skill among Archeologist
- Fire Program Geographic Information System Specialist (Fire GIS-Specialist) a part of Wildland Fire Incident Command Post (ICP) Planning shop

A smooth integration of these three elements is required – that is:

- Wildland Fire capabilities via ICP's Planning shop – Fire GIS-Specialist
- Archeological community using spatial site location & tabular data to prioritize high, medium and low values
- Fire GIS-Specialist community to carry the message to the field Fire crews

What I hope to gain from those present and those who read this paper

- Ways to implement this process

- Contact with others who have already faced such issues or who will face such

Important messages that I wish to provide to you are:

- Archeologists must process spatial location and tabular data in terms of importance prior to being passed to the Fire GIS-Specialist

- Archeologists must pass the evaluated sites to the Fire GIS-Specialist in a timely matter - work should be done in advance of a fire.

Variation among Fires and Sites

- Different classes of fires effect different types of sites to greater or lesser degrees.
- Fire/Cultural Evaluation is not trivial - analysts must grasp:
  - The nature of differing Cultural remains per Fire impact
  - The distinction among various type of fire regarding heat and fuels, etc.

Information exchange

- Fire information regarding potential direction and conditions must be passed by the Fire GIS-Specialist and understood by the Archeologist
- Mapped information showing fire direction may convey sufficient information

Role of the Field Office Archaeologist is:

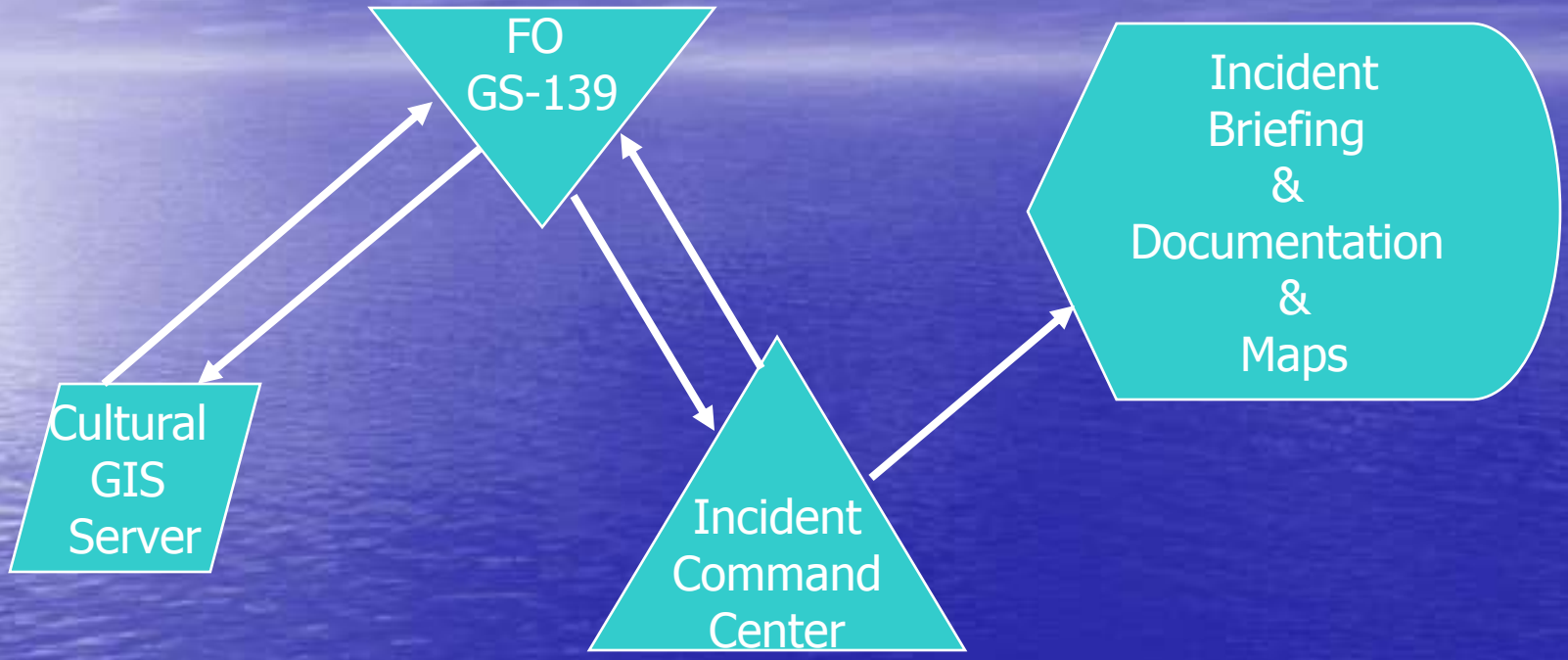
- Isolates and evaluates location & tabular data
  - For Areas inventoried and site locations
  - For fire trends and directions

