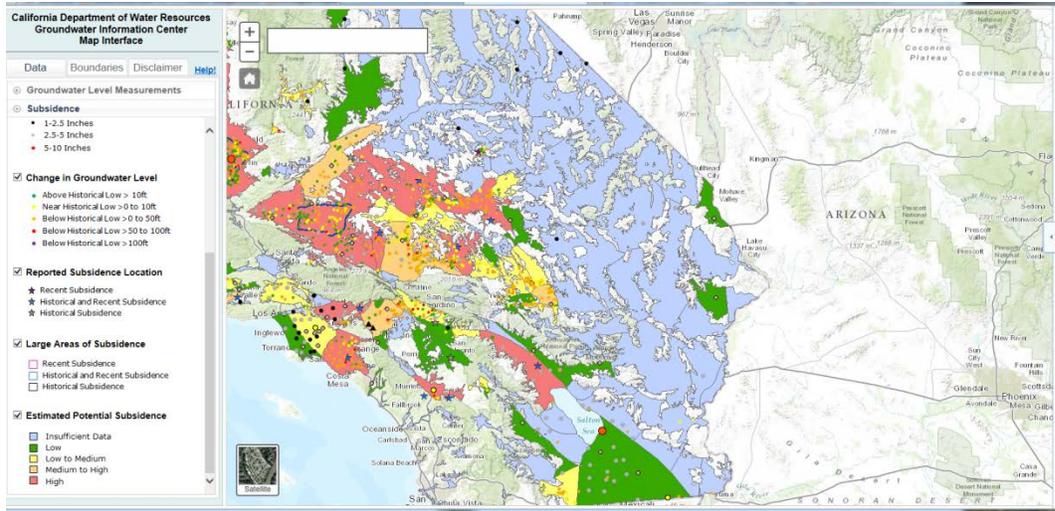


Lower Colorado River Drought Visualization Ideas

1. Drought Effects on Groundwater - California DWR – Groundwater Information Center (<http://gis.water.ca.gov/app/groundwater/>)



2. Reclamation climate projections ; Lawrence Livermore Ntl Labs – (http://gdo-dcp.ucllnl.org/downscaled_cmip_projections/dcpInterface.html#Welcome)



Downscaled CMIP3 and CMIP5 Climate and Hydrology Projections

This site is best viewed with [Chrome](#) (recommended) or [Firefox](#). Some features are unavailable when using Internet Explorer. Requires JavaScript to be enabled.

Welcome About Tutorials **Projections: Subset Request** Projections: Complete Archives Feedback Links

Specify a customized data retrieval by using the form below, spread among three tabs ("Page 1: Temporal & Spatial Extent", "Page 2: Products, Variables, Projections", "Page 3: Analysis, Format, & Notification"). The form permits specification of projection subsets according to user selections for products, variables, models, emissions scenarios, time periods, geographical areas, series versus statistical output, and output format. Submissions are constrained so that the resulting file download size does not exceed approximately 1 gigabytes. The form tracks user selections and indicates whether the specified request is within this size constraint. Requests are queued at LLNL Green Data Oasis for processing. When the request has been processed and made ready for download, the user is notified via the email submitted in the form below (sub-tab: "Page 3: Analysis, Format, & Notification"). A video illustrating the process of retrieving projections data is available [here](#).

Enter specifications on three page form below. Then press 'Submit Request'.

