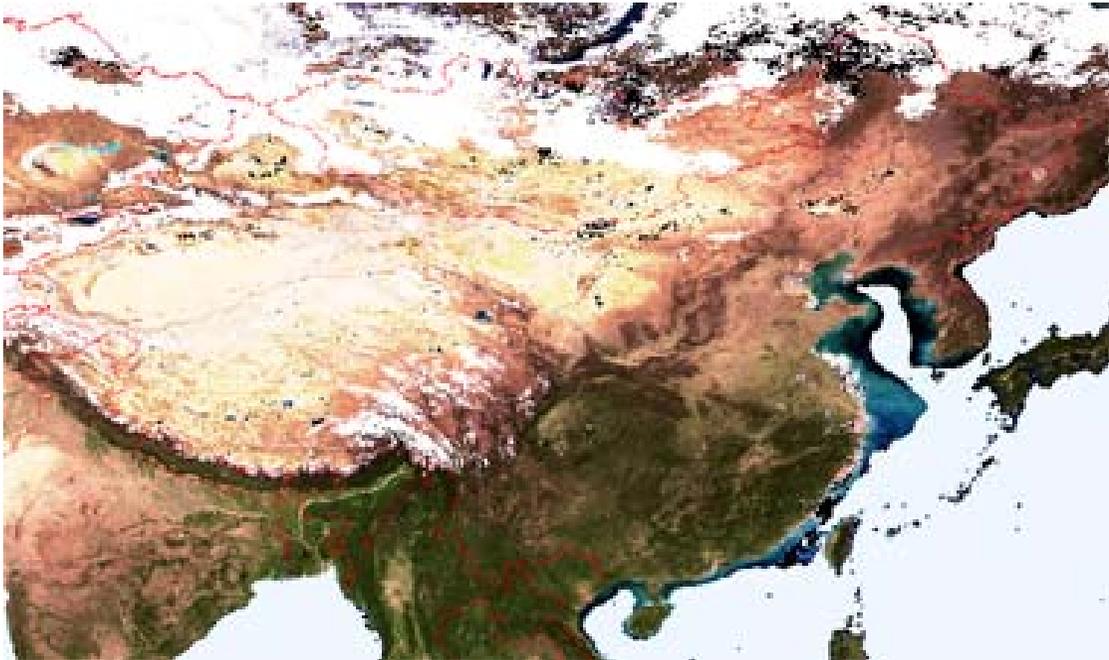


Shu roads – from the Qin Dynasty to the Sichuan earthquake



古兴州



David Jupp, Brian Lees, Li Rui, Feng Suiping



刘邦



古兴州

Outline

- ❖ The What and Where of Shu Roads & Plank Roads
- ❖ What is 3S?
- ❖ History & Geography, Literature & Culture
- ❖ Modern Shu Roads
- ❖ People & Environment
- ❖ Conclusions
- ❖ Web Site & Contacts



刘邦



古兴州

李白《蜀道难》诗意图 清·袁耀绘



蜀道观测

The What and Where of Shu Roads & Plank Roads



刘邦



古兴州

Joining north and south China

- ❖ People have moved across the Qinling, Ba and Longmen mountains since Neolithic times
- ❖ In the Warring States Qin built the first made road to conquer Shu (Sichuan) – The Golden Ox Road
- ❖ Plank road technology enabled people to move vehicles through areas with gorges and rapids
- ❖ The Han dynasty started in Hanzhong and emerged to take China via the Guanzhong.....



刘邦



古兴州

Different Types of "Trestle" road - 不同形式的栈道

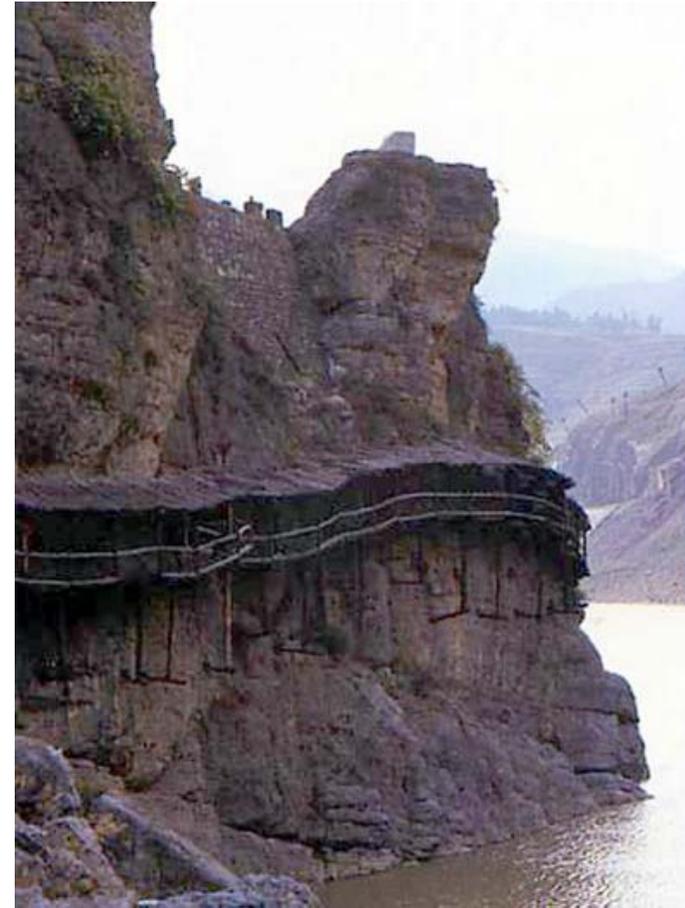
蜀道观测

Baoxie "Trestle" Road



石积式栈道

Mingyue Gorge, Sichuan



四川明月峡栈道



刘邦



古兴州

Where are the Shu Roads?

