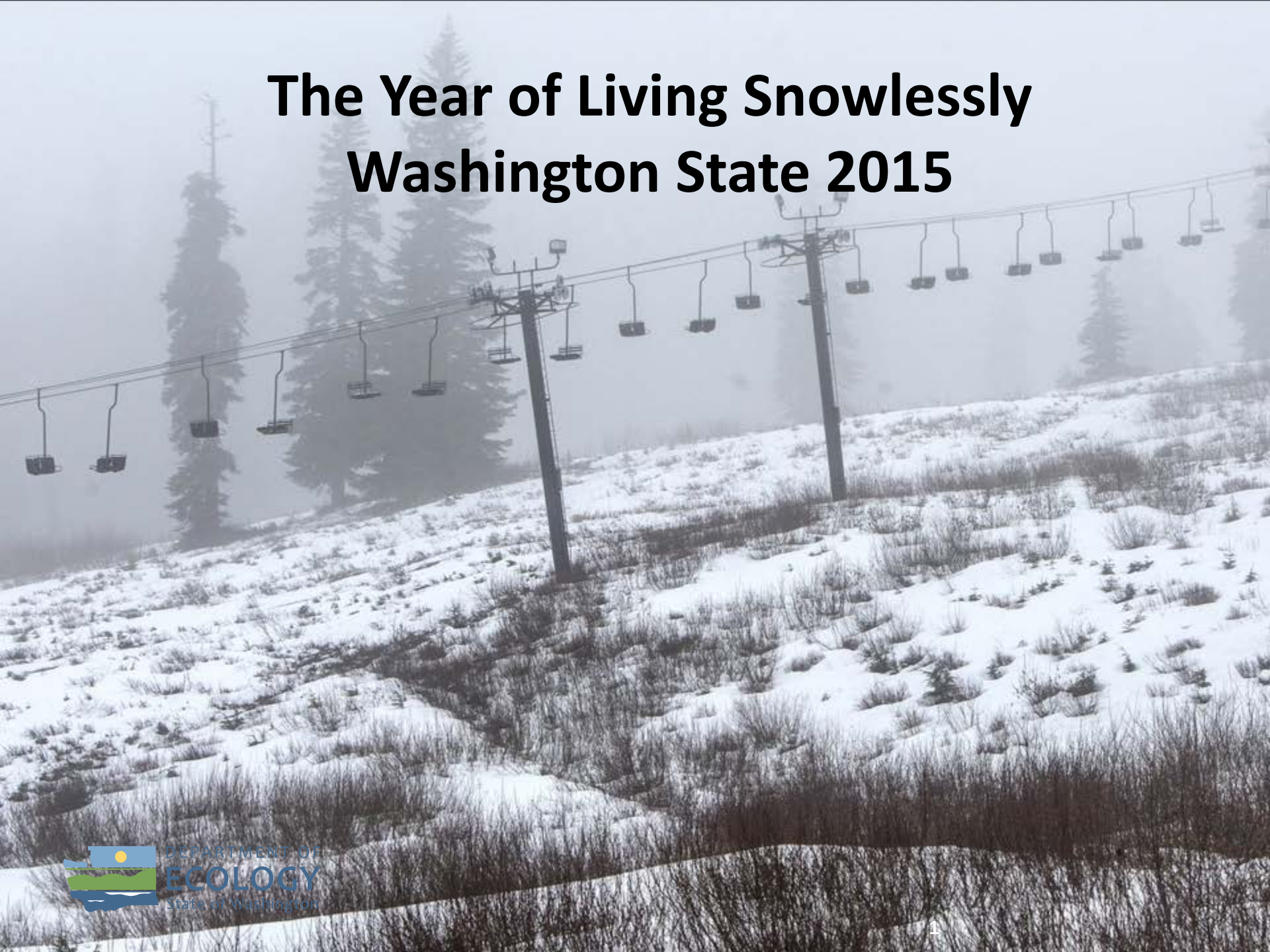
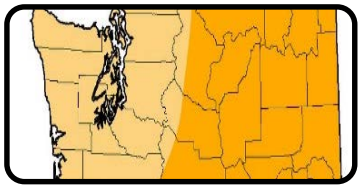
The Year of Living Snowlessly
Washington State 2015

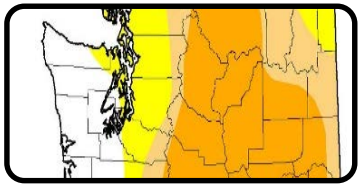


DEPARTMENT OF
ECOLOGY
State of Washington

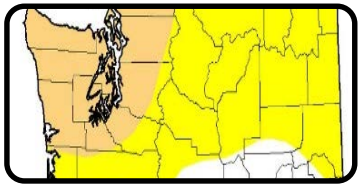
Most Recent Drought Declarations Washington State



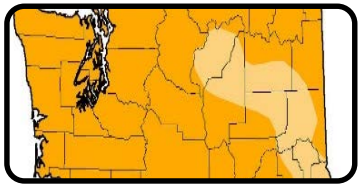
2001 (Statewide)



2005 (Statewide)



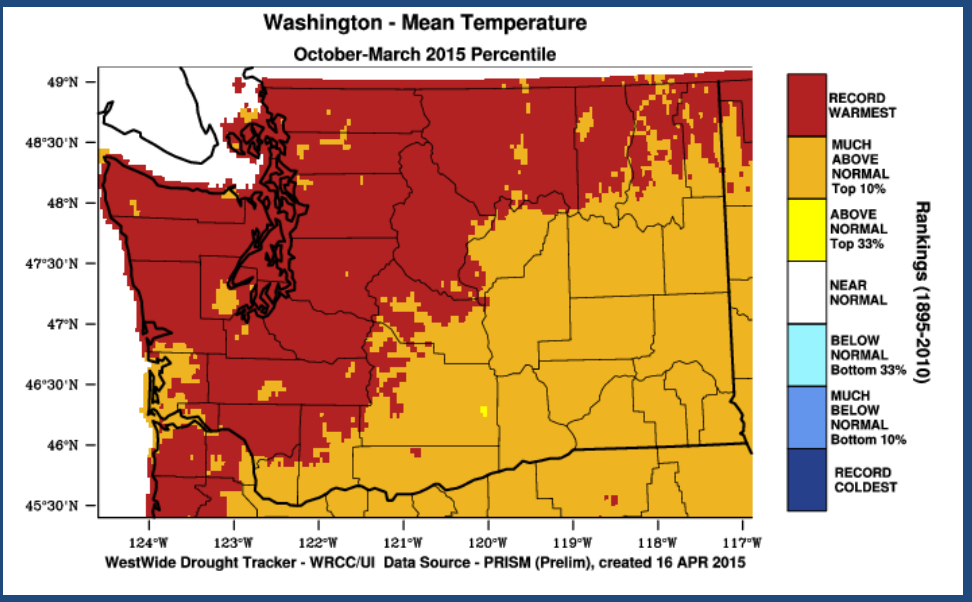
2006 (NW Olympic Peninsula)

