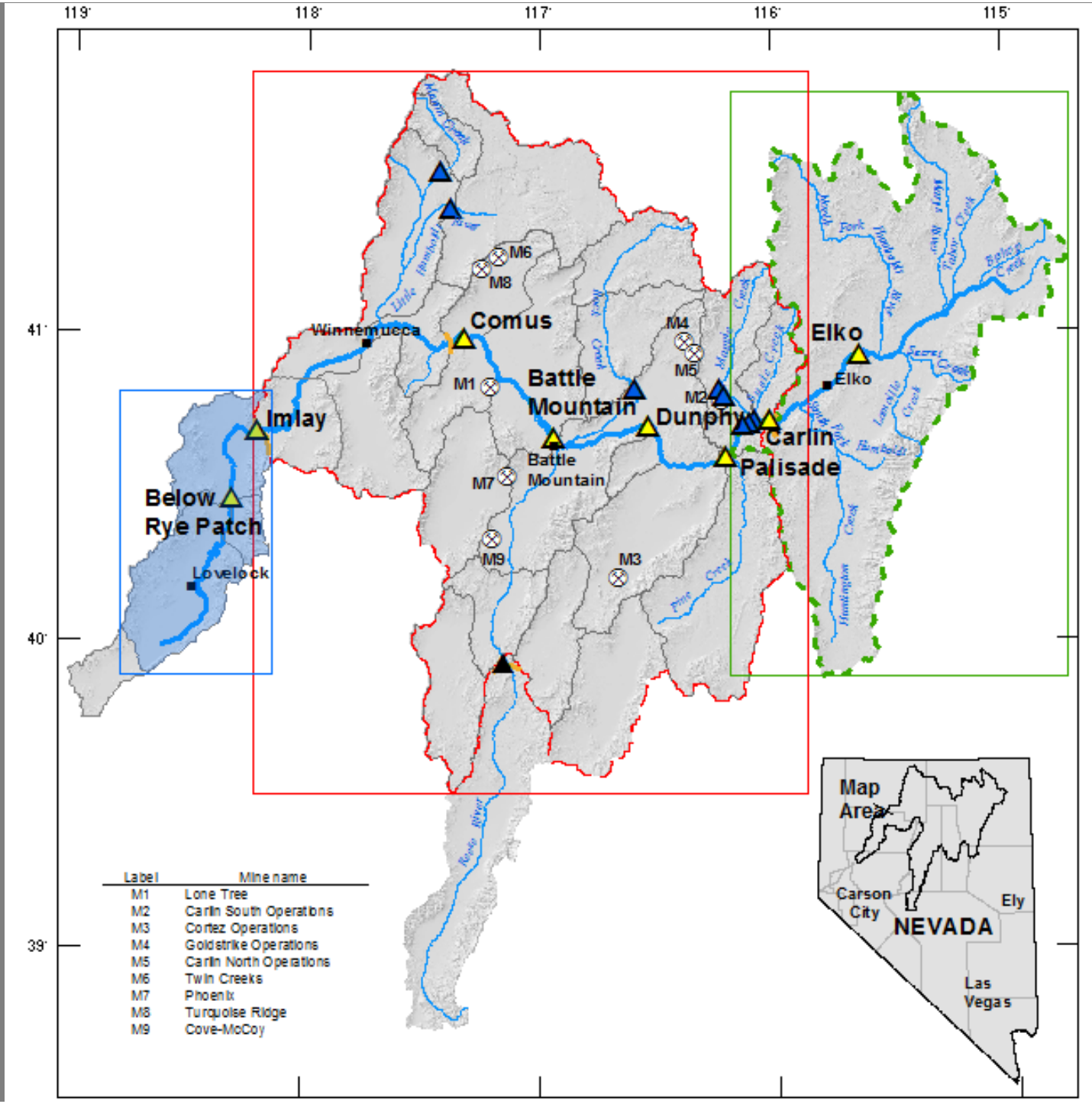
Division of
WATER RESOURCES

Conjunctive Management of the Waters of the Humboldt River Basin

Effect of Regulations On Small Business

Rick Felling
Deputy Administrator

DEPARTMENT OF
CONSERVATION &
NATURAL RESOURCES

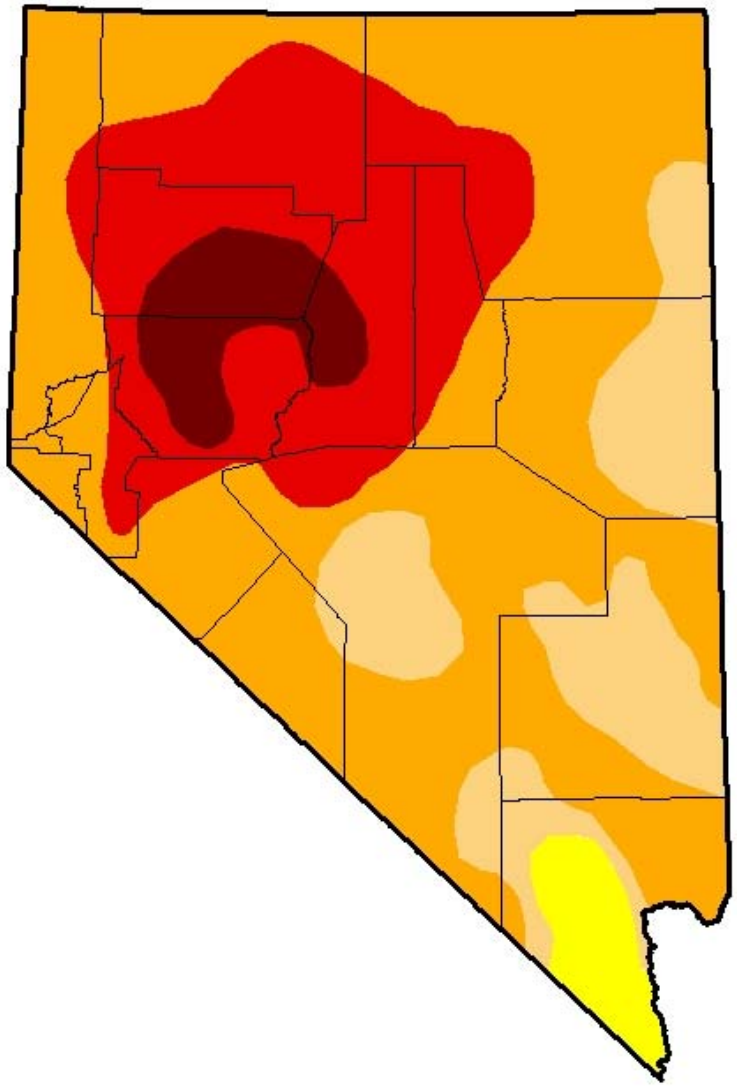


Brief History

- Humboldt River adjudication finalized in 1930's
- 285,000 acres irrigated under the decree, rights total ~700,000 af
- Groundwater development began in 1950's
- Current groundwater appropriations of 750,000 af
- Annual pumping of ~380,000 af
  - 73,000 af above Palisade
  - 308,000 af below Palisade
- Groundwater pumping depletions of river flow supported by existing studies
- All Decree rights senior to all groundwater rights
- All western states now dealing with this issue

U.S. Drought Monitor

Nevada



January 7, 2014

(Released Thursday, Jan. 9, 2014)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.81	80.30	28.55	5.37
Last Week *12/31/2013*	0.39	99.61	96.81	77.66	28.55	5.37
3 Months Ago *10/8/2013*	0.43	99.57	96.79	79.11	28.55	5.37
Start of Calendar Year *12/31/2013*	0.39	99.61	96.81	77.66	28.55	5.37
Start of Water Year *10/1/2013*	0.39	99.61	96.79	79.11	28.55	5.37
One Year Ago *1/8/2013*	0.10	99.90	93.71	55.93	9.23	0.00

Intensity:

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

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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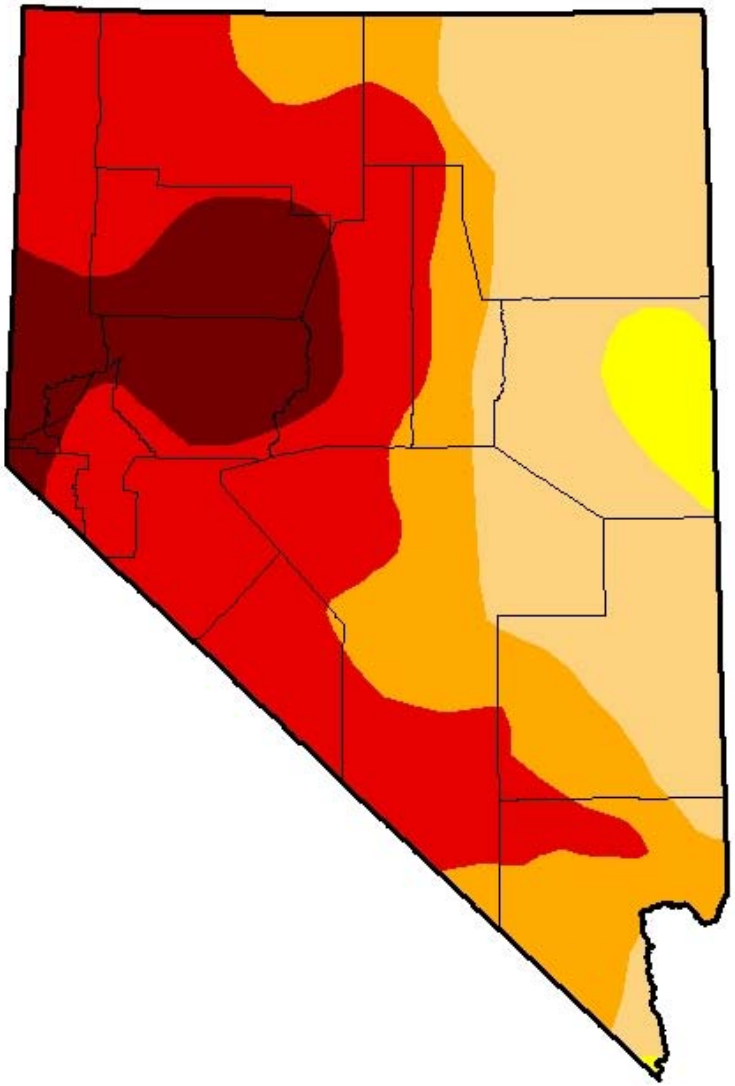
National Drought Mitigation Center

http://droughtmonitor.unl.edu/

U.S. Drought Monitor

Nevada



January 6, 2015

(Released Thursday, Jan. 8, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.98	68.25	48.38	11.89
Last Week 12/30/2014	0.00	100.00	96.98	68.25	48.38	11.89
3 Months Ago 10/7/2014	0.00	100.00	97.07	69.89	48.38	11.89
Start of Calendar Year 12/30/2014	0.00	100.00	96.98	68.25	48.38	11.89
Start of Water Year 9/30/2014	0.00	100.00	97.04	69.89	48.38	11.89
One Year Ago 1/7/2014	0.00	100.00	96.81	80.30	28.55	5.37

Intensity:

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Author:

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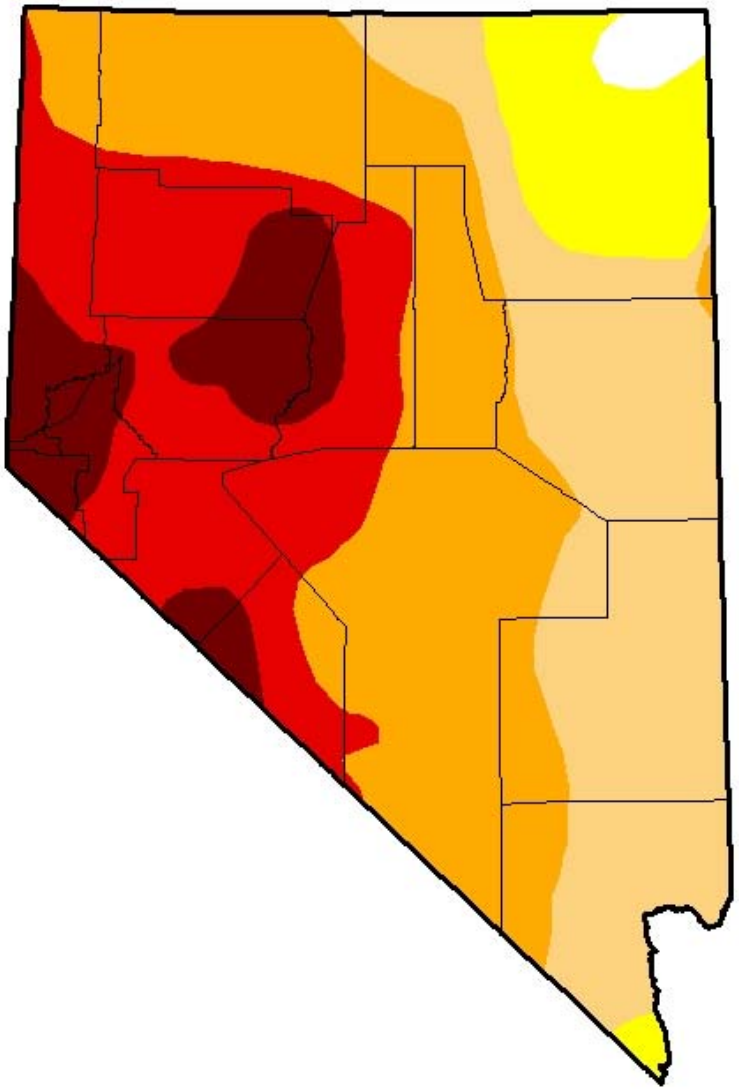
U.S. Drought Monitor

