

Anticipated 2014 Drought Impacts to Nevada Fisheries

Presentation to NBWC
March 21, 2014

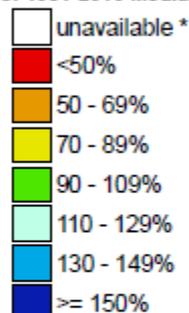
Jon Sjöberg, Chief of Fisheries
Nevada Department of Wildlife



Nevada/California SNOTEL Current Snow Water Equivalent (SWE) % of Normal

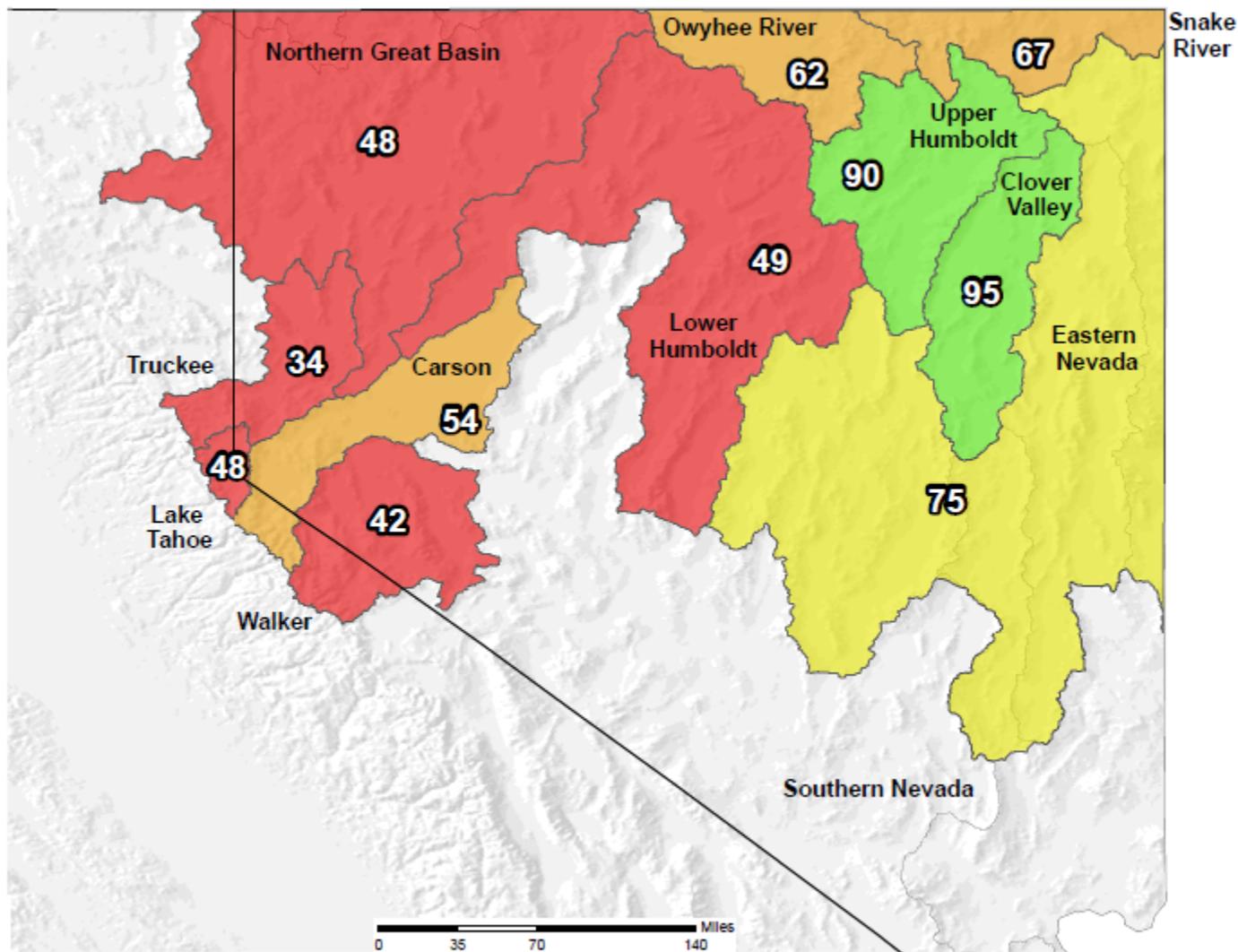
Mar 06, 2014

Current Snow Water Equivalent Basin-wide Percent of 1981-2010 Median



* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional data subject to revision



