

The Physical Geography of Afghanistan

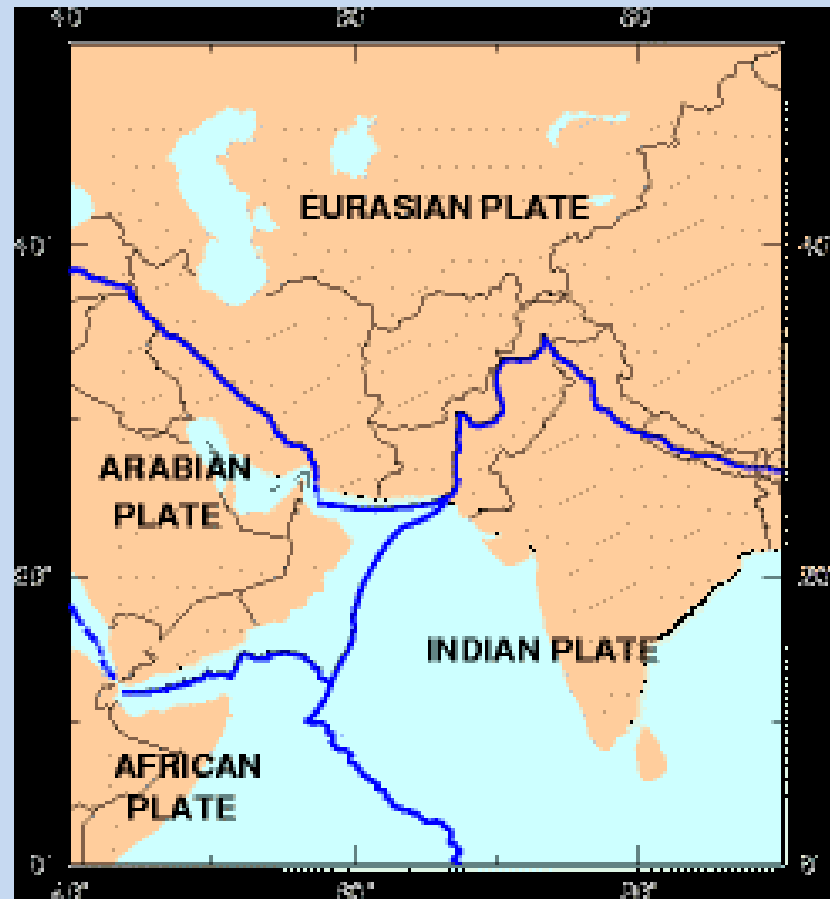
Steven Jennings

Associate Professor

Colorado Geographic Alliance

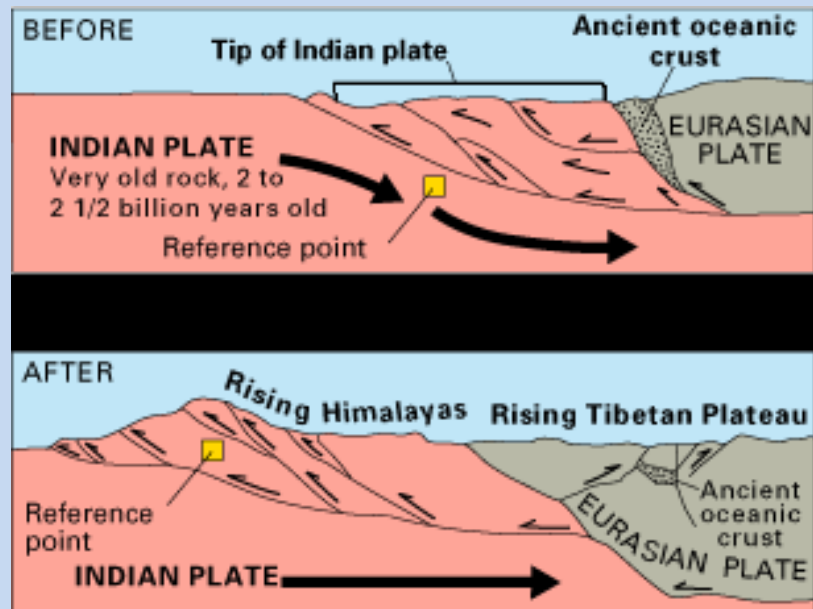
University of Colorado Colorado Springs

Plate Tectonics



http://upload.wikimedia.org/wikipedia/commons/7/71/Earthquake_Information_for_Pakistan.gif

Plate Tectonics



Topography



Topography

- The topography of Afghanistan is dominated by the Hindu Kush mountains which run from the northeast to the southwest.
- Elevation generally decreases from northeast to southwest.
- The Hindu Kush has the Southwestern Plateau to the south and the Northern Plain to the north.

Topography

- Noshaq in the northeastern part of Afghanistan, at an elevation of 7,492 m (24,580 ft) is the highest point in Afghanistan.
- It is the 52nd highest peak in the world and the westernmost peak above 7,000 m in the region.

Topography

- As in many mountainous areas, passes are important.
- Khyber Pass at an elevation of 1,070 m (3,510 ft) is an important route between Afghanistan and Pakistan. Alexander the Great and Genghis Khan used this pass to invade areas to the east.
- Salang Pass at an elevation of 3,878 m (12,723 ft) connects Kabul with the north. A tunnel was built here by the Soviet Union in the 1960s.

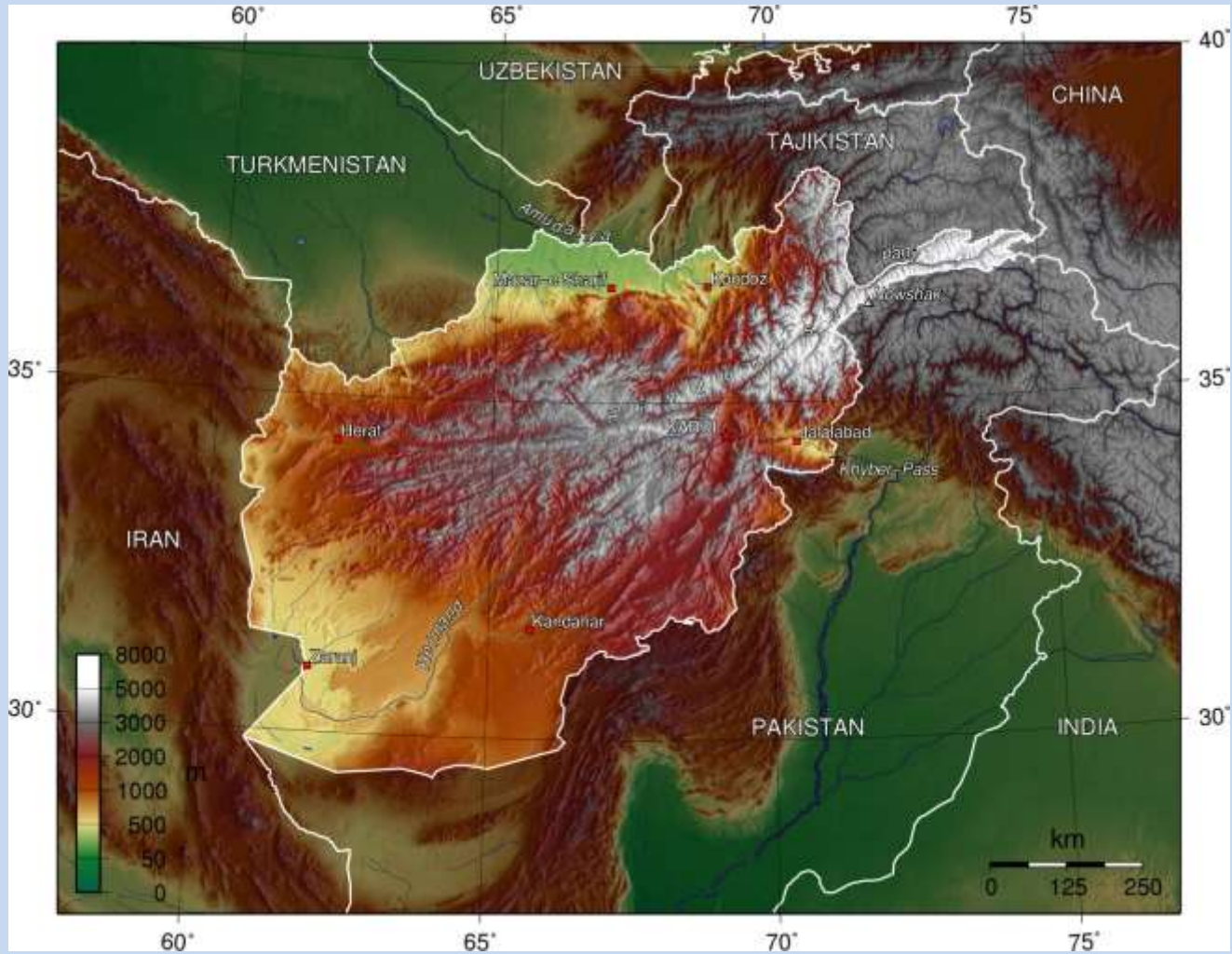
Topography

- The lowest part of the country is the Northern Plain at an elevation of approximately 260 m (850 ft).
- This region has the most fertile land and has a country's largest agricultural production.
- Rivers of this region drain to the north and so do not make it to the sea.