Nevada



January 5, 2016

(Released Thursday, Jan. 7, 2016)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	1.34	98.66	90.76	64.40	31.40	9.35
Last Week *12/29/2015*	1.34	98.66	93.08	65.49	31.74	9.35
3 Months Ago *10/6/2015*	0.01	99.99	94.76	75.92	37.52	15.93
Start of Calendar Year *12/29/2015*	1.34	98.66	93.08	65.49	31.74	9.35
Start of Water Year *9/29/2015*	0.00	100.00	94.76	76.08	37.52	15.93
One Year Ago *1/6/2015*	0.00	100.00	96.98	68.25	48.38	11.89

Intensity:

- D0 Abnormally Dry
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Author:
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http://droughtmonitor.unl.edu/

PCWCD Writ Petition

- 40,000-acre PCWCD holds 140,000 af Decree rights
- Received little to no water from 2013 to 2015
- Argue that groundwater pumping is depleting Humboldt River and conflicting with their senior water rights
- PCWCD filed writ petition in District Court August 2015
  - Curtailment in overappropriated basins
  - Eliminate cones of depression by groundwater pumping causing interference with flows of the Humboldt River
  - Treat mine water rights as permanent; consider dewatering effects and pit lakes.

Writ Petition
Effects on Small Business

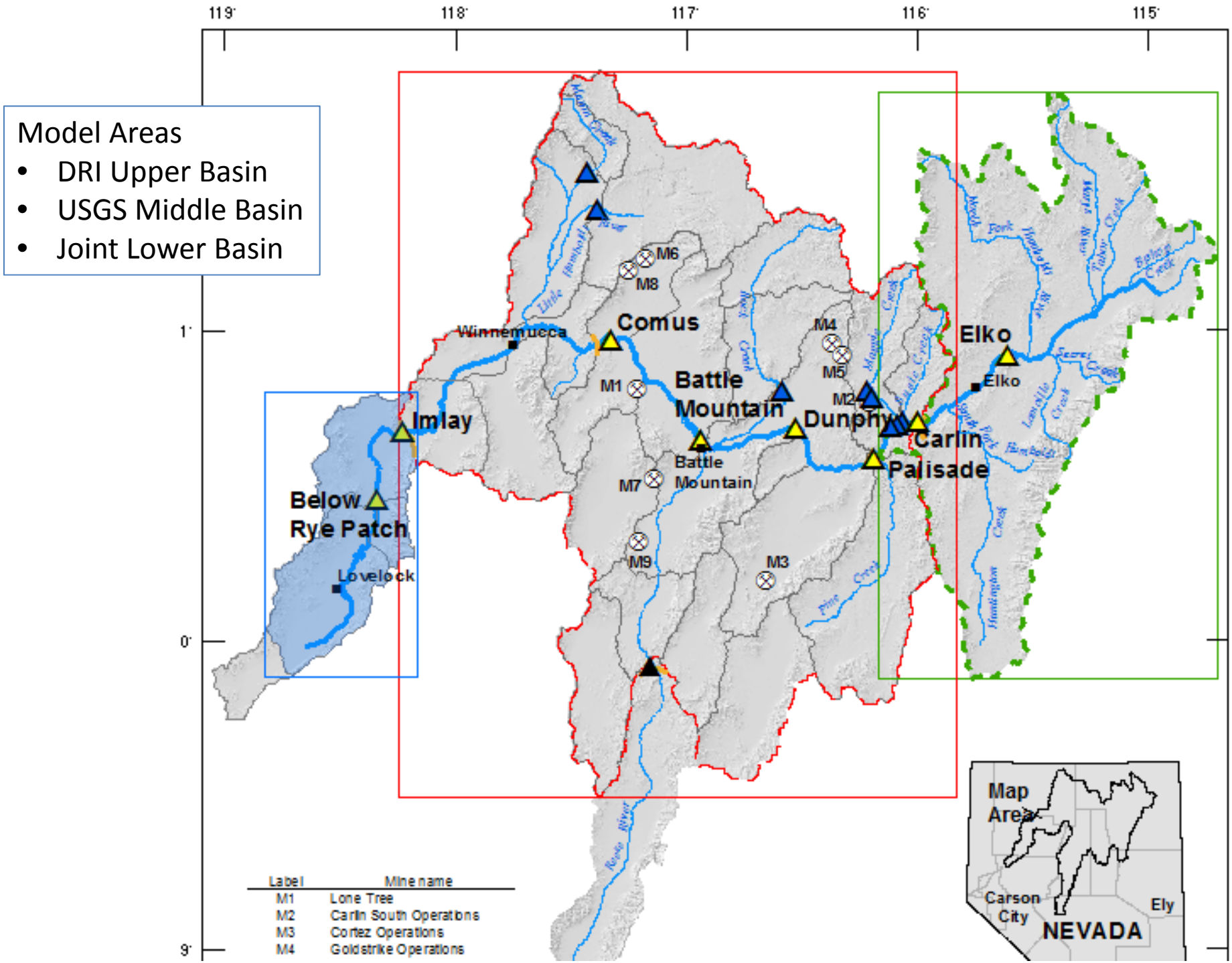
- Curtail to perennial yield all overappropriated basins, includes Dixie Creek-Tenmile, Elko Segment, Lower Reese River Valley, Clovers Area, Paradise Valley, Winnemucca Segment, Grass Valley, Oreana Subarea, Lovelock Valley and others
- Eliminate pumping by wells that capture any Humboldt River flow
  - Includes water rights regardless of priority
  - Municipal providers
  - Mines, farms, ranches, domestic wells
- Catastrophic impact to Humboldt River Basin

State Engineer's Conjunctive Management Regulations as an Alternative to Curtailment

- NRS 533.030(1) and 534.020(1) – all water appropriated subject to existing rights
- Maximize beneficial use of the limited water resource
- Allow for continued, uninterrupted groundwater use
- Provide mitigation to senior Decree rights for conflicts
- Involve stakeholders throughout process

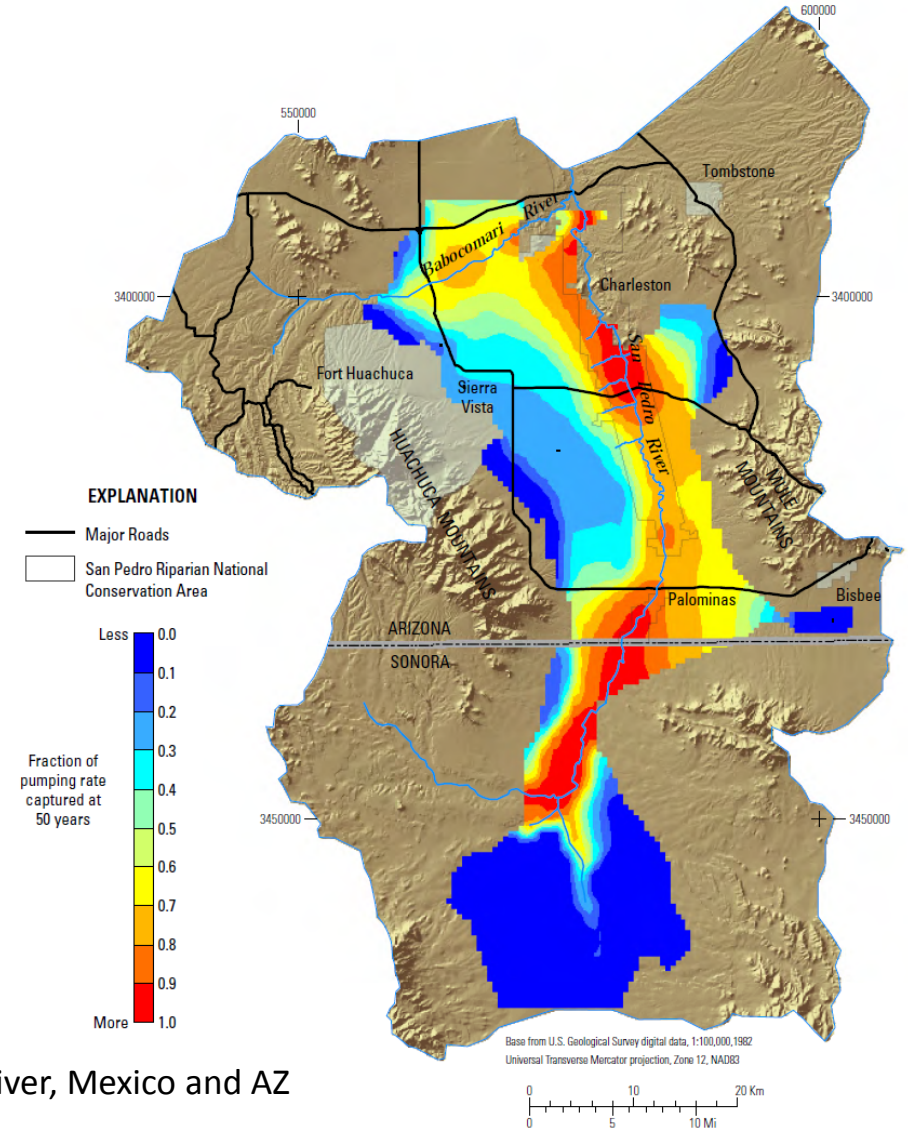
Water Model needed to determine extent of conflict

