



**US Army Corps
of Engineers**

28th Annual Public Meeting

***Proposed 2008 Rogue
Basin Project Operations***

May 29, 2008 – Medford



US Army Corps
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Portland District

Meeting Overview

- *Introductions*
- *Project Purposes & Storage Allocations*
- *Water Management Plan Development*
- *Water Supply Forecast*
- *Proposed 2008 Operating Plan*
- *Comments/Questions*



Rogue Basin Project Congressionally Authorized Purposes

➤ Primary Purposes

- *Flood Damage Reduction*
- *Fisheries Enhancement*
- *Irrigation*
- *Water Supply**

➤ Secondary Purposes

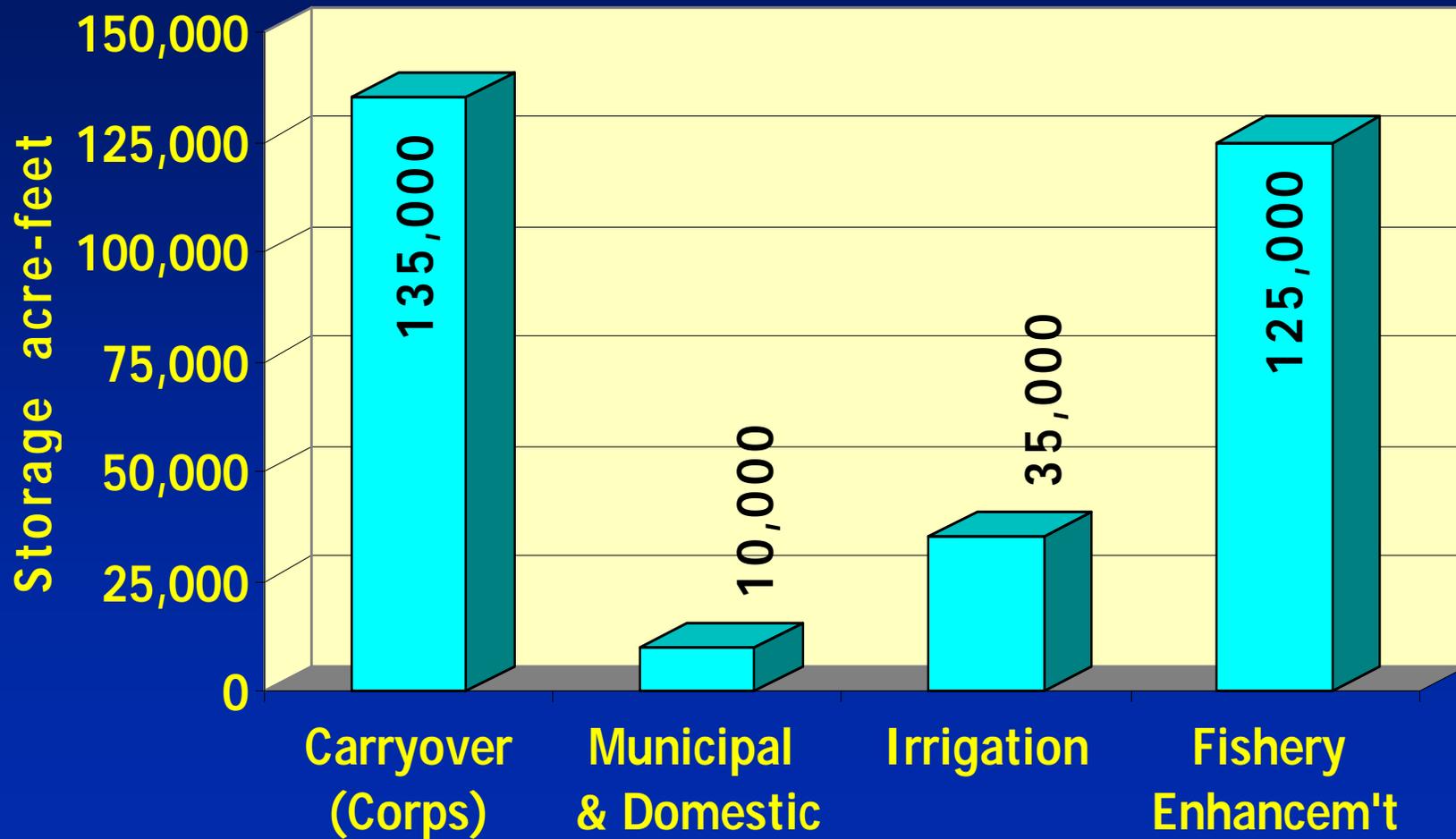
- *Hydropower**
- *Water Quality*
- *Lake Recreation*