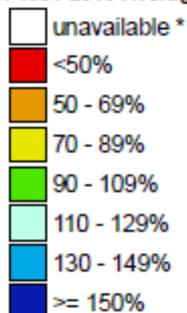
The current snow water equivalent percent of normal represents the snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS National Water and Climate Center Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>
Science contact: Jim.Marron@por.usda.gov 503 414 3047

Nevada/California SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

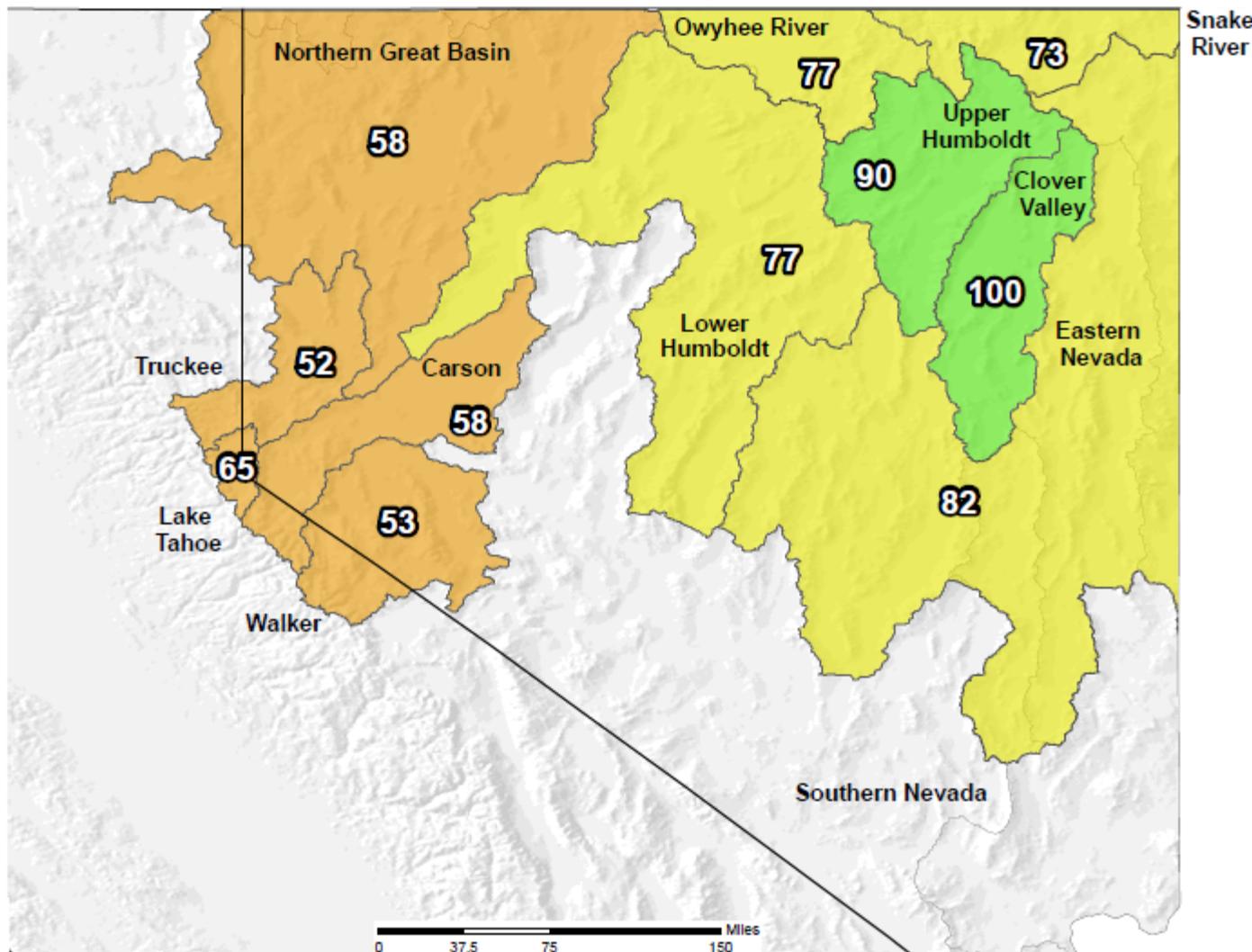
