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WEST COAST REGIONAL  
CARBON SEQUESTRATION  
PARTNERSHIP

# WESTCARB Regional Partnership

## Phase I Findings: Promising Sequestration Options

***Larry Myer***

**Technical Director**

**West Coast Regional Carbon  
Sequestration Partnership**

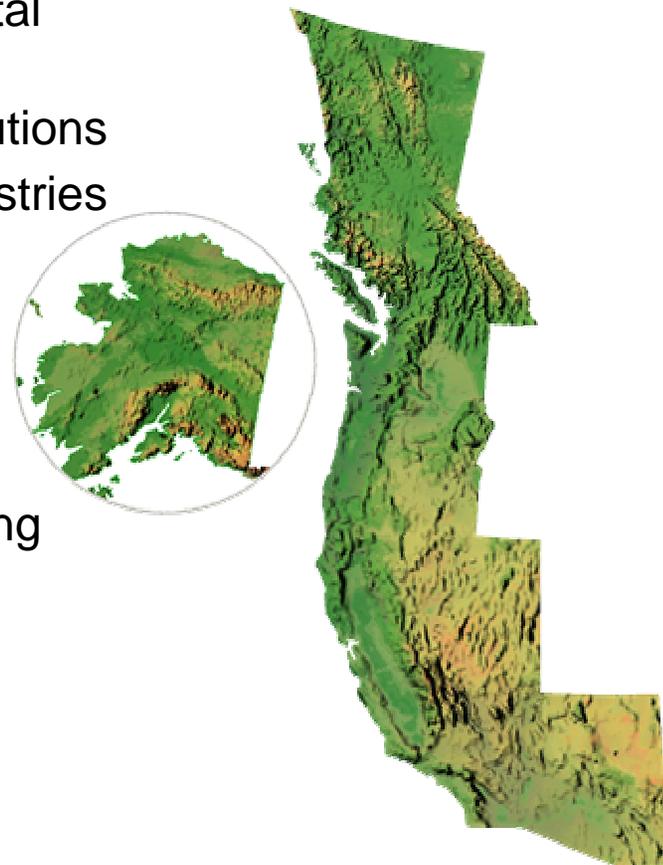
*Alexandria, Virginia*

*May 5, 2005*



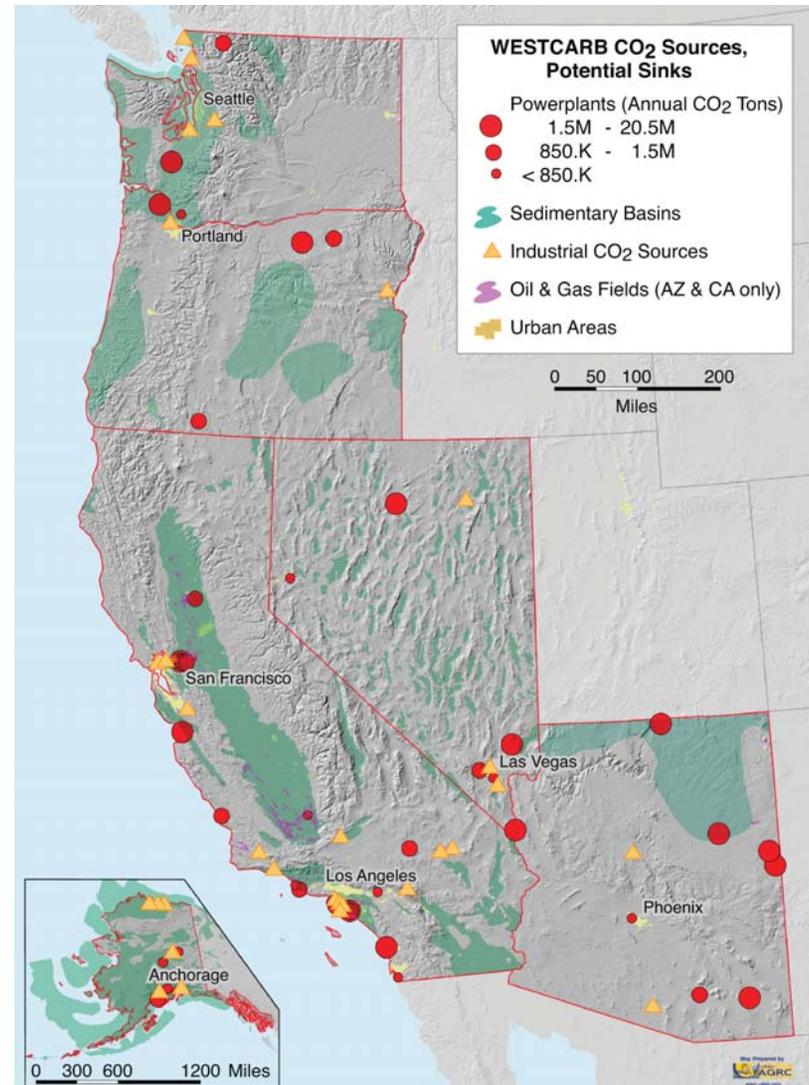
# Who Is WESTCARB?