Form Status (completed == green)

Submit Request Size (%; 100 max):

Page 1: Temporal & Spatial Extent Page 2: Products, Variables, Projections Page 3: Analysis, Format, & Notification

Step 1.1: Time Step and Period

Time Step Monthly Daily

Period Jan 1950 through Jan 1950

Step 1.2: Domain

NLDAS Basin Specific [View All](#)

Step 1.3: Spatial extent selection method

Tributary Area
38.038862 -122.285747
Map Outlet Location

Rectangular Area
Latitude 39.0625 to 40.0625 N
Longitude -94.0625 to -93.0625 E

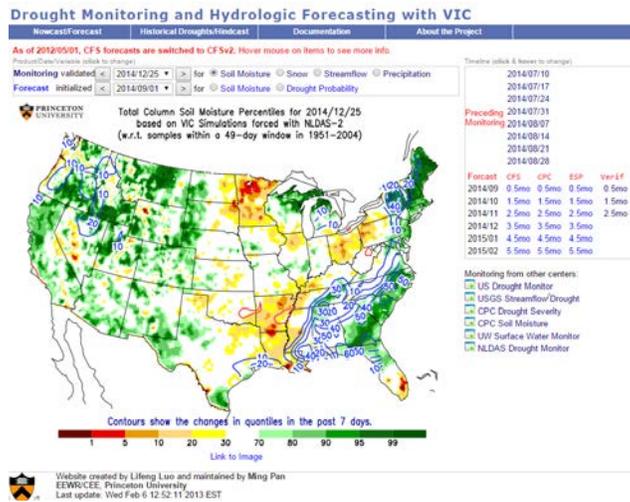
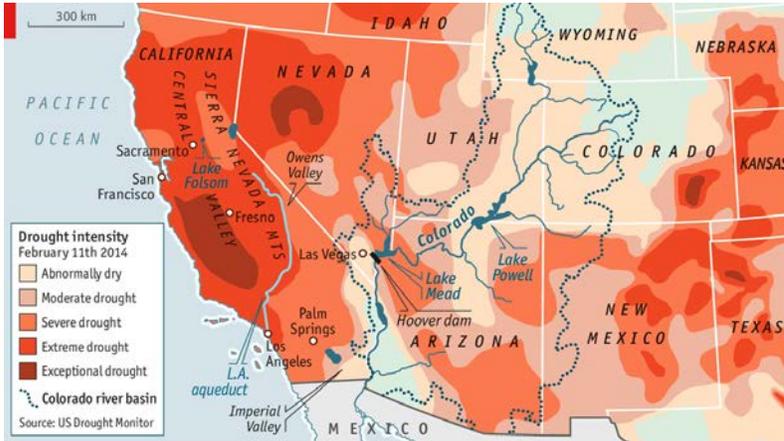
Location
39.723225 -104.973267
Map Location

3. Upper Basin teacups

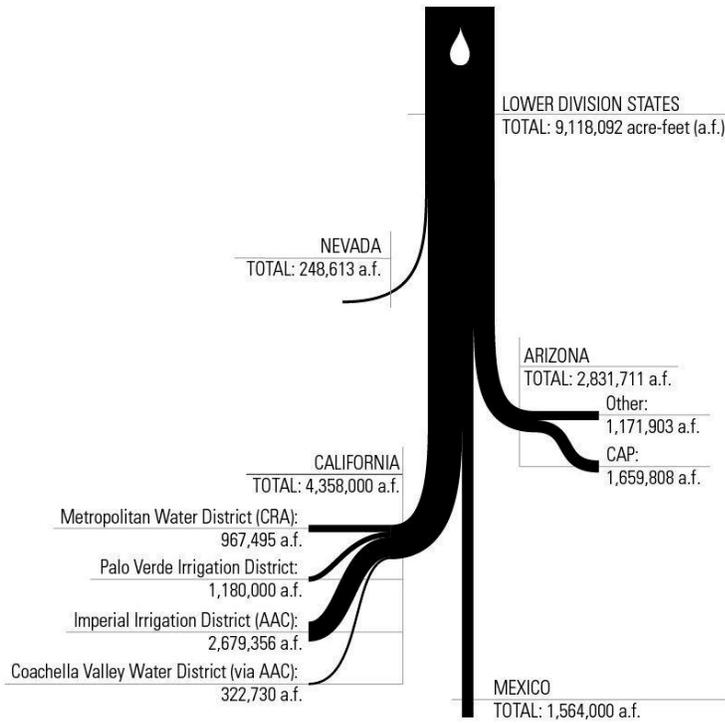
– for lower basin too? (<http://www.usbr.gov/uc/water/basin/colorado.png>)