Topography

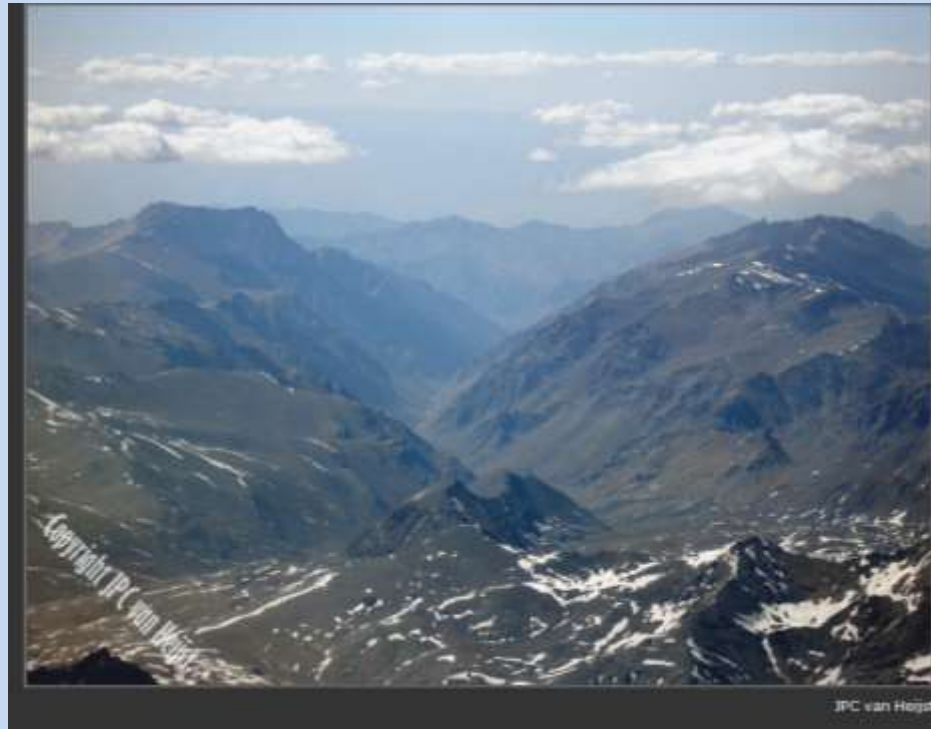
- The Southwestern Plateau is dominated by hills and deserts.
- This region also has interior drainage so that surface water doesn't reach the sea.
- Several areas contain salt flats since there is interior drainage.

Topography



http://upload.wikimedia.org/wikipedia/commons/4/45/Afghan_topo_en.jpg

Topography



http://www.pbase.com/flying_dutchman/image/63836402/large

Topography



http://www.pbase.com/flying_dutchman/image/58650209/original

Topography



Topography



<http://www.johnpattengraphics.com/Landscape/Lpages/L20.htm>

River Basins



Mineral Resources

The U.S. Geological Survey and Afghanistan Geological Survey estimated numbers of undiscovered deposits in Afghanistan by using geology-based assessment methodology. Estimates of known and undiscovered copper resources total nearly 60 million metric tons of copper. Resources of iron in known deposits are more than 2,200 million metric tons of iron ore. Twenty mineralized areas were identified that merit further study and may contain resources amenable to rapid development.

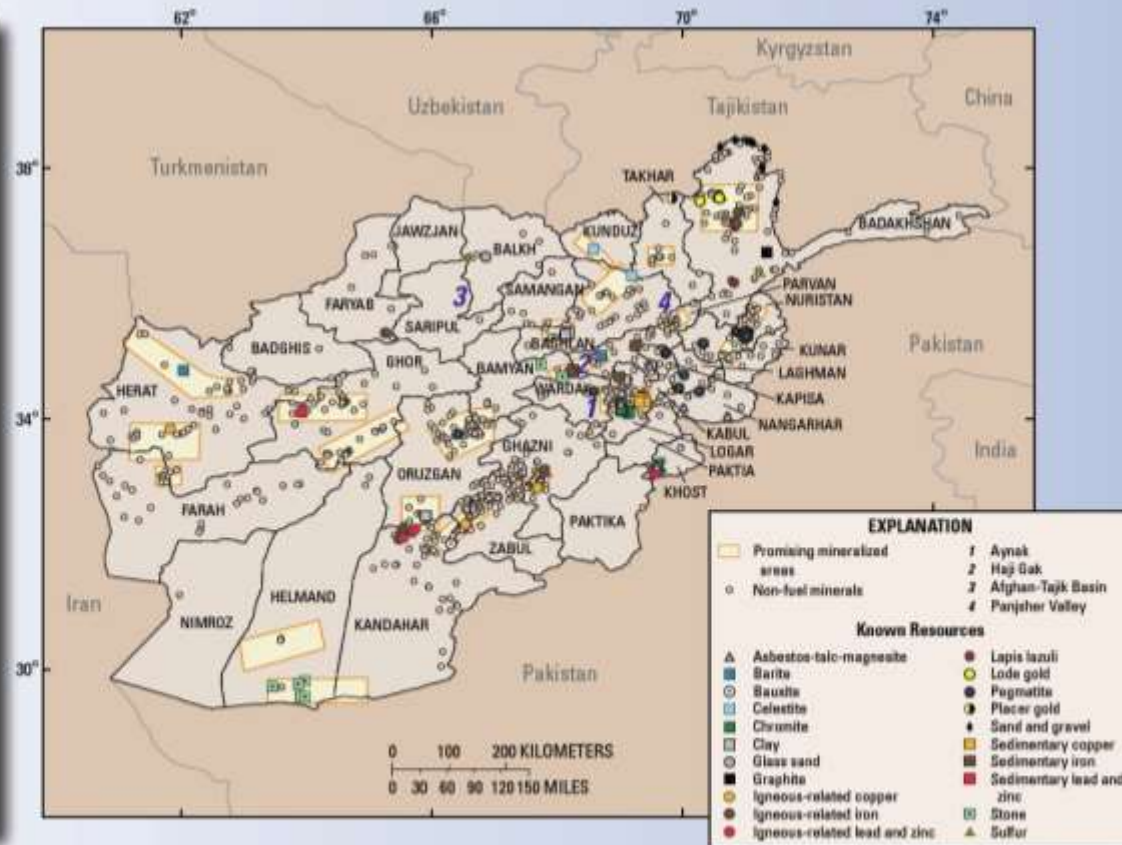


Figure 1. Map of Afghanistan showing mineralized areas recommended for further study (rectangular areas), known non-fuel mineral deposits and prospects (small dots), and selected mineral deposits for which resources have been published in the past (various symbols).

Mineral Resources

Using a geology-based assessment methodology, the U.S. Geological Survey–Afghanistan Ministry of Mines and Industry Joint Oil and Gas Resource Assessment Team estimated mean volumes of undiscovered petroleum in northern Afghanistan; the resulting estimates are 1,596 million barrels of crude oil, 15,687 billion cubic feet of natural gas, and 562 million barrels of natural gas liquids. Most of the undiscovered crude oil is in the Afghan-Tajik Basin, and most of the undiscovered natural gas is in the Amu Darya Basin.



Figure 1. Satellite image of northern Afghanistan showing locations of the Amu Darya and Afghan-Tajik Basins, as well as the Amu Darya Jurassic-Cretaceous Total Petroleum System (115401), Kalaïmor-Kaisar Jurassic Total Petroleum System (115402), Afghan-Tajik Jurassic Total Petroleum System (115601), and Afghan-Tajik Paleogene Total Petroleum System (115602). Some of the total petroleum system boundaries extend west and north beyond the view of the image. Image from National Geospatial Intelligence Agency, unclassified, 12 July 2004.