Mar 06, 2014

Water Year (Oct 1)
to Date Precipitation
Basin-wide Percent
of 1981-2010 Average



* Data unavailable
at time of posting
or measurement
is not representative
at this time of year

Provisional data
subject to revision

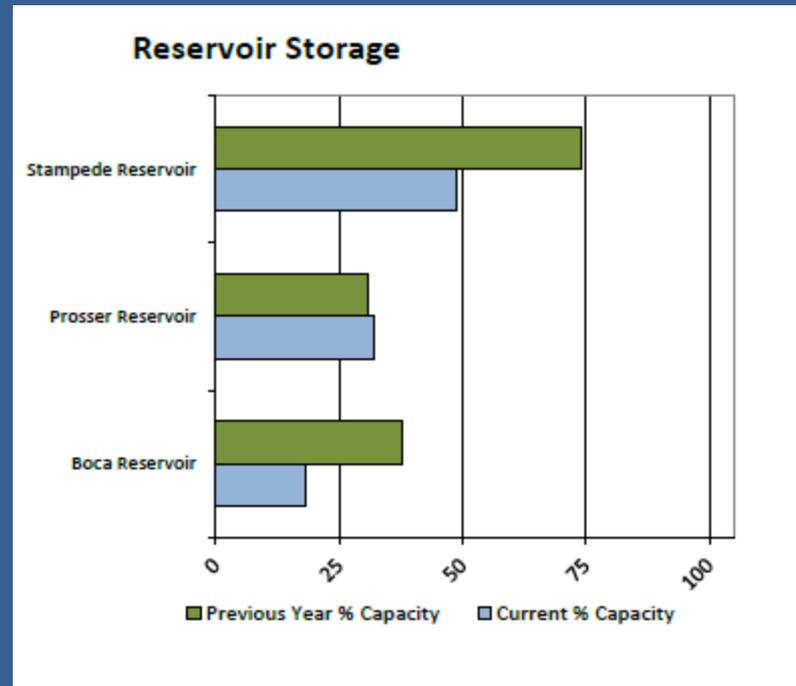


The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>
Science contact: Jim.Marron@por.usda.gov 503 414 3047

