



China Historical GIS System Demonstration

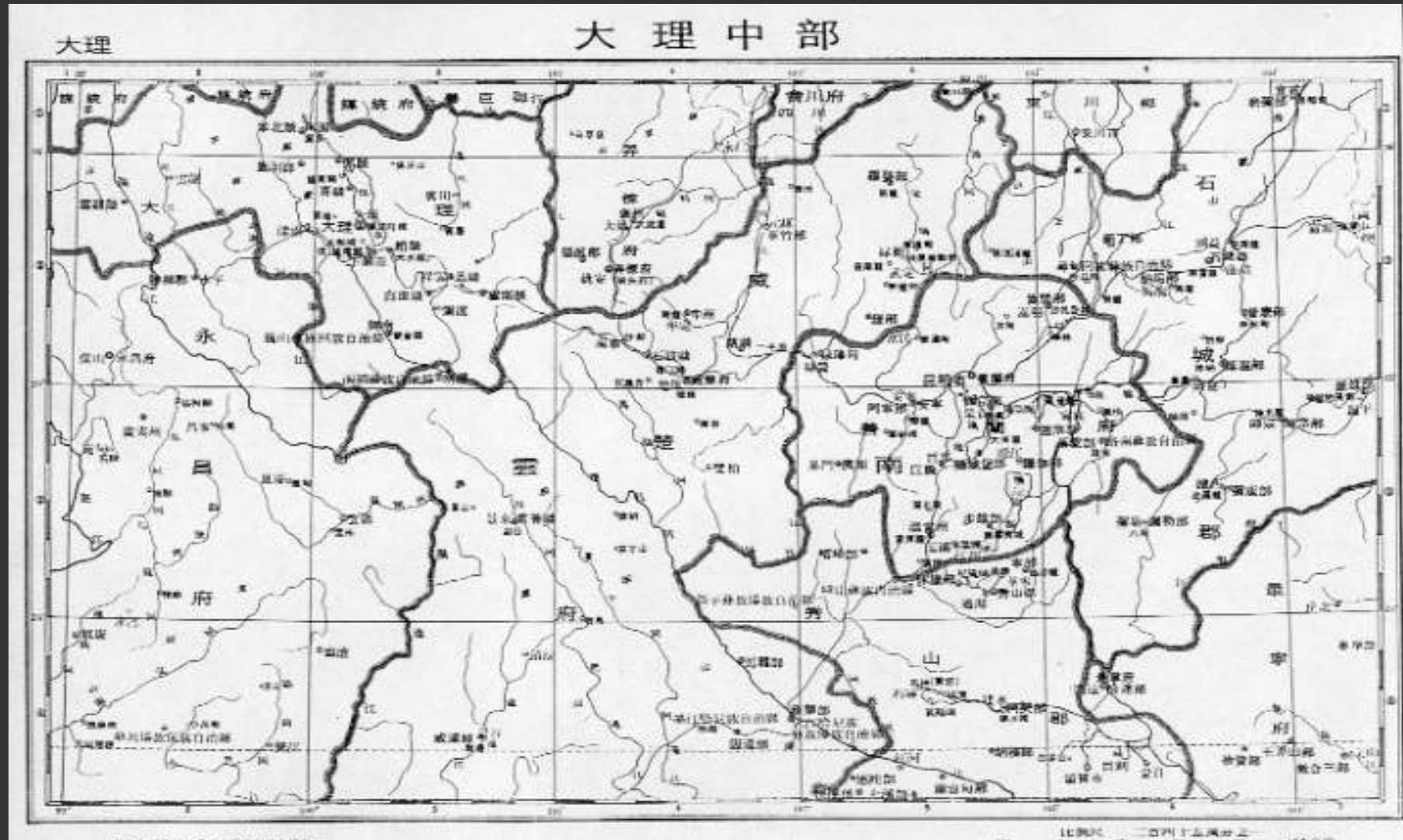
Merrick Lex Berman

Lamont Forum, Harvard, Aug 2001

GIS Layers

long_coor	lati_coor	pl	place_present	dyn_ch	prov	level2_py_name	level2_ch
111.316	35.552		山西曲沃县西南隘口	清朝	山西	Pingyang Fu	平阳府
113.073	36.333		山西潞城市西安昌	清朝	山西	Lu'an Fu	潞安府
112.693	40.154		山西左云县北宁鲁堡	清朝	山西	Shuoping Fu	朔平府
112.956	39.702		山西大同市西南安宿瞳	清朝	山西	Datong Fu	大同府
111.042	35.062		山西运城市东北安邑	清朝	山西	Jiezhou Zhilizhou	解州直隶州
111.239	34.88		山西平陆县北八政	清朝	山西	Jiezhou Zhilizhou	解州直隶州
112.884	35.618		山西晋城市东北巴公	清朝	山西	Zezhou Fu	泽州府
111.692	37.142		山西孝义市西壁关	清朝	山西	Fenzhou Fu	汾州府
113.818	40.287		山西阳高县南大白登	清朝	山西	Datong Fu	大同府
112.032	39.803		山西平鲁县西北败马堡	清朝	山西	Shuoping Fu	朔平府
112.702	38.109		山西阳曲县东北柏井	清朝	山西	Taiyuan Fu	太原府
113.81	37.821		山西平定县东柏井	清朝	山西	Pingding Zhilizhou	平定直隶州
111.583	34.905		山西平陆县东南沟夹河与白	清朝	山西	Jiezhou Zhilizhou	解州直隶州
112.454	35.408		山西阳城县东南白桑	清朝	山西	Zezhou Fu	泽州府
111.016	37.489		山西离石市西上白霜	清朝	山西	Fenzhou Fu	汾州府
111.895	40.845		内蒙古呼和浩特市东白塔	清朝	山西	Guisuiliuting	归绥六厅
111.118	38.179		山西临县东北白文	清朝	山西	Fenzhou Fu	汾州府
114.077	40.477		山西天镇县北白杨口	清朝	山西	Datong Fu	大同府
112.131	36.559		山西沁源县西北柏子	清朝	山西	Qinzhou Zhilizhou	沁州直隶州
111.896	39.213		神池县县西北八角	清朝	山西	Ningwu Fu	宁武府
112.047	38.631		山西宁武县南坝门口	清朝	山西	Ningwu Fu	宁武府
112.891	40.227		山西左云县东北保安堡	清朝	山西	Shuoping Fu	朔平府
111.079	39.012		山西保德县	清朝	山西	Baode Zhilizhou	保德直隶州
110.016	40.592		内蒙古包头市东	清朝	山西	Guisuiliuting	归绥六厅