蜀道观测

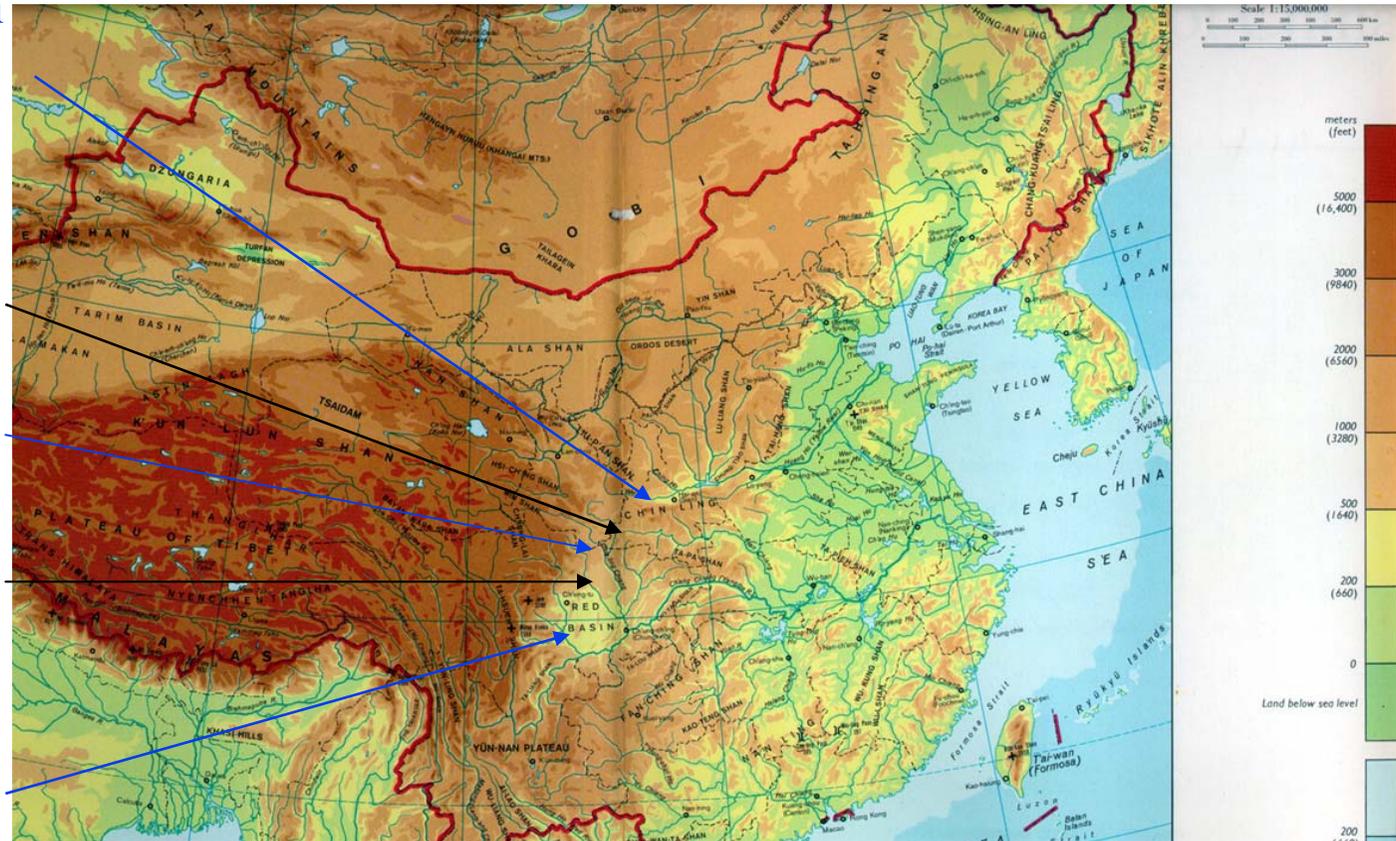
Land within
The Passes

Qinling
Mountains

Hanzhong

Ba
Mountains

Shu
(Sichuan)



刘邦



古兴州

Post Holes in Cliffs where the Plank Roads went 蜀道观测



刘邦

Reconstructed Plank Road by the Stone Gate Reservoir

蜀道观测



古兴州



刘邦

Plank Road Technology

- ❖ People used river valleys to move between the three basins of “Guanzhong”, “Hanzhong” and “Shu”
- ❖ Plank roads enabled fierce rapids and gorges to be traversed – today people use tunnels
- ❖ High passes or “barrier passes” between watersheds completed the connections
- ❖ The result was a network of Shu Roads