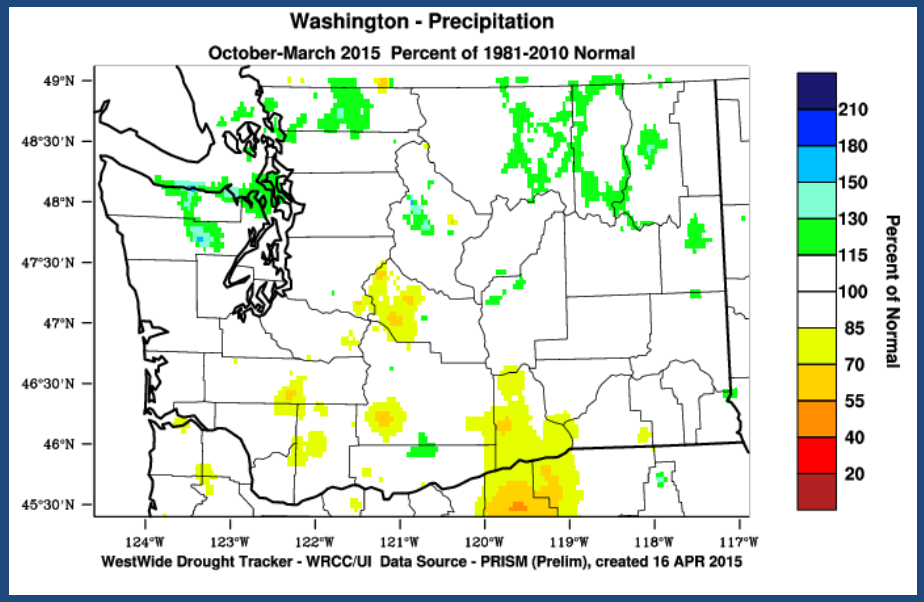


2015 (Statewide)

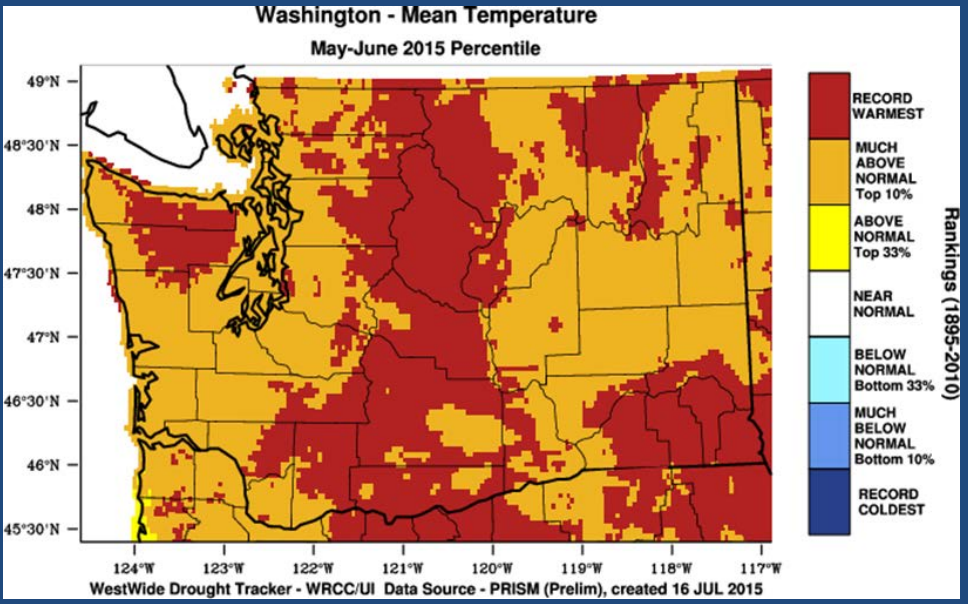
DEPARTMENT OF ECOLOGY State of Washington