**** Not Authorized Purpose at Applegate***



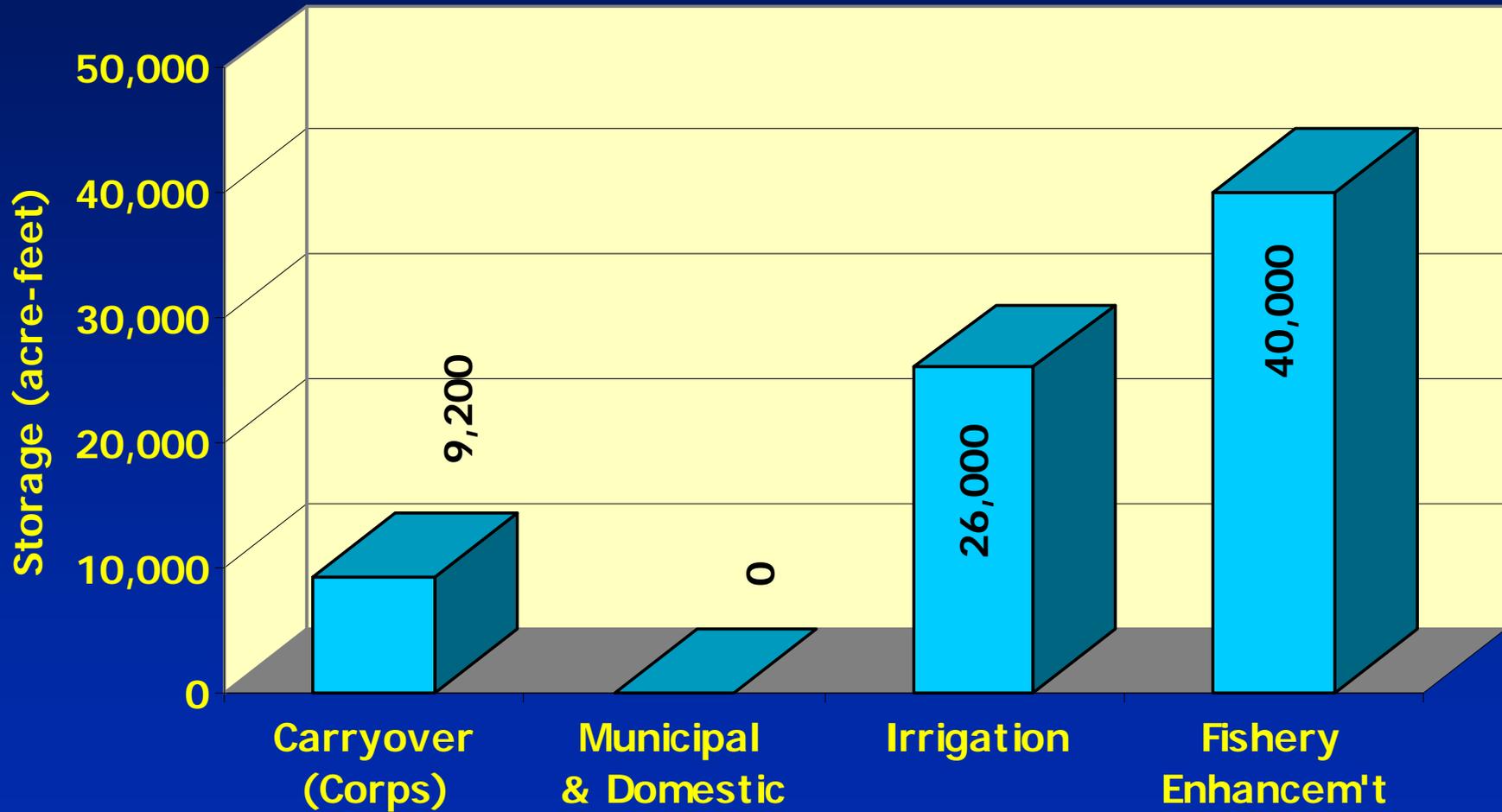
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Lost Creek Reservoir Seasonal Storage Allocations