古兴州



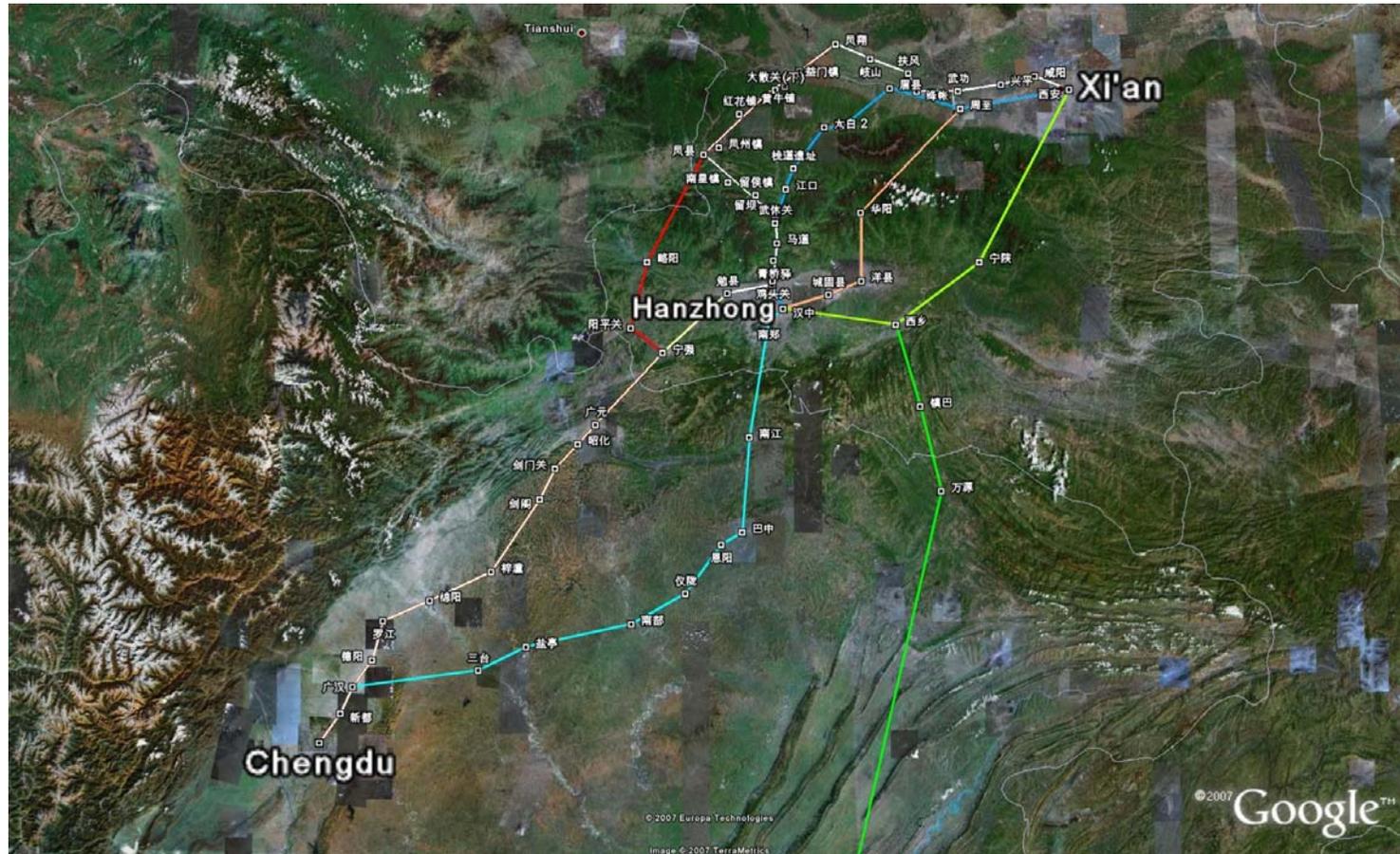
刘邦



古兴州

Route Map of the Shu Roads

蜀道观测



刘邦



古兴州

Australia-China Council Project - 澳中理事会项目 蜀道观测



- ❖ The Australia-China Council supported us in a project on Shu Road history with Hanzhong Museum. The Shaanxi Provincial Government and Chinese Academy of Sciences at Yangling also supported the project. The project is now complete.
- ❖ We held an International Symposium in Hanzhong on the Plank Roads and “3S”, its applications to history, conservation of relics and tourism in May 2007
- ❖ We developed Google Based maps of the Shu Roads, a web site to distribute information and set up a pilot study of detailed terrain mapping in the Stone Gate relic area.



刘邦



古兴州



Checking the GPS on the Baoxie Road in 2005

What is 3S?



