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Managing Water in the West

Update on the Southeast California Basin Study

Borrego Springs
March 27, 2013

U.S. Department of the Interior
Bureau of Reclamation

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The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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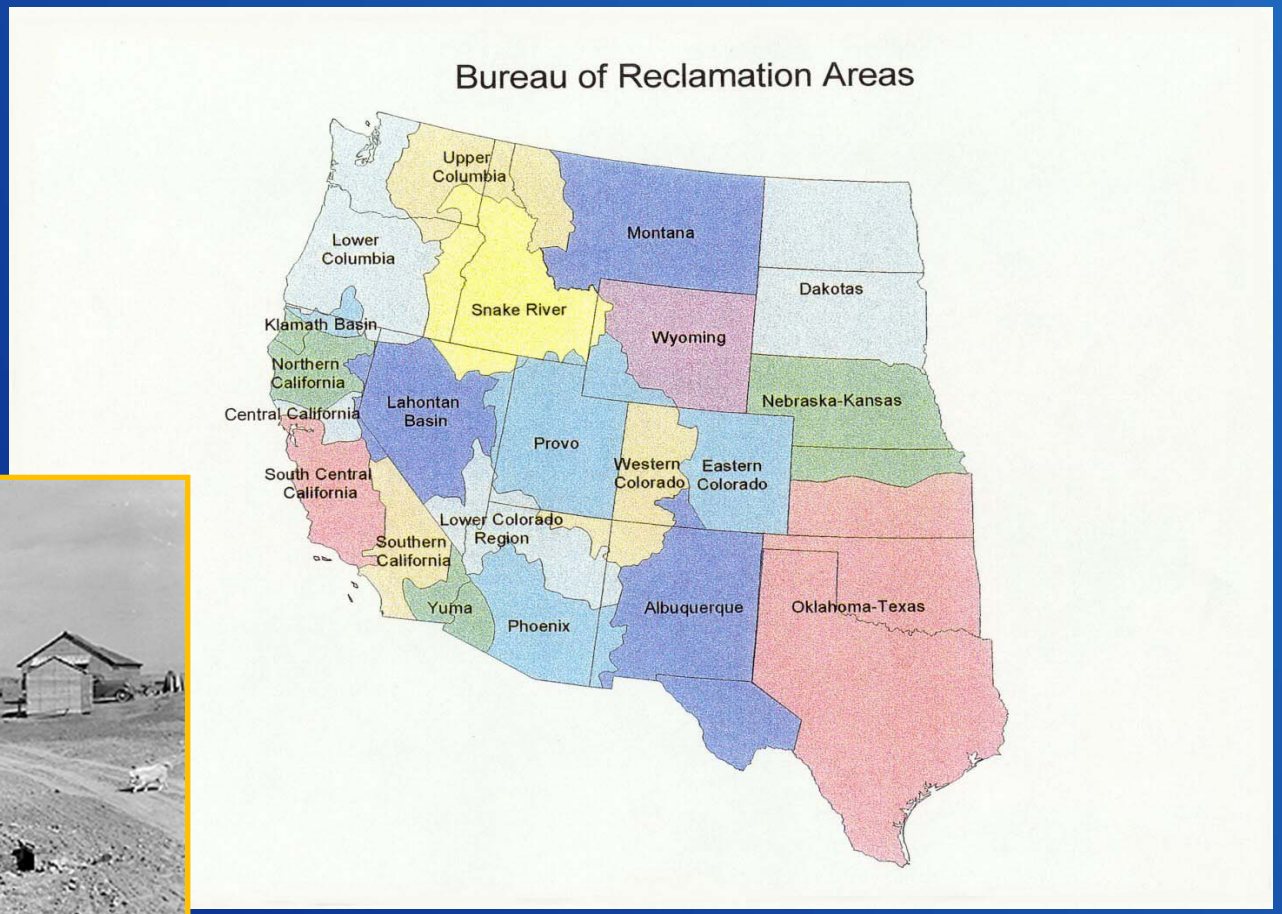

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Basin Study Concept

- Comprehensive water studies future water demands where imbalances in water supply and demand exist or are projected
  - Future supply and demand
  - Assess existing water-power operations and infrastructure performance under changing water realities
  - Develop options to improve operations and infrastructure to supply adequate water in the future
  - Recommendations to optimize operations and infrastructure in a basin to supply adequate water in the future

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What is Planning?

- Planning is a creative process
- It can tend to be unstructured and ad hoc, at times bordering on chaotic.
- Helps decision-makers identify their problems, conceive solutions to them, and compare the importance of the inevitable conflicting values inherent in any solution.
- Planning does not make decisions on the future course of action, decision makers do.
- It requires unequal measures of
  - Commitment to the process
  - Active involvement
  - Analysis, intuition, and
  - Inspiration

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Southeast California Regional Basin Study

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Current Problem

- Groundwater is the sole source of water in Borrego
- Annual groundwater pumping exceeds natural recharge by about four times
- Pumping has resulted in water levels dropping over two feet per year for the past twenty years
- As the more permeable upper aquifer is dewatered, water level declines may accelerate and water quality may deteriorate.