Sample CHGIS data

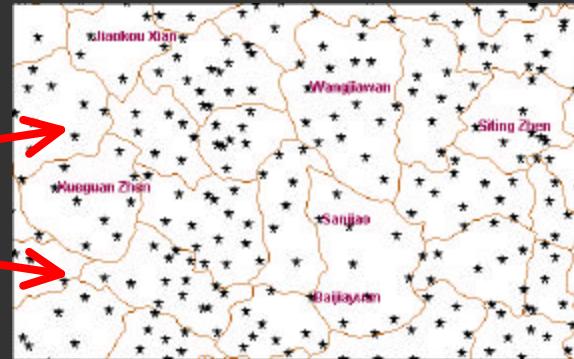


Tan Qixiang's “Historical Atlas of China”

New administrative unit datasets

Settlements as points

long_csg	lati_csg	plano_preset	dyn_chi	prov	level2_py_name	level2_en
111.316	35.995	山西永济县蒲州缺口	洛阳	山西	Fengxian Pu	风陵镇
111.075	35.335	山西运城市芮城西面	洛阳	山西	Lixia Pu	临晋镇
112.095	40.164	山西运城市临晋北界	洛阳	山西	Zhaoying Pu	朝阳镇
112.066	35.102	山西大同市阳高南界治理	洛阳	山西	Duozang Pu	大同镇
111.042	35.062	山西运城市平陆北界	洛阳	山西	Jiexiaohu Shilihe	解州衙署村
111.236	34.88	山西运城市永济北界	洛阳	山西	Jiexihai Shilihe	解州衙署村
111.084	35.618	山西运城市万荣北界	洛阳	山西	Zexian Pu	泽州府
111.060	37.142	山西运城市闻喜北界	洛阳	山西	Fenzhou Pu	汾州府
113.518	40.287	山西运城市夏县大吕东界	洛阳	山西	Tutong Pu	太师府
112.036	33.803	山西运城市芮城马营	洛阳	山西	Shuangping Pu	双平镇
112.105	33.109	山西运城市芮城李家井	洛阳	山西	Taixian Pu	太子院
113.01	37.021	山西平遥县东街东口	洛阳	山西	Fuqing Shilihe	平康衙署村
111.585	35.908	山西平遥县东街西口	洛阳	山西	Jiexiaohu Shilihe	解州衙署村
112.474	35.408	山西祁城县崇善白桑	洛阳	山西	Zeikou Pu	泽州府
111.016	37.488	山西临猗县寺上白桑	洛阳	山西	Fenzhou Pu	汾州府
111.895	41.845	山西古交市阳曲洪洞东界	洛阳	山西	Guanzhuluting	归德六厅
111.118	35.171	山西运城市永济北文	洛阳	山西	Fenzhou Pu	汾州府
114.071	40.471	山西运城市永济缺口	洛阳	山西	Tutong Pu	太师府
112.121	35.558	山西运城市芮城南子	洛阳	山西	Guanzhu Shilihe	光州衙署村
111.006	35.213	山西运城市芮城北山口	洛阳	山西	Rongya Pu	平武府
112.041	36.631	山西运城市芮城缺口	洛阳	山西	Rongya Pu	平武府
112.891	40.221	山西运城市临晋北界	洛阳	山西	Shuangping Pu	双平县
111.079	35.012	山西运城市芮城缺口	洛阳	山西	Baixi Shilihe	保德衙署村
110.016	40.592	内蒙古包头百泉	洛阳	山西	Guanzhuluting	归德六厅