(http://cdn.static-economist.com/sites/default/files/imagecache/original-size/images/print-edition/20140222_USM904.png)

- There are several drought coverages available including GRACE, NLDAS, Drought Monitor
- Drought Monitoring and Hydrologic Forecasting with VIC
(<http://hydrology.princeton.edu/forecast/current.php>)



6. Lower Colorado River water use (http://www.sankey-diagrams.com/wp-content/gallery/o_gallery_204/water-colorado-sankey-diagram.jpg)

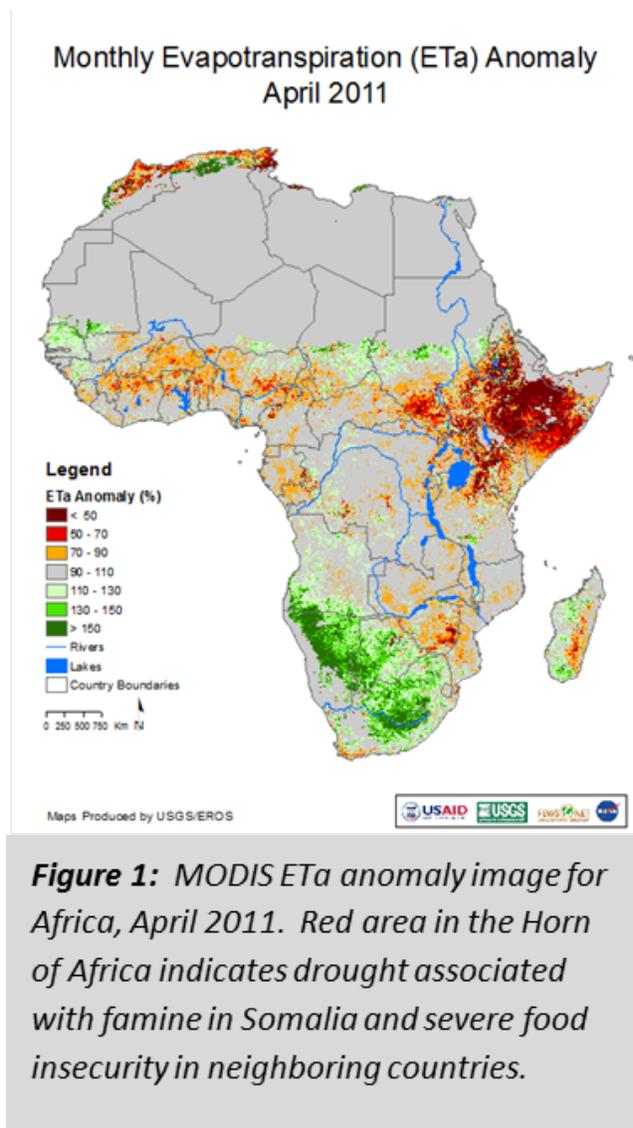


Numbers from the Colorado River Accounting and Water Use Report 2009.

7. Impacts to permitted facilities in low-flow/drought conditions
8. Water quality scenario for low flow/drought conditions
9. Water portal – for providing flood warnings (POC: Charles Kovatch, EPA)

10. Reductions in evapotranspiration

(<https://www.agriskmanagementforum.org/sites/agsriskmanagementforum.org/files/Verdin-Eilerts%20Image%201.png>)