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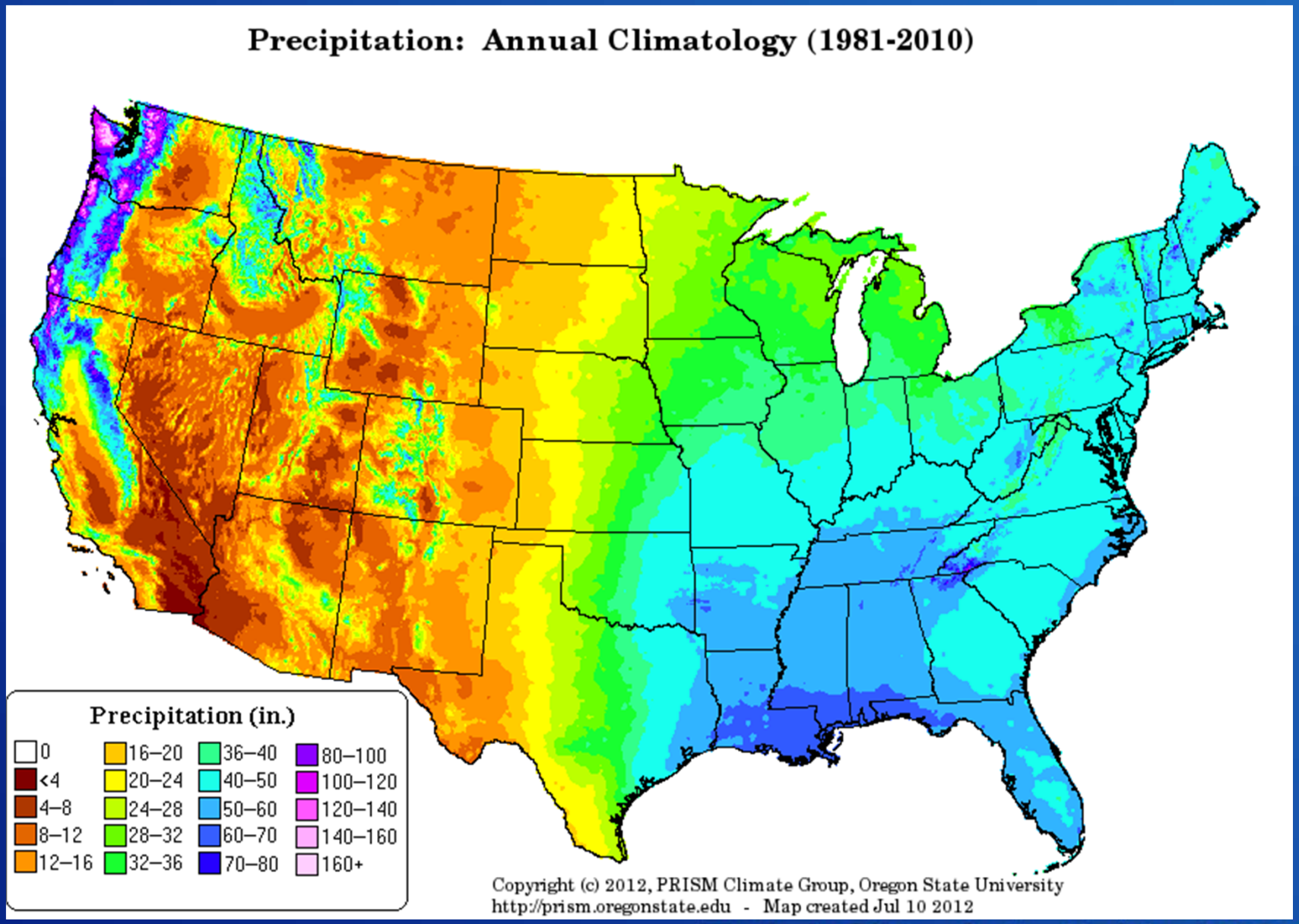

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SE California Regional Basin Study Process

- Regional Southeast California Study
- Characterize current regional water supply, demands, and conveyance and storage opportunities
- Assess risks to Southeastern CA water supplies through historical and future Climate change
- Identify potential strategies and options to address SE CA water supply and demand imbalances
  - Current
  - Forecast
- Scenario model alternatives
- USGS integration
- Identification of potential alternative futures

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Status Report

- General Status - Update
  - Since October 31, 2012, Southern California Area Office (SCAO) staff :
    - Met multiple times with Borrego Water District (BWD) and Coachella Valley Water District (CVWD) staff and board members;
    - Participated in two public outreach meetings with BWD, the agricultural-golf course pumpers, and California Department of Water Resources (DWR);
    - Discussed the study's status with Denver Technical Services Center (TSC)
  - LC region's Engineering Services Office (ESO) and TSC are progressing with their design alternatives and climate change analysis respectively.
  - Climate Change
    - In progress
    - Based on Colorado River Data

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Status Report – continued

- General Status – Update
  - Engineering - Imperial Irrigation District: Pipeline alignment towards IID.
    - Limits with this information:
      - The new estimate is for a downsized pipeline based on the 1968 report and BWD Stag grant
      - The economic analysis will be rough at a 30k foot level
  - Engineering – Coachella Valley Water District: Pipeline alignment towards CVWD's raw irrigation laterals
- Economics - will start work once the engineering cost estimates are complete.
- USGS groundwater modeling is estimated for release in summer 2013, and will be incorporated subjectively into the Basin study.

