Geographic Information Systems

Evolving the policy, practices & technology in the American Indian Trust

Centennial
National Indian Forestry & Wildland Fire Management Conference

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Access to the Right Information for Authorized Users, Anywhere, Anytime, Any Mission; Securely and Reliably.

Centennial Anniversary
GIS & Indian Forestry

Day 1: Retrospective

Day 2: Today's Issues and Challenges

Day 3: The Future

- Opportunities

- Retrospective -
Historical role of Forestry in GIS

Canadian GIS (CGIS, c1963)

- Canada Land Inventory and National Forestry Resources

  British Columbia's forest cover is 50 million hectares 123,500,000 acres (40% of total)
- Spatial Analysis & Measurement Based Framework

  Landscape Architecture (Olmstead)

  Cadastre

CGIS was the first systems approach to mapping

- **Four components**
  - People
  - Data input processes
  - Storage/manipulation - Spatial Analysis
  - Reporting & Output – Maps and Reports

- Retrospective -
Historical role of People in GIS

Geographic Information Systems are not new

- An Elder
  - Memory versus a Story
  - An oral narrative was the Map Key
- A Native Map
  - Skin Maps
  - Sky Charts of the Plains tribes

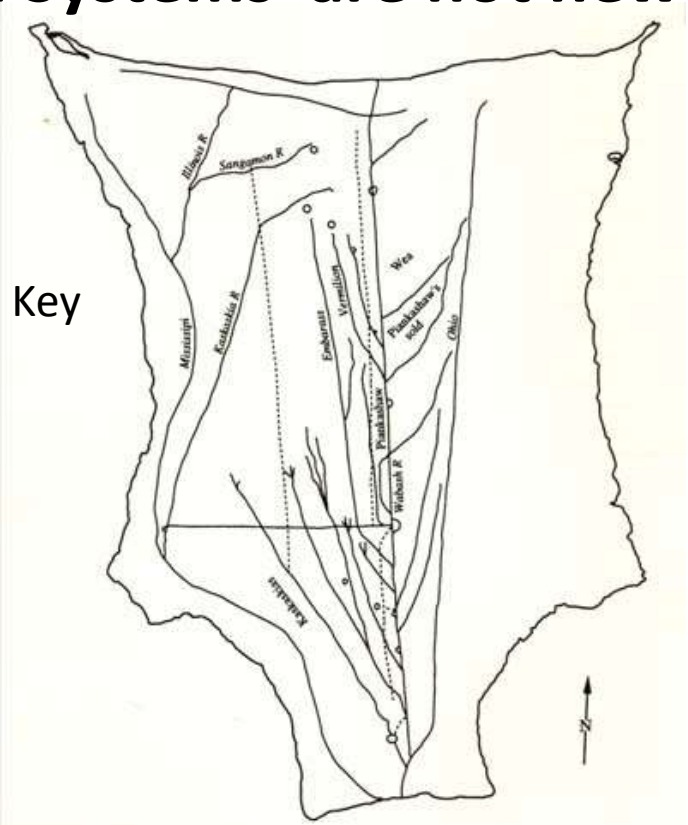


Figure 6. 1825 Anonymous Native American map on skin (redrawn for clarity).
by Raymond Wood.
The original of this Native American skin map, circa 1825, was brought to England by Mullanphy and is housed in the collection of the British Museum.

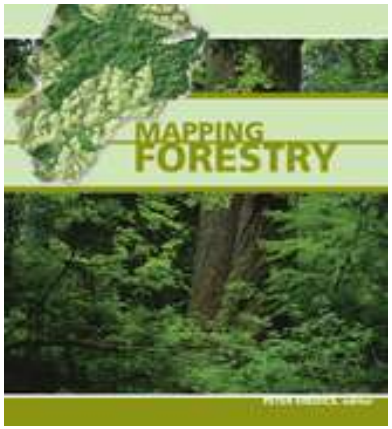
Drawing from a Native American skin map, *circa* 1825
Raymond Wood, Illinois State Museum

GIS IN FORESTRY TODAY

Results of about **801,000** for **gis forest management** with Safesearch on
Results of about **3,360,000** for **forest property management** with Safesearch on.