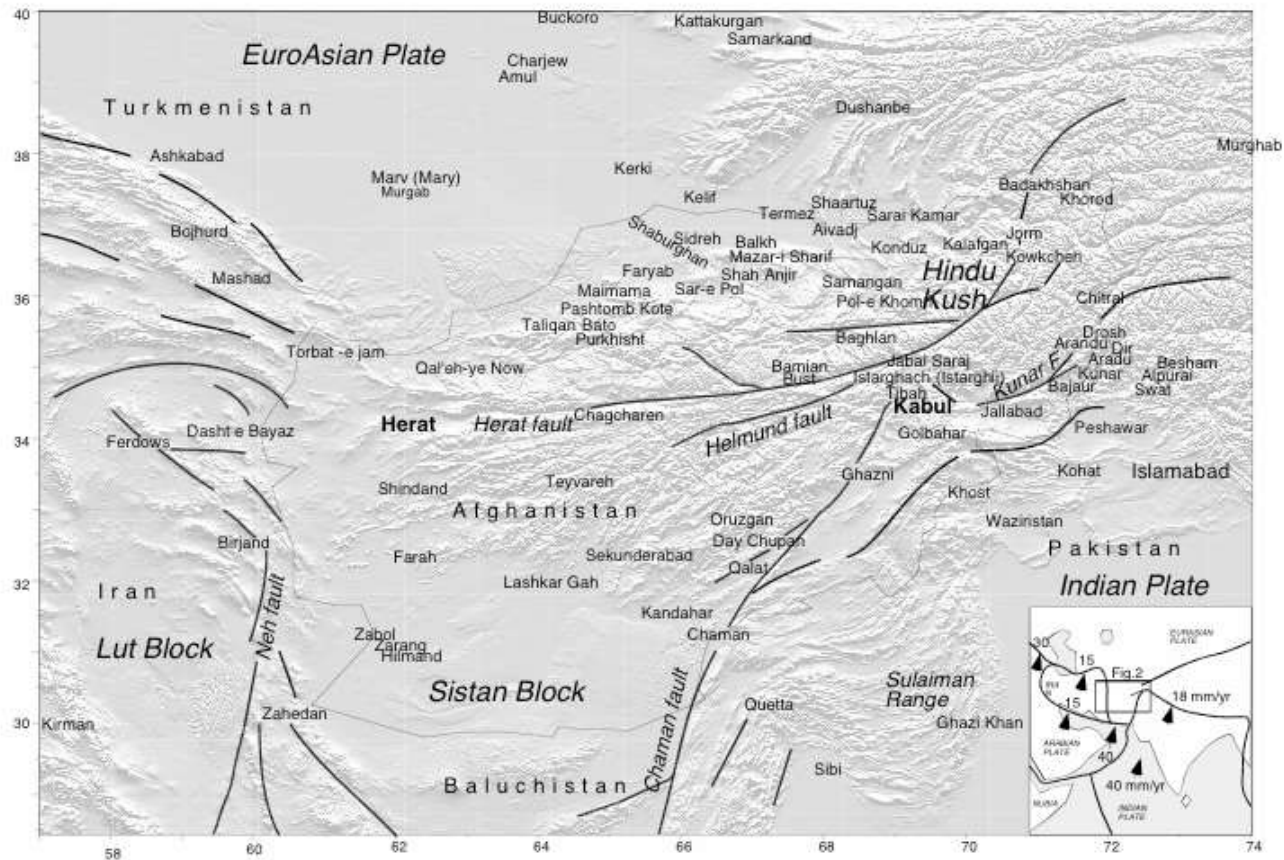
Natural Hazards



Earthquake Damage

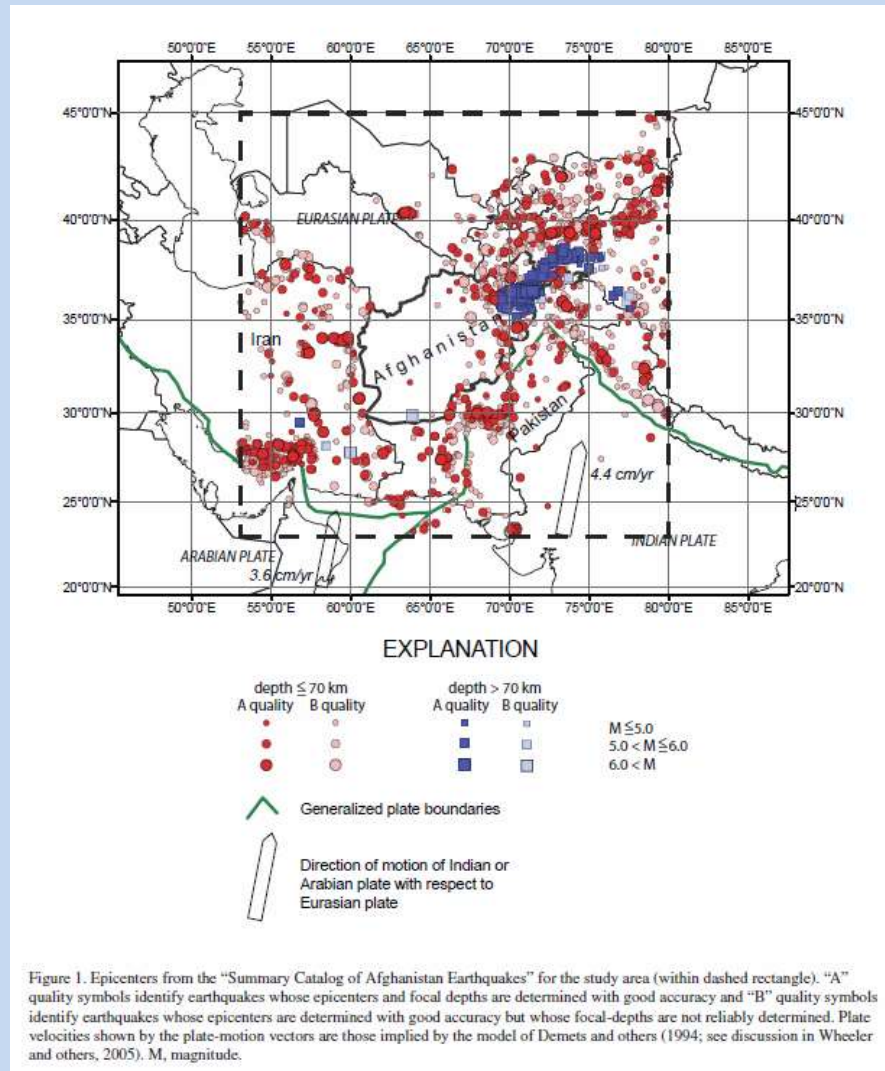
<http://www.rawa.org/temp/runews/2009/04/29/thousands-affected-by-floods-landslides-earthquakes-in-afghanistan.html>