- Forwards analysis to Fire GIS-Specialist for the Incident Command Post (ICP)

The GIS-Specialist's role is:

- Provides Fire information to Archeologist (GS-193)
- Integrates Archeologist’s information for ICP
- Passes Cultural data integrated with other data to folks who need to know via the Briefing Map

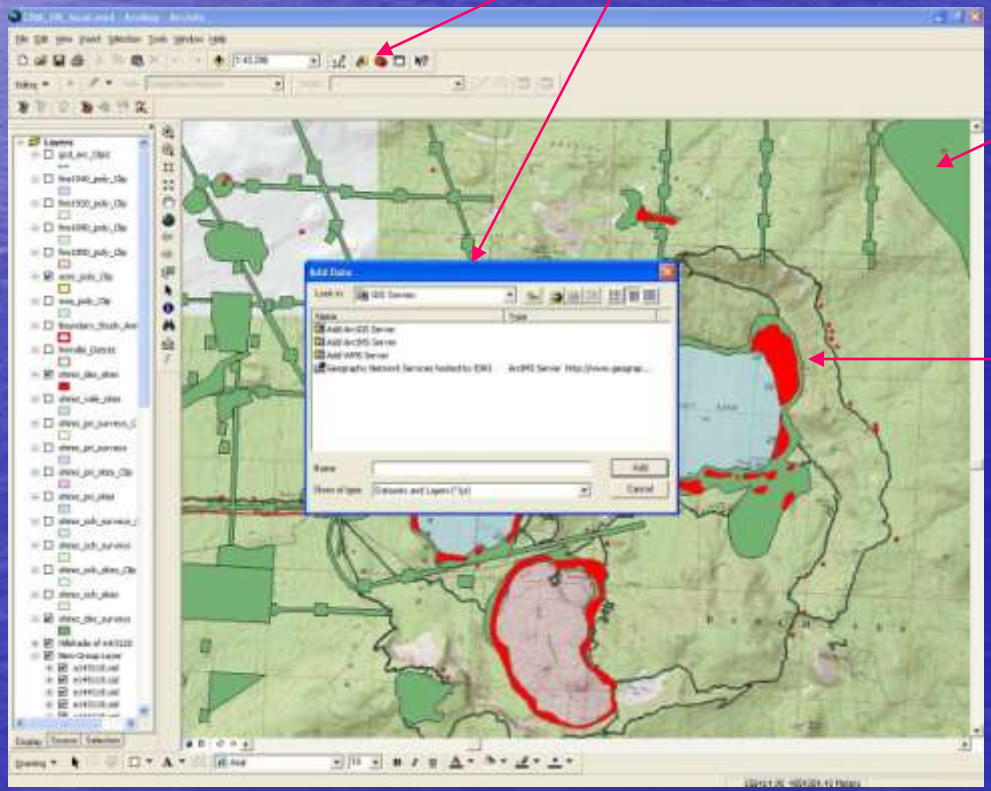
Relationships & Integration

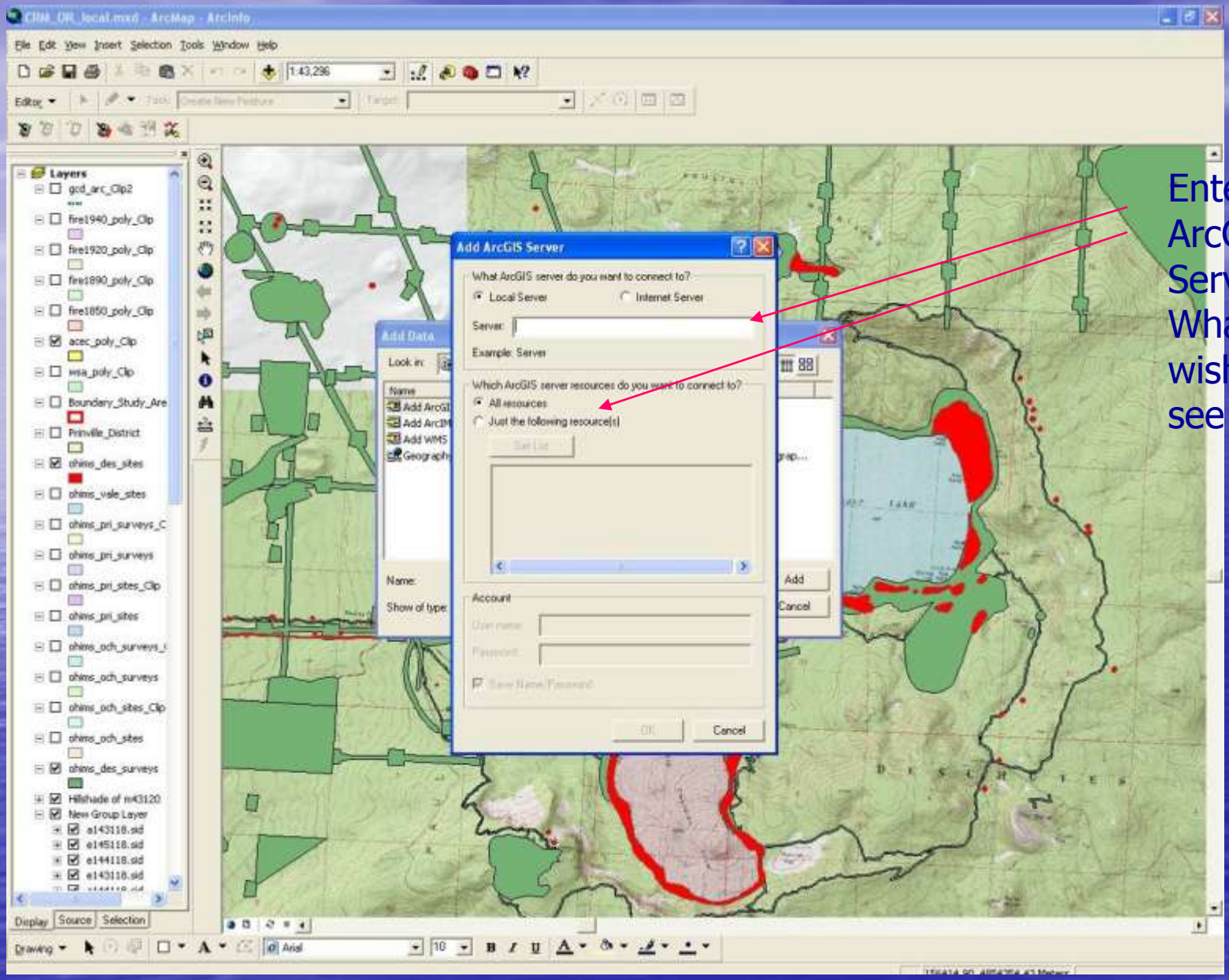


Cultural GIS Server

X, Y locations are necessary but are not sufficient. Tabular information for each site is fundamental to rating High, Medium, or Low value!

- Spatial Cultural Data must delivered effectively, efficiently with Tabular and Location for both Sites and Area's Inventoried




Add ArcGIS Server
What ArcGIS server do you want to connect to?
Local Server
Internet Server
Server:
Example: Server
Which ArcGIS server resources do you want to connect to?
All resources
Just the following resource(s)
Account
OK
Cancel
Add Data
Look in:
Name:
Show of type:
Add
Cancel
Layers
Display
Source
Selection
Enter ArcGIS Server & What you wish to see

Fire GIS-Specialist Work Area

Plotter

Large Format Product Maps

ArcGIS Workstations

Satellite Internet Connectivity

Mobile GIS [GPS/GIS] Necessary

- If lives and property secure, then resources may be considered
- Incident field crews must locate sites via x, y coordinates
  - Upload to handheld
  - Minimum description on handheld for identity of correct high value site
- Mobile GIS for all Archeology/fire work
  - Wild Land Fire Preparedness
  - Emergency Fire Rehabilitation
  - Hazardous Fuels Reduction
  - Etc.
- Know nature of and where site are
- Collect newly discovered data
- Suitable Mobile GIS has special Specifications

Fire leads to site discovery

- Emergency Fire Rehabilitation
- Collection of new data
  - Mobile GIS
  - Location
  - Tabular data
    - Same as GIS data fields
    - Seamless integration to Geodatabase
- Efficient & Effective Collection
- Use for many other Cultural/Fire operations

Deficits and major insufficiencies

- Only a handful of Archeologists are proficient with GIS
- While cultural spatial data exists, the access to the data is imperfect and the tabular information does not always allow necessary analysis by Archeologist
  - The spatial location must be accurate and tabular data must be sufficient to permit a sound evaluation
  - I perceive the necessity of ArcGIS server access to the Cultural data

Cultural Spatial Data Availability

- Presently, availability is inconsistent
- Cultural spatial data must be available in any and every case where destructive fires occur

Questions?

- Questions
- Suggestions
- Comments

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