" Our Soul is for the Benefit of Mankind "

Coal Fires Fighting in Wuda, China

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Prince of Songkla University

PSU At a Glance...

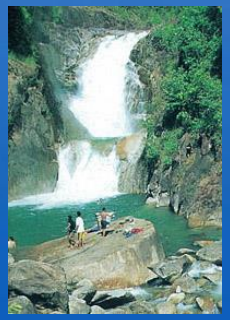
- 1st University in Southern Thailand, est. 1967
- 5 Campuses
- 30,000 Students (2013)

Surat Thani

Phuket

Hat Yai

Trang



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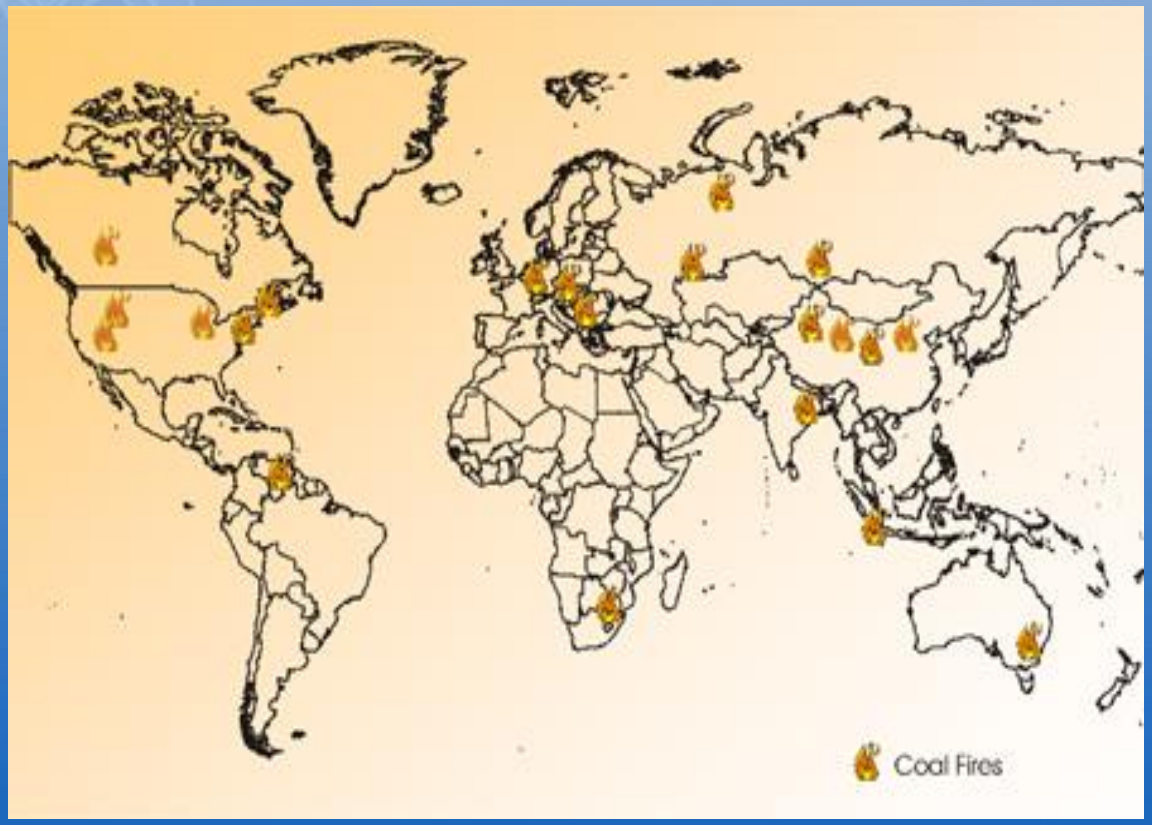
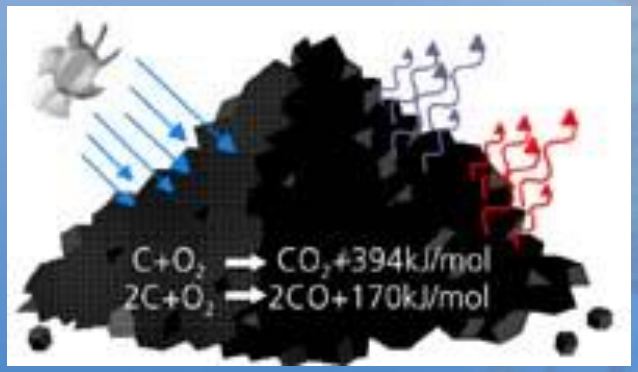
Coalfires worldwide