- Researchers from nearly 50 organizations comprising:
  - Resource management and environmental protection agencies
  - National laboratories and research institutions
  - Conservation nonprofits and climate registries
  - Oil and gas companies
  - Power companies
  - Pipeline companies
  - Colleges and universities
  - Trade associations and policy coordinating bodies
  - Vendors and service firms
  - Consultants
- Led by California Energy Commission



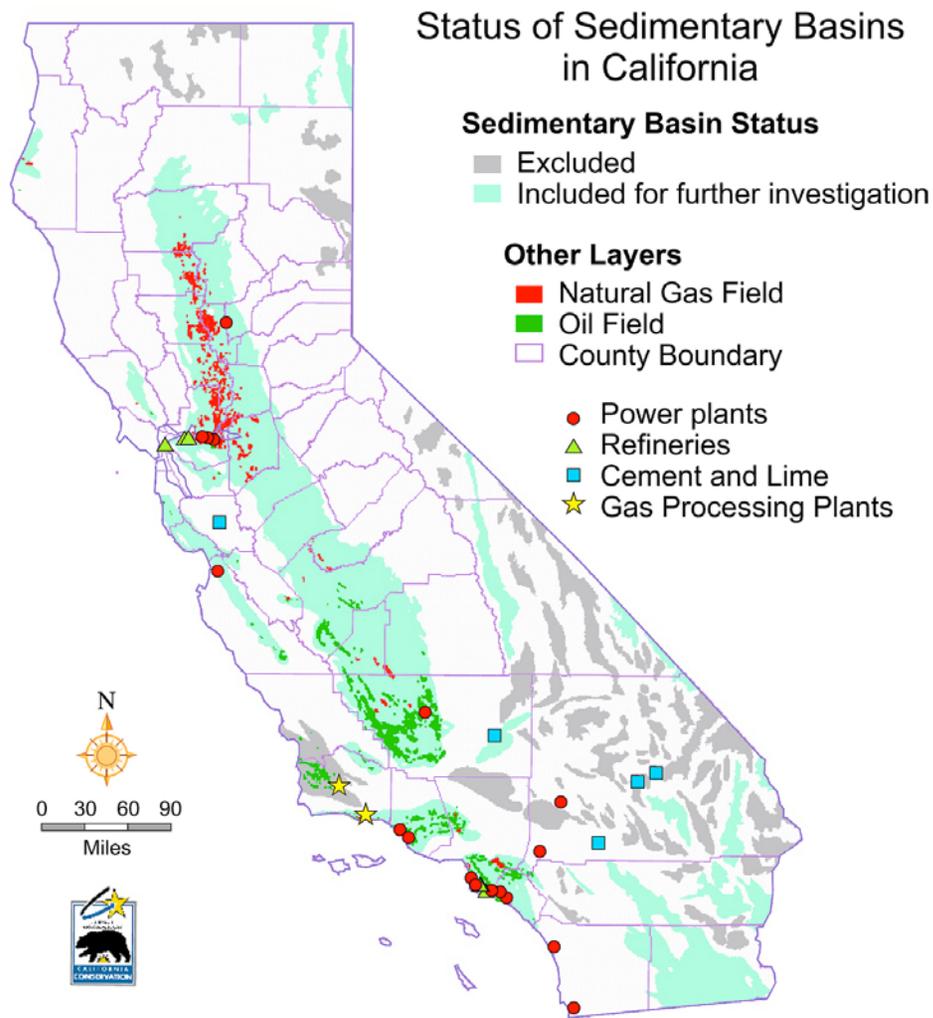
# Regional Snapshot

- Power plants and oil & gas are major sources
- Extensive basins
- Oil and gas production fields; deep coal beds
- Pipeline ROWs mapped
- Extensive forest, ag, and grazing lands suitable for terrestrial



