

ECOSYSTEMS, ENERGY AND THE RANGELAND RESOURCE

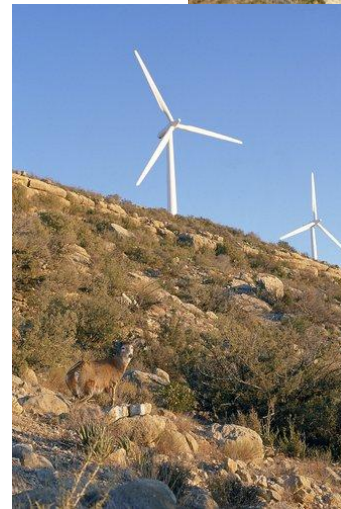
**ASSESSING TODAY and
PLANNING TOMORROW**

**William E Fox, III
May 18th, 2011**

**SUSTAINABLE RANGELAND ROUNDTABLE
RANGELANDS ISSUES FORUM**

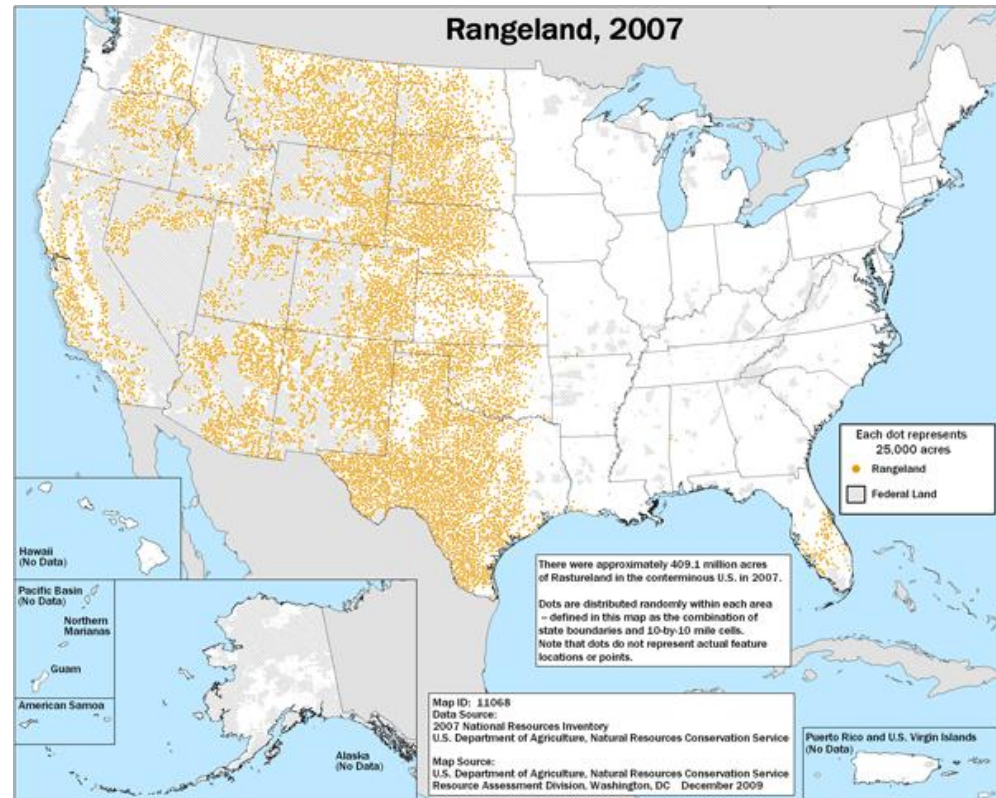
PUBLIC PERCEPTIONS

- 2008 TX Survey Results (n≈1200)
 - 94% support research & development of solar energy sources
 - 91% support research & development of wind energy sources
 - 82 % support increased production of oil & gas in the US
 - 79% support research & development of biofuels