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Where are we Now

- Colorado River Basin Study has been released
- Climate Change Analysis for this regional study is being based on appropriate information from the Colorado River Basin Study.
- Engineering designs are being prepared by Reclamation Engineers for the design and cost of a raw water pipeline from the Coachella Water District to Borrego Springs
- Engineering designs are being prepared by Reclamation for the IID alternative and the cost downsized to the water estimates of today

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Basin Water Study Scenarios (USGS)

(in acre-feet per year)

IN	Pre-Develop	Current	Scenario	Sustainable
Natural Recharge	4,800	4,800	4,800	4,800
OUT				
Flow out				
Southern End	900	900	900	900
Natural ET	3,900	0	0	0
Wells		19,000	12,000	3,900
Storage Change	0	-15,100	- 8,100	0

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Examples of Future Water Supply Choices

- Current Annual Use
  - 19,000 Acre-feet
- Current Annual Recharge
  - 4,800 Acre-feet
- Annual over pumping
  - 15,100 Acre-feet
- When selecting future water supply scenarios what do you want to achieve?
  - Stay within recharge (Continue the current situation or one of the scenarios noted by USGS) (No import) (Least expensive future cost for water.)
  - Import some additional water for growth and varied economy (Will cost the local area money (infrastructure, capital and OM&R)
  - Import enough water to cover over pumping and remove the gap allowing all current uses to continue. (Will cost the local area money (infrastructure capital and OM&R)

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Scenarios based on Future Water Supplies

- Scenario A (4,800 Acre-feet – eventual yield)
  - 4,800 AF Recharge
  - Drawdown aquifer under a managed approach
  - Limit future demand (pumping) to estimated recharge (USGS scenario)
- Scenario B (9,000 Acre-feet)
  - 4,800 AF Recharge plus
  - 5,000 AF new water imported to the valley (Will cost the local area 100%)
- Scenario C (19,000 Acre– feet)
  - Continue current pumping, and plan for identified results in 25+ years – recharge plus
  - 15,000 AF new water imported to the valley. (Will cost the local area 100%)
- Scenario D (Aquifer used as a water storage site)
  - Continue current pumping, and plan for identified results in 25+ years
  - Augmentation is done by entity doing recharge the local area will be required to pay some of the costs.)

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Water Conveyance & Storage Options Currently being Estimated by Reclamation

- Conveyance Options:
  - IID
    - Southeast via Allegretti Farm and West main canal
    - East via West main canal
  - CVWD
    - East via Salton City
- Storage – 500k AF overdraft
  - Borrego Springs Aquifer

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What is the Future?

- Limited future long term Water Supply
  - Recharge is 4,800 AF annually
- Potential Future Water Quality Problems
- Primary alternative starts with the future Scenario Planning based on the water supply levels identified by USGS
- All future scenarios needing water above the basic recharge estimates will identify the water supply gap needing to be filled and will identify the cost to the local area.
- Managing Change – Plan now to get to the future you want and/or can afford.
- Anything above recharge (import) will have a cost to be paid.

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Managing for Change

- Community Changes will require the following:
  - Decision on what kind of future do you want?
    - Agriculture
    - Municipal
    - Recreation/Tourism
    - Other
  - Some futures will require replacement water to offset over pumping the aquifer and will cost the local area for pipeline, pumps and OM&R costs
  - Are there options available for finding future sources of water?
  - Water above projected recharge (4,800 AF) will be repaid by the local area .
  - The infrastructure needed to bring new supplies to the Borrego Valley will be repaid by the local area .
- Trends in hydrologic conditions – continue
  - Effects on precipitation and runoff patterns
  - Possible less from our rain events
  - Potentially more intense runoff events

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Potential Supply Opportunities

- No Colorado River Allotment
- Second use of Colorado River water is possible
- Purchase reuse/recycle capacity and exchange water
- Potential water exchanges from Colorado River or State Water Project
- Annexation by an existing water district
- Live within the natural constraints of the Aquifer

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How to get to the Future

- Groundwater Basin needs to be managed
- Cooperate – Local area needs to work together and no one will consider the basin for offstream augmentation without controls
- Be realistic
- Be patient
- Let the process work
- Think outside of the box
- You are all in this together
- Nothing is free – the local area will be responsible for infrastructure, water supply and annual OMR costs for all import choices. No Federally or State funded FREE Project!

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Friendly Discussion of Water Rights

Discussing Water Rights, A Western Pastime

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New Borrego Water Coalition formed

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Collaboration and Team Work

What next?

- Recognize all positions
- Be open and honest
- Listen to each other
- All views are important
- There are no wrong answers
- Recognize you are in this together
- No prior Agenda's
- Be patience
- The team is greater than each individual

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Successful Water Coalition Results

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Thank You

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