Natural Hazards

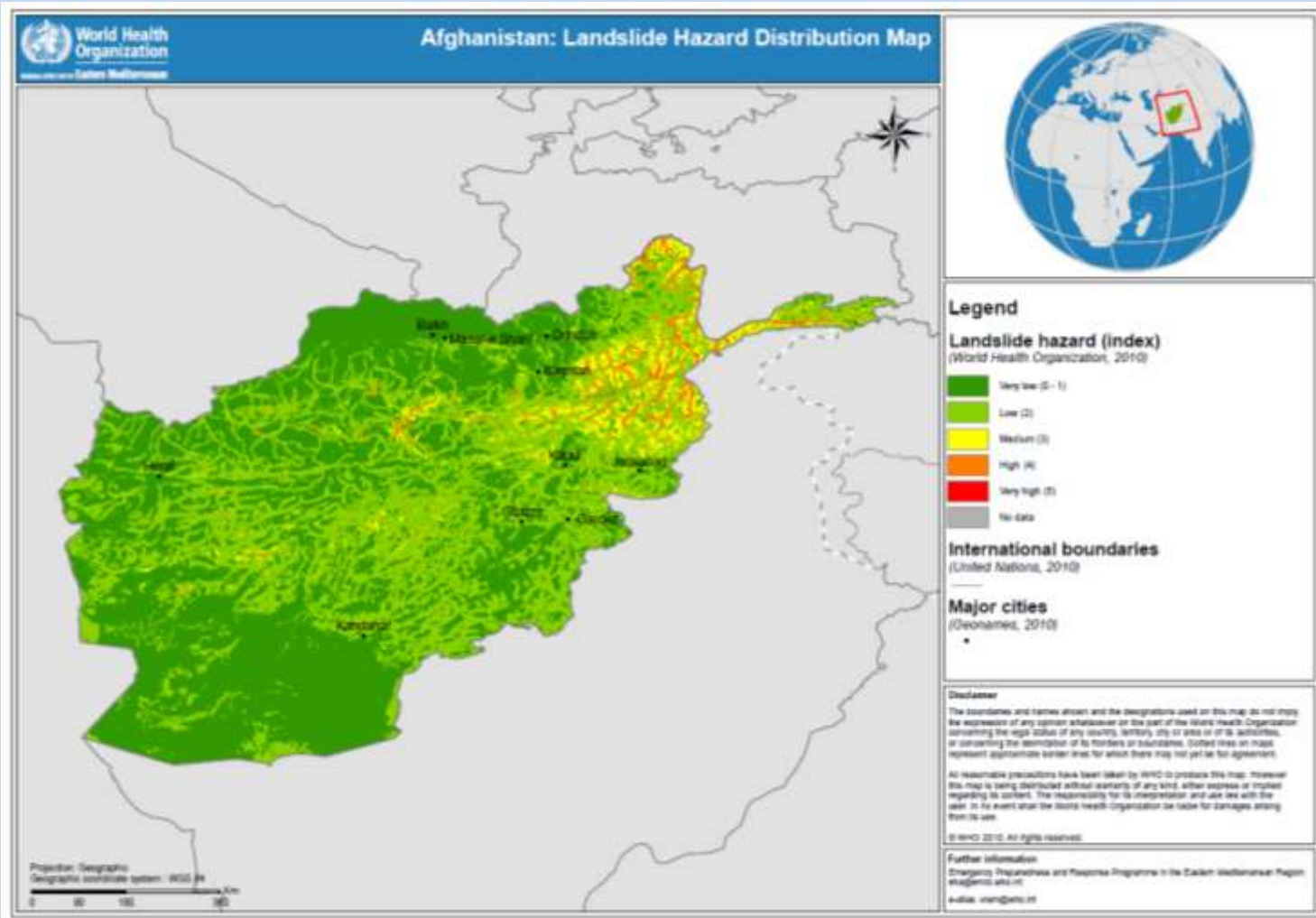


Faults

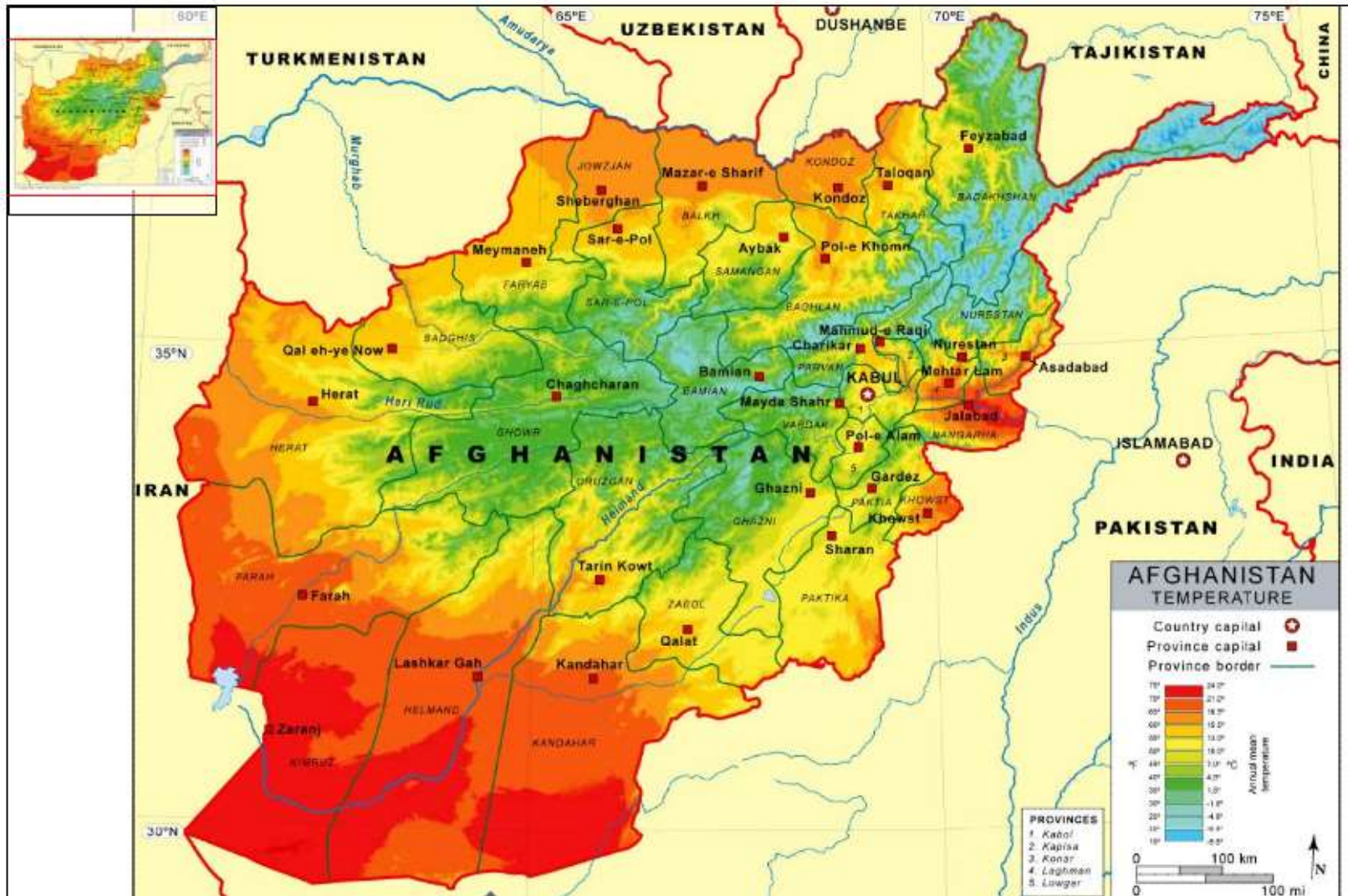
Natural Hazards



Natural Hazards



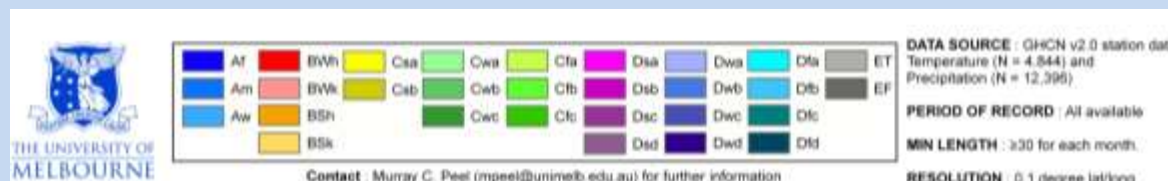
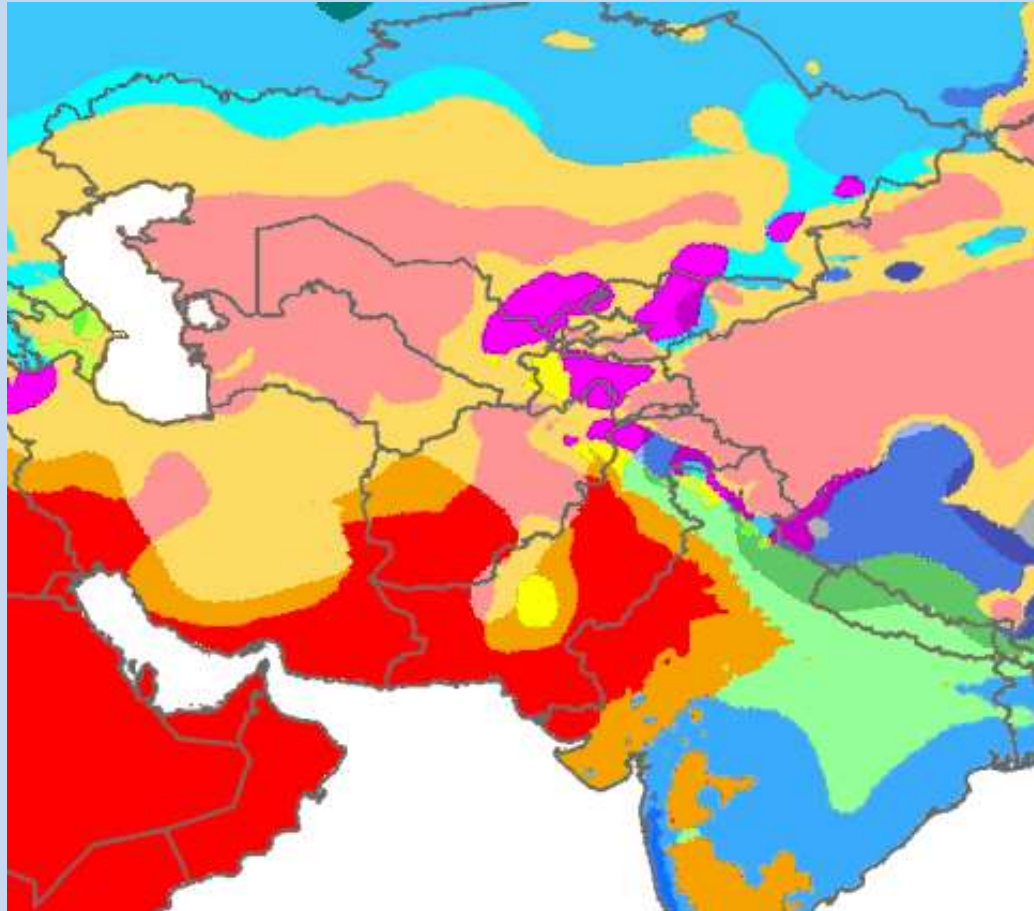
Climate