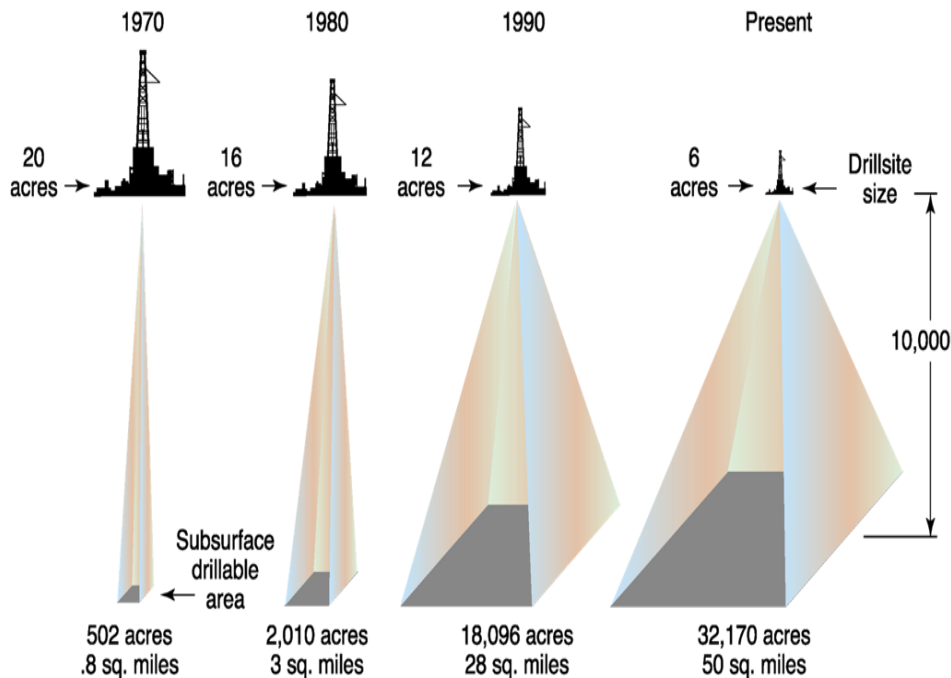
ENERGY & RANGELANDS

- Rangelands in the western 17 states hold significant potential for expanding domestic energy production.
 - Unconventional oil and gas,
 - Increase in solar and wind,
 - Expansion of biofuel, hydropower and geothermal
- **Result** - increase capacity to aid the United States in its goal of energy independence.

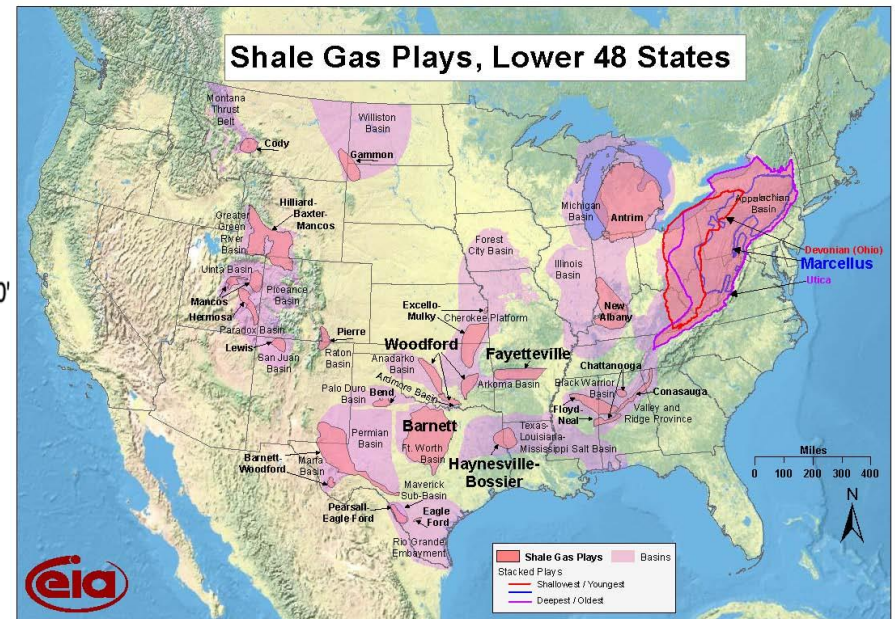


UNCONVENTIONAL NATURAL GAS

- Over 1,744 tcf technically recoverable reserves (DOE, 2006)
- Currently provides 22% of Nation's energy (GWPAC, 2009)
- Full realization must balance between production processes and environmental directives (GWPAC, 2009)



