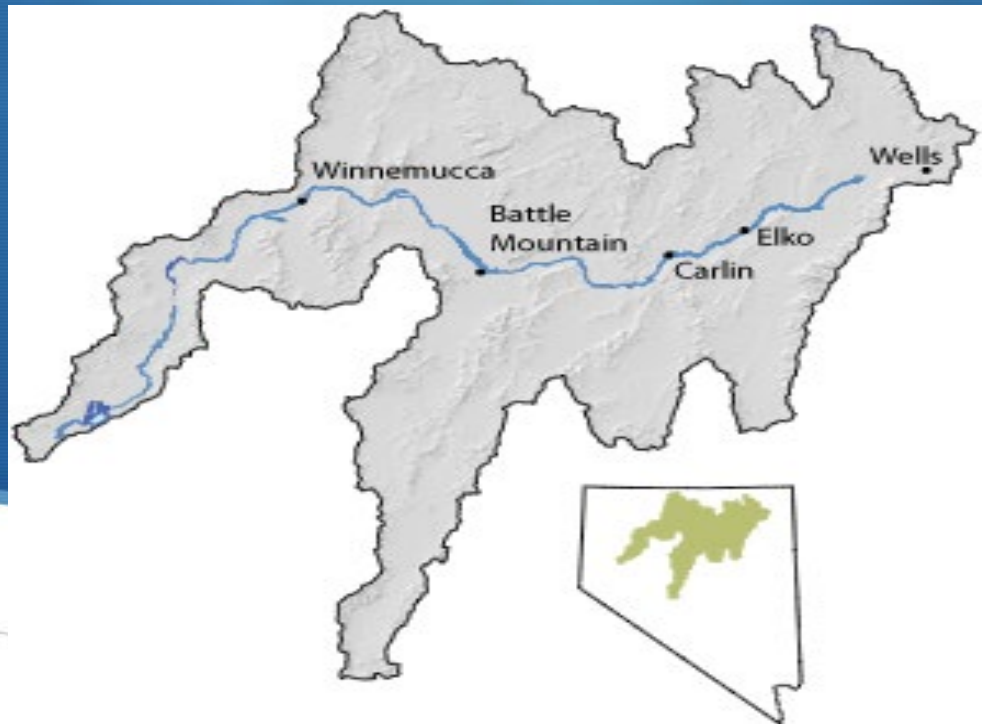


Pershing County Water Conservation District's Water Concerns and Issues within the Humboldt River Basin



Pershing County Water Conservation District (PCWCD)



