

# Preliminary Draft Regulations for the Conjunctive Management of the Waters of the Humboldt River Basin

## Legal Authority

Regulations promulgated under the authority of NRS 532.120, 533.024(1)(e), 533.030(1), 533.085(1) and 534.020(1).

## General Provisions

The purpose of these regulations is to:

1. Establish rules for a Mitigation Program for the Humboldt River and its tributaries as identified in the Humboldt River Decree, and hydrologically connected groundwater.
2. Establish rules for mitigation of conflicts through water replacement or other mitigation measures.
3. Maximize beneficial use of the water resources of the Humboldt River Basin.
4. Identify those water rights that are subject to or exempt from these regulations.

## Definitions

1. **“Water replacement” defined.** “Water replacement” means a type of mitigation that replaces injurious depletions to surface water sources caused by groundwater diversions.
2. **“Capture” defined.** “Capture” means a depletion of surface water caused by groundwater diversions.
3. **“Conflict” defined.** “Conflict” means the inability of a holder of a surface water right to the Humboldt River or one of its tributaries to fully exercise that right due to diversions of groundwater by junior-priority water rights.
4. **“Conjunctive management” defined.** “Conjunctive management” means to jointly manage the appropriation, use and administration of all waters, regardless of the source.
5. **“Groundwater” defined.** “Groundwater” means water below the surface of the land that is in a zone of saturation.
6. **“Humboldt River Basin” defined.** “Humboldt River Basin” means the surface water drainage basin of the Humboldt River identified as the Humboldt River Basin – Region 4, in: Water for Nevada, 1971, State of Nevada Water Planning Report 3.

7. **“Humboldt River Decree” defined.** “Humboldt River Decree means the Humboldt River Adjudication 1923 - 1938, including The Bartlett Decree, the Intervening Orders, the Edwards Decree, the Later Orders, the Alternative Writ of Prohibition in Carpenter V. District Court, and Decision of the Supreme Court. Compiled by Mashburn, G., and Mathews, W.T., State of Nevada publication, 1943.
8. **“Injurious depletion” defined.** “Injurious depletion” means a reduction in surface water flow due to a groundwater diversion that results in a conflict to a senior surface water right.
9. **“Mitigation plan” defined.** “Mitigation plan” identifies actions to be taken that will prevent, replace, or compensate senior surface water right holders for injurious depletions caused by diversions by junior groundwater right holders.
10. **“Surface water” defined.** “Surface water” means rivers, streams, springs and reservoirs.

### **Affected parties**

1. These rules and definitions apply only to the conjunctive management of water of the Humboldt River Decree, and to hydrologically connected groundwater, and includes:
  - a. Any holder of a water right under the Humboldt River Decree.
  - b. Any groundwater right holder whose pumping would capture one percent or more of that water right from any of the waters identified in the Humboldt River Decree after fifty years of diversion is considered to be hydrologically connected, and is subject to these regulations.
  - c. Responsible parties for mining sites with mine pit lakes that capture through evaporation one percent or more of that evaporative loss from any of the waters identified in the Humboldt River Decree after fifty years, whether the pit lake evaporation is water righted or exempted.
  - d. Holders of storage rights in Rye Patch Reservoir.
2. Owners of domestic wells, as defined by NRS 534.013 and 534.180, are exempt from these regulations.

### **Determination of Capture**

1. Capture amount for a groundwater diversion is calculated as the product of percent capture and the diversion amount. The calculation of percent capture is to be initially determined using U.S. Geological Survey and Desert Research Institute Humboldt River Basin groundwater flow models specifically constructed for determination of capture, and thereafter by any suitable study found acceptable by the State Engineer.
2. Individual capture amount is determined to be:

- a. The instantaneous percentage of capture that would occur after fifty years of continuous diversion, multiplied by the pumpage in acre-feet annually.
  - b. If a groundwater diversion is not metered, the capture amount will be calculated as the product of the instantaneous percentage of capture that would occur after fifty years of continuous diversion and the duty of the water right.
  - c. For mine pit lakes, the groundwater diversion is the annual evaporation from the pit lake. The capture amount will be calculated as the instantaneous percentage of capture that would occur fifty years after the pit lake has started filling, multiplied by the evaporation in acre-feet annually.
3. The sum of each of the groundwater capture amounts shall equal the total computed capture for the Humboldt River Basin.