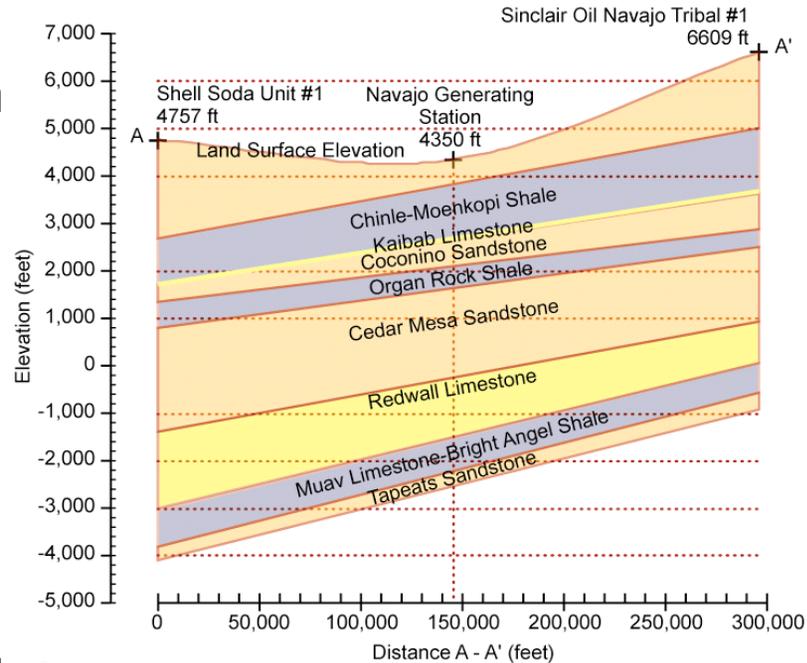
# California's Central Valley and South Coast

- Sources near sinks; capture options assessed
- Sedimentary basins screened for depth, presence of seal, etc.
- Oil and gas field data entered in GIS database; EOR and EGR opportunities
- Saline formation capacity appears massive—70–500 Gt



# Arizona's Kaiparowits Basin

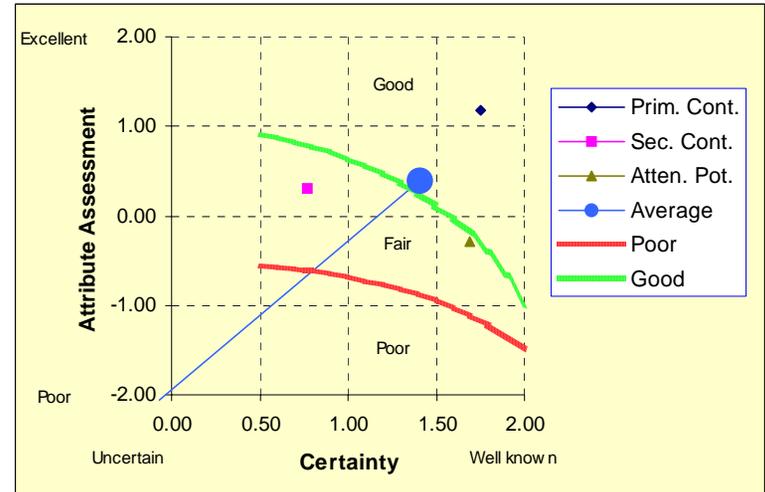
- Saline formation with 2–6 Gt of CO<sub>2</sub> storage capacity
- Beneath major coal-fired power plant
- Operating utility interest in assessing sequestration potential
- Integrated capture-storage pilot opportunity



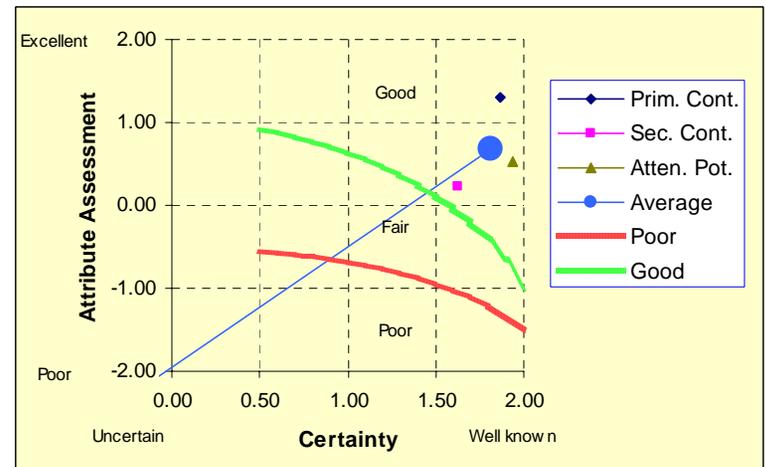
# Risk Assessment for Screening Geologic Storage Sites