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Applegate Reservoir Seasonal Storage Allocations



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US Army Corps of Engineers Portland District Water Management Team

District Engineer
Col Thomas O'Donovan

Operations Division
Chief – Dwane Watsek

Engineering and Construction Division
Chief – Don Chambers

Rogue River Basin Project
Manager – Jim Buck
541-878-2255
Jim.A.Buck@usace.army.mil
Operations – Steve Watkins

H & H Branch
Chief – Bruce Duffe (Acting)

Operators - Marv Gentry,
Bruce McClamroch, Rodney Paulson,
Don Sharp, and Patrick Smith

Fishery Biologist -
Greg Taylor

Reservoir Regulation Section
Chief – Kyle McCune (Acting)
Regulator – Laurie Rice
503-808-4887
Laurie.Rice@usace.army.mil

Cooperative Hydro-Met Data Collection & Management

- *National Weather Service/Northwest River Forecast Center*
- *Natural Resources Conservation Service*
- *US Geological Survey*
- *US Army Corps of Engineers*
- *Oregon Water Resources Department*
- *Oregon Department of Fish & Wildlife*



Rogue Basin Water Management Advisory Group

- **Oregon Water Resources Dept.**
- **Oregon Department of Fish and Wildlife**
- **Oregon State Marine Board**
- **Oregon Department of Environmental Quality**
- **National Marine Fisheries Service**
- **US Fish & Wildlife Service**
- **US Forest Service**
- **US Bureau of Land Management**
- **US Bureau of Reclamation**
- **US Geological Survey**
- **Counties**



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Water Management Planning Process

- *FEBRUARY* week 4 *Review, Lessons
Learned & Outlook*
- *MARCH* week 4 *Outlook*
- *APRIL* week 4 *Outlook & Pre-PLAN*
- *MAY* early *Draft PLAN*
- *MAY* week 4 *Public Meeting*
- *JUNE* early *Final PLAN*
- *MONTHLY* *Evaluate & Adapt PLAN*



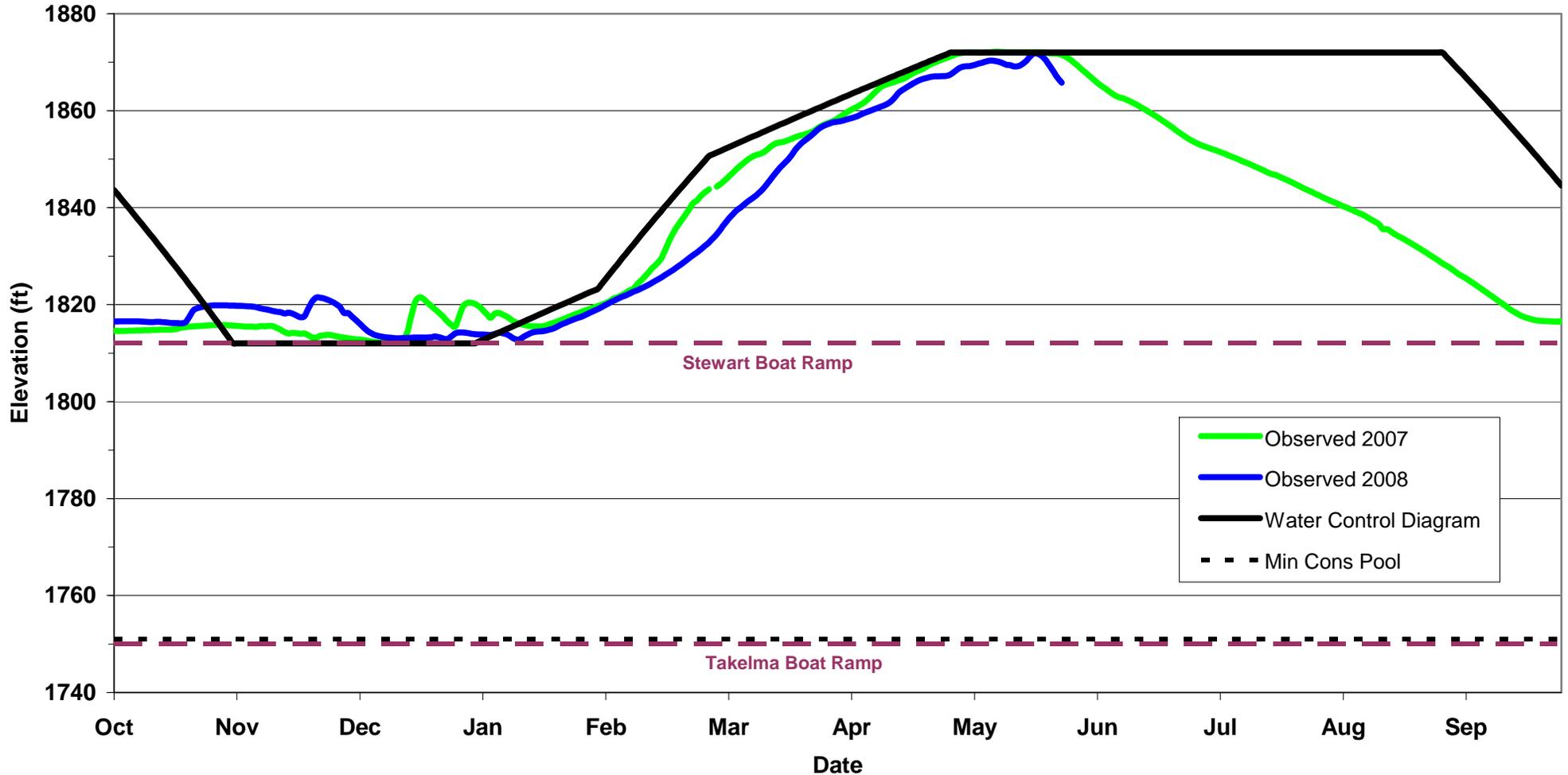
Water Year 2008 Forecast & Proposed Operations