刘邦

Tools of Trade - 专业工具



古兴州

- ❖ “3S” is shorthand for “Remote Sensing”, “GIS” and “GPS”
- ❖ Remote Sensing involves information taken from satellites, aircraft and balloons
- ❖ GIS is the management of maps and other georeferenced information
- ❖ GPS is the technology of positioning using satellite geodesy
- ❖ These are the tools with which people undertake Geographic information Science (GISc)

- ❖ 3S是中文对遥感、地理信息系统和全球定位系统的简称
- ❖ 遥感是从卫星、飞机和气球上得到信息
- ❖ 地理信息系统是管理地图与其它带有地理坐标要素信息的系统
- ❖ 全球定位系统利用卫星大地测量技术进行定位
- ❖ 这些是研究地理信息科学的工具



刘邦

3S illustrated in one picture – 3S 集于一图

蜀道观测



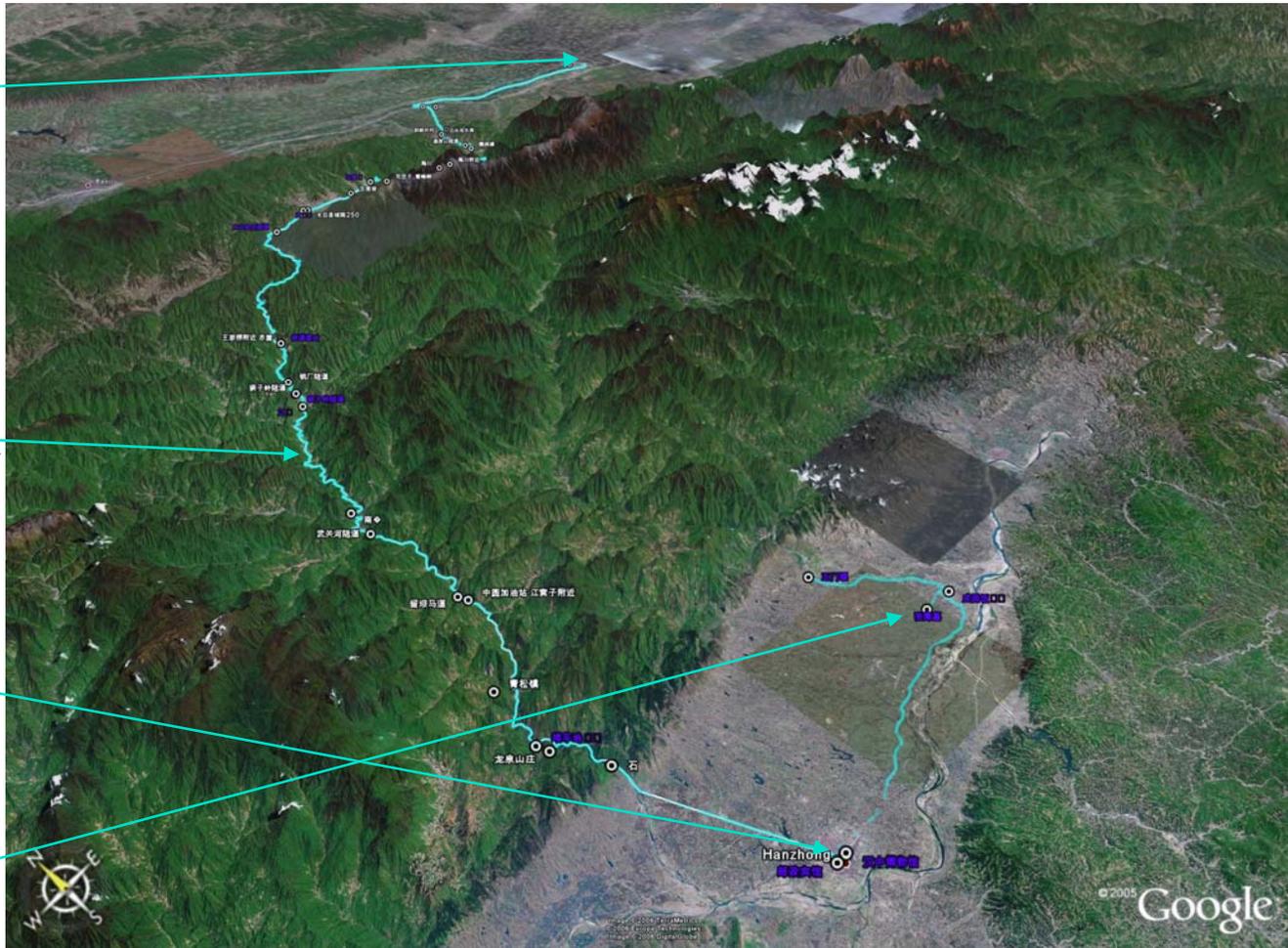
古兴州

NWISWC

GPS Track

Hanzhong Museum

Zhang Qian Tomb



杨凌水保

GPS航迹

汉中博物

张骞墓



刘邦



古兴州



The Battle of Dingjun Mountain



刘邦

History & Geography,
Literature & Culture

The Mountains make the History



古兴州

- ❖ The Qinling was a formidable barrier, the mountain roads were the scenes of war and conquest as well as inspirations for literature, art and poetry
- ❖ The rise of the Han started from Hanzhong, the Three Kingdoms saw Wei battle Shu; and Tang Minghuang lost his favourite and fled to Shu along the Golden Ox Road
- ❖ Song and Jin fought until the Mongols swept them away, Marco Polo travelled the Shu roads in the Yuan, and Ming and Qing battled rebels for Shu through the same routes



刘邦

Ancient scrolls map the places and activities along the road (sometimes artistically)