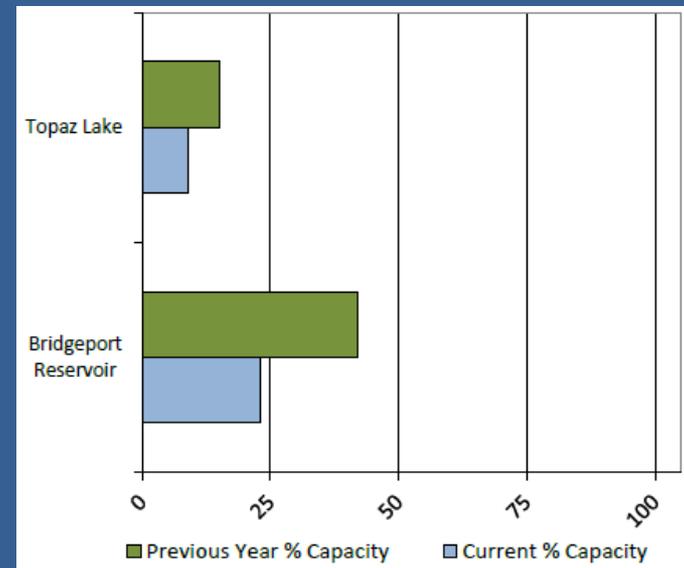
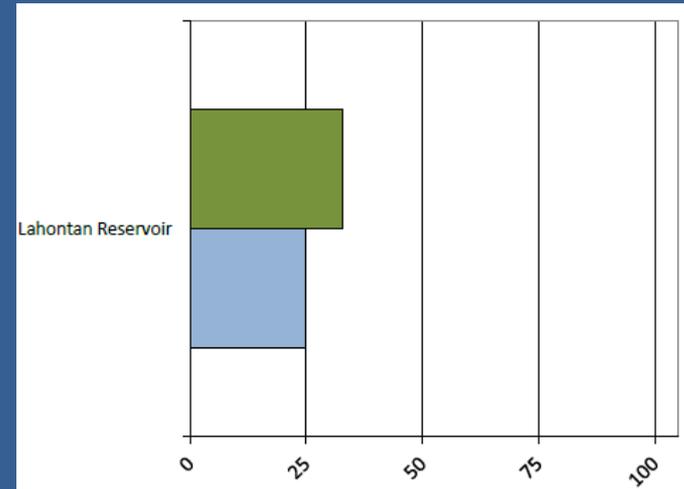
Truckee River Basin

- Snowpack in the Truckee River Basin is much below average at 32% of normal, compared to 78% last year.
- Reservoir storage is at 43% of capacity, compared to 65% last year.
- Forecast streamflows range from 10% to 30% of average.