- Academic Journals & publications

- Web Applications & GIS Tools
- Special Interest Groups



GIS

ESRI Forestry Group

YouTube - *Tribal Forestry*: Part 1

TODAY'S OPPORTUNITIES

WHAT IS CURRENT - *IS* - THE FUTURE

Geography as a reference framework

- Transparency: *Map Central at Recovery.gov*
- Collaboration: *NSDI, The National Atlas, OGC*

GIS as a Communication tool

- GIS is the GUI for information discovery
- Mash-ups - A combination of data and services that produce hybrid products and information

GIS Challenges institutional management of information

Institutional Drivers

Preparing for Today and Tomorrow

- Legal context: Policy and Progress
  - Geographic & Locational privacy
  - Protection of sovereign rights and business interests
  - Fractionation is undivided interests, fractionation is really a flavor of cadastre
- FLAIR H.R.1520 - Federal Land Asset Inventory Reform
- Fiduciary Trust Model (FTM, c2003)
  - Recommends an Indian lands Cadastral GIS (C-GIS)
- Best Practices: Demonstrated successes in Indian Country
  - Aqua Caliente: "*The Agua Caliente Land Status map is the most valuable resource used by the Tribal Planning and Development Department….*"
  - Skagit River System Cooperative: Forest Practice Activities (ESRI Pub. – *Tribal GIS*)
  - Yakama: OTS plat book from Yakama cadastral GIS
  - Coeur d'Alene: "*Earth Knowledge Tool*" & GNIS (http://gis.cdatribe-nsn.gov/)
  - Columbia River Intertribal Fish Commission: Land ownership

Organizational Issues / Opportunities

- OTS GIS Advisor
- The BLM has retired NILS
- Proposed Cobell settlement includes DOI commitment to resolve long outstanding Trust land ownership (cadastre) issues

- AAS Recommendation
- FTM Recommendations
- A well researched and documented framework for Trust Lands cadastre already exists

INSTITUTIONAL DRIVERS
OCIO - GIS & GEOSPATIAL SERVICES

Achievements

38 classes, 311 Students (82 BIA / 229 Tribal)

10.7m GIS (GSA) software distributed (9.3m savings)

1,296 Helpdesk Tickets serviced CY09

- 28% increase CY 08
- 71% Tribal

Comprehensive rewrite of existing Task Orders

Contract re-compete for CY2011

Challenges

- Funding
- Executive awareness (e.g.: NILS as a GIS solution)
- No governance structure for tasking, monitoring and accounting of enterprise GIS activities
- Matrix-management organization in a line-item budget world
- ELA: No policy framework for True-up with Tribal user base (87%)

Opportunities

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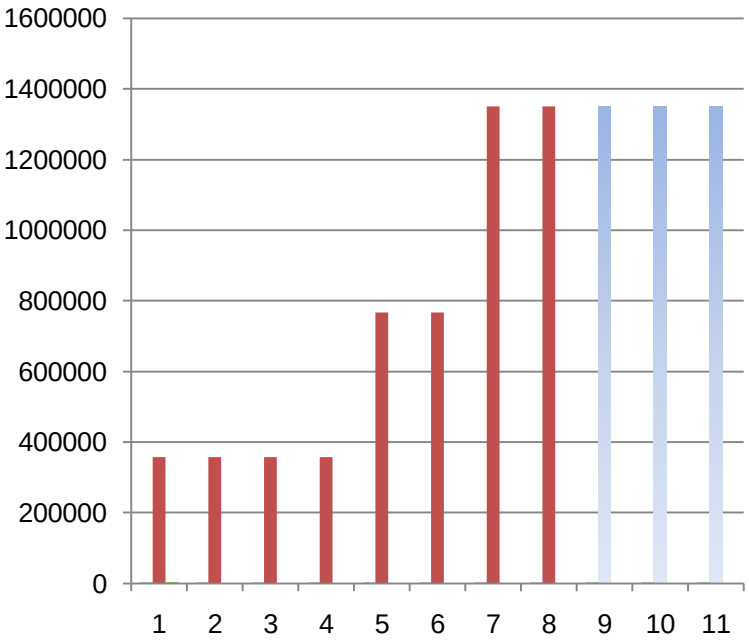
- FTM Recommendations
- AAS Recommendation