Climate

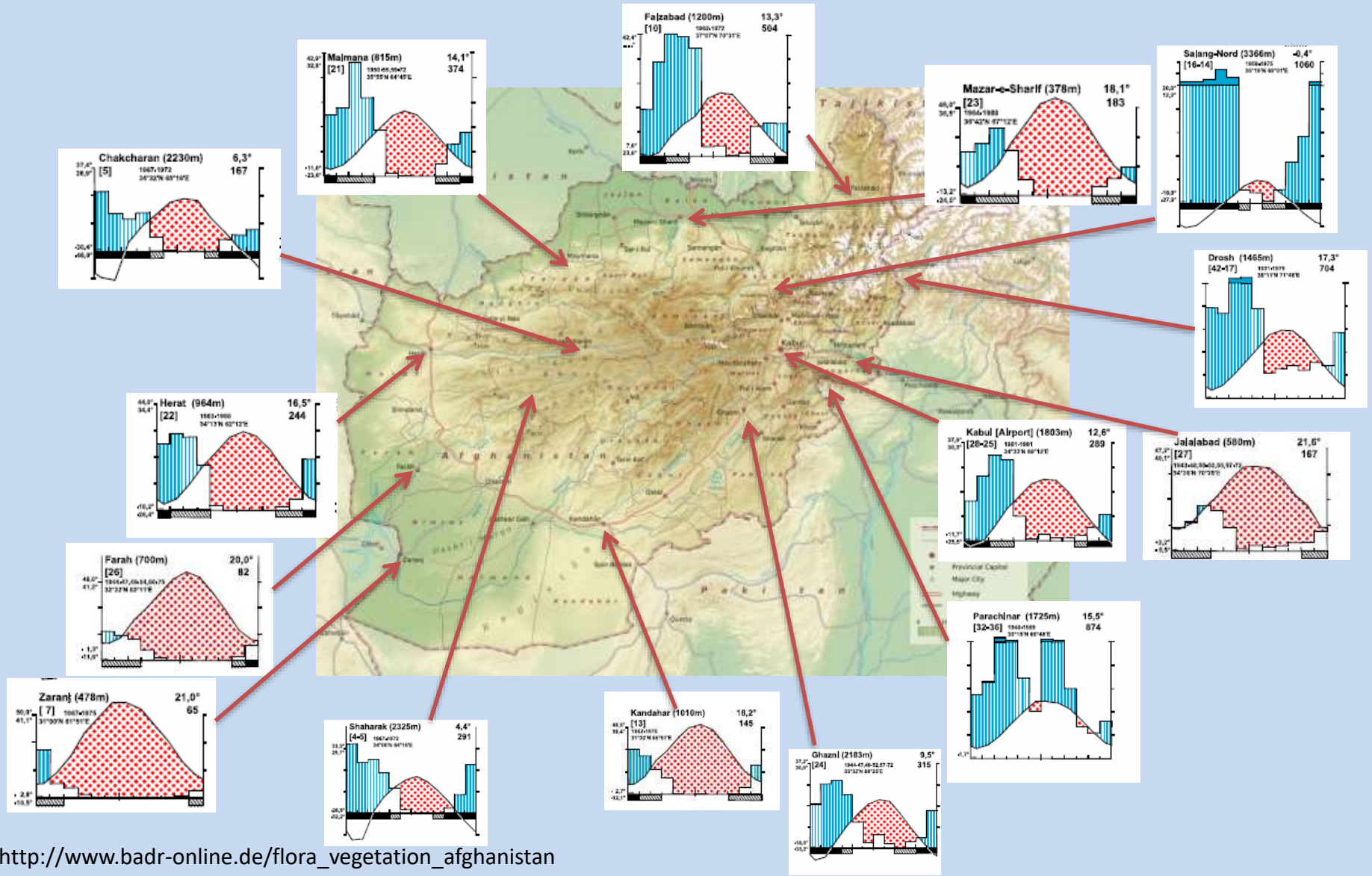


Climate

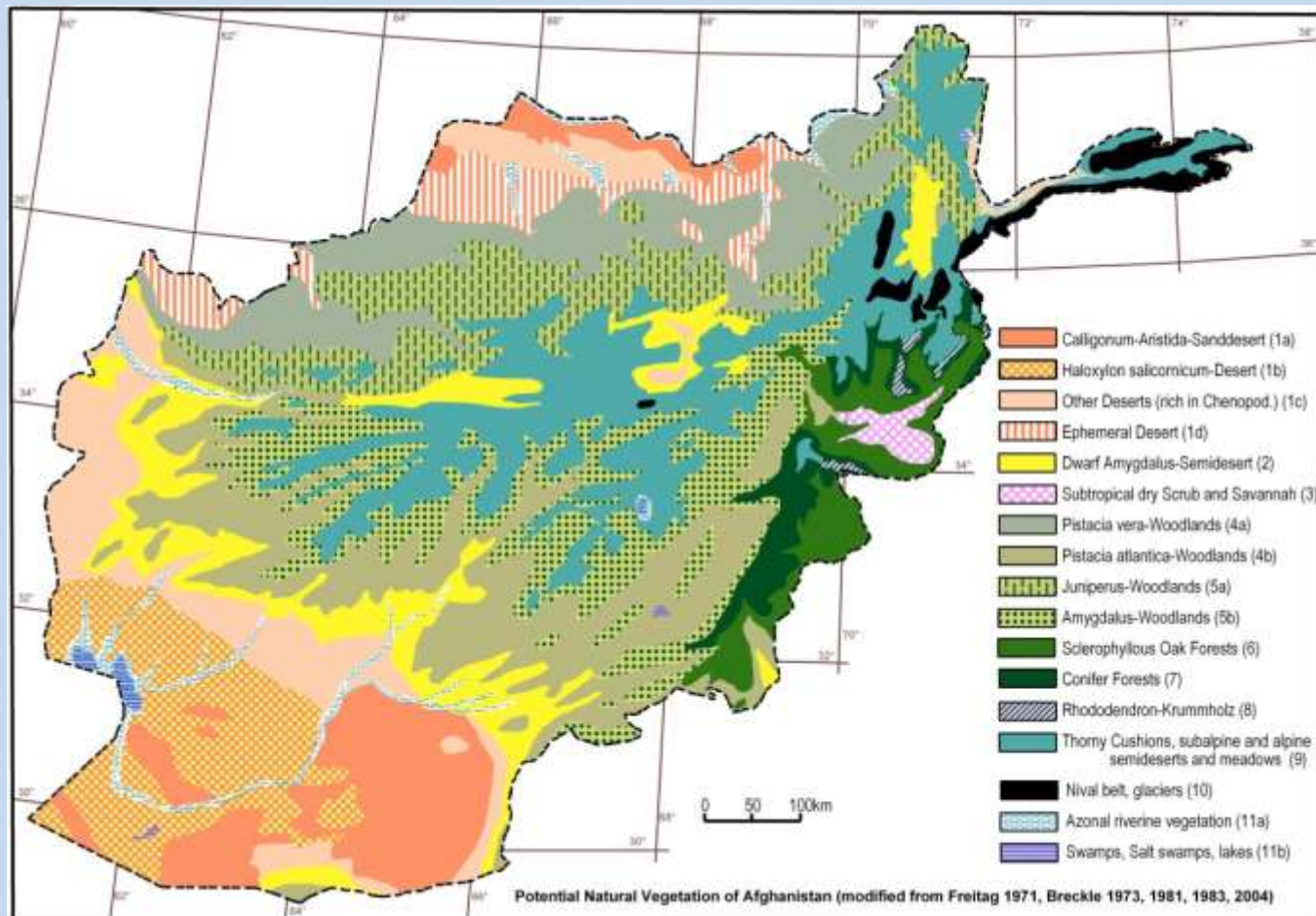


http://upload.wikimedia.org/wikipedia/commons/7/74/Koppen_World_Map.png

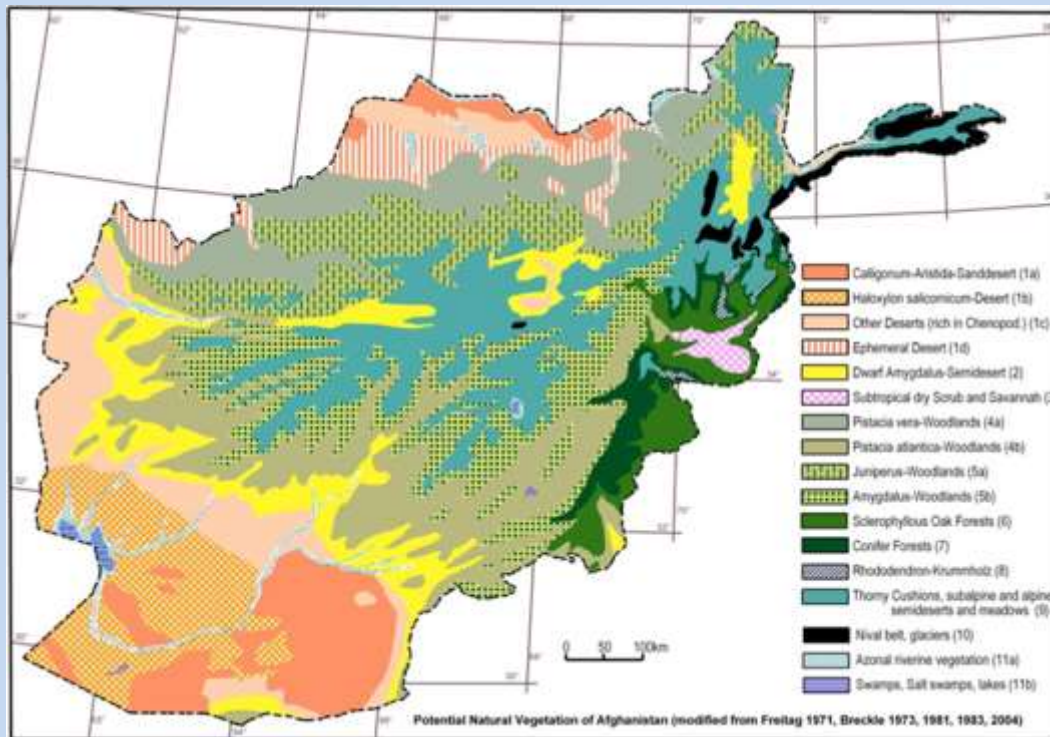
Climate



Plant Communities

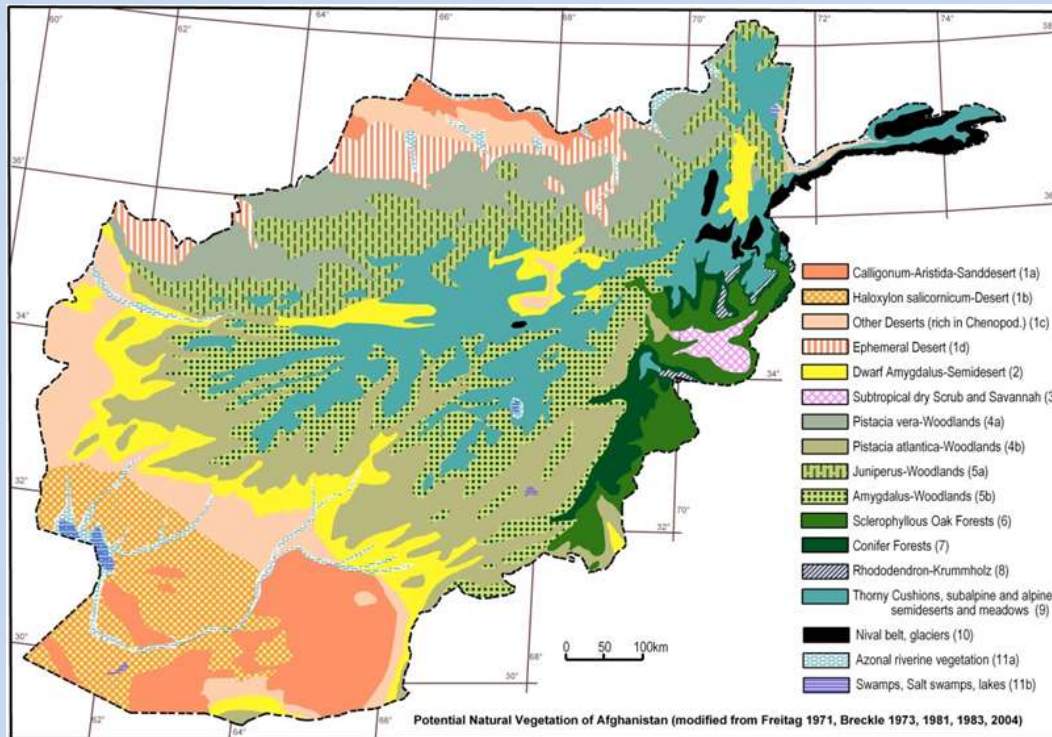


Plant Communities



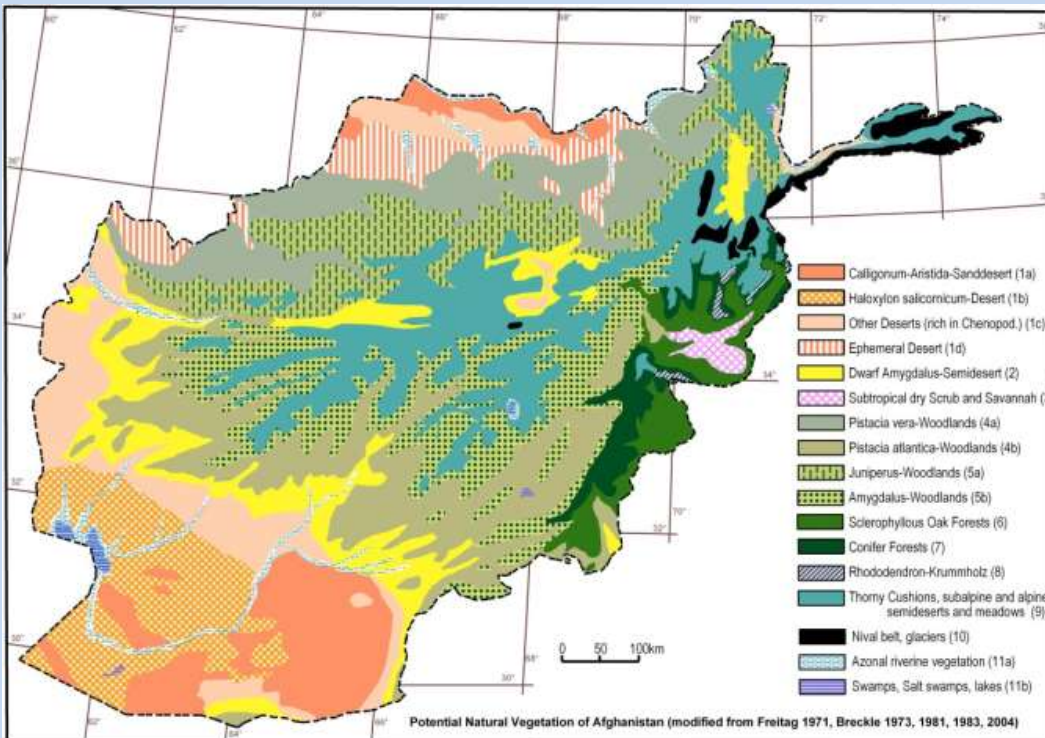
View from top of an Inselberg on the desert mosaic, near Farah, (type 1).

Plant Communities