- Tahoe storage from late spring storms will help Truckee River flows



Carson and Walker River Basins

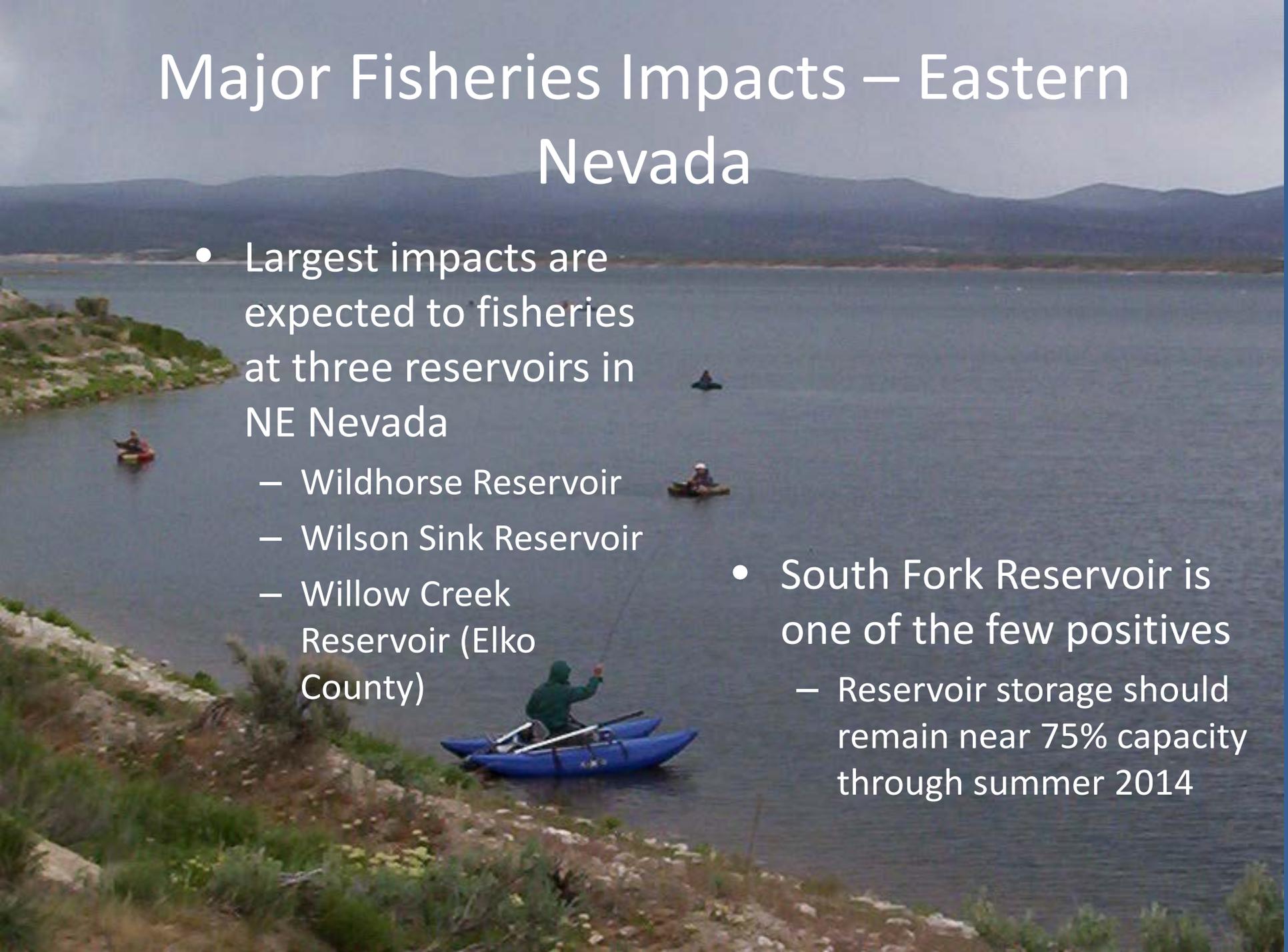
- Snowpack is at 44% to 56% of average
- Carson River flows are projected at 50% of average through July
- East and West Walker River flows are projected at 29-37% through August