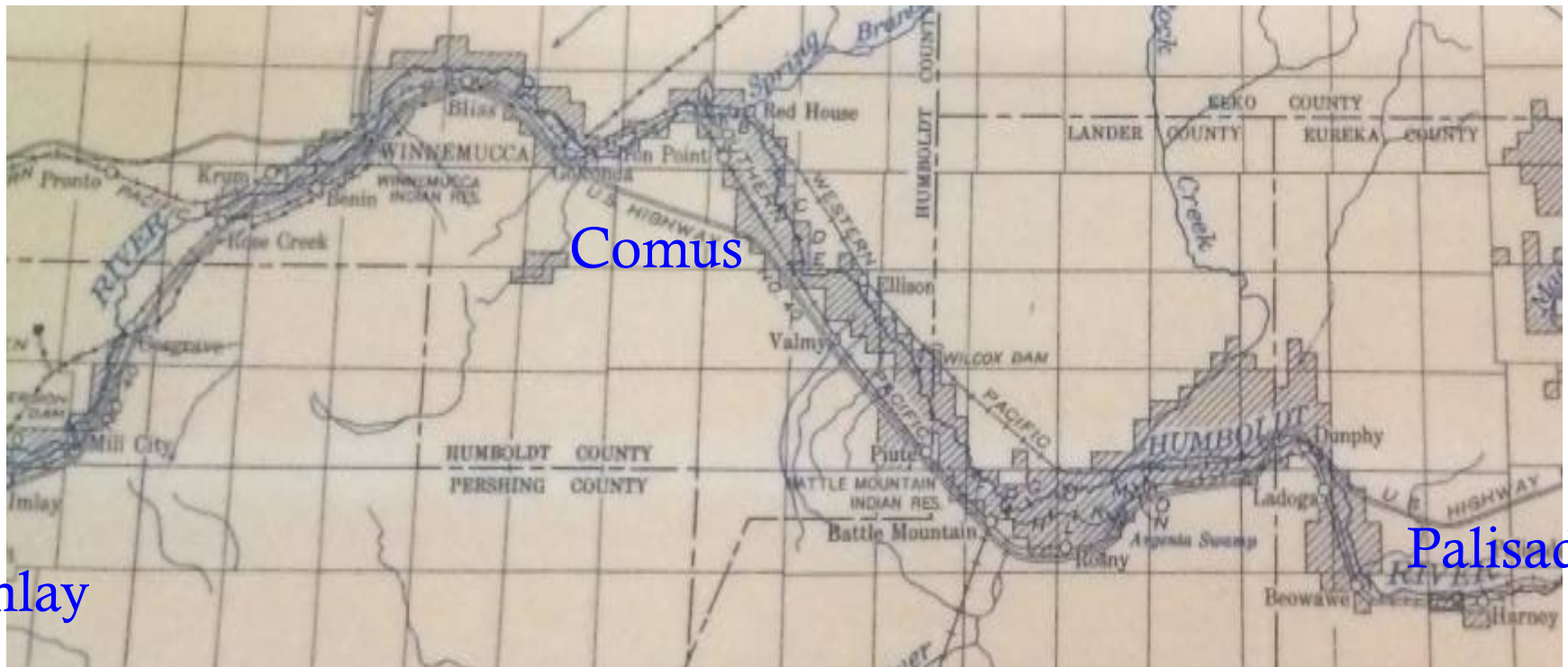
- Located at the Terminus of the Humboldt River.
- Approximately 40,000 acres within the district boundaries.
- Main crops produced include alfalfa, wheat, corn, and alfalfa seed.
- Livestock produced include cattle, goats, and sheep.
- The Humboldt River and precipitation are our only sources of water.
- Ground water quality is too poor for supplemental wells.

Interesting Facts on Humboldt River Drainage

- ◆ Humboldt River Drainage Approximately 15,000 Square Miles in Size.
- ◆ Humboldt River adjudicated by the Bartlett Decree.
- ◆ 698,379 ac/ft required to serve all water rights on the Humboldt River.
- ◆ Approximately 392,208 ac/ft to Serve Priorities above Palisade.
- ◆ Approximately 306,171 ac/ft to serve Priorities below Palisade.
- ◆ PCWCD Water Rights
 - Decreed Rights = 139,728 ac/ft/yr
 - Total Storage Rights = $\frac{164,922 \text{ ac/ft/yr}}{304,650 \text{ ac/ft/yr}}$
- ◆ Average Flow on Humboldt River at Palisade for Past 30 Years = 280,000 ac/ft/yr

PCWCD's Concerns and Issues

- River flows from Palisade to Imlay are decreasing percentage wise



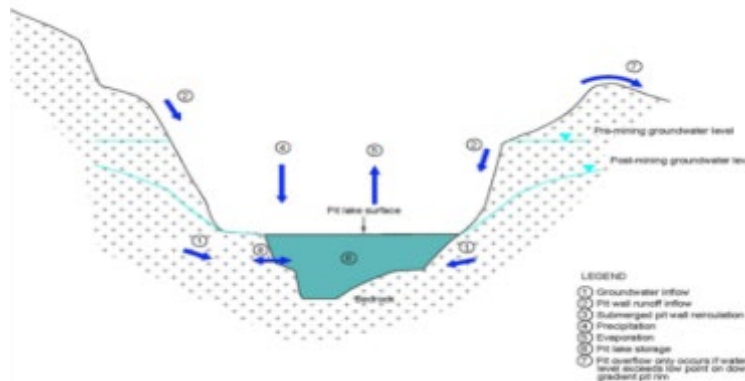
Imlay

Comus

Palisade

Factors Affecting Decreasing River Flow Percentages

- 💧 Drought
- 💧 Ground water pumping for agriculture production
- 💧 Mine Dewatering
- 💧 Basin over appropriation – 23 of 34 Basins in the Humboldt River Basin are over appropriated.