Map sources

Boundary polygons



CHGIS base dataset layers

O V E R L A Y

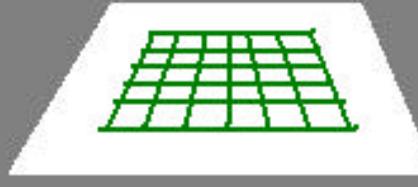
CHGIS layers



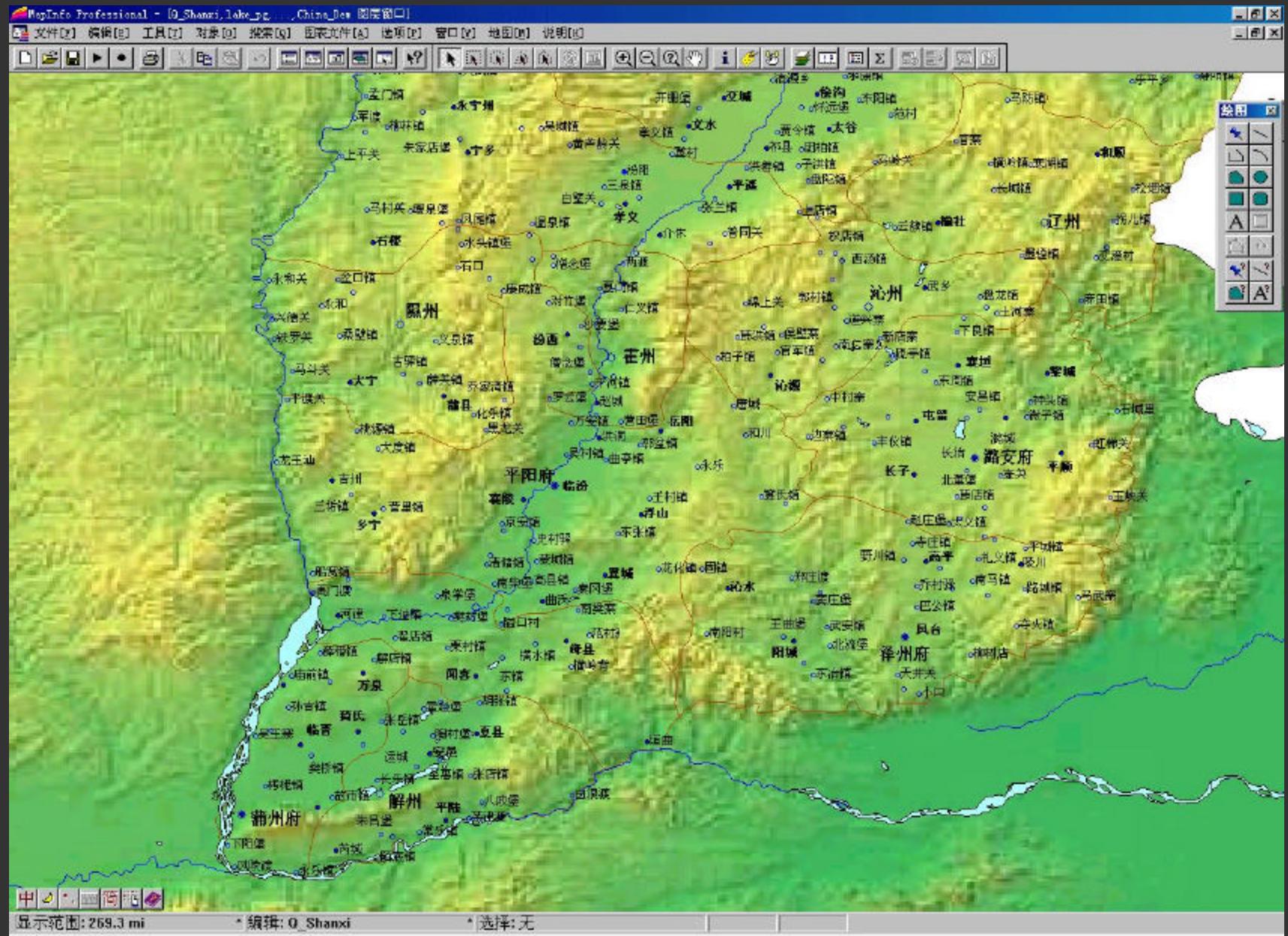
hydro layers



DEM layers



Using CHGIS spatial data with other GIS data



CHGIS data with hydro & DEM overlays

Toponym Search

pinyin	admin_type	sup_prov	province		circuit	prefect	dep_pref
Code			Level1_h	Level2_h	Level3_h	Level4_h	Level5_h
Xincheng	Xian	Ming dynasty	Jingshi		Baoding		
Xincheng	Xian	Ming dynasty	Shandong		Ji'nan		
Xincheng	Xian	Ming dynasty	Zhejiang		Hangzhou		
Xincheng	Xian	Ming dynasty	Jiangxi		Jianchang		
Xincheng	Xian	Ming dynasty	Guangxi		Qingyuan		
Xincheng	Suo	Ming dynasty	Guizhou		Annanwei		
Xincheng	Wei	Ming dynasty	Jingshi		Beiping		
M001100220025			0	11	0	22	0
M002500210026			0	25	0	21	0
M004100210027			0	41	0	21	0
M004500260022			0	45	0	26	0
M008500230032			0	85	0	23	0
M009500003722			0	95	0	0	37
M001100002422			0	11	0	0	24

Coding to distinguish unique places

Toponym Data Model

Administrative Feature Table

Key_id	Pinyin_Name	Name_HZ	Alt_Name
1234	Minyong	民永	Y
1235	Longjing	龍井	Y

Alternate Language Table

Lang_id	Alt_Lang
1	manchu_1
2	mongol_1
3	tibet_1

Alternate Name Table

Key_id	Alt_Name	Alt_HZ	Lang_id
1234	min'gyun	門永	3
1234	Menyong	岷永	3
1234	Minyong	團結	3
1234	Tuanjie	保定	3
1235	Baoding		
1235	drong'pa		

tibet_1 Table

Key_id	Tibetan_Name
1234	min'gyun
1235	drong'pa

CHGIS - fas.harvard.edu/~chgis

03-01-01

Online Toponym Search Engine Model

A map of China with its provinces outlined in yellow. The provinces labeled are Xinjiang, Hebei, Shanxi, Shaanxi, Ningxia, Gansu, Qinghai, Xizang (Tibet), Sichuan, Yunnan, Guizhou, Hainan, Neimenggu, Jilin, Liaoning, Beijing, Tianjin, Shandong, Jiangsu, Shanghai, Anhui, Zhejiang, Jiangxi, Fujian, and Hong Kong. A scale bar at the bottom left indicates distances up to 1,000 miles.

Map Data: ACASIAN
Map Design: Lex Berman

0 500 1,000 miles

Placename (Pinyin):

or Province: all

Or Guobiao Code:

[Search Tips](#)