**Determination of conflict**

1. For each surface water right subject to these regulations, the Office of State Engineer shall determine each year the amount of conflict, if any, measured in acre-feet.
2. Conflict to a surface water right is calculated as the difference between the actual delivery and the scheduled delivery after accounting for capture due to groundwater diversions.
3. A determination of conflict includes considerations of:
  - a. The priority date of the surface water right.
  - b. Whether a suitable flow-measuring device exists.
  - c. The amount of water scheduled to be delivered based on priority and approved delivery tables, and
  - d. The actual amount of water delivered.
4. Conflicts to a water right downstream of the Palisade gage will account for capture by upper basin pumpage by adding upper basin capture to the measured Humboldt River flow at the Palisade gage.
5. The sum of the conflict amounts of each of the individual surface water rights is the total surface water conflict for the Humboldt River Basin.
6. If actual delivery is equal to or greater than scheduled delivery, then no conflict has occurred.

**Determination of injurious depletion**

1. For each groundwater right subject to these regulations, the Office of the State Engineer will determine the amount of injurious depletion measured in acre-feet.
  - a. Injurious depletion amount is to be calculated as follows :

1. Each water right's injurious depletion amount is equal to its capture multiplied by the ratio of total basin conflict to total basin capture.
  2. The sum of the injurious depletion amounts is equal to the sum of the conflict amounts.
- b. An injurious depletion mitigated by water replacement will reduce the total remaining conflict in the basin by an equal amount.

### **Basin-wide Mitigation Program**

1. A Mitigation Program is hereby established for the Humboldt River Basin to mitigate, through financial compensation, conflicts to surface water rights caused by diversions by junior-priority groundwater rights. The Mitigation Program shall be administered by the Office of the State Engineer
2. Participation in the Mitigation Program shall be mandatory for all groundwater users determined to be subject to these regulations that have not otherwise fully mitigated their injurious depletions.
3. All surface water rights holders of the Humboldt River Decree are eligible to receive mitigation pursuant to these regulations.
4. The holder of the water right issued by the State of Nevada for Rye Patch Reservoir is eligible to receive mitigation pursuant to these regulations.
5. Administrative expenses of the program shall be funded through existing groundwater assessments (NRS 534.040) and surface water assessments (NRS 533.285 and 533.290) from basins located within the Humboldt River Basin.

### **Funding**

1. The Mitigation Program shall be funded by groundwater rights holders or responsible parties for mine pit lake evaporation through a special mitigation assessment levied annually by the Office of the State Engineer.
2. The mitigation assessment levied against groundwater users shall be based upon their injurious depletions. The total of the mitigation assessments levied annually shall be sufficient to compensate all surface water users for their conflicts.
3. A mitigation assessment account shall be established within the Office of the State Engineer. All mitigation assessments paid by groundwater users shall be deposited into the account, which shall be used solely for mitigation of conflicts to surface water rights holders.
4. The program will utilize ten-year averages of conflict for assessment purposes. Ten-year average conflicts will be determined by January 31.
5. The ten-year average conflict will be recalculated every five years.

6. Assessments to groundwater users will be based on the prior calendar year pumping. Groundwater users who fail to provide pumpage information pursuant to State Engineer Orders No. 1251, 1253, 1254A, 1255, 1256, 1257, 1258, 1259, 1260, and 1261 shall have their assessment calculated using their water right duty.
7. Assessments will be computed and levied by the State Engineer by February 28<sup>th</sup> for the previous calendar year.

### **Compensation**

1. Funds will be disbursed by July 1 annually to all eligible surface water right holders based on their ten-year average conflict.
2. The amount of compensation for each acre-foot of conflict will be determined by an agricultural economist or other expert retained by the Office of the State Engineer, and will be adjusted annually by an appropriate cost-of-production index.