Northern Great Basin and NE Nevada

- Conditions are highly variable with some basins dismal and others relatively OK
 - McDermitt Basin snowpack is at 7% of median value
 - Upper Humboldt Basin snowpack is at 85% with most streamflows forecast at 60-75% of average
 - Owyhee River Basin snowpack is at 51% with Owyhee River flows projected at 19% of average by July

Major Fisheries Impacts – Eastern Nevada

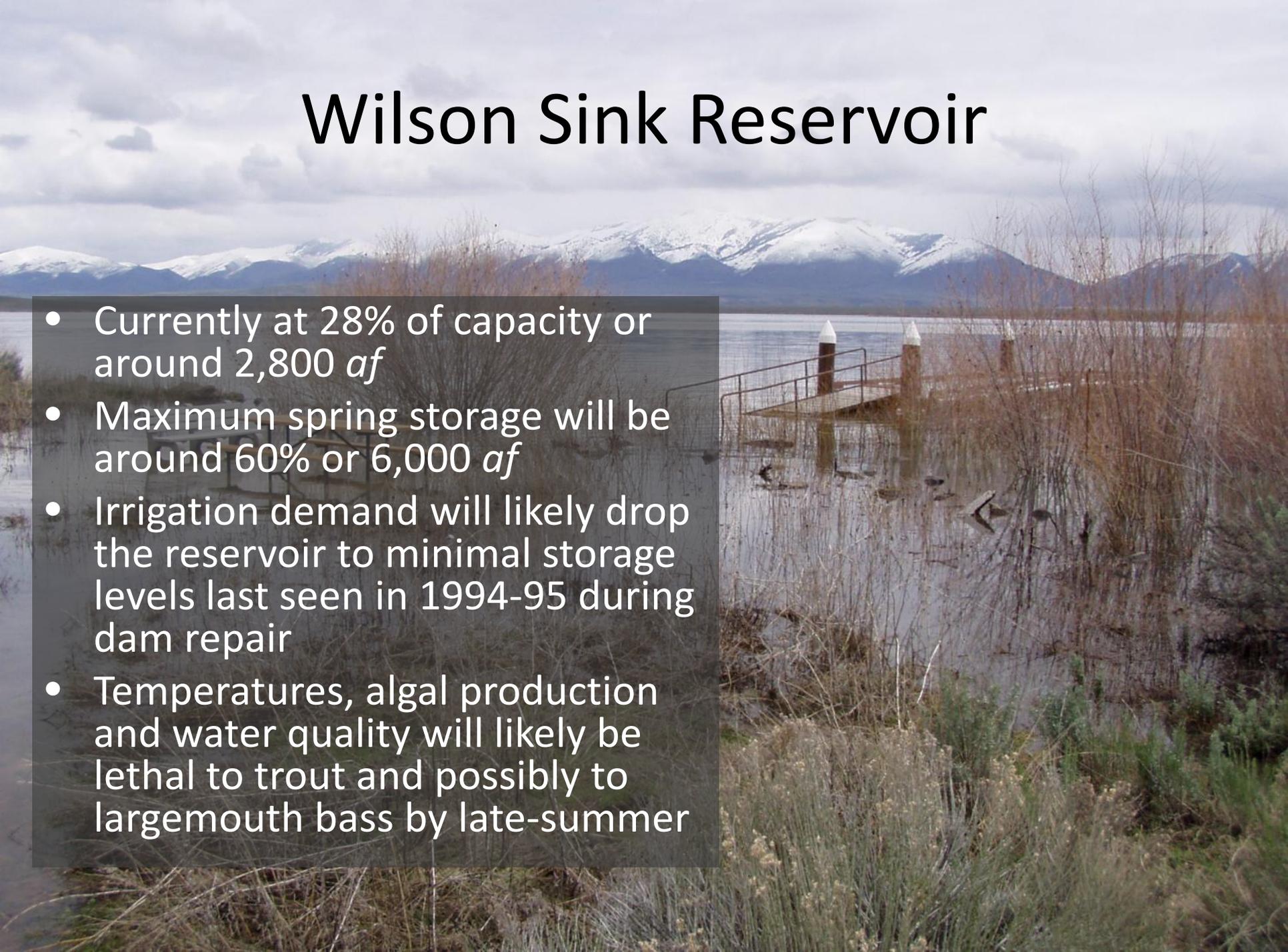
- Largest impacts are expected to fisheries at three reservoirs in NE Nevada
 - Wildhorse Reservoir
 - Wilson Sink Reservoir
 - Willow Creek Reservoir (Elko County)
 - South Fork Reservoir is one of the few positives
 - Reservoir storage should remain near 75% capacity through summer 2014
- 

Wildhorse Reservoir

- Currently at 21% of capacity or $\pm 15,000$ *af*
- With low snowpack and warm temperatures/early runoff, spring storage of 30% or around 21,000 *af* is probably optimistic
- Irrigation demand of 5K-7K *af*/month will reduce the reservoir to a minimum pool of 5,000 *af* by August
- NDOW has already been approached by USFS and Duck Valley Tribe about drawing storage to below the minimum pool this summer
- Temperatures, algal production and water quality will likely be lethal to trout and some warm water species by mid-summer

Wilson Sink Reservoir

- Currently at 28% of capacity or around 2,800 *af*
- Maximum spring storage will be around 60% or 6,000 *af*
- Irrigation demand will likely drop the reservoir to minimal storage levels last seen in 1994-95 during dam repair
- Temperatures, algal production and water quality will likely be lethal to trout and possibly to largemouth bass by late-summer



Willow Creek Reservoir

- Currently at 15% capacity or 1,500 *af*
- With ~50% snowpack, 30% or 3,000 *af* spring storage is best case scenario
- No minimum pool agreement
- Irrigation demand will likely draw the reservoir down to critical levels by mid- to late-summer

