Overview

- One-stop shopping for Africa continent base maps
- Online Atlas and Index
- Gateway to more specific data searches (across multiple systems)
- Search non-spatial visual data
- Repository for Africa research projects
Goals

• Build an interdisciplinary data repository for Africa which uses latitude and longitude instead of Dewey for organizing information
• Create a framework for organizing Africa data which could be applied globally
• Support research at all scales from local to continent-wide
• Support access to all types of material: photos, maps, text, video, audio, spatial data
• Provide long term persistence of data and links to data
Why Africa?

• To correct the misperception that there is little data on Africa
• Data exists but is hard to access – stored in multiple archives in many formats
• Harvard has one of the largest collections of Africa maps
• Research at Harvard will benefit from easier access to data on Africa
Affiliations Inside Harvard

- W.E.B. DuBois Institute
- Center for Geographic Analysis
- Department of African and African American Studies
- Dept of History of Art and Architecture
- Business School
- Law School
- School of Education
- Dept of Government
- Dept of Anthropology
- School of Public Health
- GSD
- Museum of Comparative Zoology
Partners Outside Harvard

• Afriterra (historical african map archive that is being georeferenced) http://afriterra.org
• Human Area Relation Files (world ethnographic database, georeferenced) http://www.yale.edu/hraff/
• World Cultures Journal http://eclectic.ss.uci.edu/~drwhite/worldcul/world2.htm
• Ethnologue (database of African languages) http://www.ethnologue.com/
• Cultural Maps of Africa (Mark Felix)
• Indian Ocean Project – Pat Seed, UC Irvine
• Tara – Trust for African Rock Art http://www.africanrockart.org
System Functions

• Tools for navigating map: Gazetteer, pan, zoom
• Keywords search
• Query tools
• Ability to add data to system
• GIS and Google Earth visualization of contents
• View of Harvard Projects on Africa
System Characteristics

• Open standards/protocols to support interoperability
• Use existing components where possible
• Services oriented architecture
Service Oriented Architecture

Will act as a server to remote clients
Will act as a client to remote servers
Proposed Functionality – Phase 1

• multi scale base map of continent
• tag cloud view of contents
• pan and zoom
• gazetteer for finding places
• permalink to map view and contents
• global text search against all content
• instant display of search results on map
• click points to view contents
• user added points
• user loaded content
• user added tags
• user added web services
• admin of new features
• admin of categories
Key Elements of System

- Digital Base Map (does not yet exist for Africa)
- Continental Data Layers
- Africa Gazetteer
- Keyword Search (across all content)
- User Added Points (map notes, photos, links)
- User Added Tags (to describe any content)
- User Added Services
- Moderator Capability
- Web services Client and Server
- Download Access to Data
Building the Base

• The U.S., France, Germany, Italy, Russia, and many African countries have created map series for multiple scales and time periods.

• Harvard Map Library has a complete or near complete set for many series.
Google for most of Africa

Base mapping
same location
Overview of Harvard Map Library Holdings

• Country and/or City level series for:
  – Morocco
  – Algeria
  – Tunisia
  – Libya
  – Egypt
  – Sudan
  – Somaliland
  – Kenya
  – Uganda
  – Rwanda
  – Burundi
  – Tanzania
  – Mozambique
  – South Africa
  – Rhodesia
  – Zimbabwe
  – Zambia
  – Swaziland
  – Botswana
  – Malawi
  – Liberia
  – Gambia
  – Sierra Leon
  – Ghana
  – Gold Coast
  – Nigeria
  – Zaire
  – Congo
  – Chad
  – Benin
  – Togo
  – Niger
  – Ivory Coast
  – Guinea
  – Mali
  – Burkina
  – Senegal
Building the Base – 1:2,000,000
Level of Detail
Scanning and Georeferencing
More Detailed Mapping – 1:250k
Level of Detail
New Base Map Selected
More Detail with Zoom

Africa Map

[Image of a map with roads highlighted]
More Detail with Zoom
Larger Language Families
Cultures in the Ethnographic Atlas

Fields in Ethnographic database

We have compiled ethnographic data on over 500 African cultures primarily based on George P. Murdock's Ethnographic Atlas of the World. Since we have over 1,000 fields of data for each culture, the database will allow us to examine areas of creativity from a wide range of perspectives.

1. Agriculture
2. Animal Husbandry
3. Boat Building
4. Cast Stratification
5. Class Stratification
6. Civic Number
7. Organized Kin Groups
8. Community Organization
9. Concept Frequency
10. Concept History
11. Cousin Marriage
12. Cultural Typology
13. Distribution of Inheritance
14. Distribution of Movable Property
15. Extended Family Organization
16. Family Organization
17. Fishing
18. Floor Level
19. Floor Level Copy
20. Gatherers
21. Gestural Variation
22. Ground Plan of Dwelling Copy
23. Ground plans of Dwelling
24. Height Variation
25. High Grade
26. House Construction
27. Housing
28. Inheritance of Movable Property
29. Inheritance of Real Property
Ethnographic Atlas Themes, Mapped

Economy

Slavery
Map Diversity

Slave Routes

China 1389

Refugees
Historic Base Maps

1829 Herrison
Composite History Maps
(to be created)
Welcome to the Collections of the Peabody Museum of Archaeology and Ethnology. There are two methods available to view the collections. You can choose either to browse a specific collection or to perform a search according to your own interests. Researchers can choose more advanced options.
Peabody Collections as Map Layers
The Center prepared a detailed master plan for the revitalization of the Older Urban Fabor of Al Qusur on the Red Sea. The study focused on identifying public improvements and defining appropriate development regulations to encourage private investment and foster the preservation and rehabilitation of the built environment.