### **Other mitigation plans**

1. A groundwater user subject to these regulations may file a water replacement plan or other type of mitigation plan with the Office of the State Engineer to mitigate their injurious depletions in lieu of participation in the basin-wide Mitigation Program.
2. All water replacement plans must be accompanied by temporary or permanent applications to change the point of diversion, place and/or manner of use of the replacement water right.
3. Mitigation plans must be submitted to the State Engineer by January 15<sup>th</sup> of the year for which the plan is to be effective. The State Engineer will approve or deny the plan by March 15<sup>th</sup>.
4. Any surface water source, or groundwater from outside the 1% - fifty-year capture zone, may be used as replacement water.
5. For replacement water made available in locations other than the location of the injurious depletion, normal flow losses must be considered in the change application.
6. Injurious depletions will be calculated as the ten-year average based on historical pumpage.
7. Any person may request the State Engineer to consider other means to mitigate an injurious depletion.
8. A groundwater right holder's failure to participate in the Mitigation Program or have an approved mitigation plan is determined to be a violation of NRS 533.030(1), 533.085, or 534.020(1). The water right holder is prohibited from diverting any groundwater until the injurious depletion is mitigated and may be subject to fines and penalties pursuant to NRS 533.481 and 533.482.

## Mitigation Program Example

**Farmer A** has a pivot 2 miles from the Humboldt River that has a water right for 500 acre-feet (af). Meter readings show that his average pumpage for the past ten years is 400 af/yr. The fifty-year capture determined by the groundwater model at that location is 60%.

Capture at the site is  $400 \text{ af} \times 60\% = 240 \text{ af}$ .

In this example, we will assume that average capture by all groundwater use in Humboldt River basin over the same ten-year period is 100,000 af/yr.

Using the groundwater flow model, the system loss at Palisade due to capture by upper basin groundwater pumping is then added to the gage flow at Palisade to establish a new (larger) baseline for determining priorities below Palisade. In this example, we will assume that flows at the Palisade gage are 10 cfs less than they would have been in absence of groundwater pumping. Ten (10) cfs is added to the measured Palisade gage flow, and all downstream deliveries are now based on this revised flow.

Scheduled delivery for each right in the entire basin is compared to actual delivery and the differences are summed. This summed amount is the total basin conflict. Basin conflict for the mitigation program is based on a ten-year average. For this example, we will assume the ten-year basin conflict averages 2,000 af/yr.

Farmer A's injurious depletion is calculated as the product of his average capture (240 af/yr) and the ratio of total basin conflict (2,000 af) to total basin capture (100,000 af):  $240 \text{ af} \times 2,000 \text{ af} / 100,000 \text{ af} = 4.8$  acre feet. Farmer A's injurious depletion is 4.8 af for the year, and this amount must be mitigated through a water replacement plan or the Mitigation Program.

If Farmer A does not have water replacement plan approved by the State Engineer, he is assessed under the Mitigation Program for his 4.8 af injurious depletion. If water is valued at \$100/af, Farmer A's assessment for the year would be \$480.

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**Farmer B** has 400 acres classified as harvest. After adding 10 cfs to the measured Palisade gage flow, delivery records show that he has received an average of 50 af/yr less than he should over the ten-year period. He incurred 50 acre-feet of conflict due to junior groundwater pumping.

Farmer B is entitled to compensation under the Mitigation Program. If the value of surface water for that year across the basin was determined to be \$100/acre foot, Farmer B is eligible to receive  $50 \text{ af} \times \$100/\text{af} = \$5,000$ .

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If one of the groundwater users mitigated his injurious depletion by supplying surface water, then the total basin conflict is reduced accordingly. For example:

**Miner C** captures a ten-year average of 100 af/yr due to their combined operations, pit lake evaporation, etc. Their injurious depletion is  $100 \text{ af} \times 2,000 / 100,000 = 2 \text{ af}$ . They own senior decree rights and can provide 2 af over the course of the season by not calling for the water. The State Engineer accepts this approach in a water replacement plan filed by Miner C. Miner C has fully mitigated their injurious depletion and they are done.

For the remainder of the water users, the total remaining conflict amount (and the total remaining injurious depletion amount) is reduced by 2 af to 1,998 af.

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