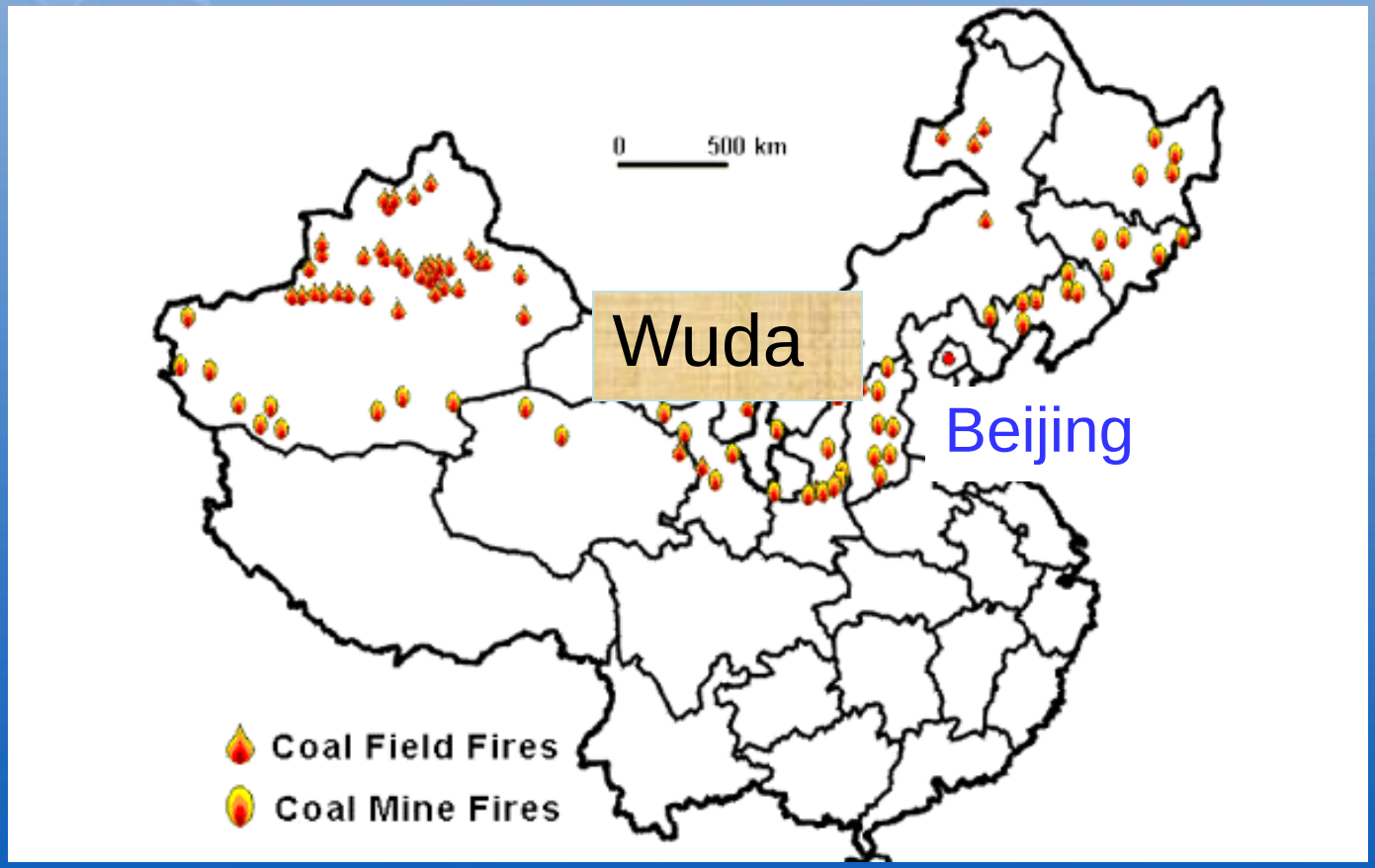




Affected by coal fires

- Large amounts of aerosols and toxic gases, like carbon monoxide or sulphur oxides
- Land-subsidence, contamination of drinking water and damage of flora and fauna around the fires
- Destroyed valuable coal resources

Coal fires in Wuda



Xinjiang, Shaanxi, Liaoning, Jilin, Heilongjiang, Ningxia, Inner Monggolia, Wuda, Hebei and Gansu

Coal fires in Wuda

- The Wuda Inner Mongolia coalfield is located NE of the Helan Mountain
- Tthickness of 0.2 m to 6m are exposed in a 10 km long and 4 km wide N-S striking syncline
- Coal fires affect an area of 280,000 m2. Most coal fires occur underground and can be related to small-scale mining operations.
- Currently there are 3 underground coal mines in Wuda (Huang Baici, Su Haitu and Wu Hushan).