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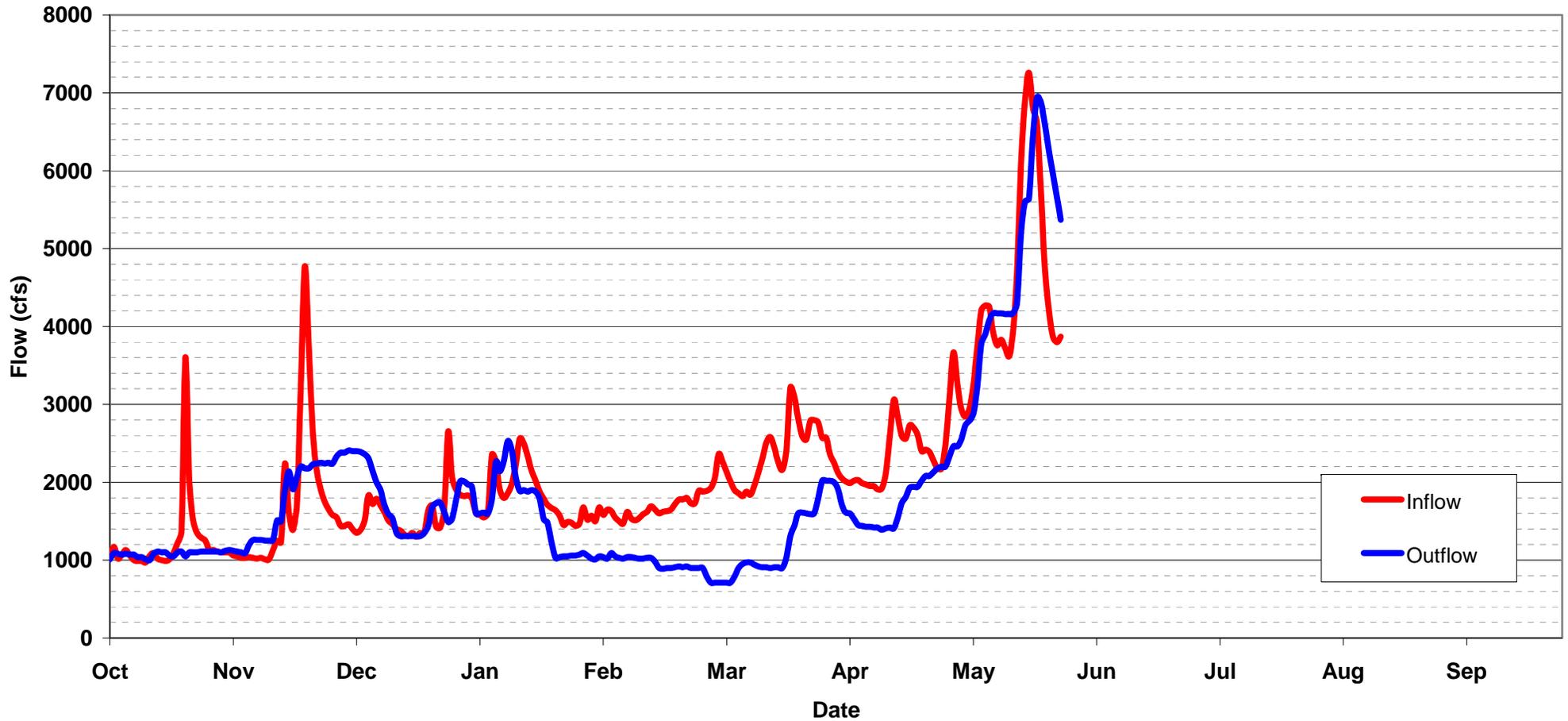
Lost Creek Lake Elevation