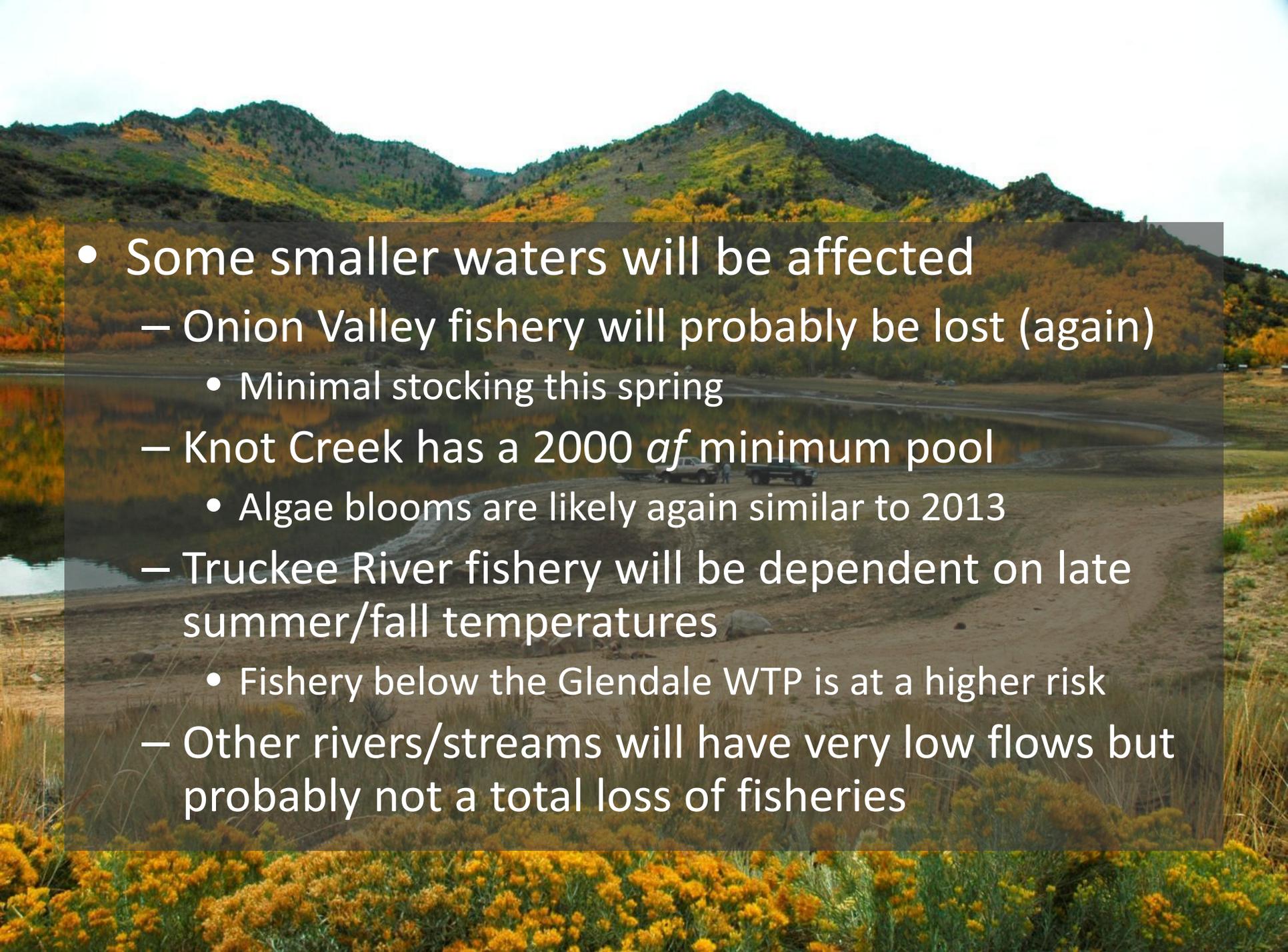


Management recommendations for Wildhorse, Wilson Sink and Willow Creek

- Removal of harvest limits for game fish species in summer 2014 if water storage conditions don't improve substantially by early May
 - For all three reservoirs
- Salvage warm water game fish species if practical and transplant into South Fork Reservoir
 - (Wildhorse and Wilson Sink reservoirs)
- Salvage warm water game fish species if practical and transplant into Chimney Creek Reservoir
 - (Willow Creek Reservoir)