- Ongoing studies by USGS and Desert Research Institute
- Use existing models and geology data
- Simulate the natural system
- Calibrate to historic conditions, flow records, water levels and pumpage
- Quantify how much surface water is actually captured by groundwater pumping


Model Areas
• DRI Upper Basin
• USGS Middle Basin
• Joint Lower Basin
119°
118°
117°
116°
115°
41°
40°
39°
Winnemucca
Comus
Imlay
Battle Mountain
Dunphy
Carlin
Palisade
Elko
Below Rye Patch
Lovelock
M1
M2
M3
M4
M5
M6
M7
M8
M9
Label Mine name
M1 Lone Tree
M2 Carlin South Operations
M3 Cortez Operations
M4 Goldstrike Operations
Map Area
Carson City
Ely
NEVADA

Develop capture maps

- Evaluate stream depletion as result of pumping
- Publicly available models
- Interactive capture maps
- Peer-reviewed professional publications



Ref: USGS Circular 1376; San Pedro River, Mexico and AZ

Statutory Requirements to Implement Regulations

- NRS 233B - NV Administrative Procedures Act
- Determine if regulation likely to impose an economic burden on small business, and, if so
- Prepare small business impact statement
- Public Workshops
- Hearings

Humboldt River Basin Conjunctive Management Regulations

Approach:

- Allow for replacement of injurious depletions – to the extent that surface water is available
  - No reservoirs exist, replacement must be from direct diversions while in priority
  - Groundwater cannot be used for replacement
- If replacement water is not made available, then groundwater users are required to participate in a basin-wide mitigation plan
  - Includes all groundwater use that depletes river
  - Mitigation by financial compensation
  - Mitigation fund compensates surface water users based on conflict
  - Need independent value of water in upper, middle and lower basin
  - Determine conflict – based on pre-pumping estimate of supply, scheduled deliveries minus actual deliveries

Humboldt River Basin Conjunctive Management Regulations

Problems and issues:

- Lower basin water users may want water, not money
  - For surface water flows to return to normal flow would require decades with no pumping
  - Population centers, major mines, agriculture and businesses are close to river and would be curtailed
- Upper basin senior groundwater rights are often supplemental to surface, and in high capture zones
- Groundwater assessment fees may prove too costly for many users
- Domestic wells
- Forfeiture issue

Advantage of Proposed Regulations vs Writ Petition

- Addresses same groundwater rights as writ petition
- Regulations allow for continued, uninterrupted diversions
- Senior senior surface water rights compensated to the extent of conflict
- Use 10-year average conflict for surety, planning
- Better outcome for both surface water and groundwater users than curtailment
- Regulations will impose a burden on small business, but much less than potential curtailment


Questions?