Lost Creek Lake Elevation WY 2008



Lost Creek Lake Inflow and Outflow

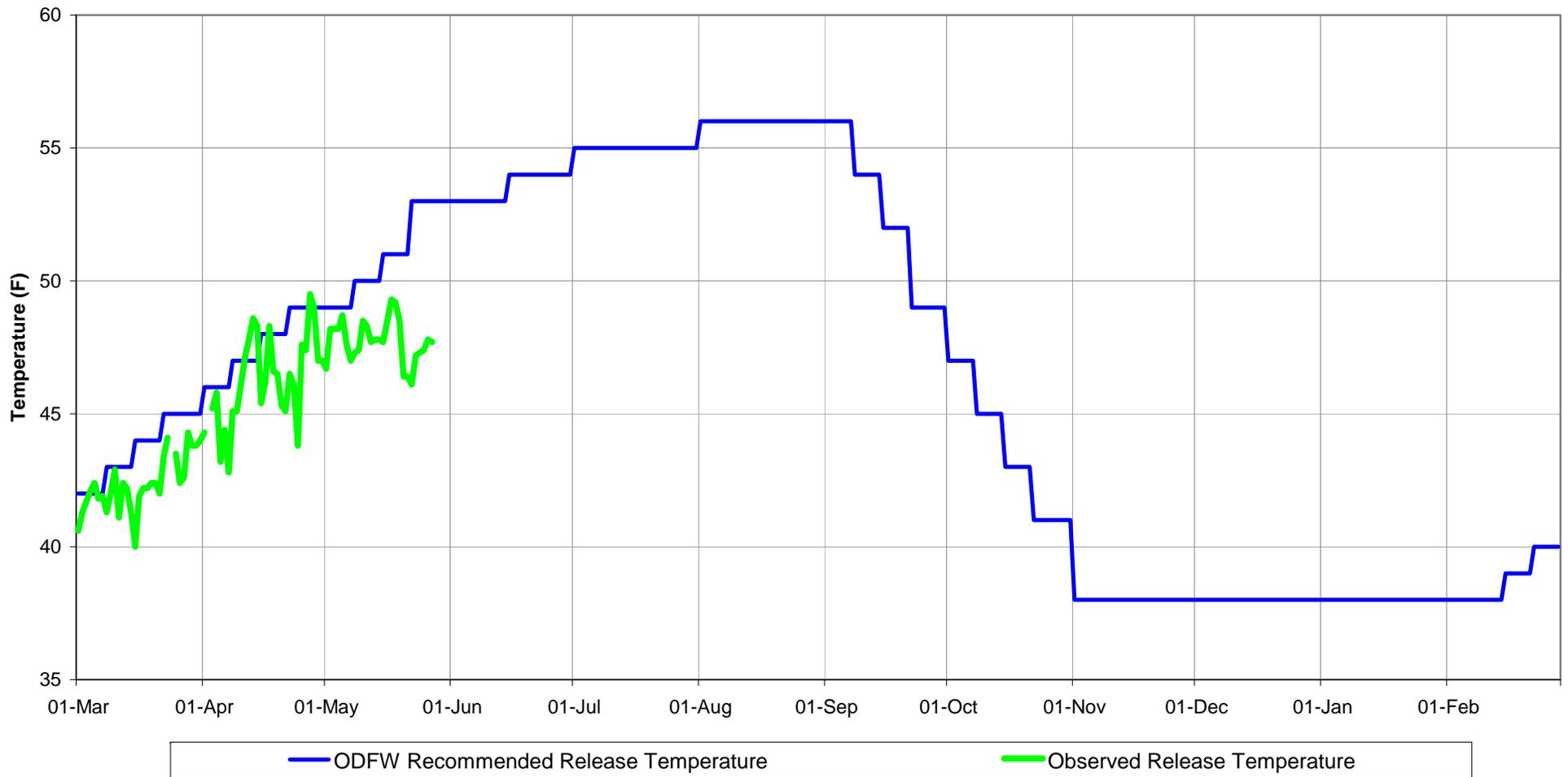
Lost Creek Lake Inflow and Outflow WY 2008