Major Fisheries – Western Nevada

- Drought effects on larger reservoir fisheries will likely be less severe than in NE Nevada
 - Lahontan Reservoir is at 25% of capacity and expected to be at minimum pool by September
 - Fishery survival will be dependent on fall temperatures
 - Rye Patch Reservoir is <5%, storage is uncertain pending decision by PCID on irrigation use
 - Topaz Lake is at 13% of capacity but fishery should have limited additional impacts this summer

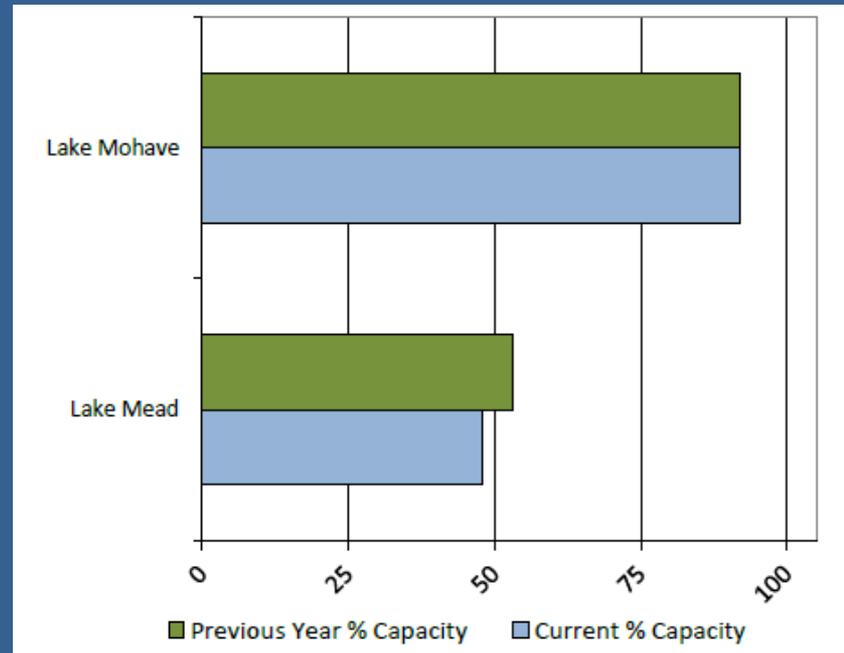
- 
- Some smaller waters will be affected
 - Onion Valley fishery will probably be lost (again)
 - Minimal stocking this spring
 - Knot Creek has a 2000 *af* minimum pool
 - Algae blooms are likely again similar to 2013
 - Truckee River fishery will be dependent on late summer/fall temperatures
 - Fishery below the Glendale WTP is at a higher risk
 - Other rivers/streams will have very low flows but probably not a total loss of fisheries

Management actions for western Nevada fisheries

- Harvest limit removals are not recommended for Lahontan and Rye Patch because of mercury consumption advisories
 - Limited salvage and relocation of sport fish may be an option
 - Encourage commercial harvest of carp and blackfish to reduce biomass
- Many waters are being stocked earlier to maximize angler harvest before summer conditions occur
- Most smaller waters will have stocking numbers reduced 50-60% to compensate for low flows and low storage levels

Southern Nevada fisheries

- Southern Region waters are a relative bright spot
 - Kirch WMA and Eagle Valley Reservoir are not expected to show major effects from drought conditions
- Mead storage will decline to ~1083' by September (currently 1102') but with minimal impacts on the fishery
- Lake Mohave will remain stable at normal elevations





Questions and Discussion