

Presentation to State Land Use Planning Advisory Council Regarding Drought Impacts and Climate Change on Agriculture in the Carson River Watershed



**Presented by:
Edwin James
General Manager
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05/09/2009 15:27

Carson River Watershed

- apx. 3,966 square miles
- Carson River 184 miles long
- Limited Upstream Storage
- Newlands Project
- Truckee Canal
- Alpine Decree
 - Segmentation

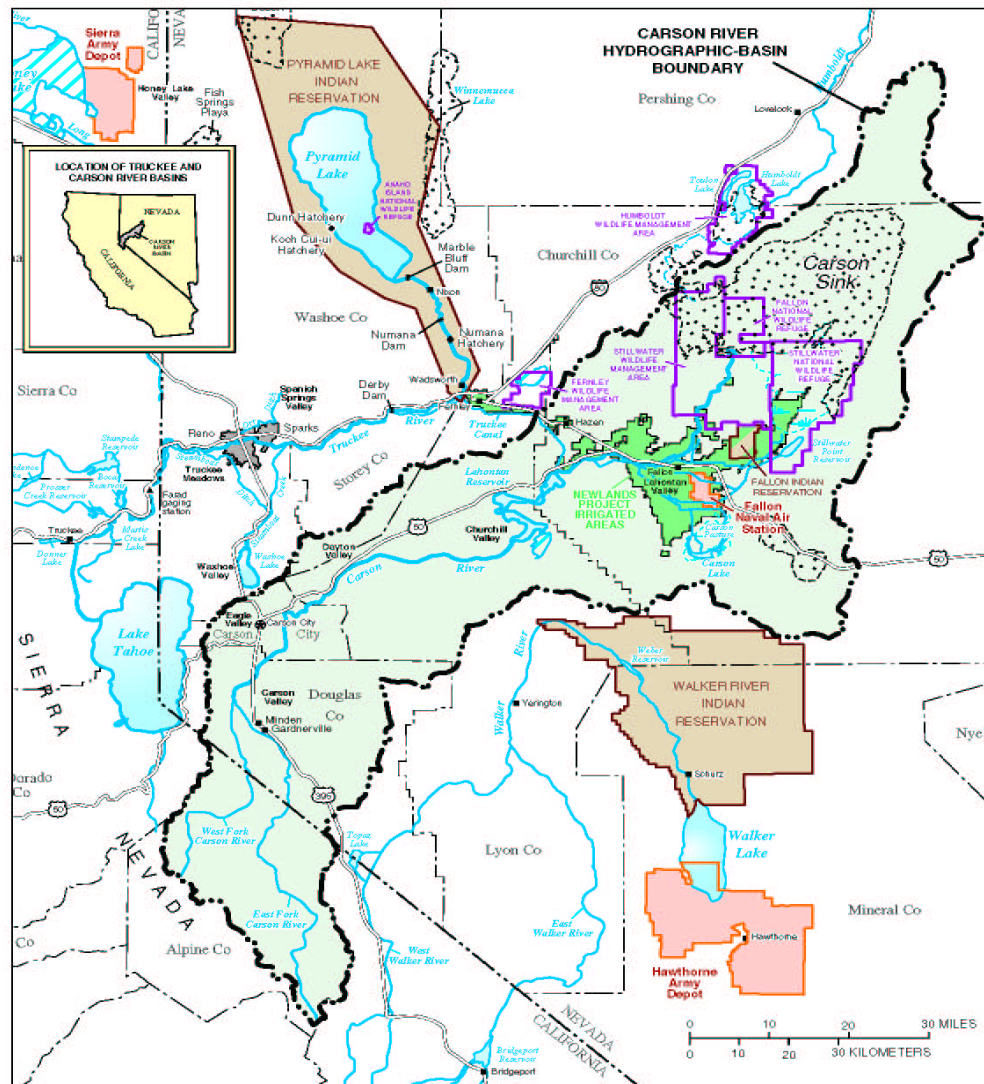
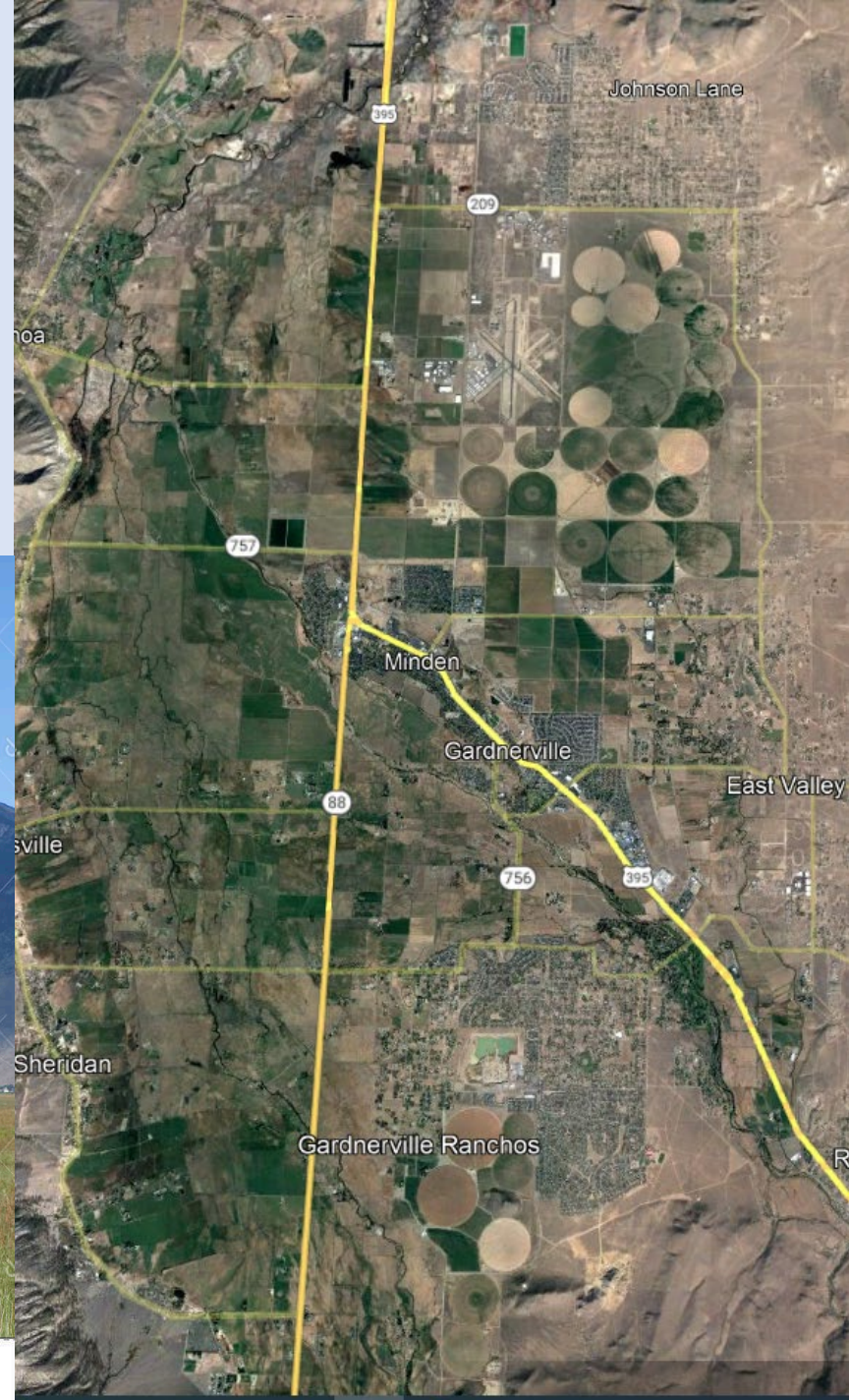