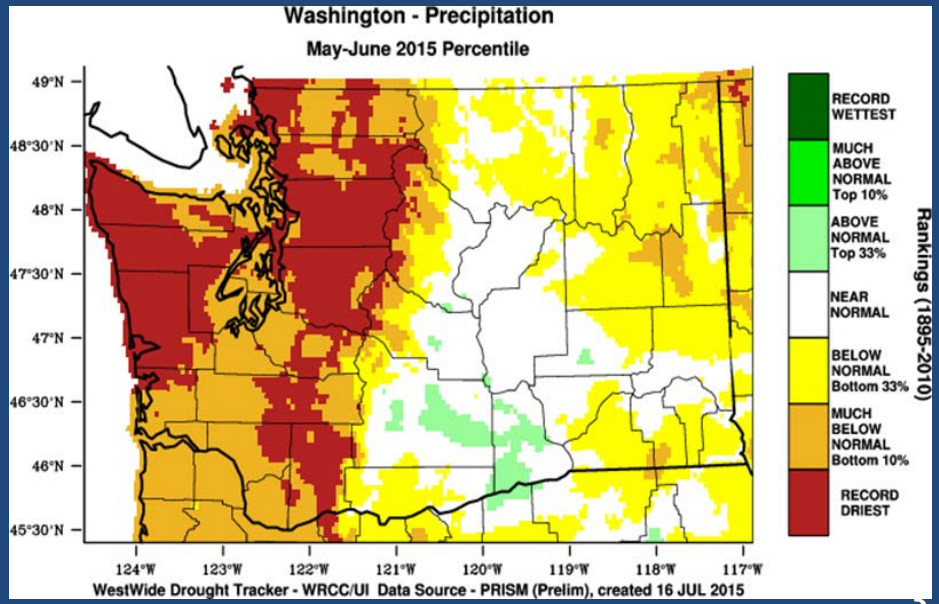
October thru March 2015



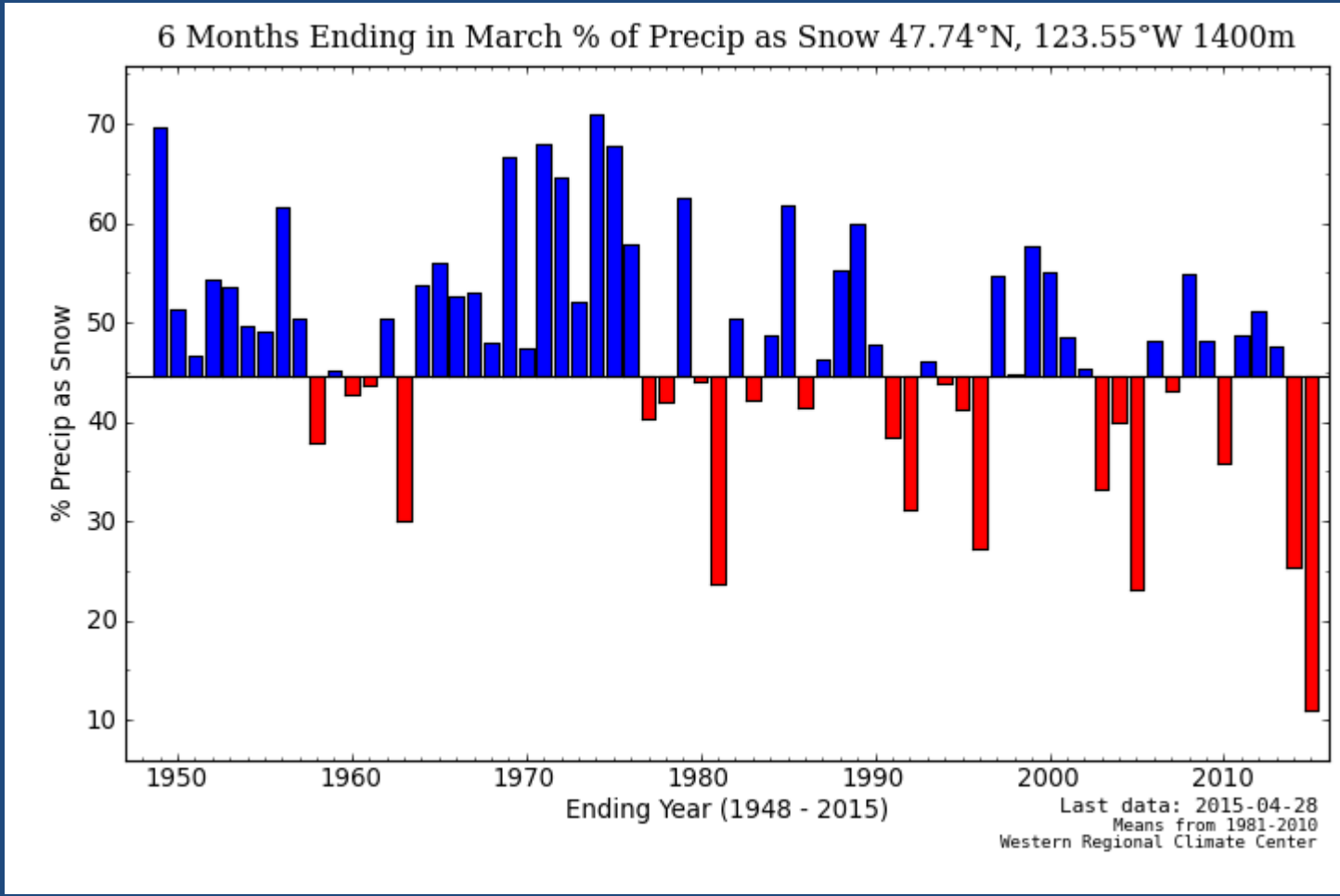


May thru June 2015



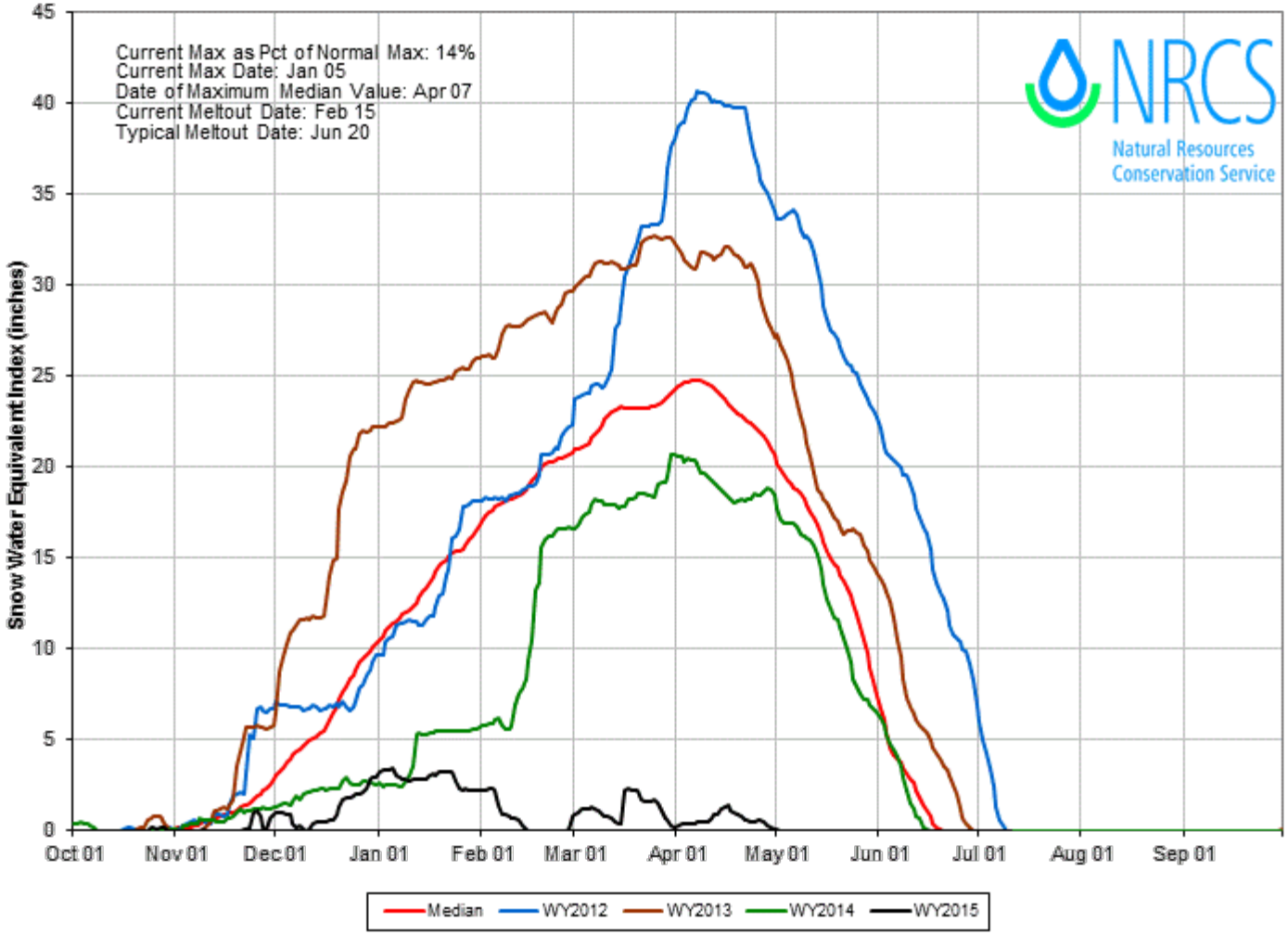


Greatest Percentage of Precipitation falling as Rain instead of Snow in the last 65 years (Olympic Mountains, elev 1400 m)



DEPARTMENT OF ECOLOGY
State of Washington

OLYMPIC Time Series Snowpack Summary
Based on Provisional SNOTEL data as of Jul 10, 2015