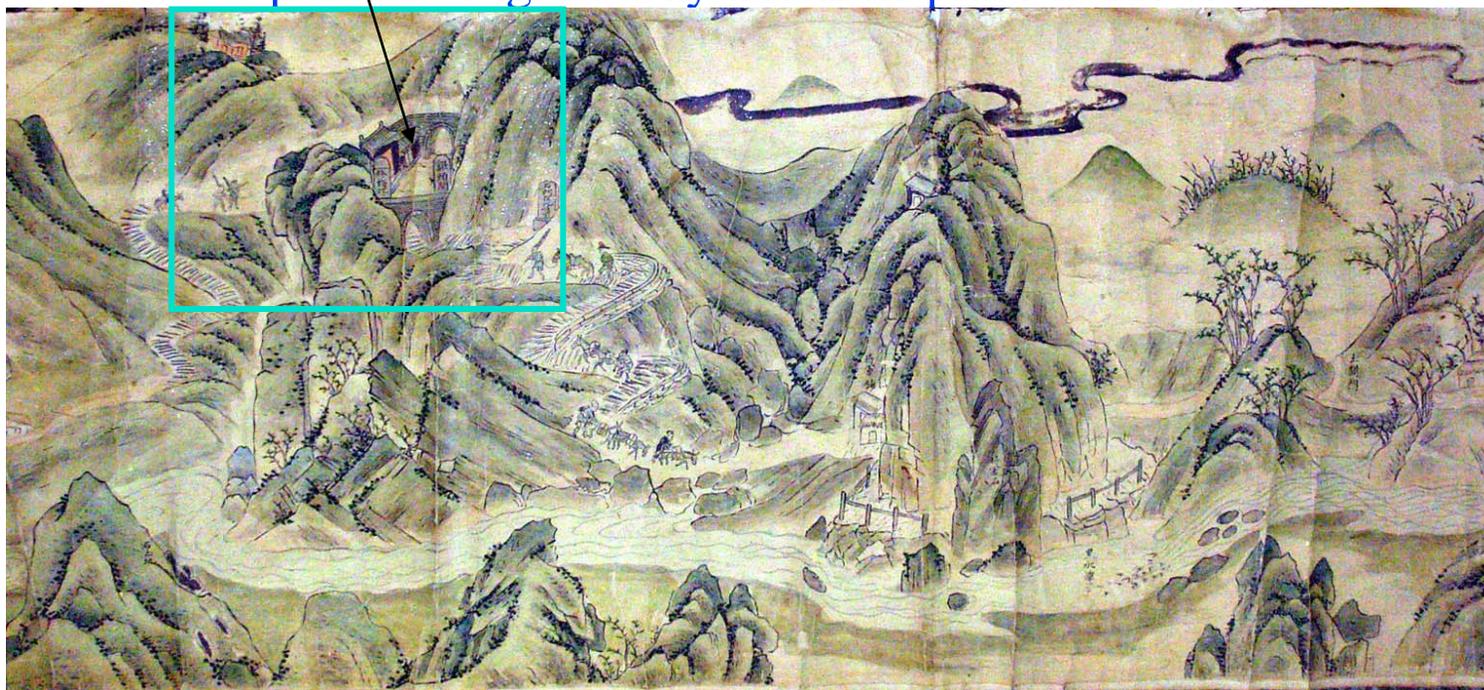
蜀道观测



古兴州



The details and annotations show the tracks Linking the places along the way and their place in the terrain



Shimen – Stone Gate & Tunnel



刘邦



古兴州

Along today's Baoxie Road

蜀道观测



The Modern Shu Roads



刘邦

Modern Shu Roads



古兴州

- ❖ Some things remain as they have been for centuries and others have been replaced by the most modern technology
- ❖ In 1943 the roads to Shu were still “hard” but today a major freeway links Xianyang to Hanzhong in two hours
- ❖ Tourists are joining intrepid travellers and wilderness has become an attraction rather than a hardship



刘邦

The Temple at Jitou Guan – still in use, if you can climb and the old road is there to hike along

蜀道观测



古兴州

Scroll
Map



Today



Moore Family
Photograph
Approx. 1940



刘邦



古兴州

The Road to Shu was still hard in the 1930's and 1940's

蜀道观测



Old Road
Baoji to Hanzhong
1930's & 40's



蜀道难 西汉公路 褒谷路 张佐周摄 1937年

Pictures provided by Frank Moore and Hanzhong Museum



刘邦

But sometimes the roads to Shu are still “hard”

蜀道观测



古兴州



刘邦

A Memorial to Shu Roads on the Xihan Tollway

蜀道观测



古兴州



刘邦



古兴州



People & Environment



刘邦

Life on the Shu Roads is still an older China



古兴州



Farmers Market in Fufeng



Street scene in Hanzhong



Qing period buildings in Gu Jiange



Laowai are still interesting



刘邦

Wilderness and Refuge



古兴州

- ❖ The wilderness was refuge for people from armies and animals from humans
- ❖ Today, the reserves and mountain scenery are as attractive as the history
- ❖ Conservation and preservation of historical relics and wildlife habitats are going hand in hand
- ❖ Panda, Macaque, Golden Monkey, Crested Ibis and Musk Deer all have reserves near Hanzhong