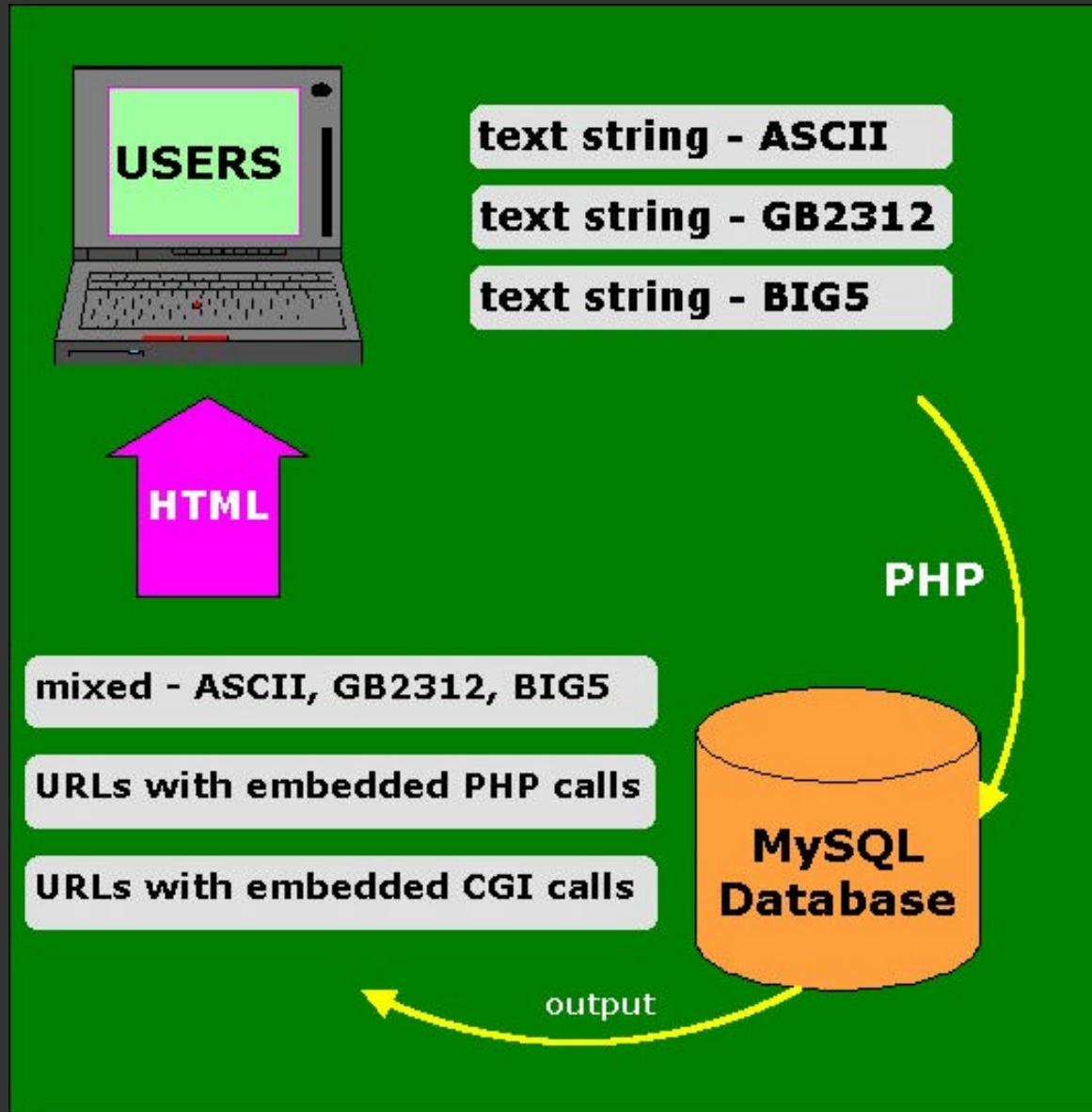
Search Engine Form

2 items found

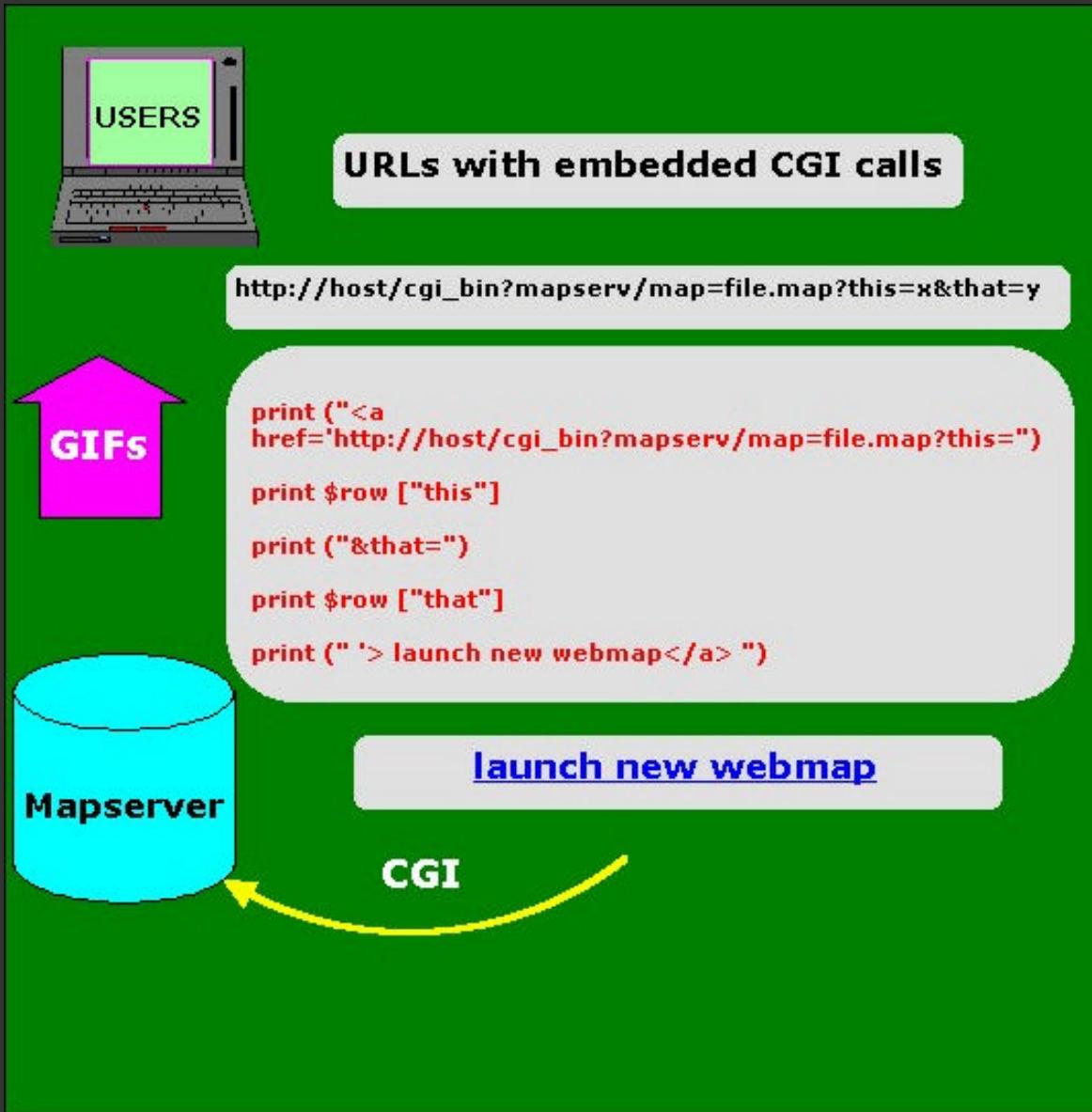
- Chinese Name:**白沙黎族自治縣**
 - Pinyin Name:**Baisha**
 - Minority Name:**Lizu**
 - Admin Unit:**Zizhixian**
 - Prefecture:**Sanya Shi**
 - Province:**Hainan**
 - GB Code 1991:460030
 - [Search Harvard Map Collection](#) for Hainan Province
 - [Search Harvard Yenching Library Local Histories Collection](#) for Hainan Province
-
- Chinese Name:**白沙工農區**
 - Pinyin Name:**Baisha**
 - Minority Name:
 - Admin Unit:**Gongnongqu**
 - Prefecture:**Daxian Diqu**
 - Province:**Sichuan**
 - GB Code 1991:513032
 - [Search Harvard Map Collection](#) for Sichuan Province
 - [Search Harvard Yenching Library Local Histories Collection](#) for Sichuan Province