Bogachiel Peak, Olympic Mountains

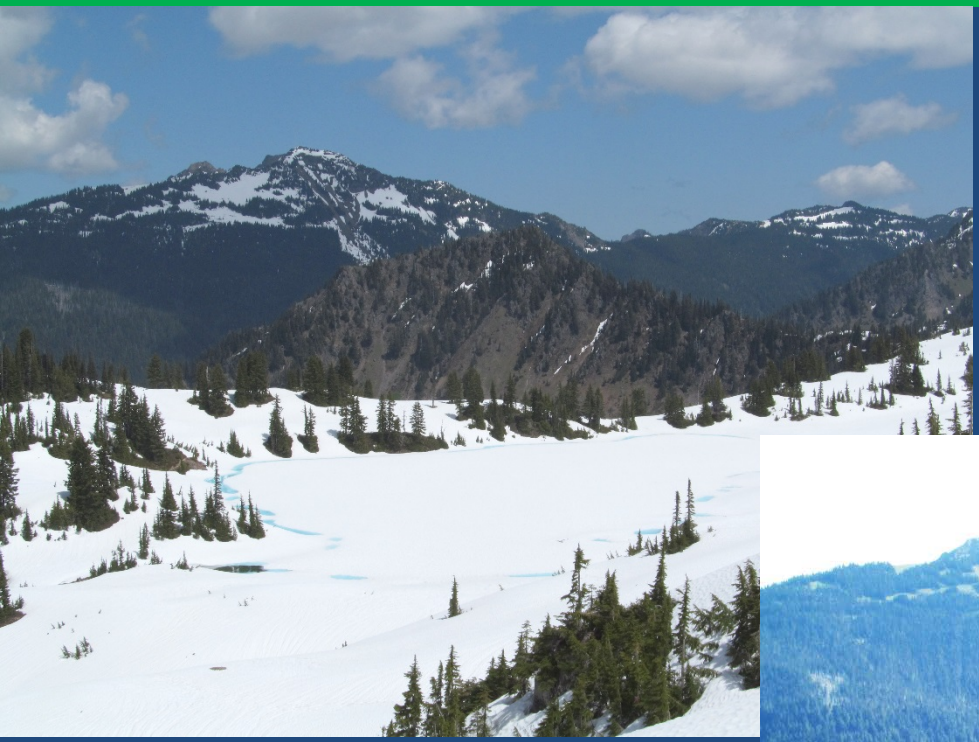
June 5, 2014

June 6, 2015

DEPARTMENT OF ECOLOGY
State of Washington

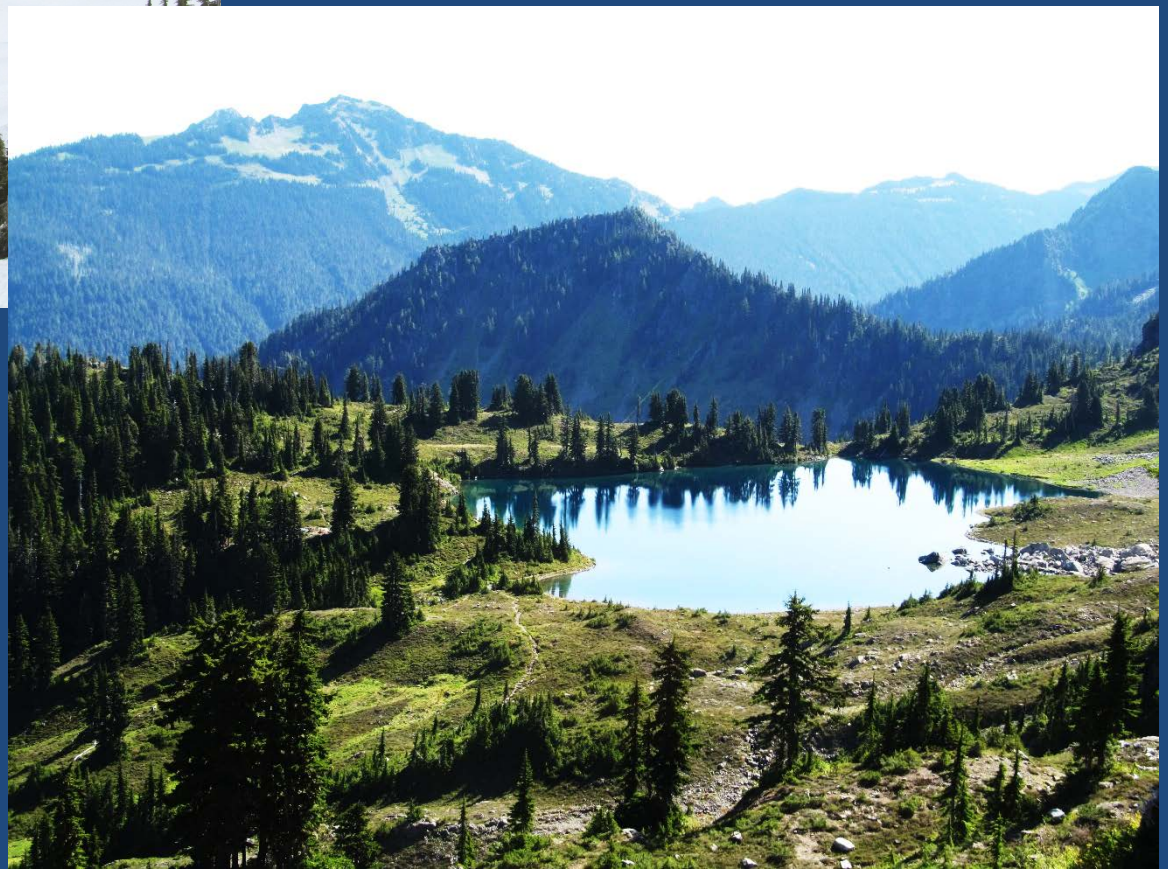
Photo Credit: David Carmody

Lunch Lake, Olympic Mountains



June 5, 2014

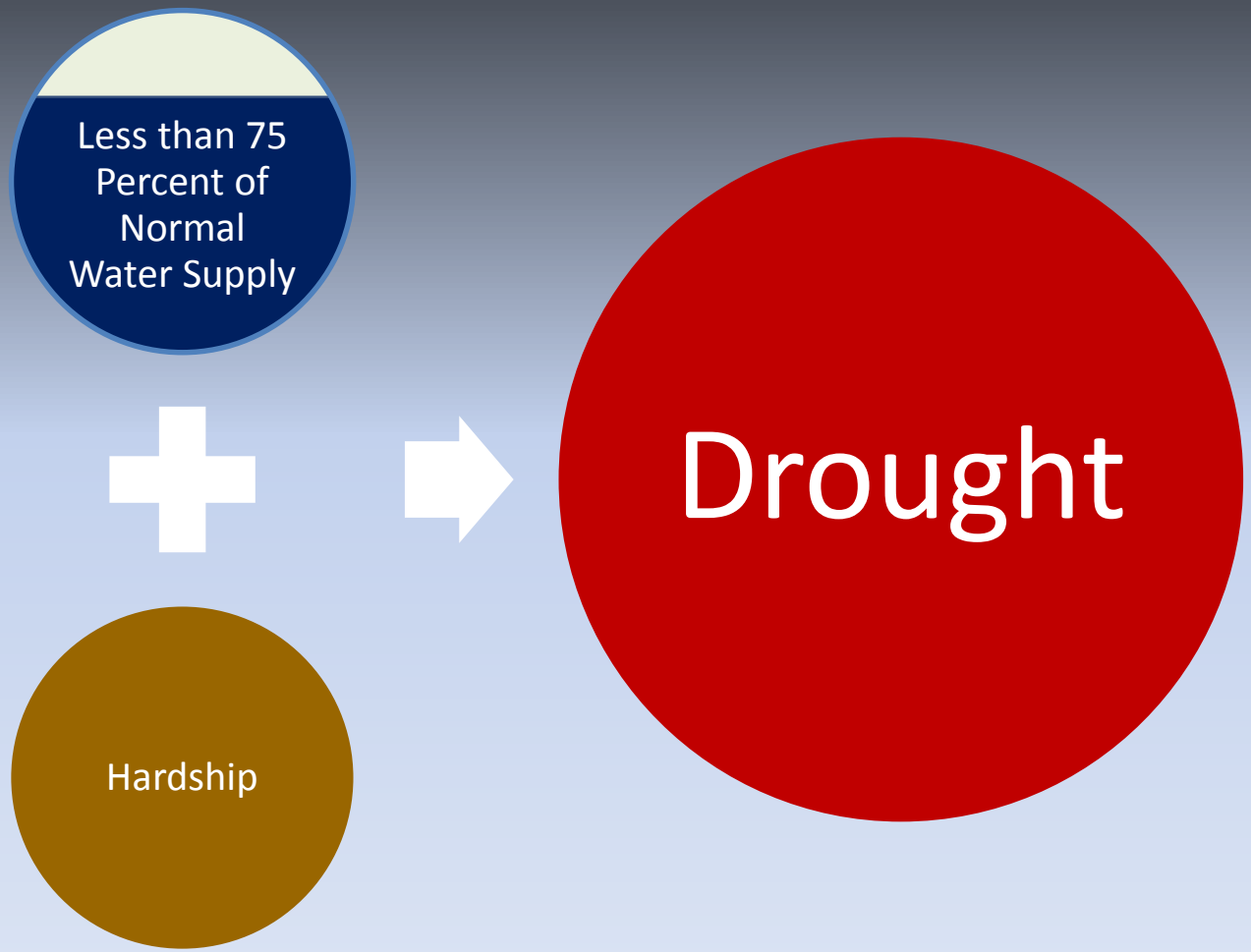
June 6, 2015



DEPARTMENT OF ECOLOGY
State of Washington

Photo Credit: David Carmody

Washington State's Drought Trigger



DEPARTMENT OF ECOLOGY
State of Washington

RCW 43.83B.400

Three Waves of Drought Declarations

March 17

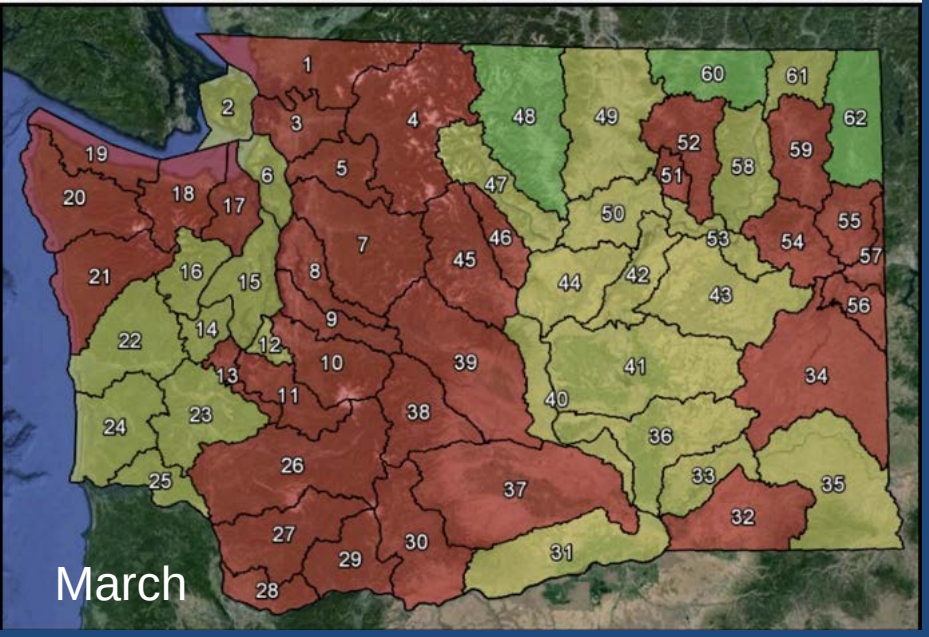
- 11 watersheds
- Clearest cases of potential hardship (irrigation, fisheries)