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Coal Fire Management

- **Main extinguishing methods are the covering with soil, water injection for cooling, and drilling with yellow mud, organic polymer composite colloid, and foam**

Coal Fire Fighting

- Drilling and water injection
- Excavation of fire source in shallow depth
- Drilling and grout injection
- Ground compaction and soil coverage
- Isolation walls (barriers) where mine production is at risk,
- Inert gas (nitrogen) injection
- Closing of small-scale mines where possible

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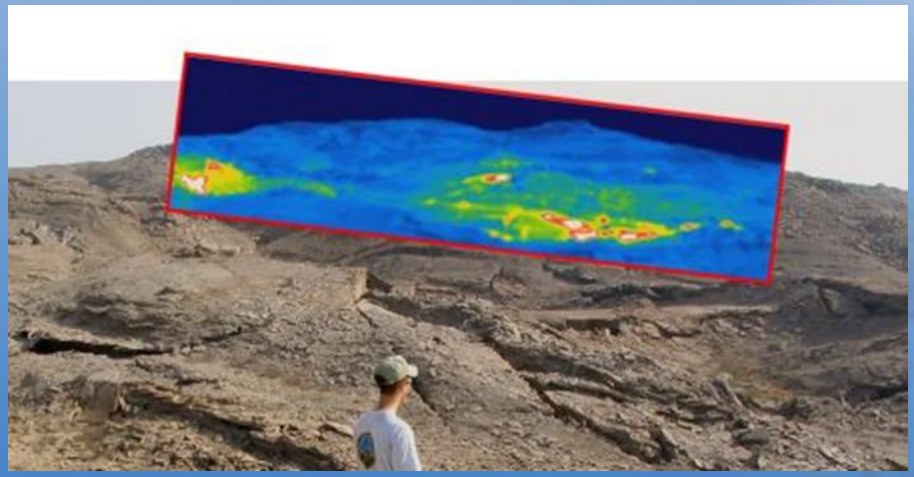
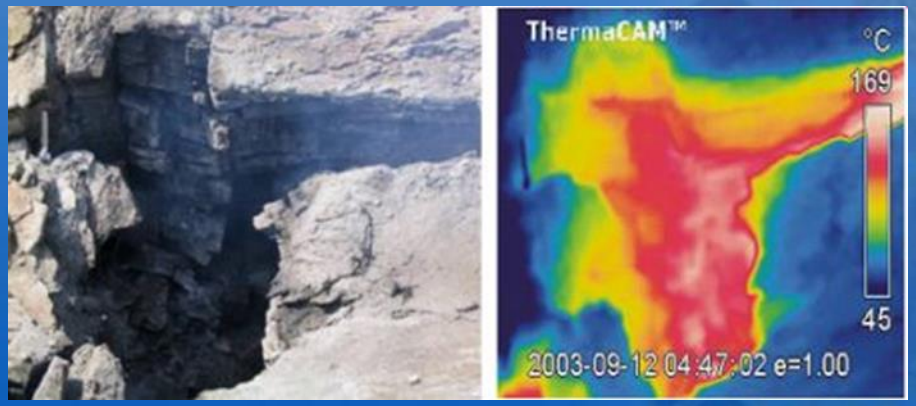
Coal fire monitoring





Conclusion

- Coal fire could lead serious pollution to environmental
- Detection and prevention of underground coal fire is directly related to earth environment for human being, related to effective use of coal resources for the mining enterprises, but also it is very important guarantee for the safety production in coal mine.
- The coal fire management is successful in the interest of future generation protection resources, protecting the ecological environment and realizing the strategic goal of sustainable development
- Must clearly understand that the detection and prevention of underground coal fire is very important in the scientific detection methods of coal fires, practical prevention technology of coal fires

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THANK YOU VERY MUCH

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