Source: William Harrison, Kansas Geological Survey



BIOMASS – Billion Ton Annual Supply

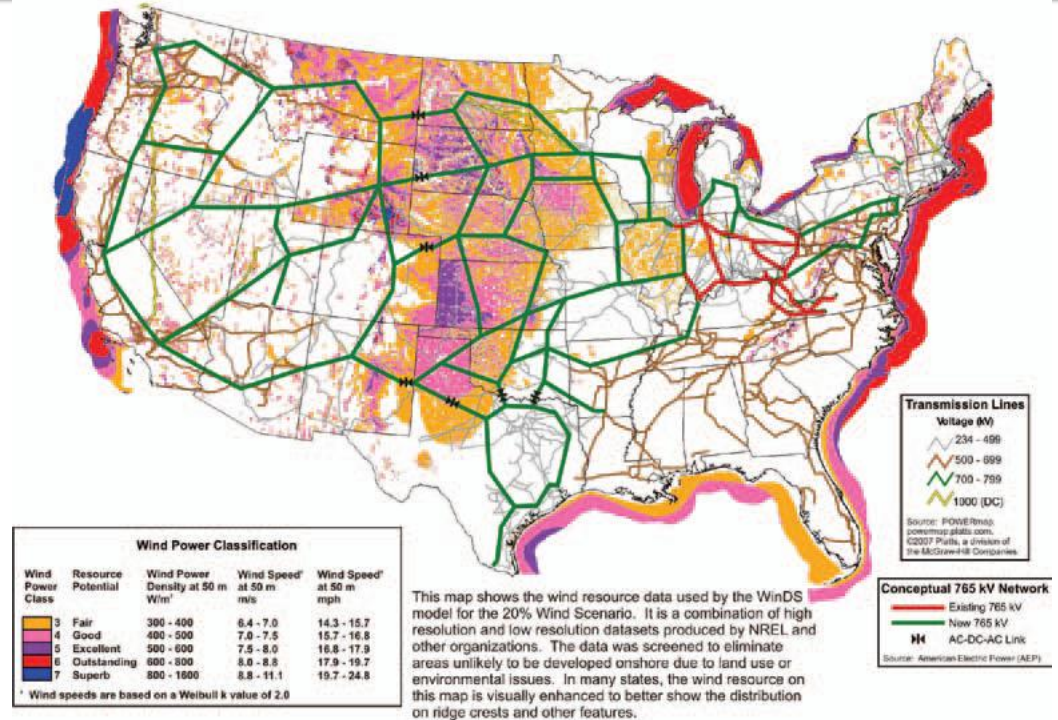
- Biomass consumption in the industrial sector will increase at an annual rate of 2% through 2030, up to 4.8 quads in 2030.
- Biomass consumption in electric utilities will double every 10 years through 2030.
- Combined, biopower will meet 4% of total industrial and electric generator energy demand in 2010 and 5% in 2020.

