Physical Geography Chapter 9
Low Latitude and Arid Regions

Simplified Koeppen Climate (lasses)
A- Humid Tropical
B- Arid Climates
C- Humid mesothermal (mild winter)
D- Humid Microthermal (severe winter)
E- Polar Climates
F- Highland Climates

Climates occur in a predictable way. – Figure 9.2
- zones of Transition

Tropical Climates- Table 9.2
- 18ºC average T of the coldest month

Figure 9.5 – Index of Humid Tropical Climates

Af- Tropical Rain forest
- Ave T = 77º F (25ºC)
- 5º-10º of equator, noon sun is always overhead
- Therefore narrow temperature ranges (⇒2- 3ºC, 4-5ºF), or none
- Ocean Island – an ocean
- At least 80 inches (200 cm) of rain
- 12 hours day/night
- Any variations in monthly rainfall can be traced to migration of the ITCZ
- Selva vegetation- broad leaf
  - delicate balance between trees/ ground/ soil development
- Basic rocks – volcanics, limestones
- Humans are outnumbered by critters
- Insects: Malaria, yellow fever, sleeping sickness
- People came in – Slash/Burn or Shifting Cultivation
  (can only do for a few years) – use small plots
- Crops- Rice, rubber and Cacao (Malaysian, Indio, W. Africa, Caribbean)

Tropical Monsoon (Am)
- mostly with Peninsula lands of SE Asia
- ITCZ driven
  (land to sea in winter, sea to land in summer)
- Seasonal rain
- Slightly larger temperature variation (2º - 6º C), due to dry season
- Transitional to Af
- Fewer critters in Am, due to extremes
- Rice climate- pick in dry

Tropical Savanna- Aw

- 5-20º of tropics
- Experiences humid rainforest and steppe climate characteristics
- Typically near the margin of the extent of the NSA
- High Sun - Tropical characteristics
- 3-6º C (5-11ºF) temperature ranges
- Vegetation –llanos or campos –grasslands
- Big variations in vegetation and soils
  - toward Af, Am- more iron rich
  - toward B- more depleted zone soils
  - deep rooted, fire resistant trees- deal with dry months
- Rainfall is less predictable from year to year
- Larger tropical critters:
  Photo Safari's
  Herbivores- elephants, rhinos, big cats

Arid Climate Regions

- concentrated in areas of the subtropical high
  (Tropic of Cancer/Capricorn – 10-15º N or S)

- interiors of continents in the Northern Hemisphere
- least populated of main climates
- classified according to relationship between precip and potential evapotranspiration

BW Desert Climates

- Extremes – minimum precipitation, maximum isolation, few clouds, biggest T ranges (40º C, 72ºF) in one day (90%)
- More common (22º-28ºC, 40-50ºF)
- Average T calculated are based on values in the shade
- Sun - 110º F or more (43º C)
  - Soil in Mojave- 200ºF (95ºC)
- Middle – Latitude deserts have the biggest ranges
- Precipitation, if it occurs, it can be freakish
- Intense heating of the land produces big PGF- windy
- sparse vegetation – xerophytes – adapted to extreme draught – thick bark, thorns, waxy leaves
  - Cactus, Joshua Tree

BS- Steppe Climate

- Close to deserts
- Factors : 1. continentally
  2. Rain- shadow
  3. Subtropical Highs

  Any one of 3
- Greater Precipitation : 10-20 in (25-50 cm) than BW, but PE still exceeds precipitation
- annual rainfall can vary a lot from year to year
- rainfall timing is related to adjacent climates
  1. Located between desert/ tropical Savanna – rain comes during high sun season (dry Savanna shrub tree, bush)
  2. Located next to a Cs – winter rain (shallow rooted gasses)
- Middle – latitude steppes have big T ranges
- Difficult and risky farming (wheat, barley) – dust bowl results in draught years