- Most time-sensitive for getting drought mitigation tools into play (agriculture)

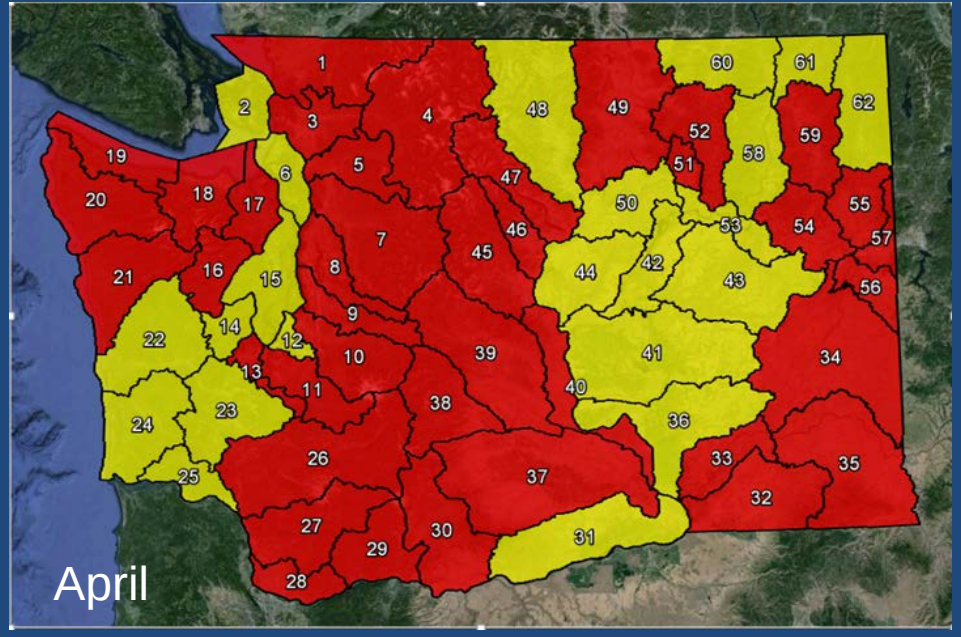
April 22

- 13 additional watersheds
- Further declines in forecasted runoff
- Puget Sound Basins needed additional evaluation

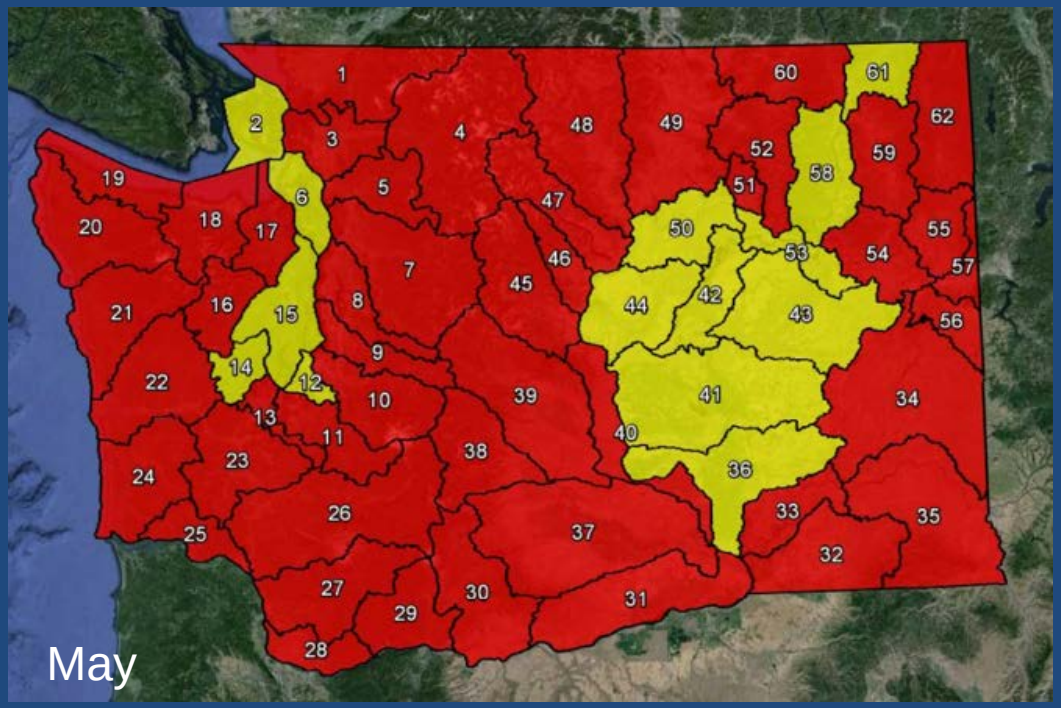
May 21

- 48 of 62 watersheds expected to fall below drought water supply criteria
- Precipitation deficit starting to show





Watersheds Expected to be Below 75 Percent of Normal Water Supply



Northwest River Forecast Center
ESP Natural Volumes

River and Hydrology | Water Supply | Observations | Weather Forecasts | Climate | NWRFC