刘邦



古兴州

Tourism and Travel have been increasing

蜀道观测



Signboards at Jiangwozi



Guides (导游) are an important Profession in China



刘邦

The Qiang People

- ❖ Since Han times (some say the Xia Dynasty) the Qiang have lived in the mountains behind Sichuan Plain and along the Jialing River
- ❖ Distinctive culture and language, but history largely unwritten and ignored in Chinese dynastic records. Will have played a large part in the secondary road trade that avoided taxes and armies
- ❖ Now a recognised minority people and part of a “Qiang Cultural and Ecological Protection Experimental Area” including the unique culture and ecology of their area



古兴州



刘邦



Qiang Temple of the River God, Lueyang

蜀道观测

古兴州



Stage for Qiang “Opera”. Stopped due to competition from TV



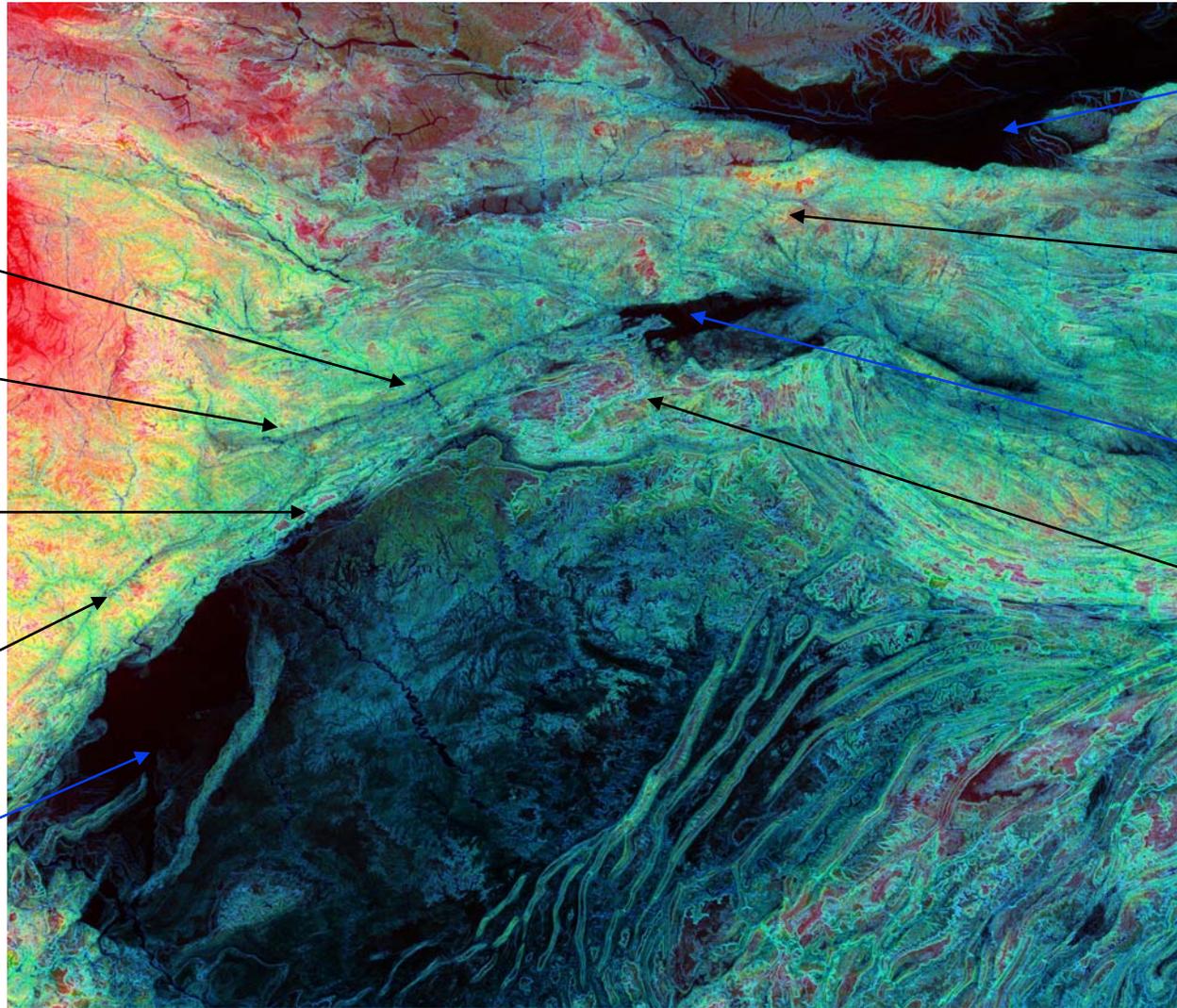
刘邦



古兴州

Worlds in Collision – Geology Rules

蜀道观测



Bailongshui

Tangjiaba

Longmen Mountains

Wenchuan

Chengdu

Xi'an

Qinling Mountains

Hanzhong

Ba Mountains



刘邦

The Dragon Gate Opens



古兴州

- ❖ At 14:28 on May 12, 2008 (512) the Longmen fault slipped and the shear wave travelled as far as Beijing and Shanghai rocking tall buildings from which ran frightened people
- ❖ The people in the mountains had nowhere to run and also faced aftershocks some of more than magnitude 6 that still occurred as late as September and October
- ❖ Many Qiang people died or were made homeless among the more than 70,000 victims in the disaster area. Relief and rebuilding are still in progress
- ❖ In the future people will rebuild their lives and people from all over the world can help them – including by visiting and getting to know them