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Lost Creek Temperature Release Schedule

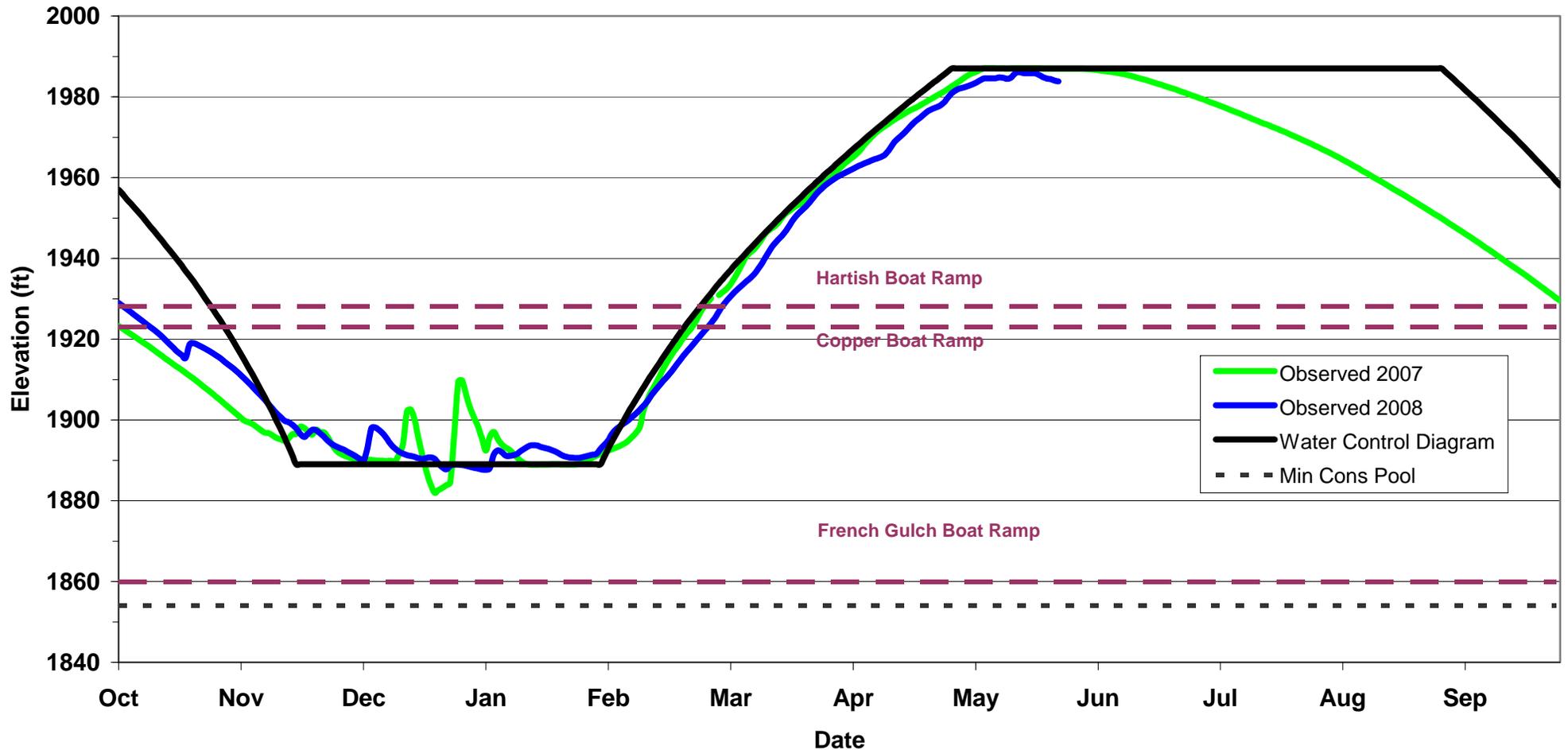