Figure1. USGS hydrologic features map of the Carson River watershed and surroundings.

Carson Valley Agriculture Segments 2 (EF), 5 (WF), and 6 (CR)





Carson City Agriculture Segment 7a



Lyon County
Carson River
Agriculture
Segments 7b, 7c, 7d,
and 7e





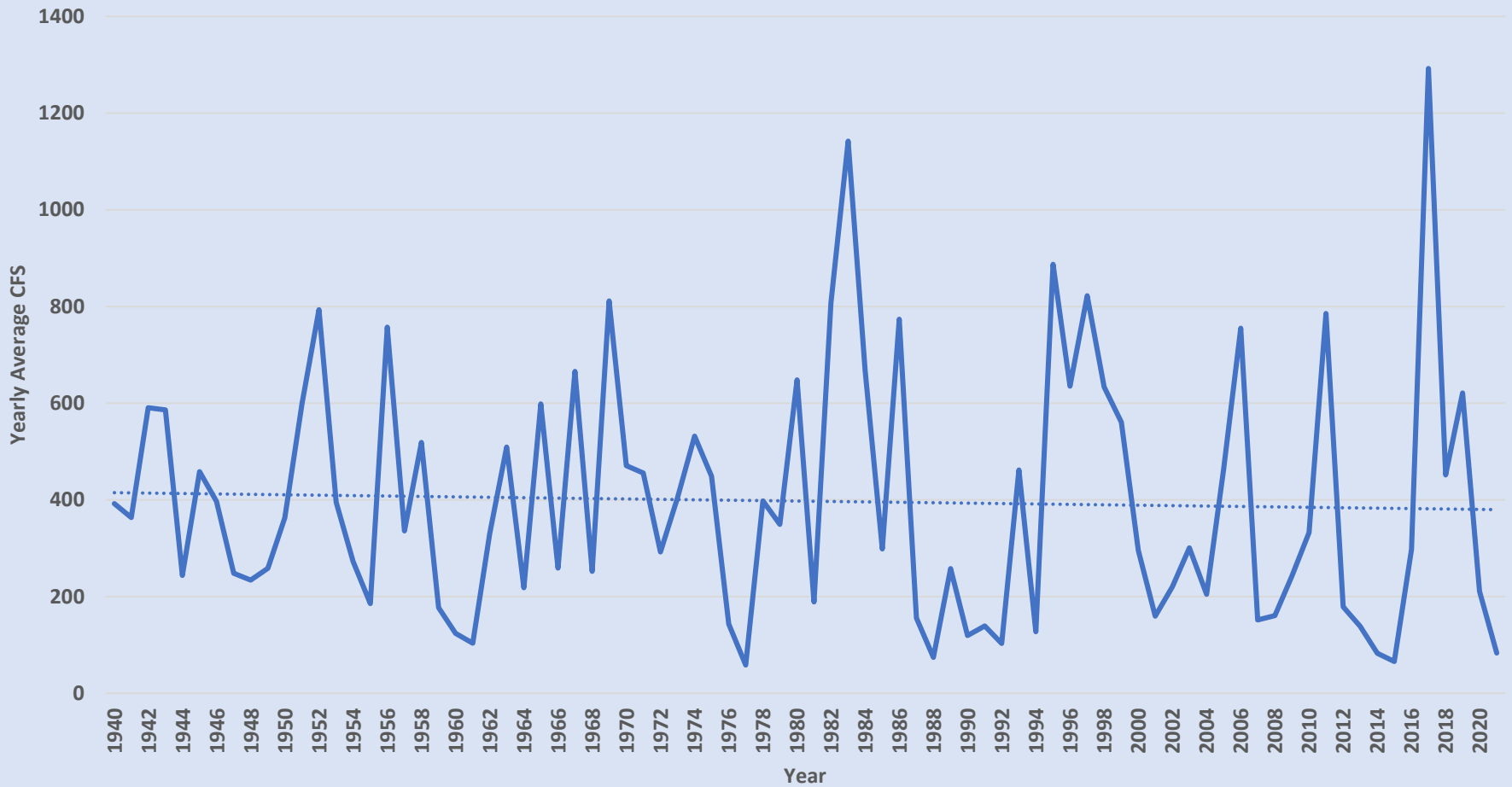
Churchill County Agriculture Segment 8



Average Yearly CFS

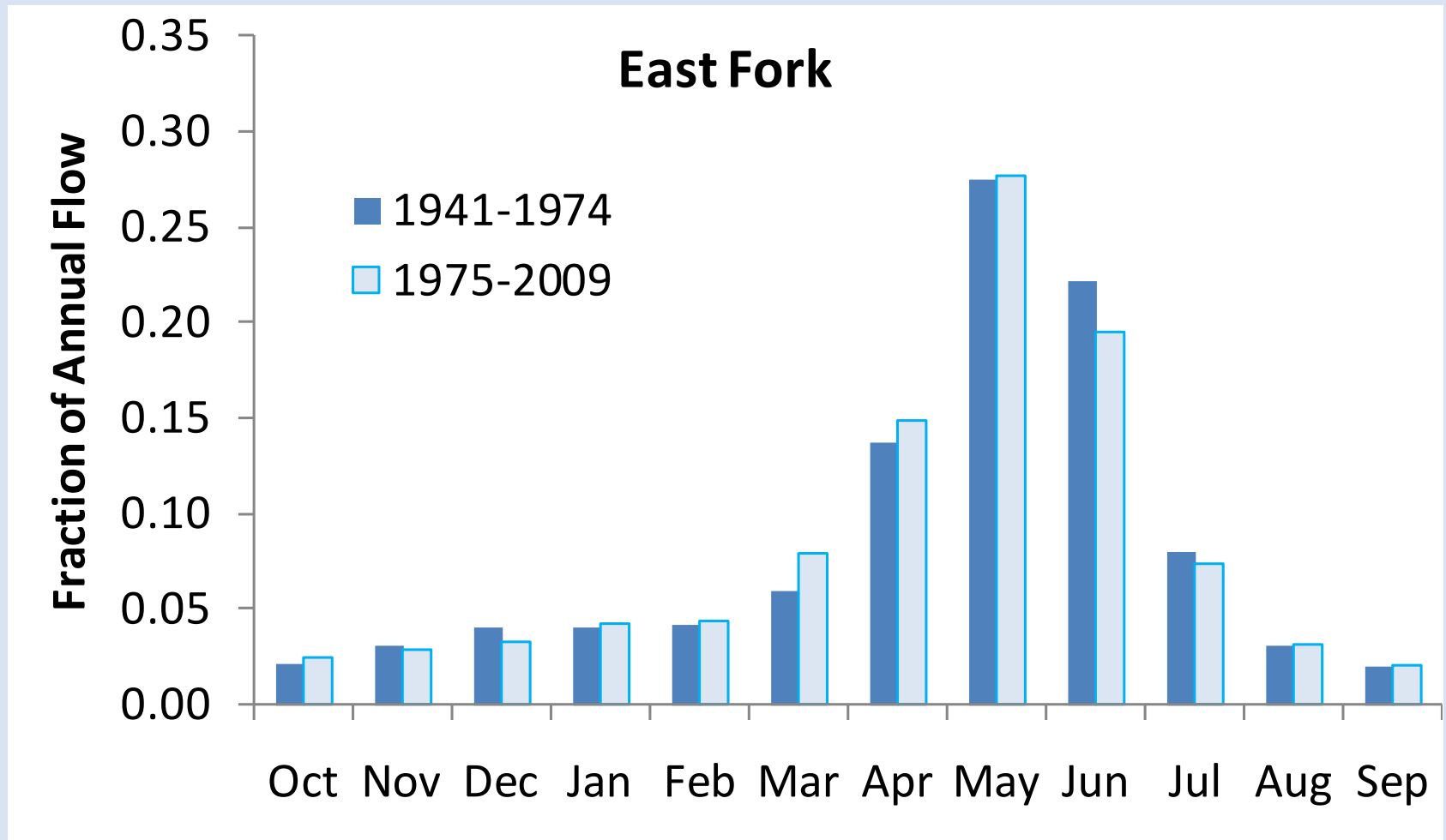
1940 to 2021

(Carson City)



Runoff Changes

Monthly Streamflow – East Fork



Instream Flows - 1940 to 2018

On average, flows are slowly decreasing in each river stretch

Location	WF at Woodfords	EF near Gardnerville	EF +WF	CR near Carson City	CR near Fort Churchill*
USGS Station #	10310000	10309000		10311000	10312000
Annual Average Flow, CFS	103.0	365.4	468.3	401.1	377.4
Annual Flow Standard Deviation, CFS	50.2	181.3		256.4	258.4
Average Peak Day Flow, CFS	1,150.7	3,599.5		4,178.8	3,278.8
Peak Day Flow Standard Deviation, CFS	1,253.8	3,579.0		5,544.0	3,700.5
% Average Annual Change in Flow	-0.10%	-0.05%	-0.06%	-0.12%	-0.05%
% Average Change in Flow between 1940 and 2018	-7.91%	-4.03%	-4.88%	-8.99%	-3.74%
*Data trends from Ft Churchill gauge are not statistically significant and should be interpreted as such					

Inflow into Lahontan Reservoir

From October 1, 2020 to September 30, 2021

Fort Churchill Stream Gauge 46,195 AF - 26 %

Truckee Canal (Hazen Gauge) 131,528 AF - 74 %

A landscape photograph showing a river winding through a valley. The river is surrounded by numerous trees with bright yellow autumn foliage. The background consists of steep, rocky hills with sparse vegetation under a cloudy sky.

QUESTIONS?

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Photo by: Juan Guzman