Results Contain Links to Launch New Searches

Embedded Search Requests



Embedding New Queries in URLs



How to Embed CGI Calls in URLs

Harvard Map Collection Search Results

2 map records found

Country / Region depicted:	China
Publication Date:	1935
Vernacular Language:	Chinese
Map Scale, :	1 :190,000
Pusey Call Number :	7823 HAI6 1935
Map Series Area Description:	Hainan Island
Number of Index / Locator Sheets:	1
Total Number of Map Sheets in Series:	12
Detailed Description:	Maps of Hainan Island, Chinese General Land Survey, 1935. Library has complete coverage of index, but not all of island is represented (southernmost regions not covered).
Guide Map Showing Approximate Area of Map Series:	Get Map (available for China only)

Request Launches Automatic Search



Powered by MapServer

0

35 70 105 140 175 210 mi

- Browse map
 Query feature

Zoom In

Pan

Zoom Out

Zoom Size



counties

Mapserver Zooms to Requested Extent

Layer: China Counties 1990

GUOBIAO CODE 1991	CHINESE NAME	PINYIN NAME	ADMIN UNIT	CAPITAL CHINESE NAME	CAPITAL PINYIN NAME	CAPITAL ADMIN UNIT
460201	三亞市	Sanya Shi	Urban Districts	三亞市	Sanya Shi	City