*-DOE/GO-102005-2135
-ORNL/TM-2005/66*



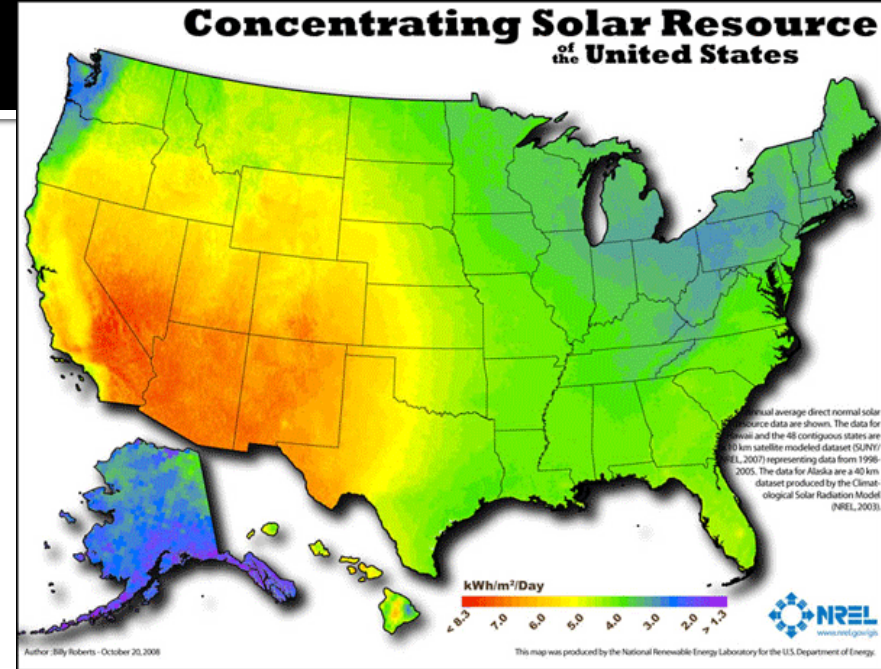
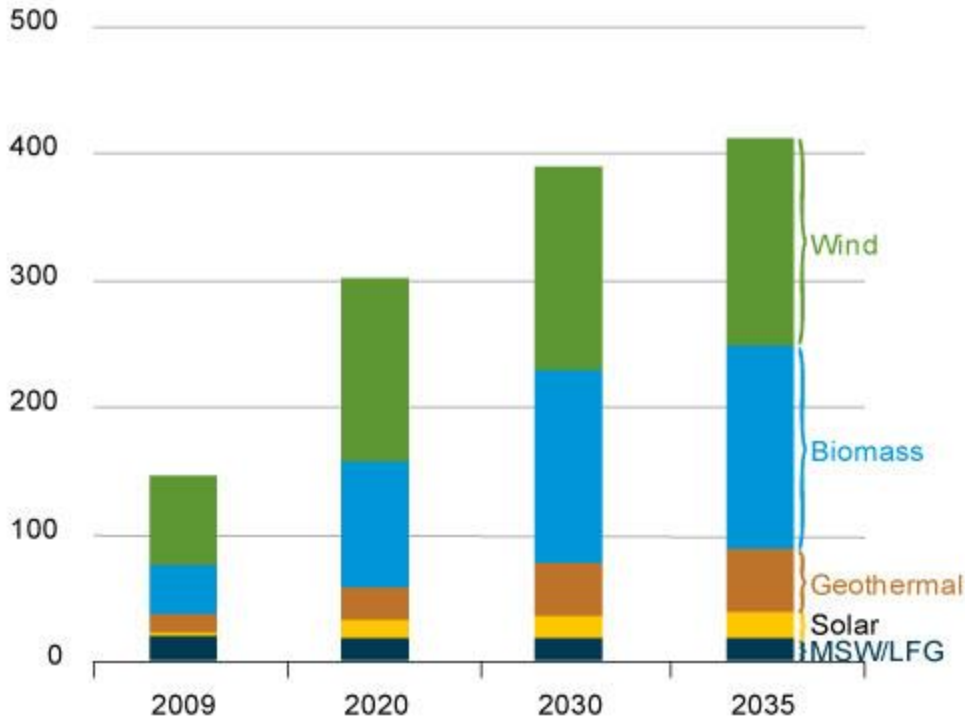
WIND – 20% WIND ENERGY BY 2030

- The 20% Wind Scenario envisions 251 GW of land-based and 54 GW of shallow offshore wind capacity to optimize delivered costs, which include both generation and transmission.
- Wind power would be a part of broad and near-term strategy to substantially reduce
 - air pollution,
 - water pollution,
 - global climate change
- As a domestic energy resource, wind power would also stabilize and diversify national energy supplies.