- Spreadsheet model for scoring Health, Safety, and Environmental (HSE) risks due to leakage for site selection
- Three main controlling characteristics:
  - Primary containment potential
  - Secondary containment potential
  - Attenuation potential
- User can:
  - Specify the importance of various attributes through weighting factors
  - Evaluate and score various attributes
  - Specify uncertainty inherent at sites

## Ventura Oil Field

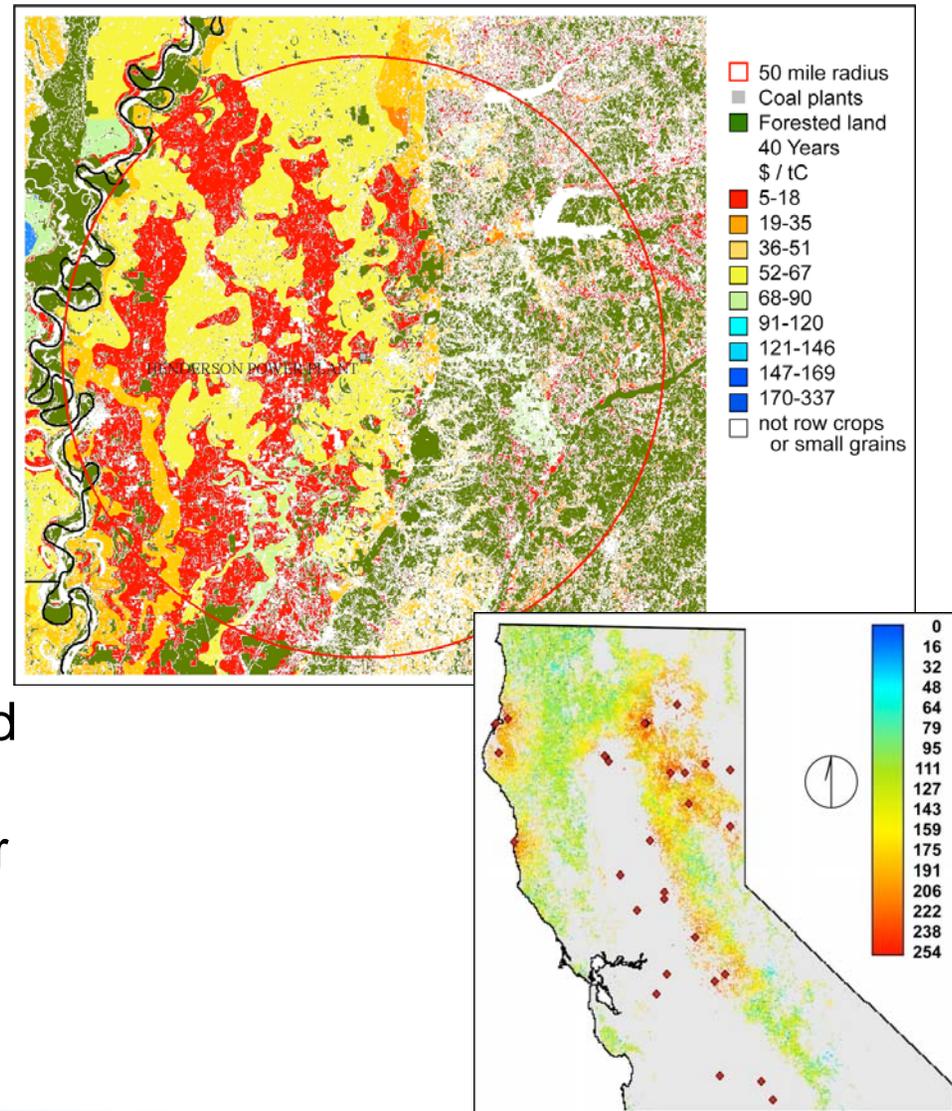


## Rio Vista Gas Field



# Terrestrial Options in Oregon, California

- Carbon storage potential mapped for afforestation of range and ag lands
- Supply curves prepared for multiple timeframes
- Excellent potential for catastrophic wildfire emissions avoidance through thinning of choked forests (removed fuel can be used in biomass power generation)



# WESTCARB States Offer Excellent Geologic and Terrestrial Pilot Sites

- WESTCARB found multiple promising sequestration options, throughout region
- Pilots will provide site-specific data to validate:
  - Major geologic storage suitability
  - Leakage risk assessment
  - Public acceptance
  - Regulatory requirements
  - Monitoring methods
  - Terrestrial options and measurement methods