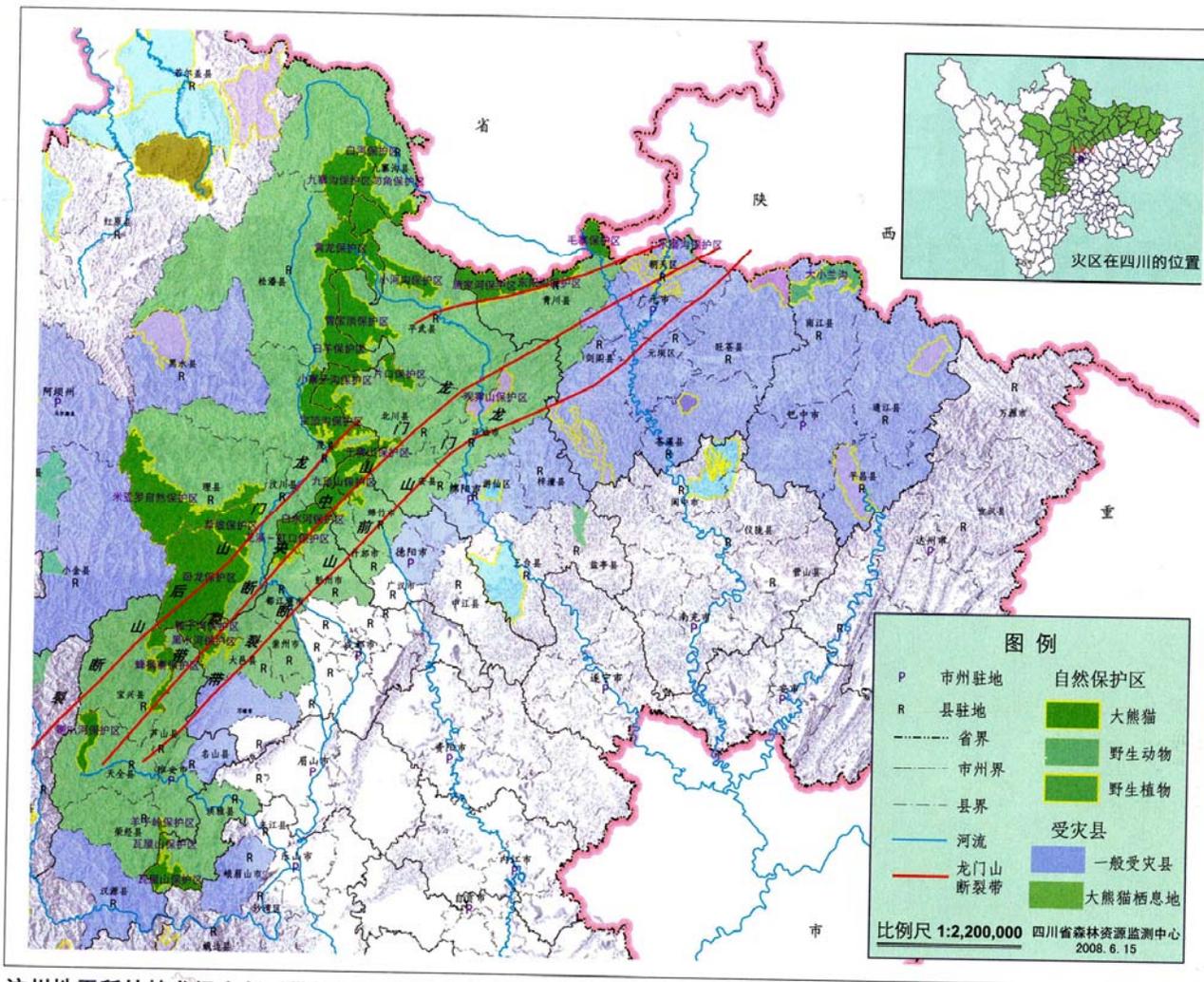


刘邦

Fault Lines of the Wenchuan Earthquake



古兴州



汶川地震所处的龙门山断裂带恰好穿过四川省自然保护区最为密集的一个区域。



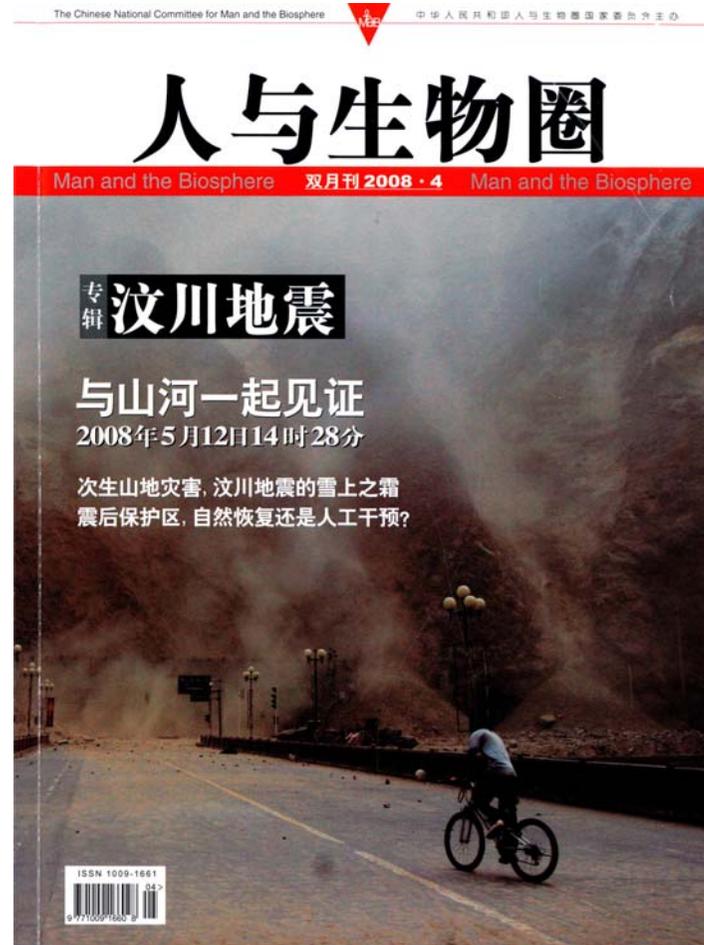
刘邦



古兴州

The great Wenchuan earthquake

蜀道观测



刘邦



古兴州



Conclusions



刘邦

Mountains, Rivers and Lakes



古兴州

- ❖ The Qinling, Ba, Longmen are areas of mountains, rivers and lakes – wild and formerly inaccessible but are now open to explore
- ❖ A “Shu Roads Ecological and Historical Tourism Route” exists in China – but is still unknown outside
- ❖ The “Plank Road Spirit” is a part of China’s culture and an inspiration for modern road and rail development. It will be needed to rebuild in Sichuan
- ❖ Our project had some technical aspects but its real aim was to open up contacts, expand interactions and introduce western people to this part of China’s history and culture
- ❖ Time will tell.....



刘邦



古兴州

Shu Road Project Web Site

蜀道观测

Applying 3S technology to the History of China's Shu Roads and Qinling Mountain Plank Roads - Windows Internet Explorer

http://members.iret.net.au/~jupp_22@coemal.com.au/index.htm

File Edit View Favorites Tools Help

Links

AVG - YAHOO! SEARCH Search - Active Surf-Shield Search-Shield AVG Info -

Google 8 Search - Bookmarks - Find - Check - AutoFill -

Search web... Favorites - Spaces -

UltraEdit - YAHOO! SEARCH Web - Wikipedia - On: 35 - 19°C - News (0) - Yahoo! Mail - Sydney 18:01 - Games -

Applying 3S technology to the History of China's Shu ...



[SHU ROADS INTRODUCTION](#)

[PROJECT OUTLINE](#)
(English)

[项目介绍 \(中文\)](#)

[PUBLICATIONS](#)

[PICTURES](#)

[WENCHUAN & SHU ROADS](#)

[HANZHONG](#)

[LINKS](#)



[GPS Data](#)



[What's New in the Shu Roads Project?](#)

CONTACT Principal Investigators:

David Jupp	Feng Suiping
Brian Lees	Li Rui