Risks

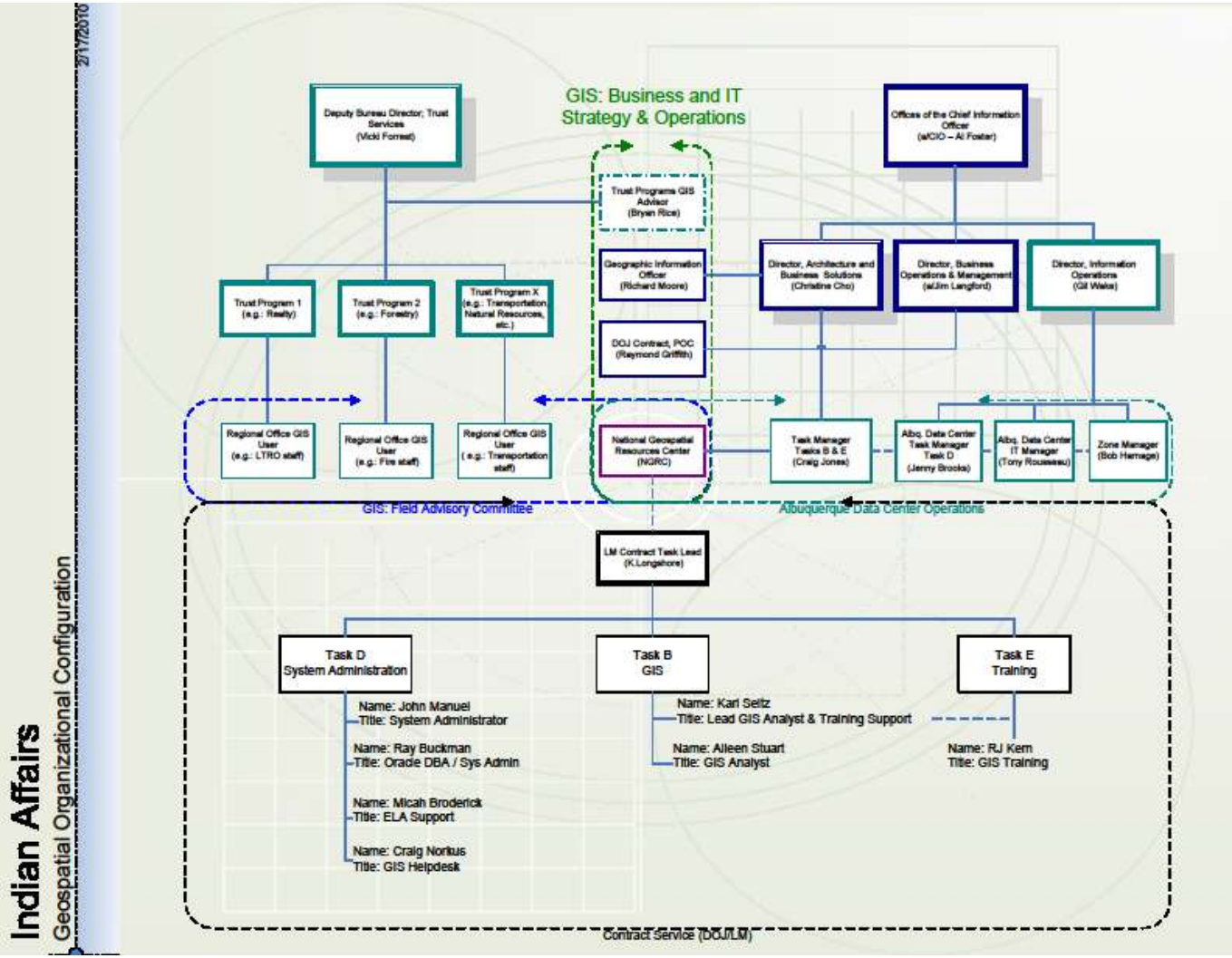
- Enterprise GIS
- Reduction of IIRIP
- Fragmentation of enterprise GIS
- Continued rise in the cost of ELA participation

Historic Costs for Indian Affairs participation in DOI GIS Software Enterprise Licensing Agreement

Contract Cycle	Year	Cost
1	2003	357000
1	2004	357000
1	2005	357000
2	2006	357000
2	2007	767000
2	2008	767000
3	2009	1350000
3	2010	1350000
3	2011	1350000
3	2012	1350000
3	2013	1350000



ORGANIZATIONAL FRAMEWORK FOR COLLABORATION



Sensitive But Unclassified—For Official Use Only

"The lands within numerous Indian reservations have been fragmented, with privately owned real estate intermixed with tribal, city, county, state, and federal authorities in a ***bewildering array of jurisdictional geographies."***

QUESTIONS?

Thank You