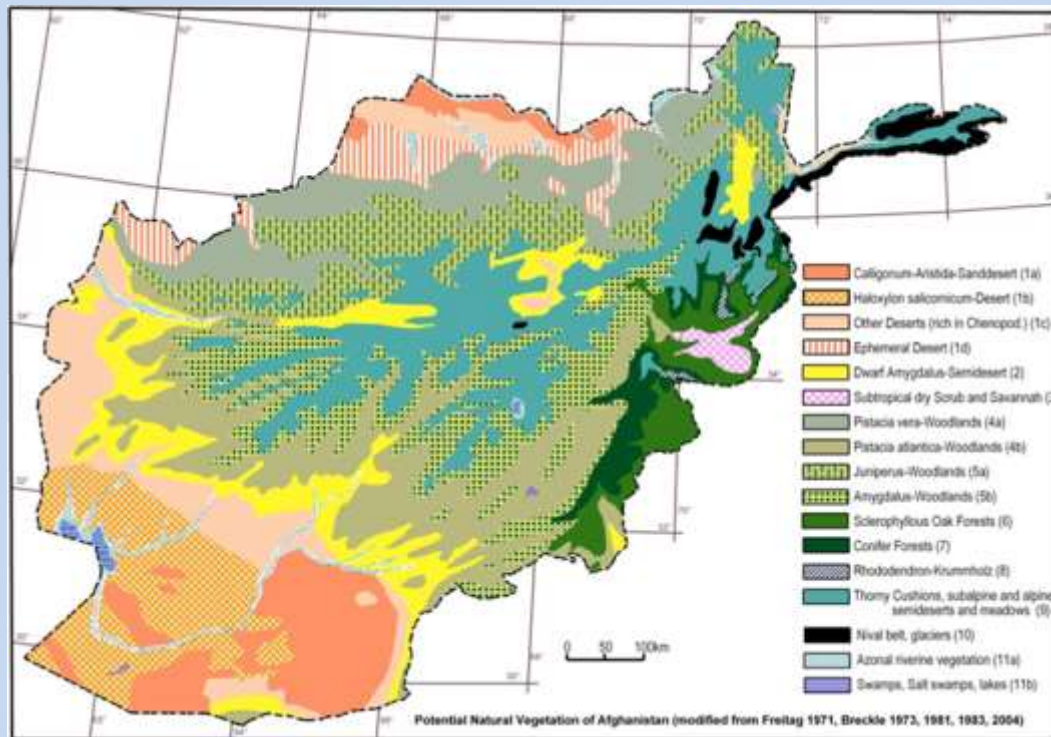
Artemisia herba-alba semidesert (type 2), subshrubs used for fuel and cooking, near Shindand, 900 m elevation.

Plant Communities



Subtropical semidesert with *Calotropis procera*, between Jalalabad and Khyber Pass, 700 m elevation (type 3)

Plant Communities

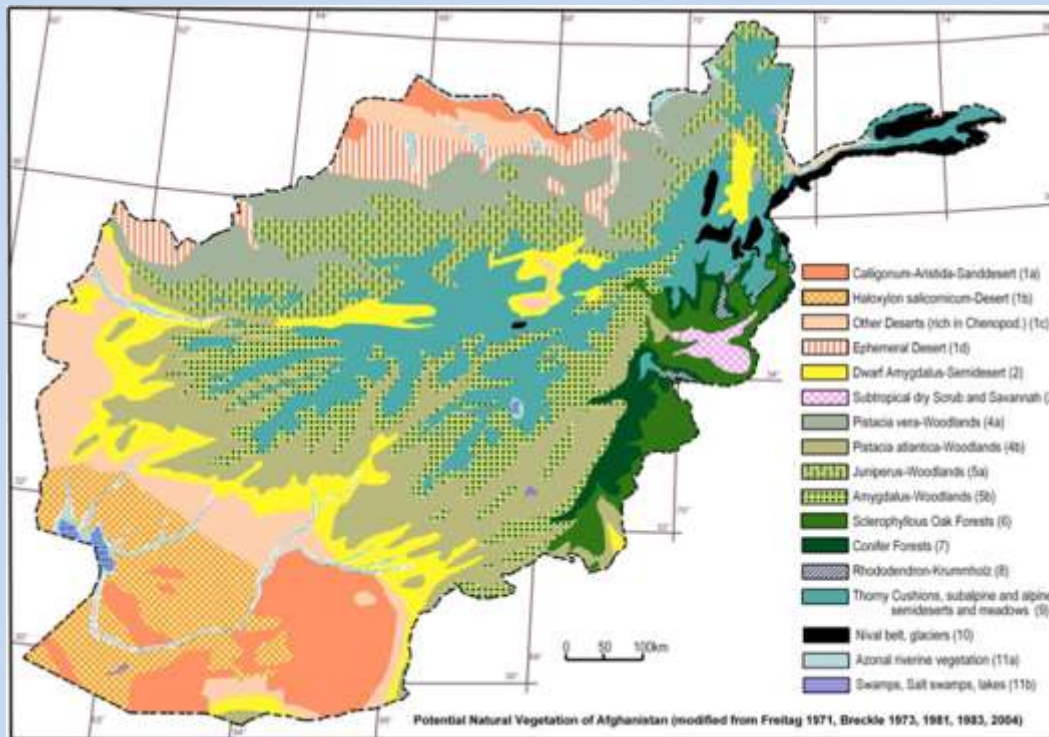


Pistacia vera woodland in North Afghanistan, near Khulm, 800m elevation (type 4a).