Home | Zoom Out | --- Quick Zooms --- | ESP Issued: 2015-05-11 | Ensemble Date: 2015-05-11 | Permalink

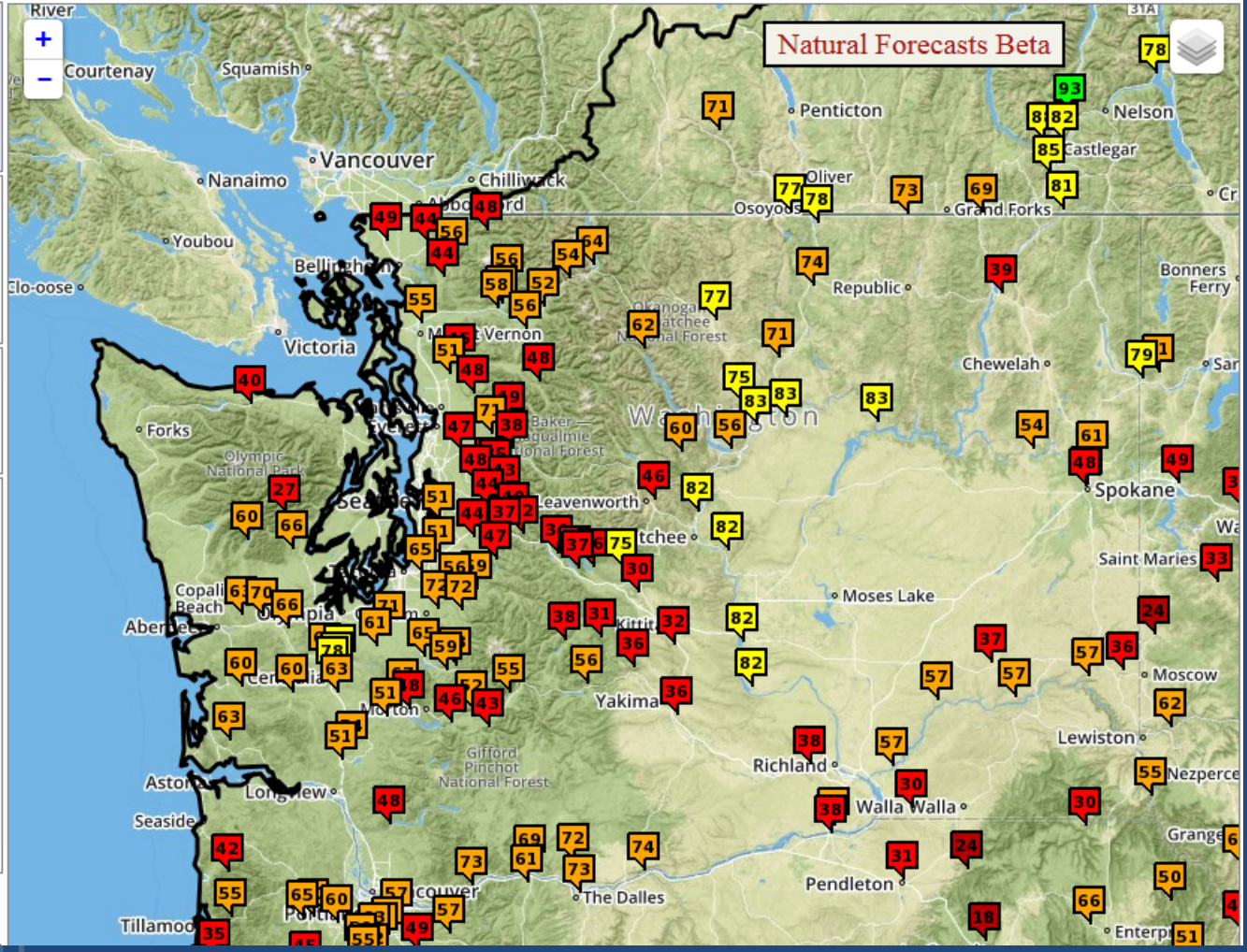
Search
Enter NWS ID:
GO

Map Overlays
- [x] NWRFC Boundary
- [ ] NWRFC Basins
- [ ] NWS HSAs
- [ ] Counties

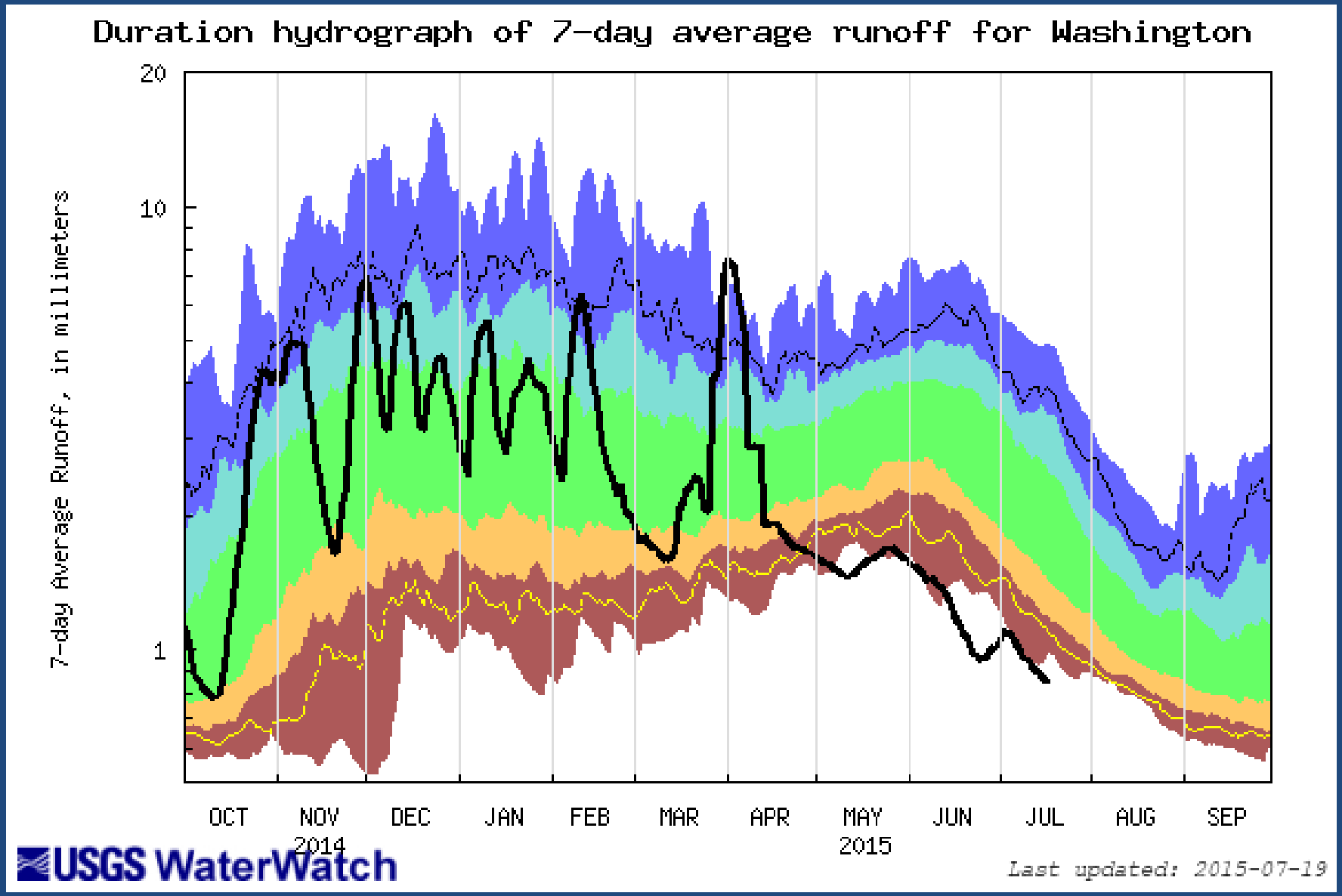
Map Type
- ESP Natural Status
- (•) ESP Natural % of Avg