The Peder Seger Wallenberg Charitable Trust funded the Center to assist the Red Sea Governorate and the City of Qusur in preparing the plan and proposals, and defining a strategy and an action plan for the preservation and revitalization of the historic urban fabric of Qusur. The study focused primarily on:

- Developing an operational strategy for revitalization and preservation
- Developing a master plan for the historic urban fabric and surrounding impact areas
- Defining an appropriate regulatory framework
- Developing strategies that would concentrate on infrastructure and public space as the catalysts for upgrading and enhancing the built environment
- Capitalizing on the development opportunities of strategically located parcels to launch the revitalization process and encourage private investment for the preservation and rehabilitation of the built environment.

The study team led by Francesca Saporiti and Anna Esperanza included practitioners Dr. Taheri Waly and Afif Makarem and Mohamed Sherafy Arda. The team is working closely with Dr. Samir Samaha, the Governor’s advisor on Tourism and Development, and Mohamed and Yousef Waly, who led the...
Harvard Museum of Comparative Zoology (Amphibians and Reptiles)
Human Ecological/Ethnographic Approach to Organizing Data

- Geology
- Elevation
- Climate
- Hydrology
- Soils
- Vegetation
- Fauna
- Early human land use
- Historic land use
- Ancient roads, trails, ports
- Historic mapping
- Ethnographic regions
- Language regions
- Political boundaries – 1800, 1900, 1950, 2000
- Base mapping – 1900, 1950, 2000
- Place names
- Current transportation
- Mining
- Current land use
And More Possible Layers

- African cities and sites
- Socio Political data and maps
- Historical maps
- Specialized maps
- Ethnographic and language maps
- Genetic mapping
- Slave trade
- Africa and the World
- World Heritage Sites
- Population density
- Wikipedia
- Library of Congress
- Gutenberg Project
- Internet Archives
- MapDex WMS and ArclMS layers for Africa
- Harvard projects
Spatial Selection by Layer

User selects layer:

| Place Names | Languages | Cultures | History | Roads, trails | Geology | Fauna | Harvard Projects |

Values from layer returned:

| Language1 | Language2 |

Features highlighted on map with corresponding table.
Gazetteer

The gazetteer will support search for materials and navigation.

- Geographic Names System (GNS)
- Getty Thesaurus of Geographic Names
- Alexandria Digital Library
- Others
Place Name Search Against Gazetteer

Accra, Ghana
An Africa Gazetteer has many uses:
• User navigation, map labeling
• User georeferencing of materials
• Used in automated georeferencing of collections
• Can be provided as a web service for other organizations to use
Gazetteer source: Geographic Names System (GNS)

Estimate for Africa based on Benin: over 1 million

6357 place names for Benin
User inputs keyword:

Then user selects layer to search. Default is All

Features highlighted on map with corresponding table of results
Select from Results

Africa Map

Ajaojuto
Ajaojuto is a town in south-central Nigeria, on the bank of the Niger River. It is located at around 10°N, 6°E, and is the home of the multi-billion-dollar Ajaojuto steel rolling mill in Kogi State, Nigeria. It is not yet connected to the main railway system of Nigeria.

Tags:
Nigeria, Cities, Wikipedia, Communities

Actions:
What's Nearby, Mark for Conversation

Places
- Show Full Map
- View in Google Earth
- Nothing places are displayed as red and yellow points overlaid on map.

- Southern Adar Forest Reserve
- Kikba Native Area Number 7
- Ikom Forest Reserve
- Iloga Native Area Number 3
- Iloga Native Area Number 4
- Iloga Native Area Number 5
- Ilagbogba Forest Reserve
- Adur Forest Reserve
- OkuGagaga
- Odeagbasa Forest Reserve
- Gregory River
- Little Ose Forest Reserve
- Numa
- Iloga Native Area Number 2
- Iloga Native Area Number 3
- Iloga Native Area Number 6
- Akpatagum Forest Reserve
- Akpatagum
- Ologogogoro Forest Reserve
- Akpatagum Forest Reserve
- Olome Iloga Forest Reserve
- Osara Forest Reserve
- Oponcha Forest Reserve
Zoom in to Selected Against Satellite Base Map
Data Search Remote Sources

- Search for spatial data through the Harvard Geospatial Library (HGL)
- Add data found to the base data view
- Search for non-spatial data through Harvard Visual Information Access (VIA)
- Optionally specify a location on the base data view to register the URL linking to the found items
Harvard Projects View

View project descriptions and contact information for any project in Africa.
Access Project Information
Summer ‘07 Students
City of Abomey Project (Benin)
City of Abomey Project
Abomey Data

<table>
<thead>
<tr>
<th>NAME</th>
<th>BOUGHT HSE</th>
<th>ORIG HSE OWNER</th>
<th>FRLINEAGE</th>
<th>FAMILY AFFILIATION</th>
<th>OCCUPATION/CLASS</th>
<th>SPECIALIZATION</th>
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<td>Prince</td>
<td>Gele</td>
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<td>Ayino</td>
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<td>Huagbonu</td>
<td>w. 8 &amp; 75</td>
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Abomey Ethnographic Breakdown
Abomey Lineages w/ Links
Abomey Lineages

Palace
Abomey Lineages

Festival
Abomey Historical Images
Abomey Current Images

http://www.mrfs.net/trips/2005/West_African_Coast/Abomey/Abomey.html
City of Ife Project (Nigeria)
City of Ife area around palace
Archeological Ife
Mapping Ife
Ife In Google Earth
Thank you