Lost Creek Outflow Temperature 2008



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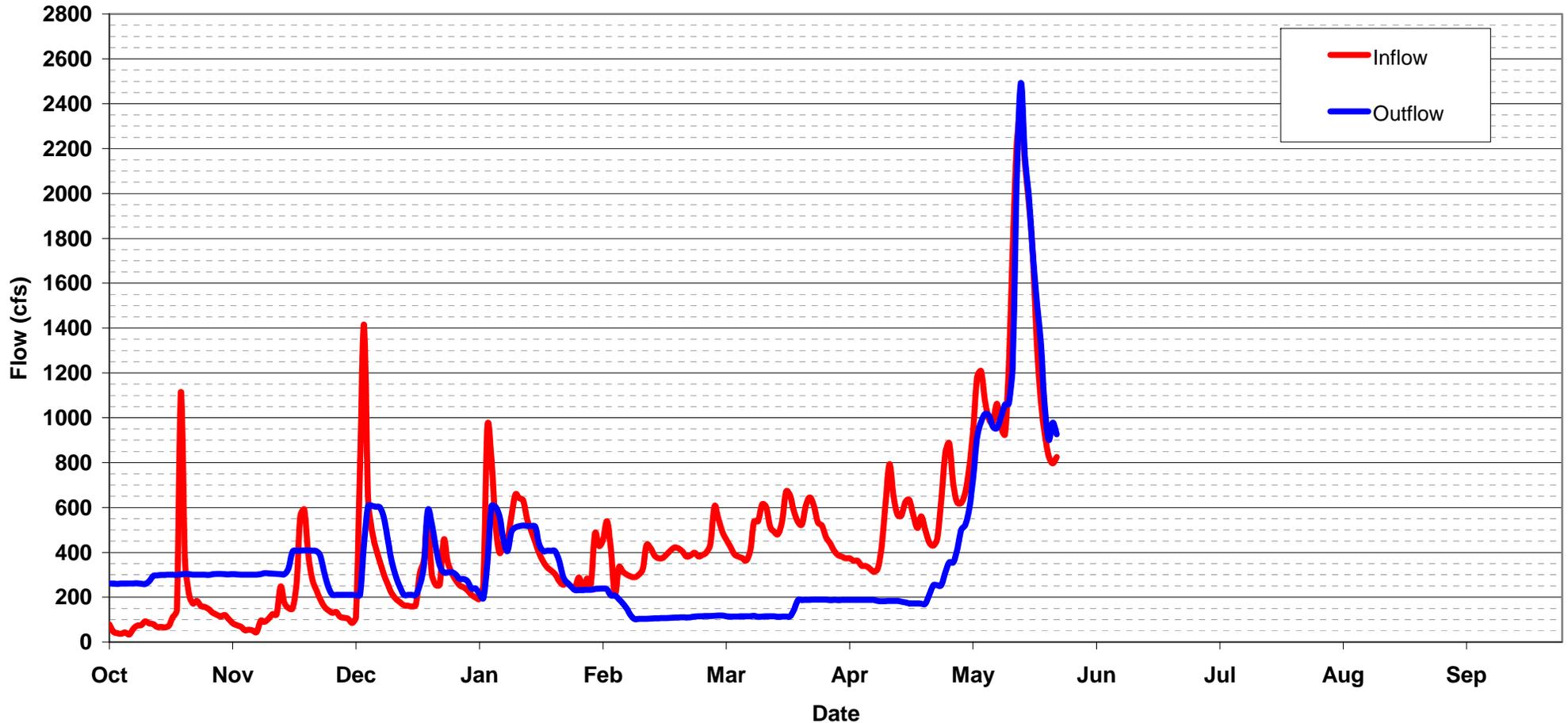
Applegate Lake Elevation