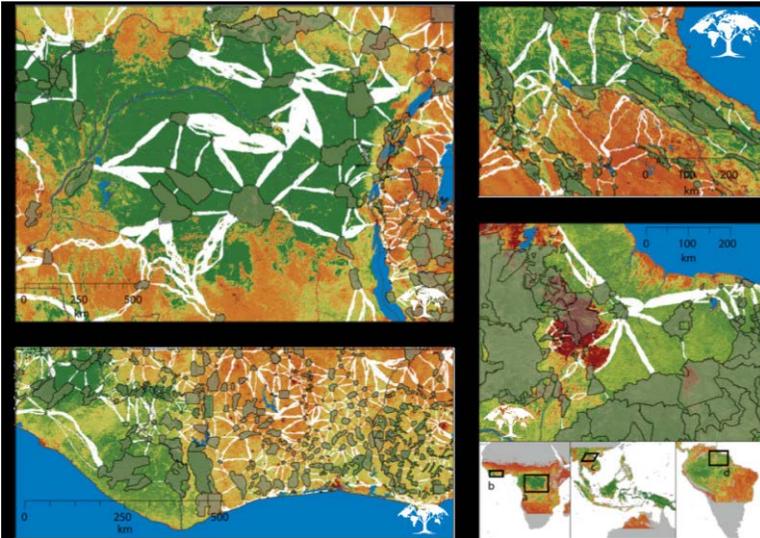


11. Drought impacts to ag production - including NASA's Fallowed Area Mapping for Drought Impact Reporting and Decision Making (<https://c3.nasa.gov/water/projects/5/>)

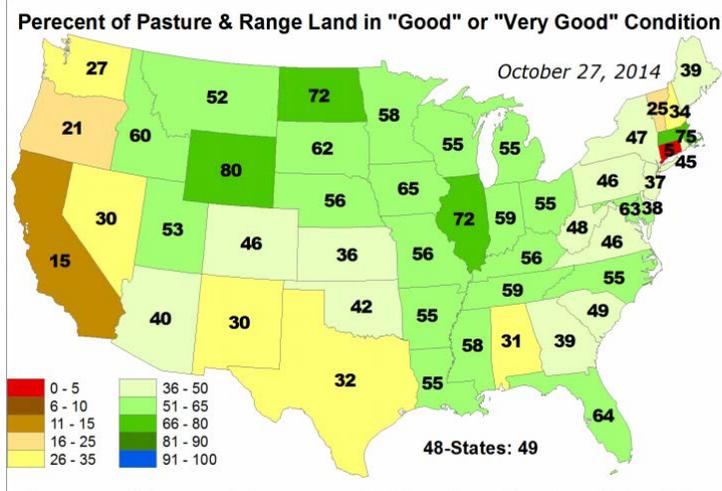


- 12. Soil moisture model to indicate acute dryness
- 13. Habitat Corridor changes resulting from drought

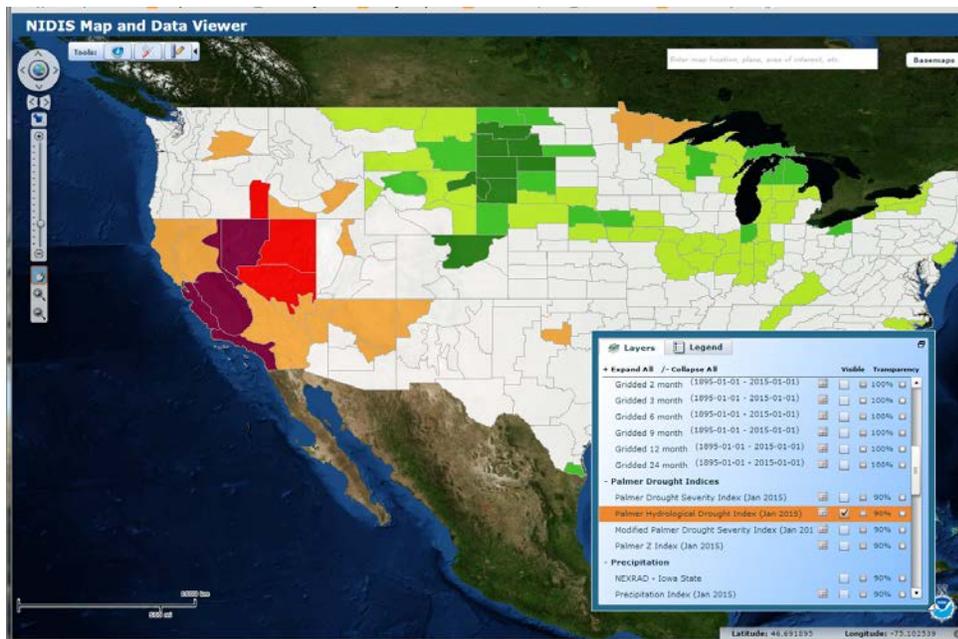
(<http://images.sciencedaily.com/2014/02/140203155203-large.jpg>)