Legend
ESP Natural Volumes
Period: APR-SEP
Forecast (% Avg)
- No Average, No data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- > 175

Stations Displayed: 195

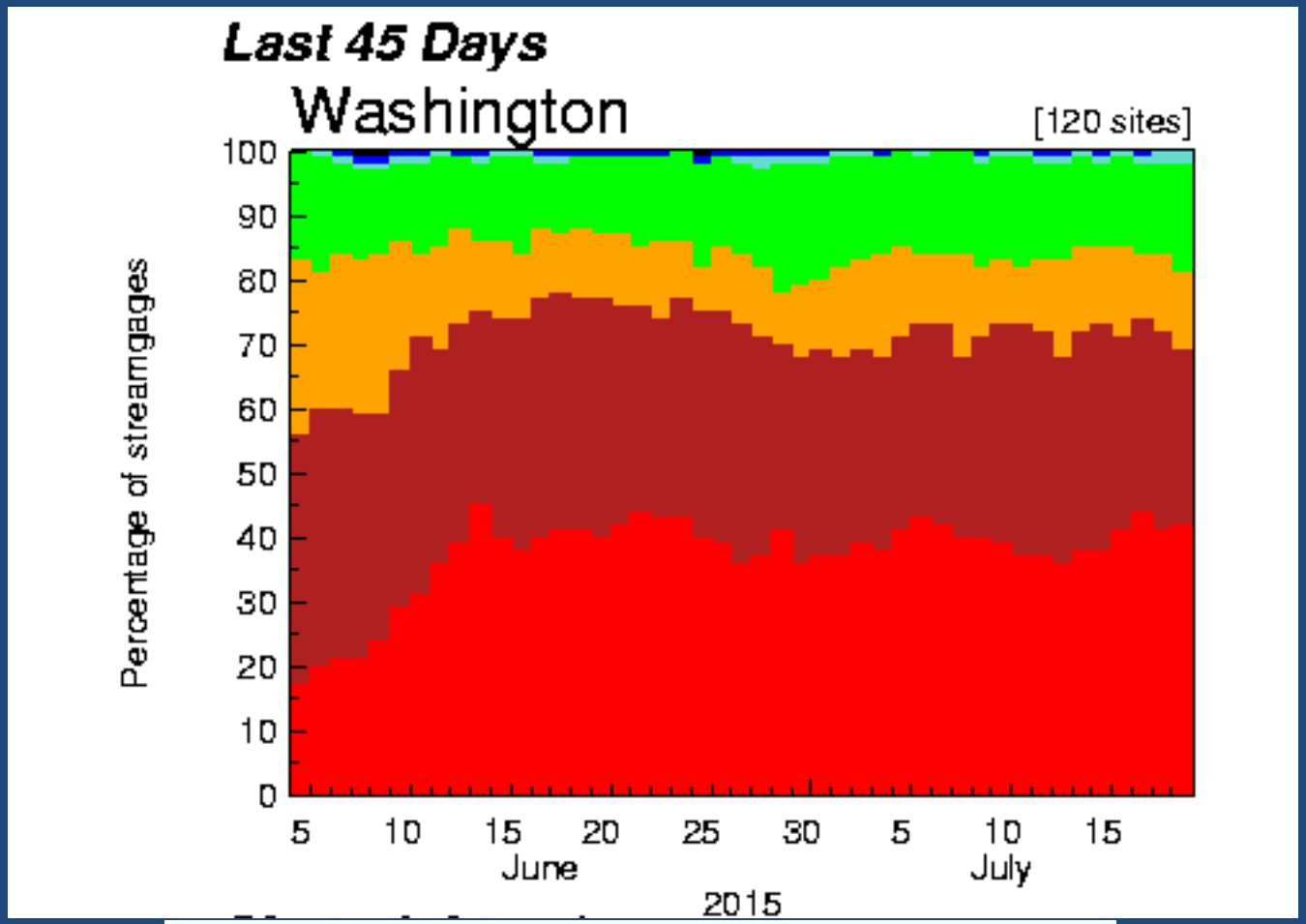


State of Washington



DEPARTMENT OF ECOLOGY
State of Washington

Daily streamflow compared to historical streamflow for 45 days prior to July 19, 2015

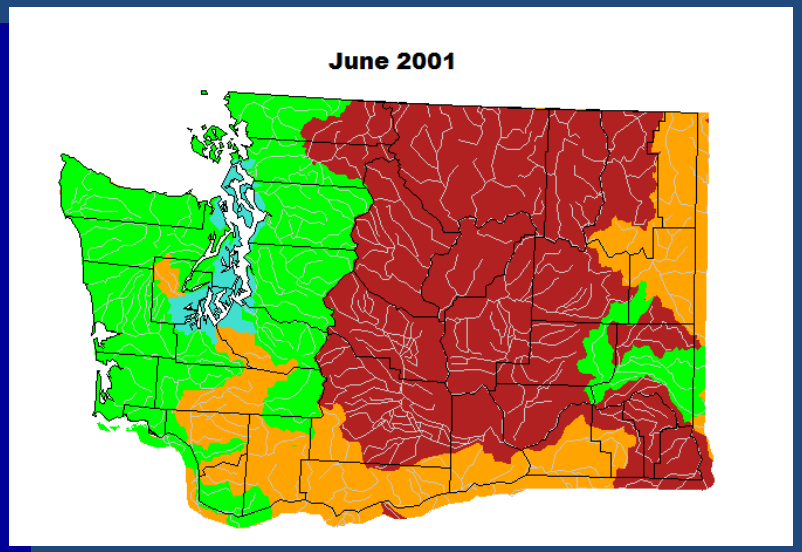


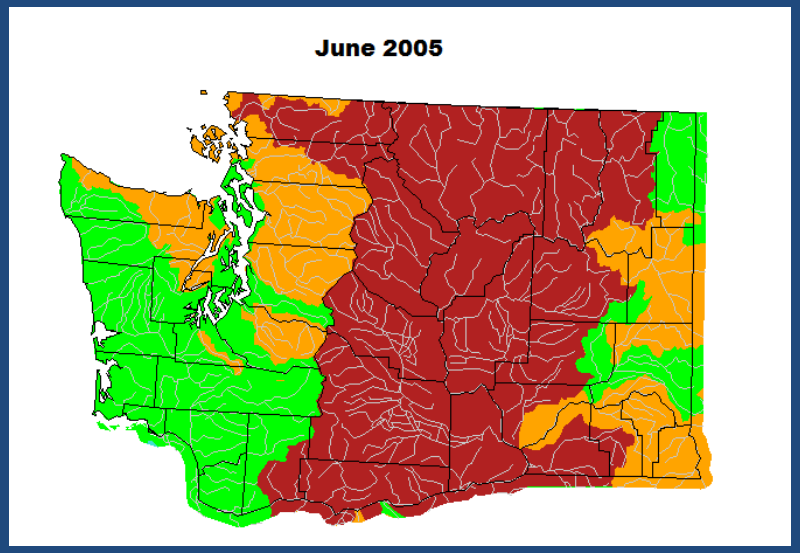
Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