Project Financially Supported by:

(This site is in English but includes Chinese versions of some of the text. To view the Chinese characters you may need to install and/or enable East Asian language support.)

**尊敬逝者，重建家园；
天佑中华，众志成城。**

Australia-China Cooperation to Enhance the Knowledge and Impacts of Historical Culture through 3S Technologies in the Hanzhong Area of Western China.

中澳合作在中国西部汉中地区应用3S技术促进历史古迹研究，提高历史文化影响

This project, financially supported by the Australia-China Council, is cooperating with the [Hanzhong City Museum](#) and the Institute of Soil and Water Conservation, both in Shaanxi Province, P.R. China. The objective is to develop interactions between Chinese and Australian Museums, Art Galleries, Libraries and academic groups as well as tourism and similar commercial operations with a common interest in [history and conservation](#). The project aims to enhance understanding, interchange and friendship. The mechanism is through a common interest in the use of [modern technology](#) to support historical research, archaeological relics, the preservation of history and the development of historical and adventure tourism. [\[MORE\]](#)

[Project Final Phase II Acquittal & References](#)

<http://www.qinshuroads.org/>



刘邦



古兴州

Acknowledgements 致谢

- ❖ NASA for MODIS & SRTM images
- ❖ Digital Globe and Google Earth for material
- ❖ Hanzhong museum for photographs of relics
- ❖ China “Man and Biosphere” magazine for scanned photographs of the Wenchuan Earthquake
- ❖ Frank Moore for old photographs of the road to Hanzhong
- ❖ Li Lingtao and Zhang Meiyi for their contributions to translations between English and Chinese during the Project



刘邦



古兴州

Thank you for listening - 谢谢你的聆听

蜀道观测

Reconstructed
Plank Road

Stone Gate
Reservoir



重建的栈

石门水



刘邦