

# Climate and the Giant Panda



# Panda Distribution

- Pleistocene: Burma, Thailand, Laos and Vietnam
- Climate and habitat change restricted distribution
- 5 mountain areas; Qinling, Minshan, Qionglai, Liangshan and Xiangling
- 24 isolated populations
- 1500 individuals in the wild
- 60% protected in the 40 nature reserves

# Panda Distribution



Source: WWF Panda Fact Sheet 2007

# Panda Distribution



from [www.WWFChina.org](http://www.WWFChina.org)

# Panda Food

- Obligate feeders on bamboo
- 99% of diet
- 1% scavenged food, other vegetation & rodents
- Bamboo low nutrient content & palatability
- Abundant food source, low competition
- 14 hours a day eating
- Bamboo determines distribution

# Seasonality

- Summer: higher elevations, sparse forest canopy e.g. *Bashina fangiana*
- Winter: lower elevations, mixed & deciduous forest, tall bamboo e.g. *Fargesia robusta*

# Synchronous Semelparity

- Common in bamboo favoured by pandas
- 'Die back' every 30-120 years
- *B. fangiana* flowers ~45 years
- 10-15 years for bamboo to regenerate
- 1983 bamboo flowered in north Sichuan -> 138 pandas died
- Need to access alternative species, migration
- 1980s 80% of *B. fangiana* flowered in Wolong reserve; *F. robusta* available as alternative food - > 3 out of 25 pandas died

# Panda Habitat

- Understorey bamboo species
- Slope
- Aspect
- Water – ice free water
- Forest cover – shelter; shaded bamboo richer in nutrients & more palatable
- Altitude - 1500m to 3250m
- Human land use – <2000 m cultivated; logging - > too dense bamboo; fragmentation restricts movement

# Environmental Layers

- Global land cover classification
- Altitude
- Annual precipitation
- Moisture index
- Absolute minimum temperature
- Growing degree-days over 5°C (GDD5)

# Correlations