How Drought and Underground pumping is affecting PCWCD Farmers

- ◆ A full allotment for PCWCD constituents is 3.0 ac/ft/ac/yr
- ◆ Summary of PCWCD allotment for last 20 years
 - ◆ 3 years = -0- allotment
 - ◆ 9 years = 50% or less allotment
 - ◆ 3 years = greater than 50% allotment but less than full allotment
 - ◆ 5 years of 100% allotment.

Underground Pumping

- ◆ Long term over pumping of ground water basins is impacting base flows of the Humboldt River.
- ◆ There is approximately 469,900 acre feet of perennial ground water yield in the Humboldt River Basin.
- ◆ There is approximately 757,758 acre feet of committed ground water rights in the Humboldt River Basin.
- ◆ Total over appropriation of 287,858 acre feet of ground water in Humboldt River Basin.

Mine Dewatering

- Creates large Pitt Lakes that affect recharge and return flows to Humboldt River



A few boring statistics about the pit lakes

Over a million acre feet in the lakes.

Some are doing more backfill now, so the eventual amount may be less.

Evaporation lost from pit lakes will be close to the amount of water SNWA requests from Cave Valley.

	Volume When Full	Area When Full (ac)	Approximate Depth When full	Source	Evaporation (af/y)
McCoy Cove	35000	165.4		HCI, 2001	645.2
Goldstrike	360000	710.0	1120	Schaeffer, 2007	2769.0
Gold Quarry	175000	371.0		HCI, 1997	1446.9
Lone Tree	129900	400.2		WMC, 2008	1560.9
Twin Creeks	128558	393.0	852	Geomega, 2007b	1532.7
Crossroad	143220	269.0	870	Geomega, 2007a	1049.1
Cortez Hill	79931	179.0	840	Geomega, 2007a	698.1
Total	1051609				9701.9



Basin Over Appropriation

- ◆ 23 of 34 Basins in Humboldt Drainage are over appropriated.
- ◆ Example:
 - ◆ Winnemucca Basin, Grass Valley Basin and Paradise Valley Basin have a combined Perennial Yield of 64,000 ac/ft/yr.
 - ◆ Total Committed underground rights to these Basins is 171,146 ac/ft/yr
 - ◆ This is the Hardest stretch of the Humboldt River to move water through due to River channel loss.

Steps Currently take by NDWR to Address these Issues and Concerns

- ◆ Awaiting results of long-term study done jointly by USGS and D.R.I. with a completion date of Fall 2022.
- ◆ This model supposedly will determine the amount of surface water being captured by underground pumping.
- ◆ It is estimated that capture due to underground pumping will be approximately 25,000 – 27,000 ac/ft/yr.

PCWCD believes other measures should also be taken.

- ◆ All underground irrigation rights of 4.0 ac/ft/ac should be reduced to 3.0 ac/ft/ac like all Harvest Rights on the Humboldt River.
- ◆ Follow the Prior Appropriation Doctrine “First in time-First in Right”
- ◆ All Surface Rights on the Humboldt River are Senior in Priority to all Underground Rights in Humboldt Drainage.
- ◆ In all Basins that are currently over appropriated, Do Not Allow any new underground applications. This includes Agriculture, Commercial, Mining & Milling and Domestic.
- ◆ Because Nevada is one of the nations fastest growing States population and industry wise, if there is no available water then it must be purchased.
- ◆ Conjunctive Management

Conclusion



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- ✦ Tom Meyers, Ph.D. Hydrologic Consultant