14. US Drought Portal (<http://www.drought.gov/drought/>)

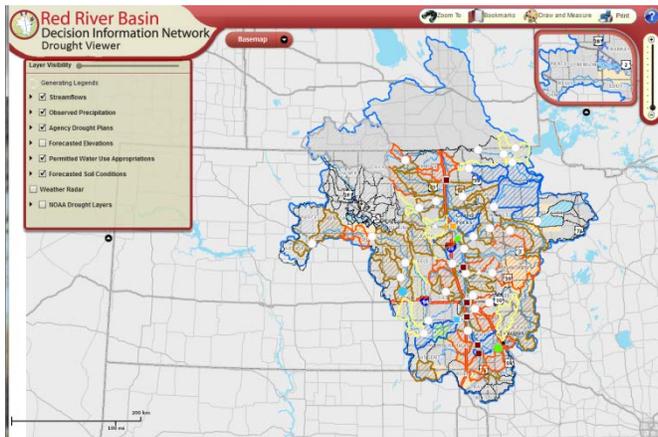


15. NIDIS Map Viewer - drought indices, other overlays



Drought Decision Support System (Long-term deliverable)

1. Red River Basin DSS (<http://www.rrbdin.org/rddss>)



2. Upper Colorado River Basin Drought Monitor (<http://www.drought.gov/drought/regional-programs/ucrb/ucrb-home>)

U.S. Drought Portal
www.drought.gov

What is NIDIS? Products Tools Regional Programs Resources

Upper Colorado River Basin Region

U.S. Drought Monitor
Upper Colorado Watershed

February 17, 2015
(Released Thursday, Feb. 19, 2015)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

| | None | D1 | D2 | D3 | D4 |
|-------------------------|-------|-------|-------|-------|------|
| Current | 10.14 | 8.91 | 10.75 | 14.04 | 4.14 |
| Last Week | 11.14 | 10.30 | 12.32 | 14.54 | 4.14 |
| 3 Months Ago | 12.47 | 12.13 | 12.24 | 10.74 | 3.42 |
| Start of Current Season | 10.43 | 12.17 | 12.24 | 14.02 | 4.14 |
| Normal | 10.35 | 12.04 | 12.04 | 9.21 | 6.95 |
| One Year Ago | 6.95 | 10.86 | 11.14 | 7.93 | 5.90 |

Intensity:
 D0 Abnormally Dry
 D1 Moderate Drought
 D2 Severe Drought
 D3 Extreme Drought
 D4 Exceptional Drought

The drought severity is based on the degree of soil moisture deficit. Soil moisture may vary. See accompanying text summary for more information.