Map of Selected Feature

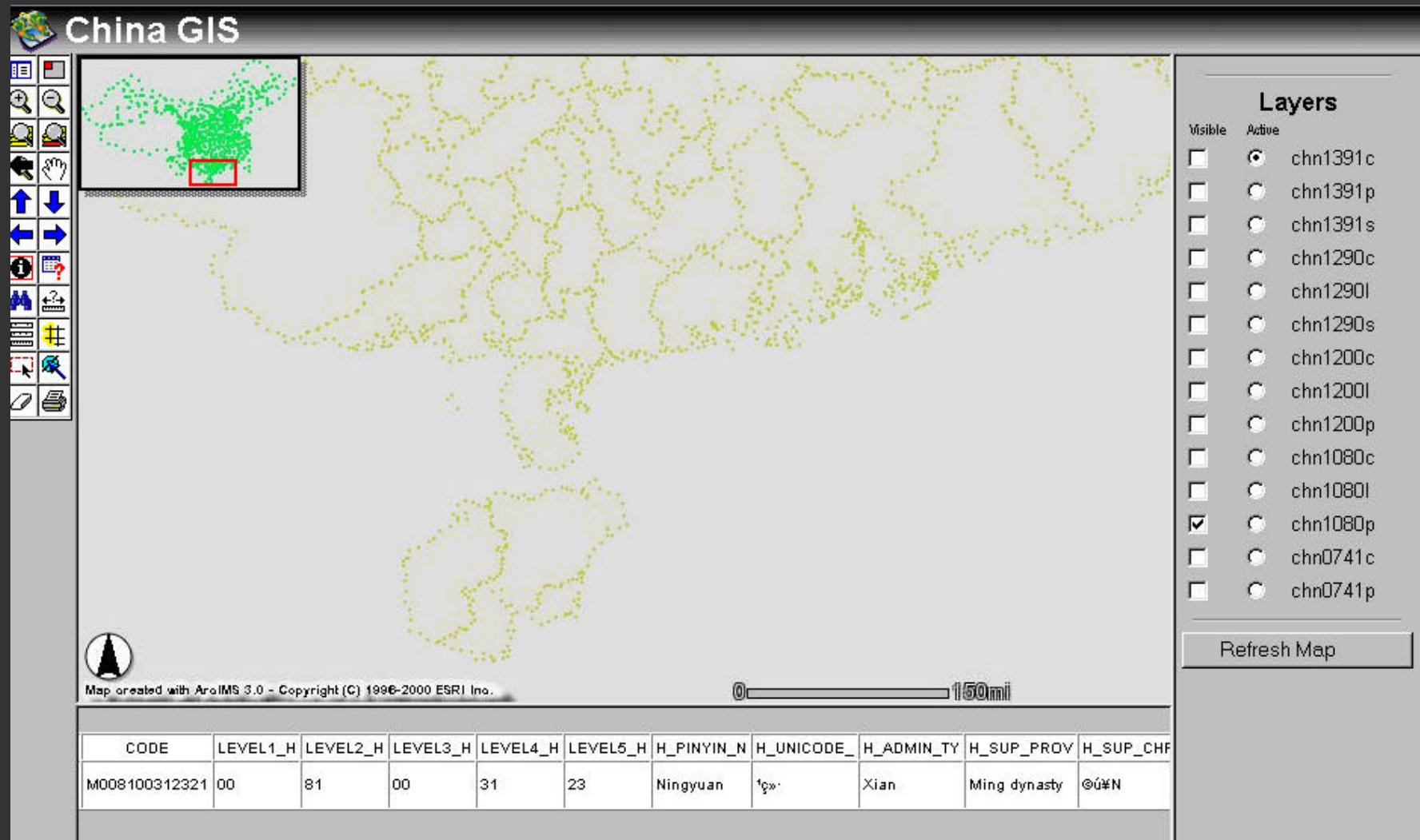


Query Feature - Shows Attributes

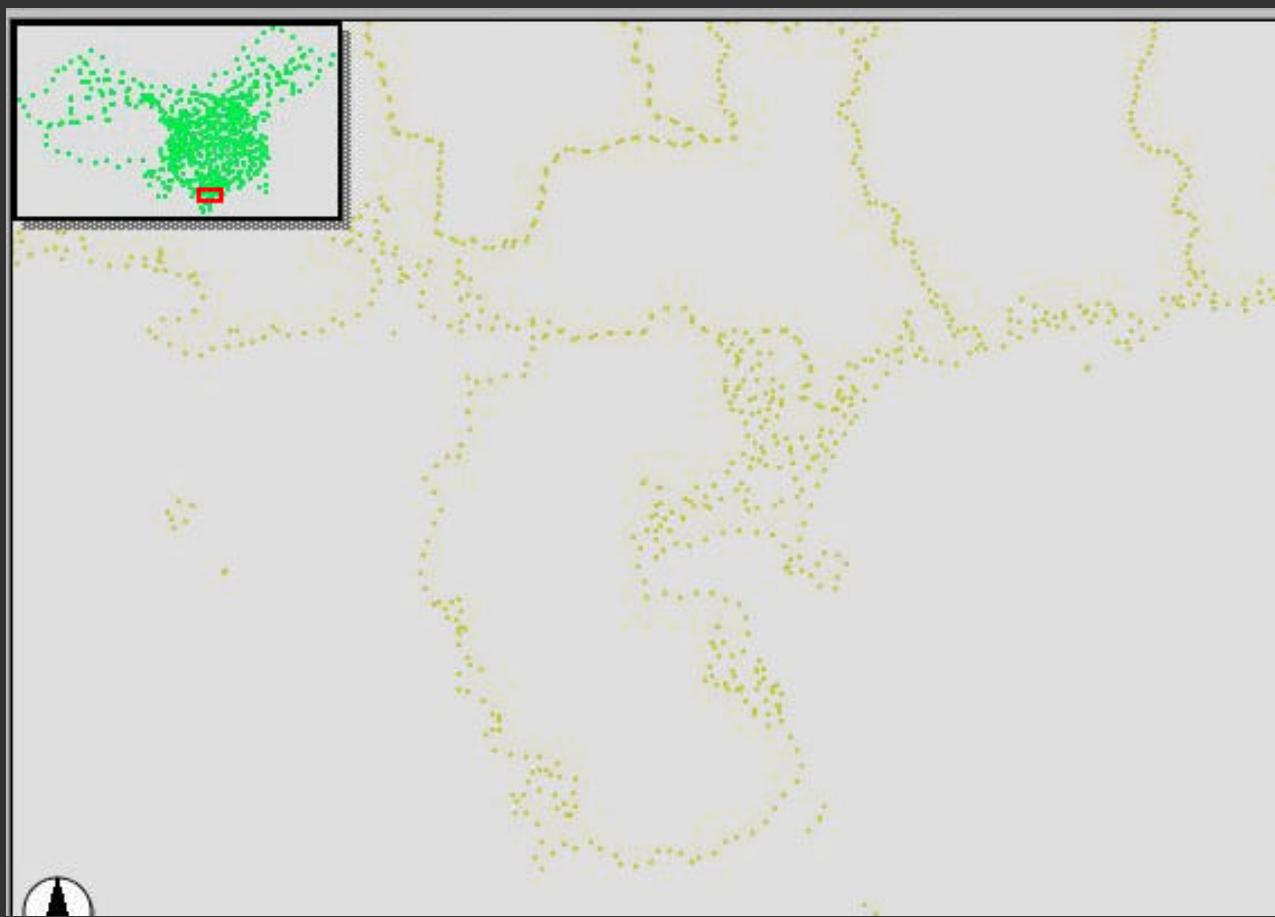
Mapservers



Hartwell GIS - Geospatial Library

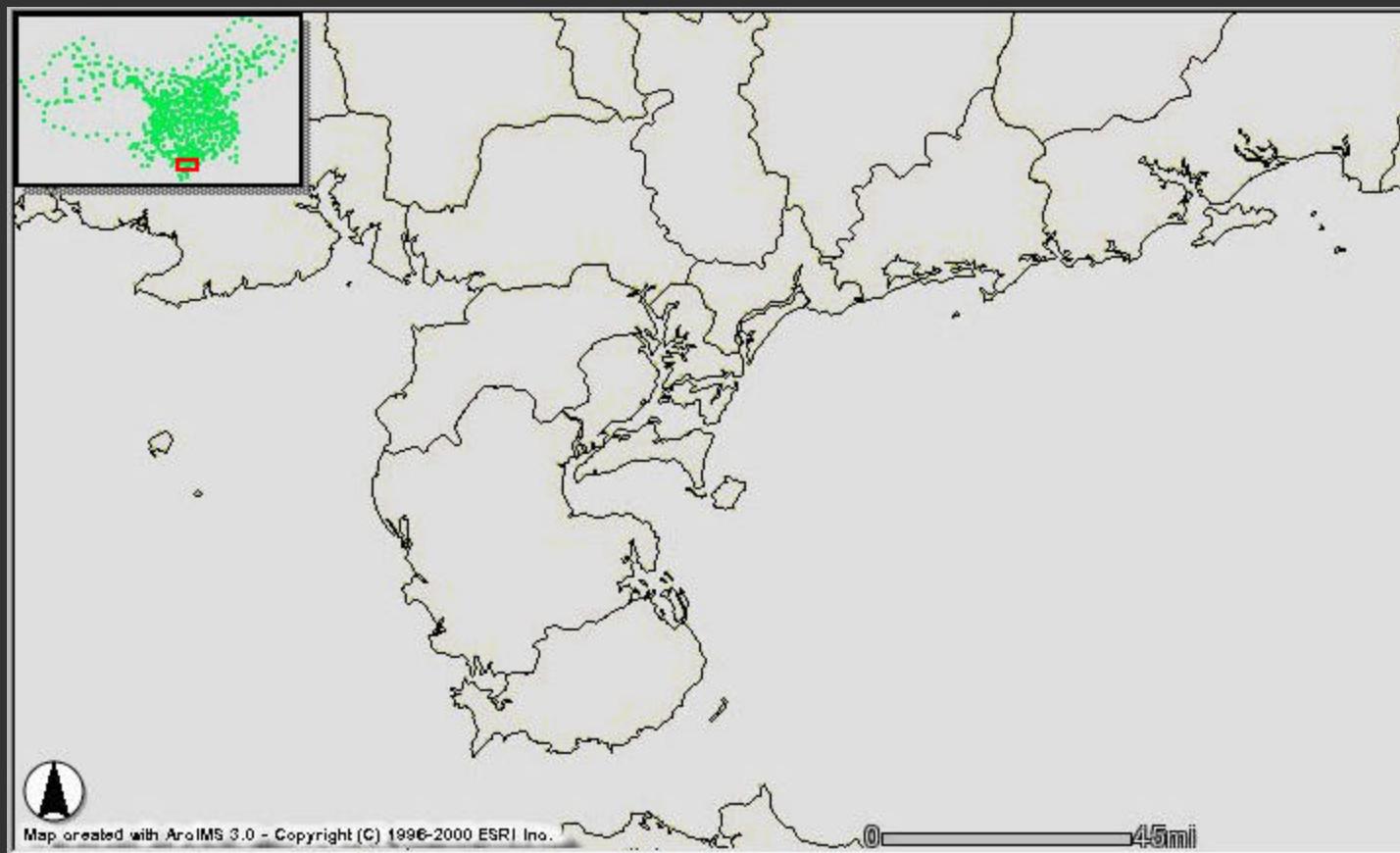


Hartwell GIS - Zoomed in with Info Request



CODE	LEVEL1_H	LEVEL2_H	LEVEL3_H	LEVEL4_H	LEVEL5_H	H_PINYIN_N	H_UNICODE_	H_ADMIN_TY	H_SUP_PROV	H_SUP_CH
M008100312321	00	81	00	31	23	Ningyuan	宁远	Xian	Ming dynasty	明

Zoomed in Showing Prefectures



CODE	LEVEL1_H	LEVEL2_H	LEVEL3_H	LEVEL4_H	LEVEL5_H	H_PINYIN_N	H_UNICODE_	H_ADMIN_TY	H_SUP_PROV	H_SUP_CH
M008100312321	00	81	00	31	23	Ningyuan	宁远	Xian	Ming dynasty	明

Zoomed in Showing Counties



H_PINYIN_N	H_UNICODE_	H_ADMIN_TY	H_SUP_PROV	H_SUP_CHPV	H_PROVINCE	H_CHINPROV	H_PREFECT
Changyi	ㄔㄤ一ㄵ	Xian	Jin dynasty	ㄐㄧㄣ	Shandong Dong Lu	ㄕㄢㄉㄤㄉ,ㄉ	Wei Zhou

H_PINYIN_N	H_UNICODE_	H_ADMIN_TY	H_SUP_PROV	H_SUP_CHPV	H_PROVINCE	H_CHINPROV	H_PREFECT
Beihai	ㄅㄞㄏㄞ	Xian	Tang dynasty	ㄊㄤ	He'nan	ㄷㄱㄶㄱ	Qing

Southern Song overlay on Tang - Counties

Guide Map Showing Province Location:



0 95 190 285 380 475 570 mi

Guide Map Showing Country Location:

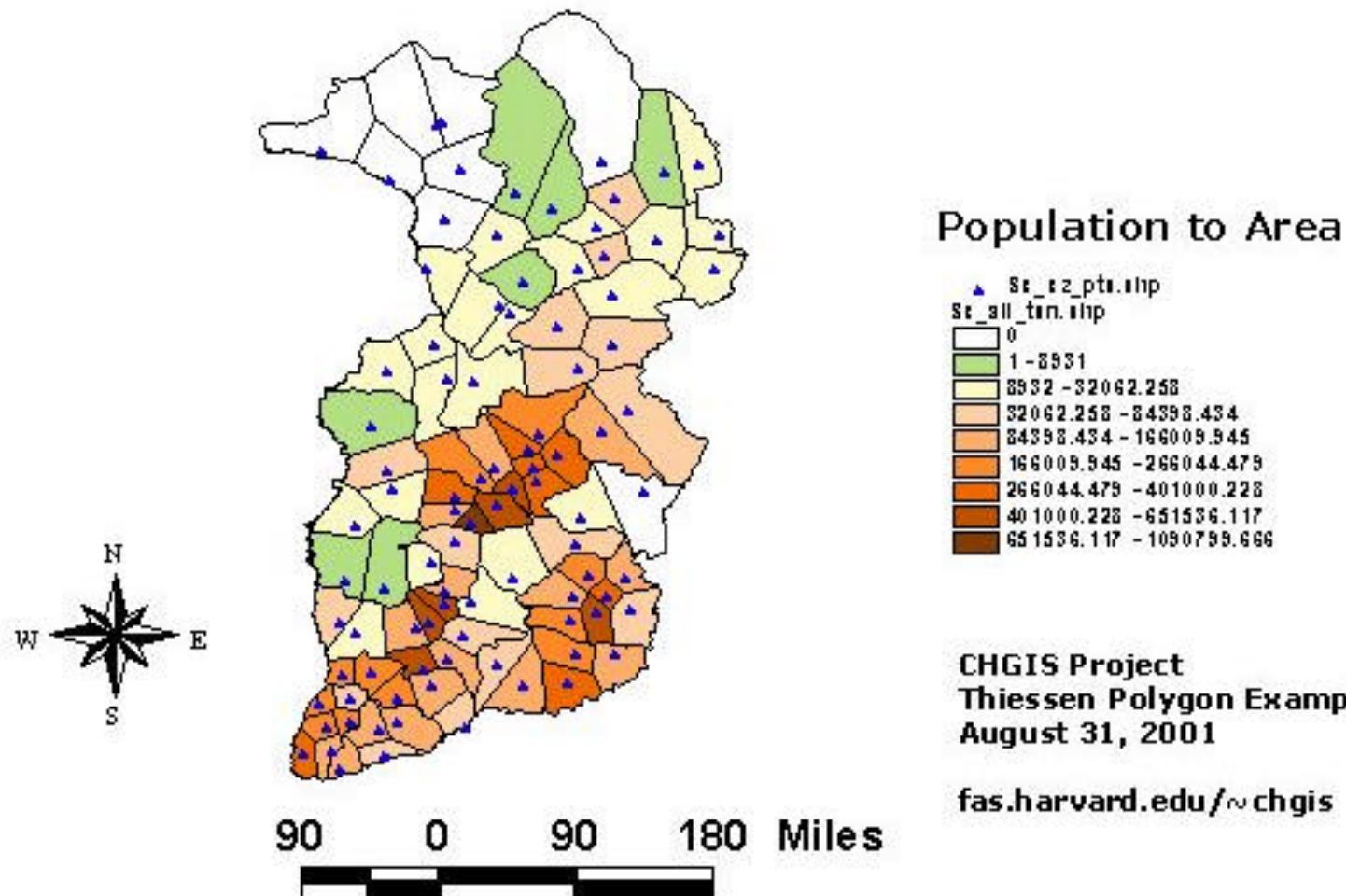


0 760 1520 2280 3040 3800 4560 mi

CHGIS 1820 Placename Searches

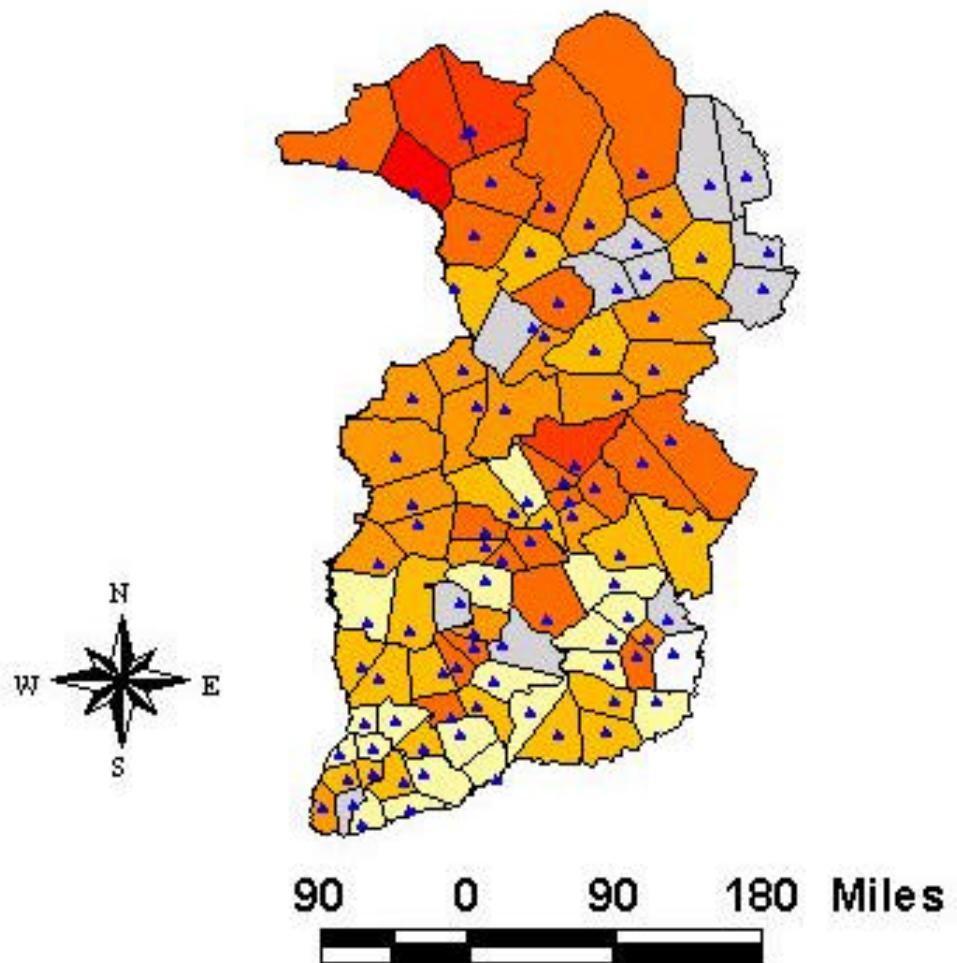
CHGIS for Historical Data Display

Shanxi - Male Population - CE 1820 (normalized by county area)



Approximate Boundaries - Thiessen Polygons

Shanxi - Changping Quota - CE 1820



Raw Quotas

- ▲ Sx_xz_pts.shp
- Sx_all_tsn.shp
- 0
- 1 - 11000
- 11001 - 14000
- 14001 - 18000
- 18001 - 22000
- 22001 - 36000
- 36001 - 50000
- 50001 - 100000

CHGIS Project
Thiessen Polygon Example
August 31, 2001

fas.harvard.edu/~chgis

Approximate Boundaries - Thiessen Polygons



China Historical GIS Project

website: fas.harvard.edu/~chgis

email: chgis@fas.harvard.edu