Plant Communities



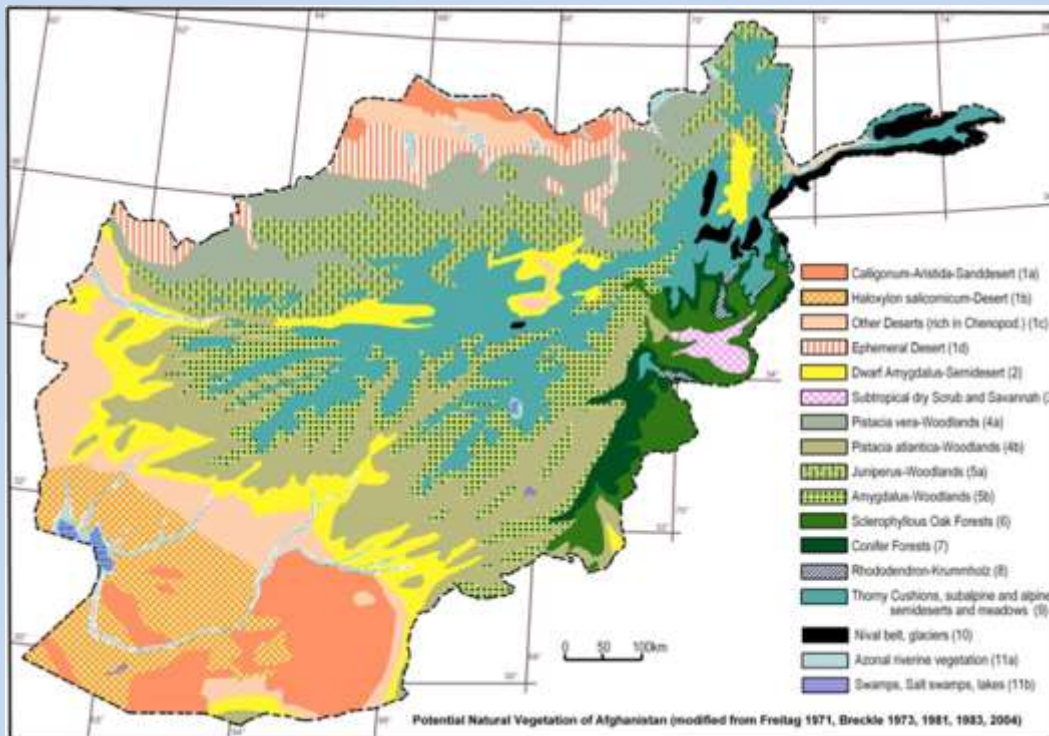
Plant Communities



Juniperus woodland on the Northern slopes of Hindu Kush,
Salang Pass, 2400 m elevation (type 5a).

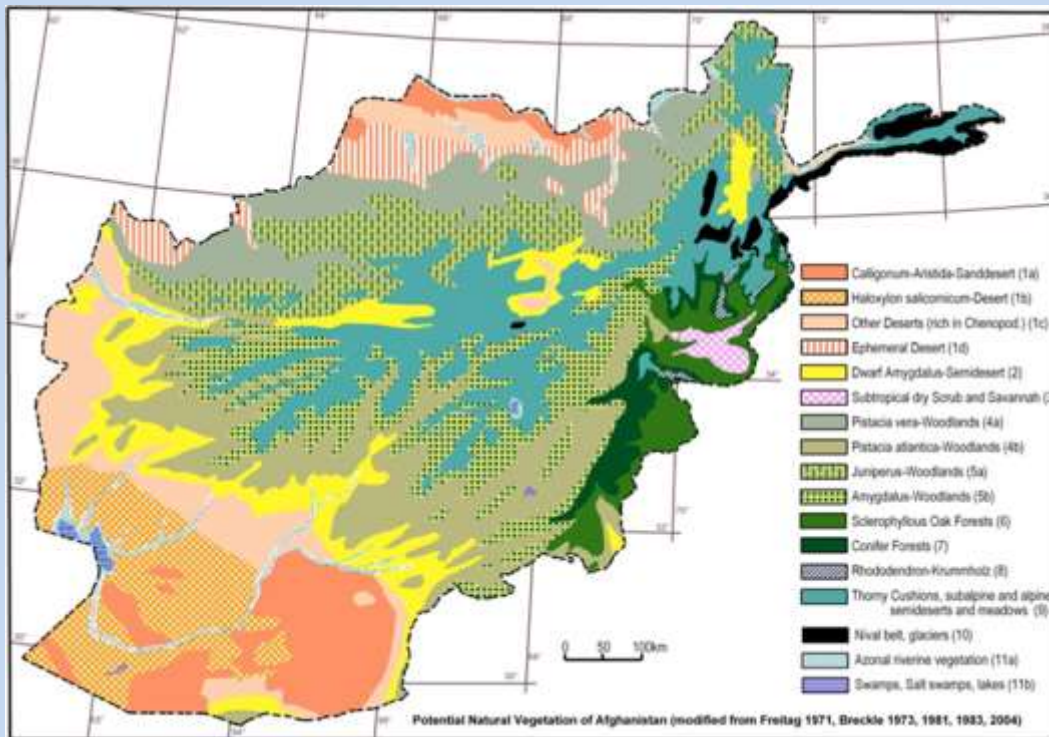
http://www.badr-online.de/flora_vegetation_afghanistan

Plant Communities



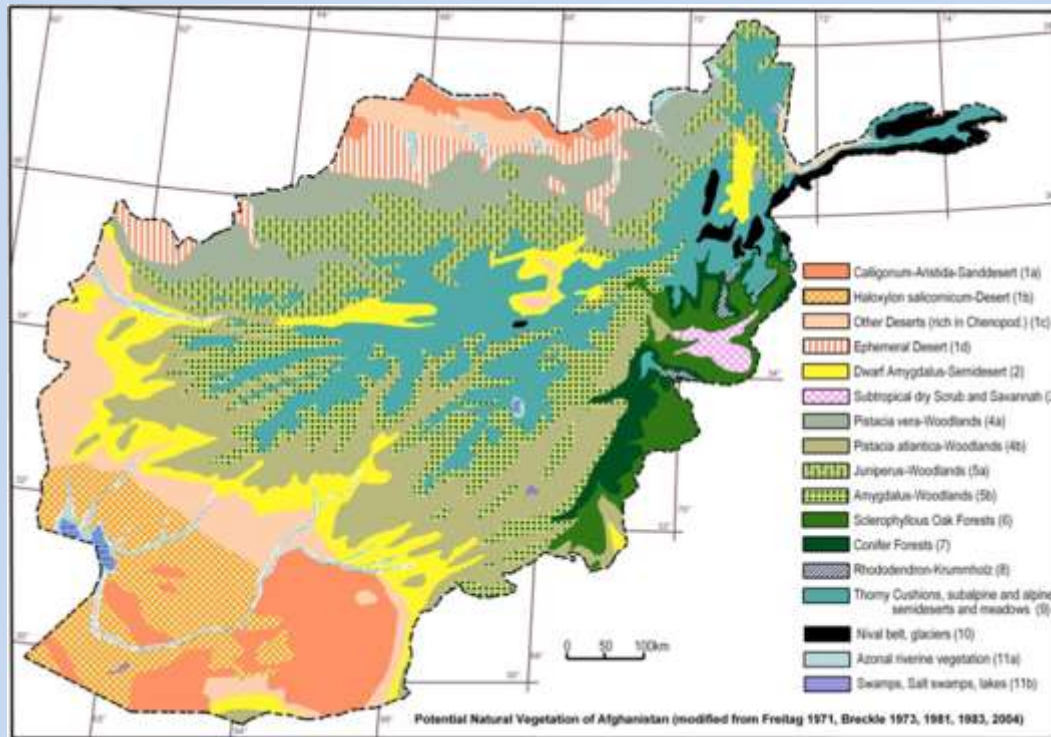
Quercus balout forest in the Pech Valley, 1500 m elevation, Nuristan (type 6).

Plant Communities



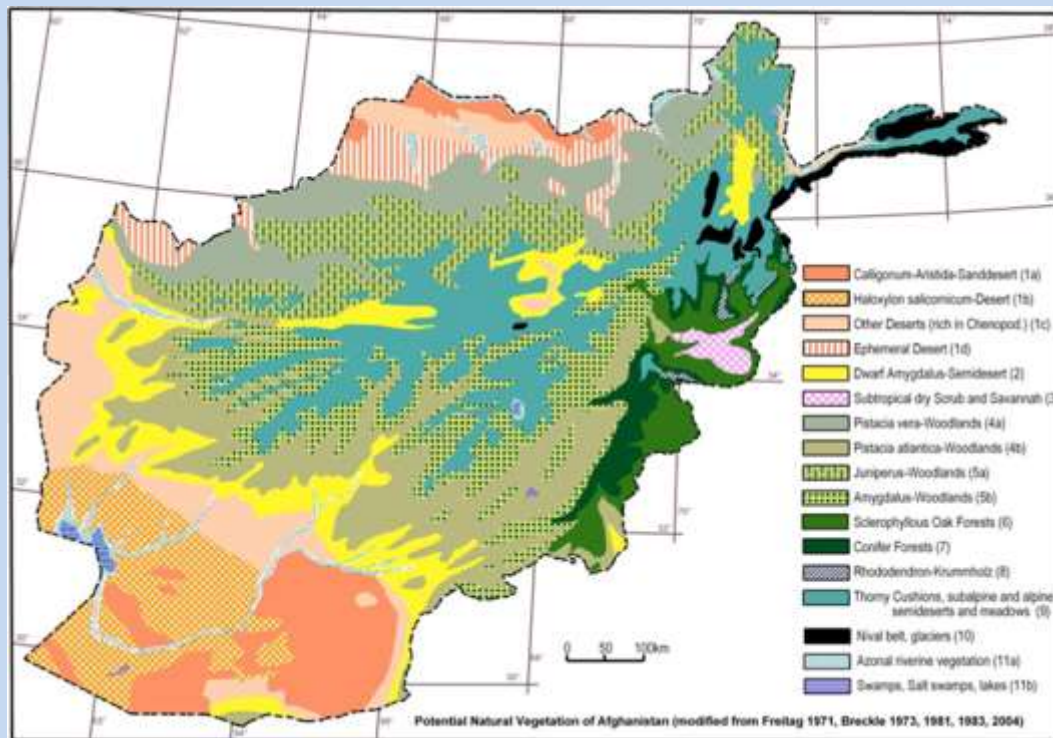
Pinus gerardiana woodland in Northern Nuristan, 1800 m elevation, Bashgal Valley (type 7)