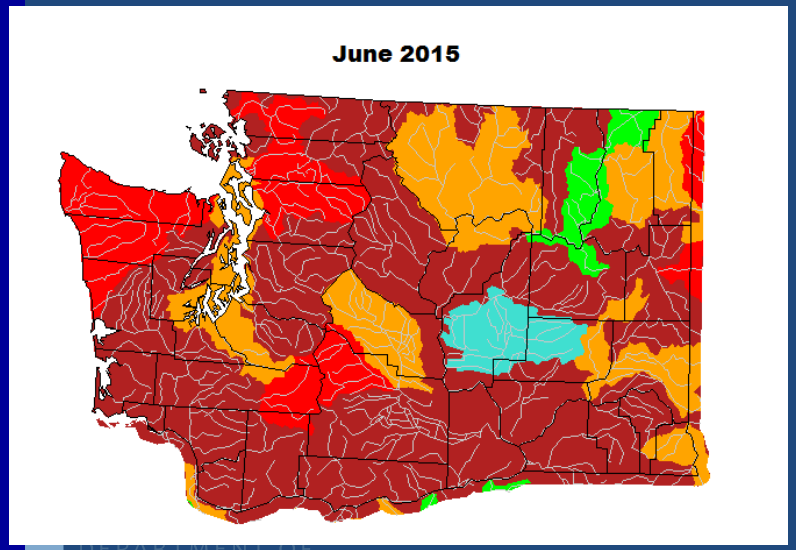
USGS
science for a changing world

Average June 2001, 2005 and 2015 Streamflow

(2001 & 2005 were previous years of statewide drought in Washington)







Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

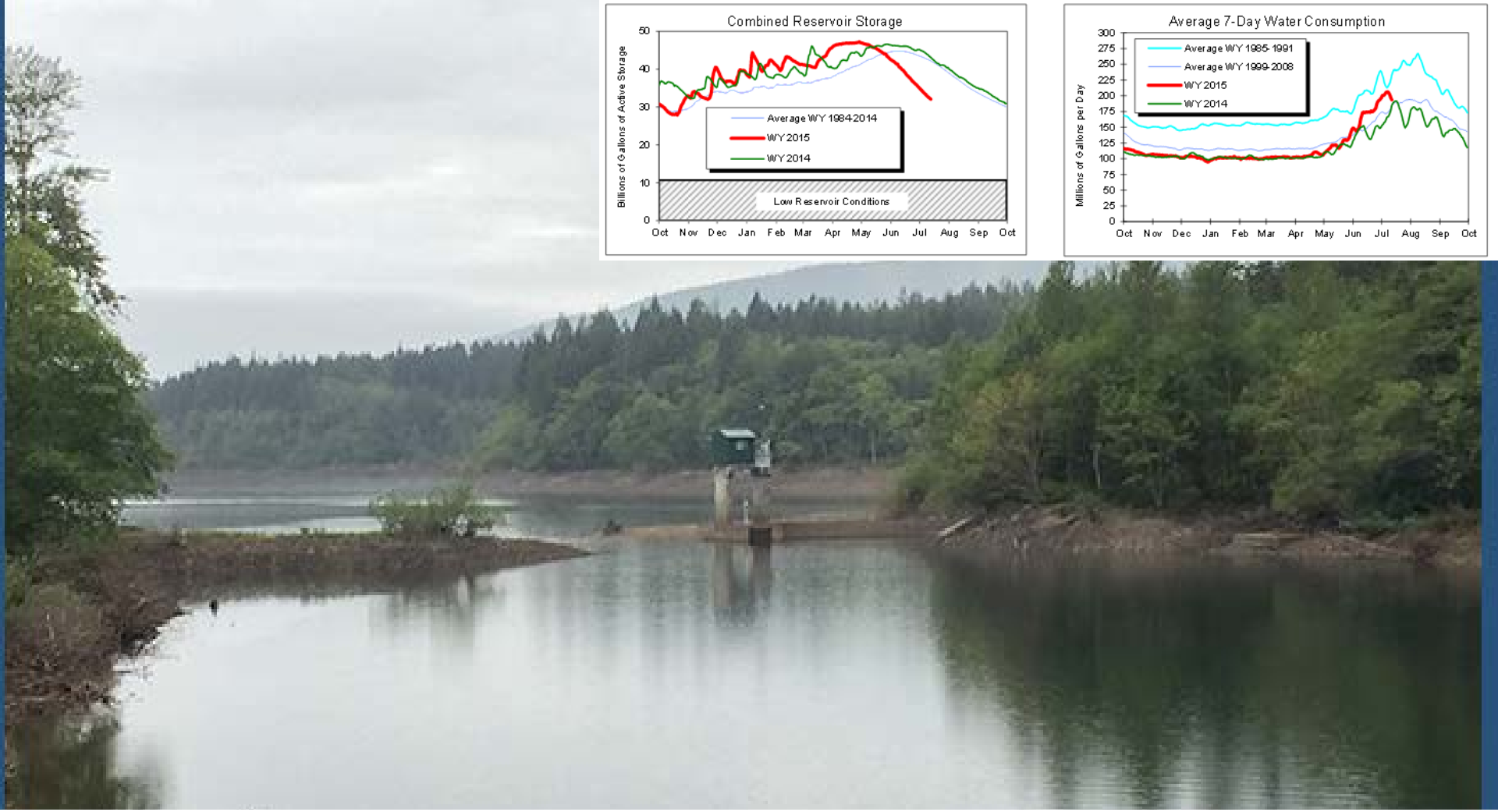
DEPARTMENT OF ECOLOGY State of Washington

USGS science for a changing world

Drought Impacts So Far

- Progressively reduced allocations in the Yakima Basin
- Reports of crop losses and crop stress, lower fruit quality
- Curtailment in some watersheds to protect senior water rights

- Reports of fish stranding in some rivers
- High water temperatures: WDFW Hatcheries letting fish go early, fish mortality in Columbia river
- Widespread fishing closures



- Large Municipalities with Storage are in Good to Fair Shape
- Hydropower Projects are working hard to manage for multiple objectives (e.g., power, recreation pool levels, downstream flow requirements)
- Some communities resorting to backup wells
- Some communities asking or requiring customers to conserve

Chester Morse Lake Reservoir - This photo was taken on July 12, 2015 by Aaron Erman

Summary of Drought Response Actions

- Leasing of water rights in Yakima and Dungeness Basins to benefit instream flow
- Facilitating Pulse Flows in the Walla Walla Basin
- Authorization of ~40 mitigated emergency wells in Yakima Basin
- Curtailment Orders issued to 300+ Water Right Holders Statewide in various basins to protect senior water rights
- Facilitating emergency water right transfers (e.g., Skagit Basin)
- Public outreach and water system coaching

DEPARTMENT OF ECOLOGY
State of Washington

Emergency Rule for Drought Relief Funding

- Purpose is to reduce hardship where water supplies are less than 75 percent of normal
  - Improve public drinking supplies
  - Restore water for irrigating commercial crops
  - Protect fish and wildlife

DEPARTMENT OF ECOLOGY
State of Washington

Drought Funding Eligibility

- The applicant must be a public entity
- The applicant must be capable of implementing the proposal in a timely manner
- The associated water use must be an existing use under a legal water right
- The applicant must provide a 50 percent funding match, unless “fiscally disadvantaged.”

http://www.ecy.wa.gov/drought/

DEPARTMENT OF ECOLOGY State of Washington

Jeff Marti
Washington Department of Ecology
Water Resources Program
jeff.marti@ecy.wa.gov
360 407 6627

http://www.ecy.wa.gov/drought/