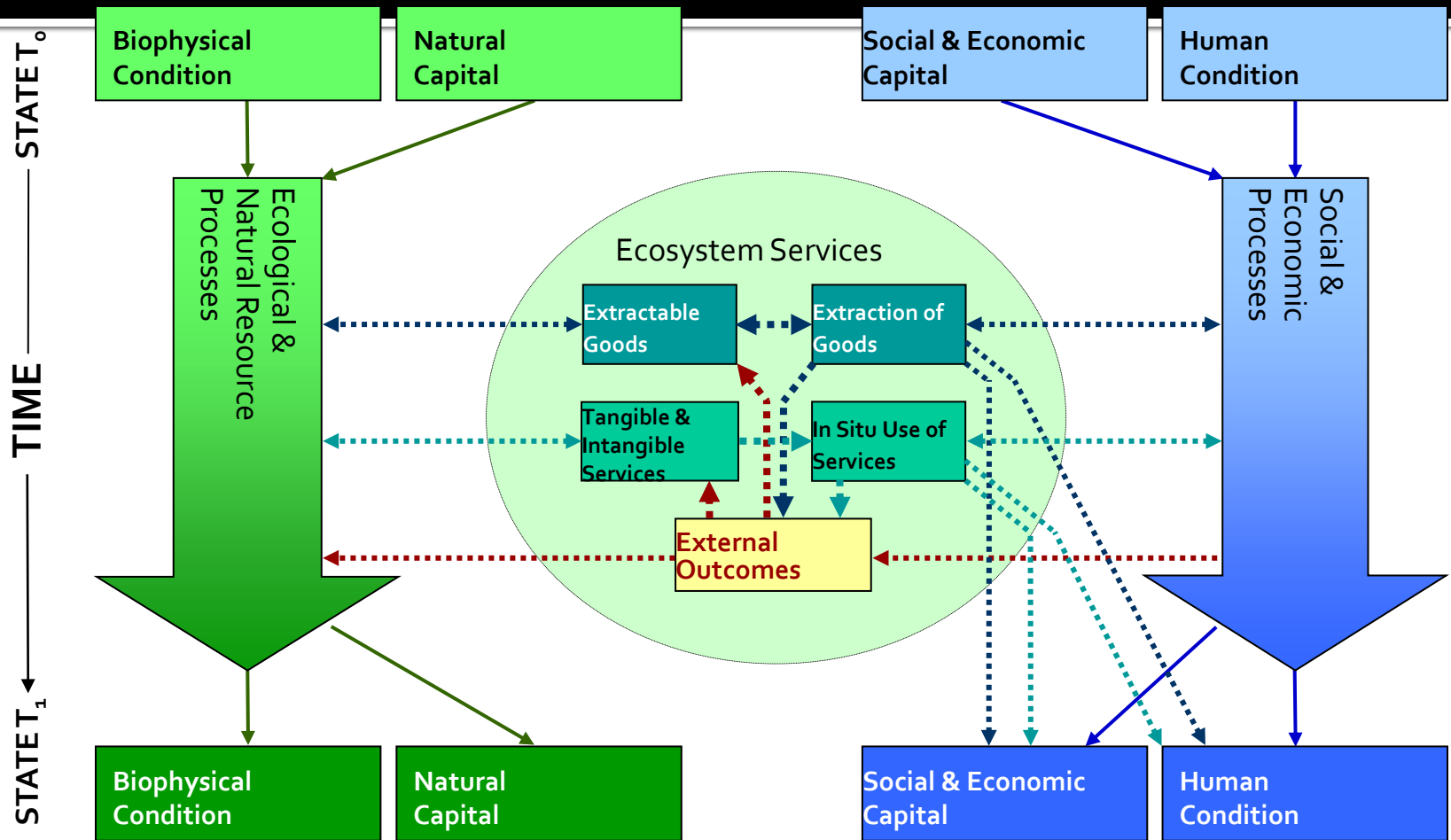


SOLAR

Figure 83. Nonhydropower renewable electricity generation by energy source, 2009-2035 (billion kilowatthours)



ASSESSMENT IS CRITICAL



Integrated Social, Economic, and Ecological Concept (ISEEC) for identifying linkages that affect the delivery of ecosystem goods and services on rangelands

THANK YOU!