Plant Communities



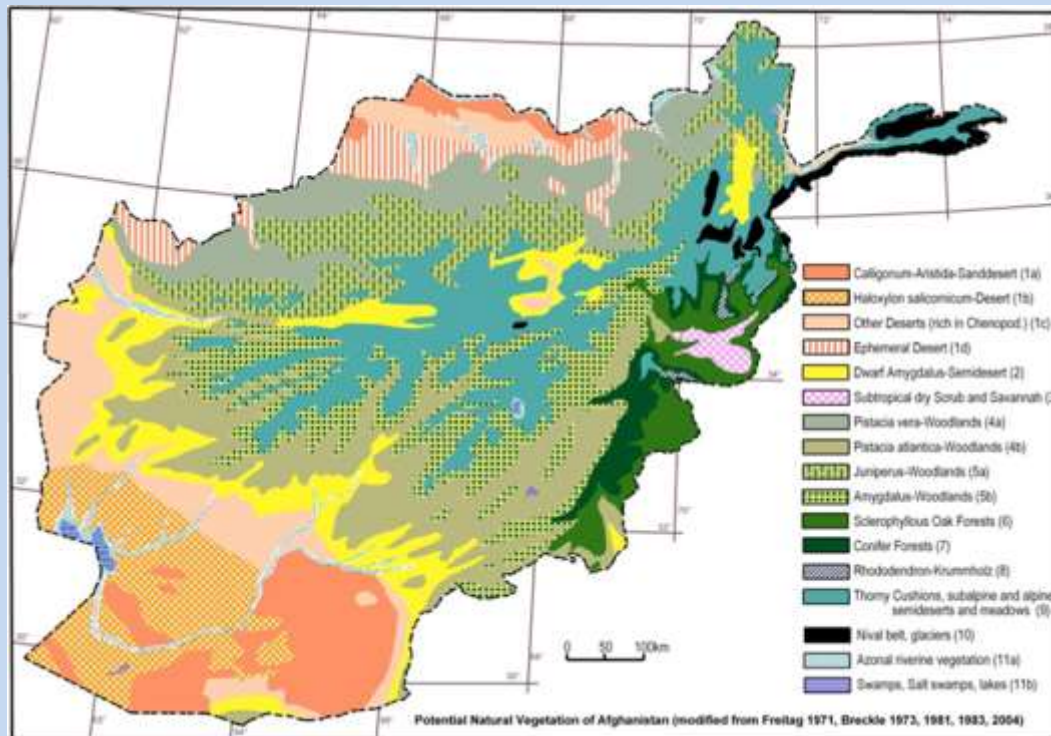
Riverine vegetation close to the treeline, with *Salix*, *Betula* and *Hippophae*, Bashgal-Valley 3000 m elevation, Nuristan (type 8)

Plant Communities



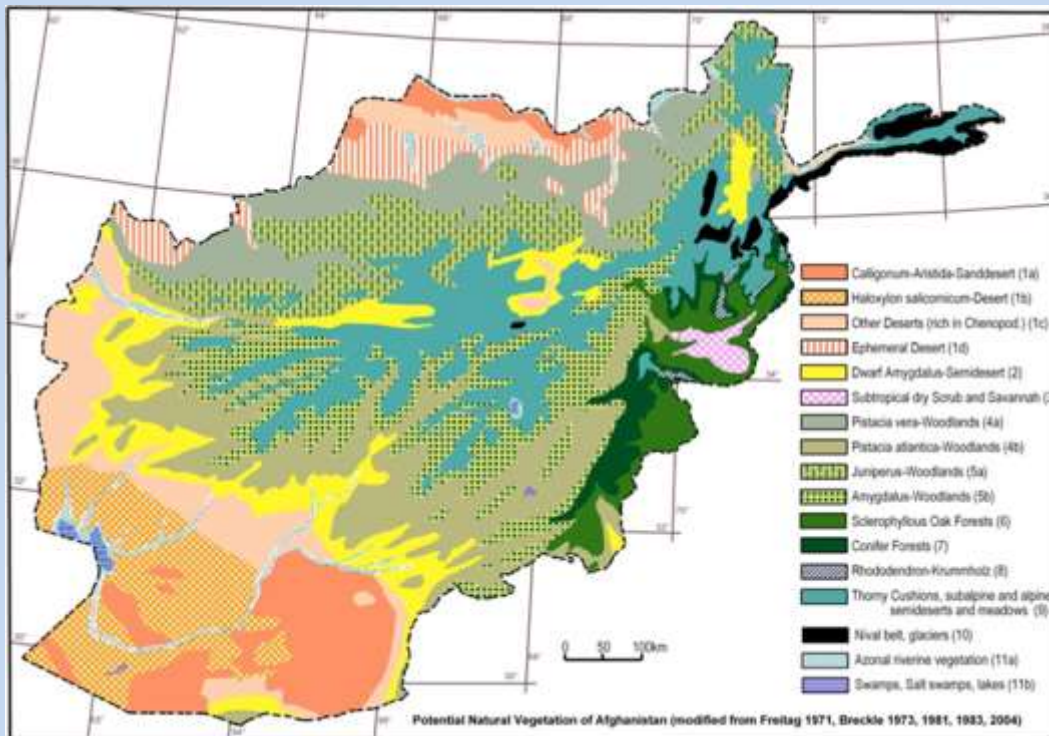
Thorny cushion shrubland above timberline, at Dasht-e-Nawor mountains with various *Astragalus* and *Acantholimon* cushions, 3500 m elevation (type 9).

Plant Communities



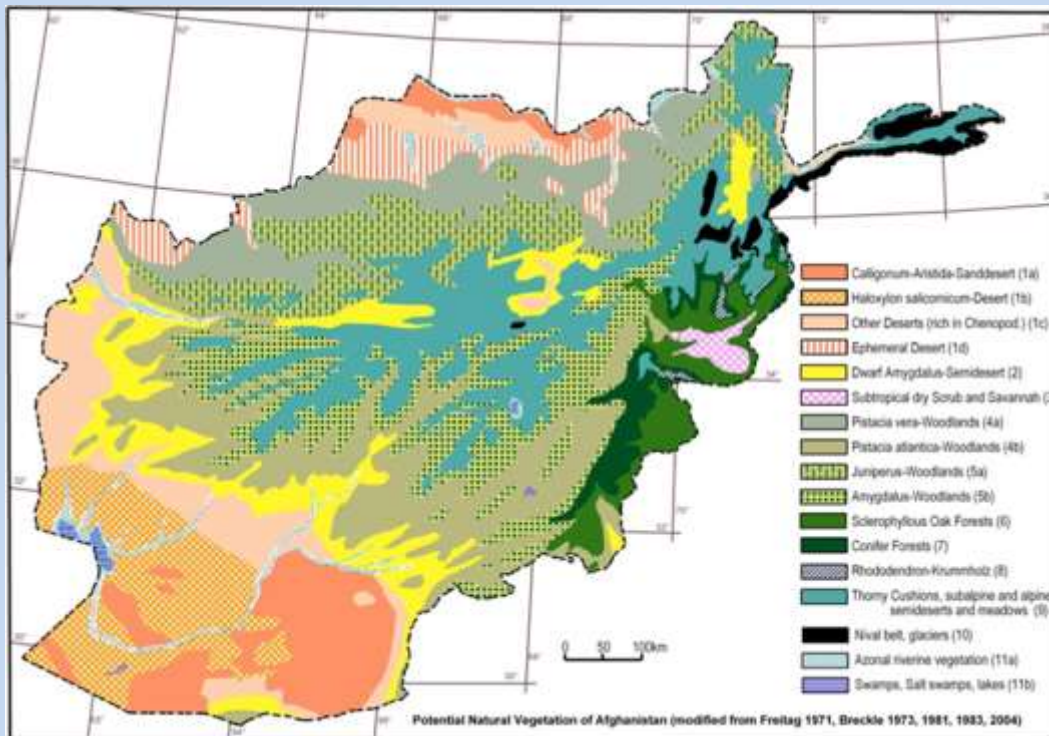
Nomad camp in summer, at Fuladi-valley, Koh-e-Baba, with heaps of thorny cushions for cooking and heating, 3800 m elevation (type 9).

Plant Communities



Reed vegetation at Hamun-e-Puzak, Afghanistan (type 11a).

Plant Communities



Heavily salinized salt-flat with thick salt crusts, and very open halophyte vegetation, mainly with the extreme halophyte *Halocnemum strobilaceum*, near Ankhoy (350 m elevation) (type 11b).