Author:
Richard Higgins
NCEM/NOAA

USDA NCEM/NOAA
<http://droughtmonitor.unl.edu/>

Drought Monitor Time Series

%Area for West

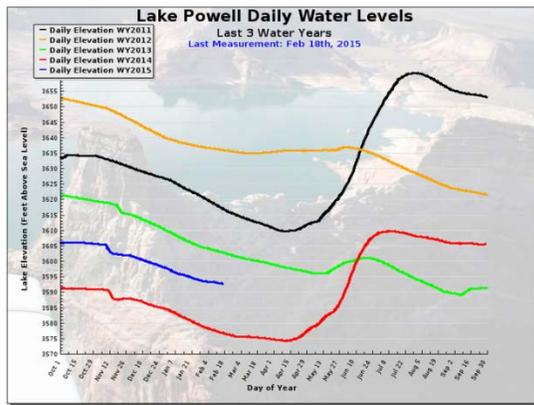
2014 05 10 2014 11 06
Larger View

Upper Colorado River Basin

Upper Colorado River Basin
Four Corners Tribal Lands

Impacts

Impacts



UCRB Announcements

- In Colorado, spruce bug epidemic eclipses mountain pine beetle blight
Thu, Feb 12 2015, 9:00am
- WWII-era bomber beneath Lake Mead
Fri, Feb 6 2015, 10:00am
- With future uncertain, Colorado shields its water
Tue, Dec 9 2014, 4:00pm
- Colorado River Basin faces dramatic shortfall, federal study says
Mon, Dec 17 2012 (All day)
- Upper Colorado Drought Assessment Webinars - bi-weekly
Tue, Oct 16 2012, 12:00pm to 12:30pm

Forecast

Significant River Flood Outlook

Colorado Basin River Forecast Center
Valid February 19 - February 24, 2015

Significant River Flooding:
 None Expected
 Possible
 Likely
 Occurring/imminent
 Out of Area

Note: Flash Flooding or river over flooding will NOT be included in this outlook.

Impacts:
 Roads adversely affected
 Residential, commercial, industrial and/or agricultural areas affected.
 May require evacuation of people and livestock.

Prepared 07:30 02-19-2015 MST
 NOAA, National Weather Service
 Colorado Basin River Forecast Center
 Salt Lake City, Utah
www.cbrfc.noaa.gov

Related Information

- Colorado River Indicators and Triggers
- State of Colorado Drought Response Plan
- Bureau of Rec-SECUREWater Report: Managing Water in the West

Summary of Current NASA Activities on the lower Colorado River

NLDAS data (GSFC & NOAA) providing multi-model drought monitoring for North America (see <http://ldas.gsfc.nasa.gov>).

Other NASA data sets and/or activities (see <https://c3.nasa.gov/water/>):

- Colorado River Basin Authority Snow Project with Tom Painter/NASA JPL
- Moderate Resolution GRACE Data on Drought Monitoring and TWS with Matt Rodell/NASA GSFC
- Quick Drought Response with the US Drought Monitor with Brian Wardlow/NDMC and Mark Svoboda/NDMC. See <https://c3.nasa.gov/water/projects/16/>. Also using QuickDri with MODIS NDVI and Verdin/USGC. Also see the numerous products available from the US Drought Monitor site (see <http://droughtmonitor.unl.edu/>).
- Multi-Scale ET and Drought from Chris Hain and Martha Anderson.

Other linked projects include:

- California drought monitoring and Satellite Irrigation Management Support (SIMS) water loss with the California DWR led by Forrest Melton/NASA Ames (see <https://c3.nasa.gov/water/projects/1/>);
- California hydrologic forecasting led by S. Margulis/UCLA (see <https://c3.nasa.gov/water/projects/?page=2&sort=-created>);
- mountain snowpack estimation using satellites, led by J. Dozier/UCSB (see <https://c3.nasa.gov/water/projects/14/>);
- global soil moisture estimates for food production by Bolten/NASA (see <https://c3.nasa.gov/water/projects/>); and
- monitoring of global agriculture drought by Becker-Reshaf/U-Md, see <https://c3.nasa.gov/water/projects/?page=2&sort=-created>); and
- continental US drought and hydrologic forecast monitor at Princeton University led by Eric Wood (see <http://hydrology.princeton.edu/forecast/current.php>).