Applegate Lake Elevation WY 2008



Applegate Lake Inflow and Outflow

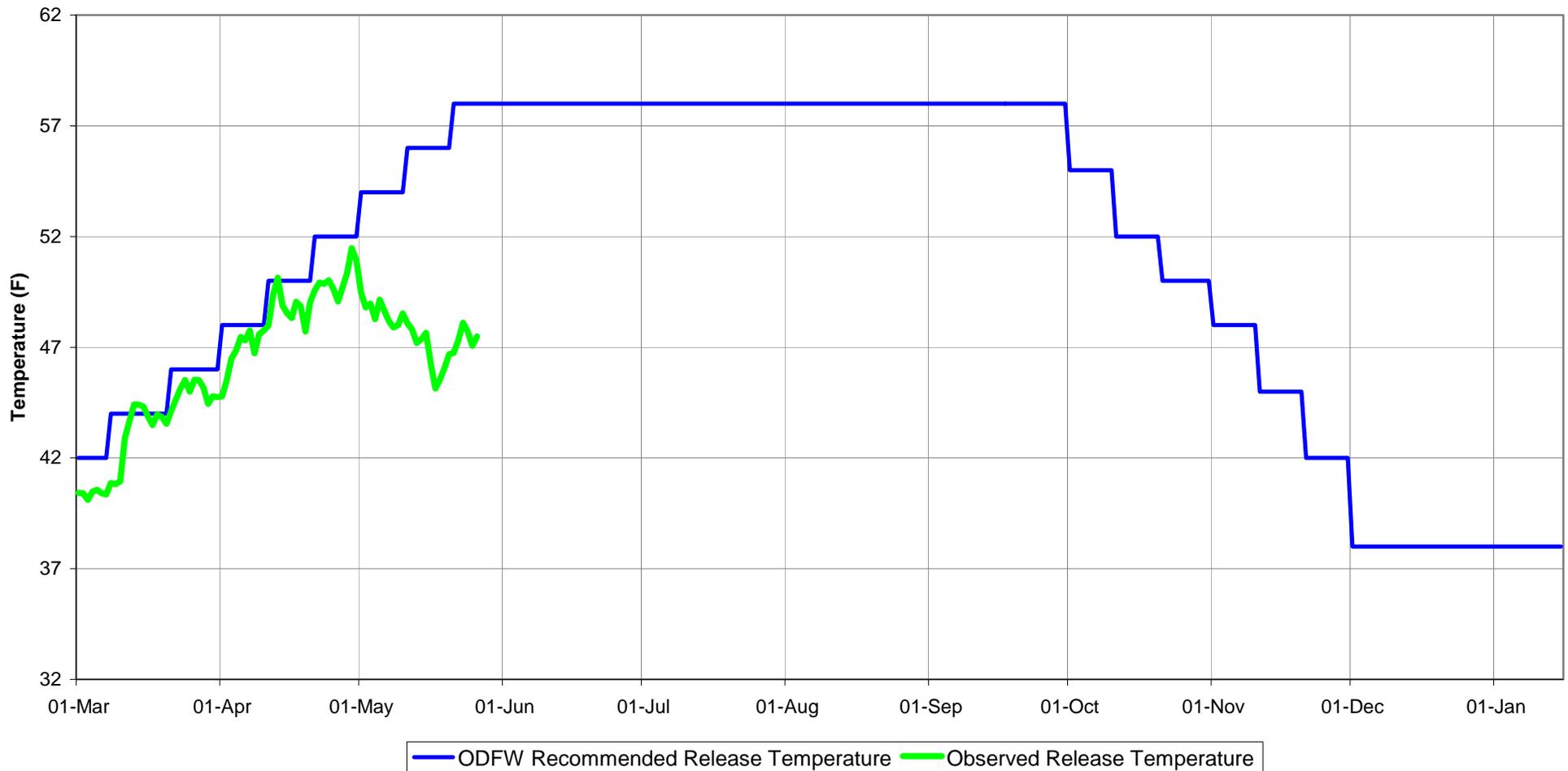
Applegate Lake Inflow and Outflow WY 2008



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Applegate Temperature Release Schedule

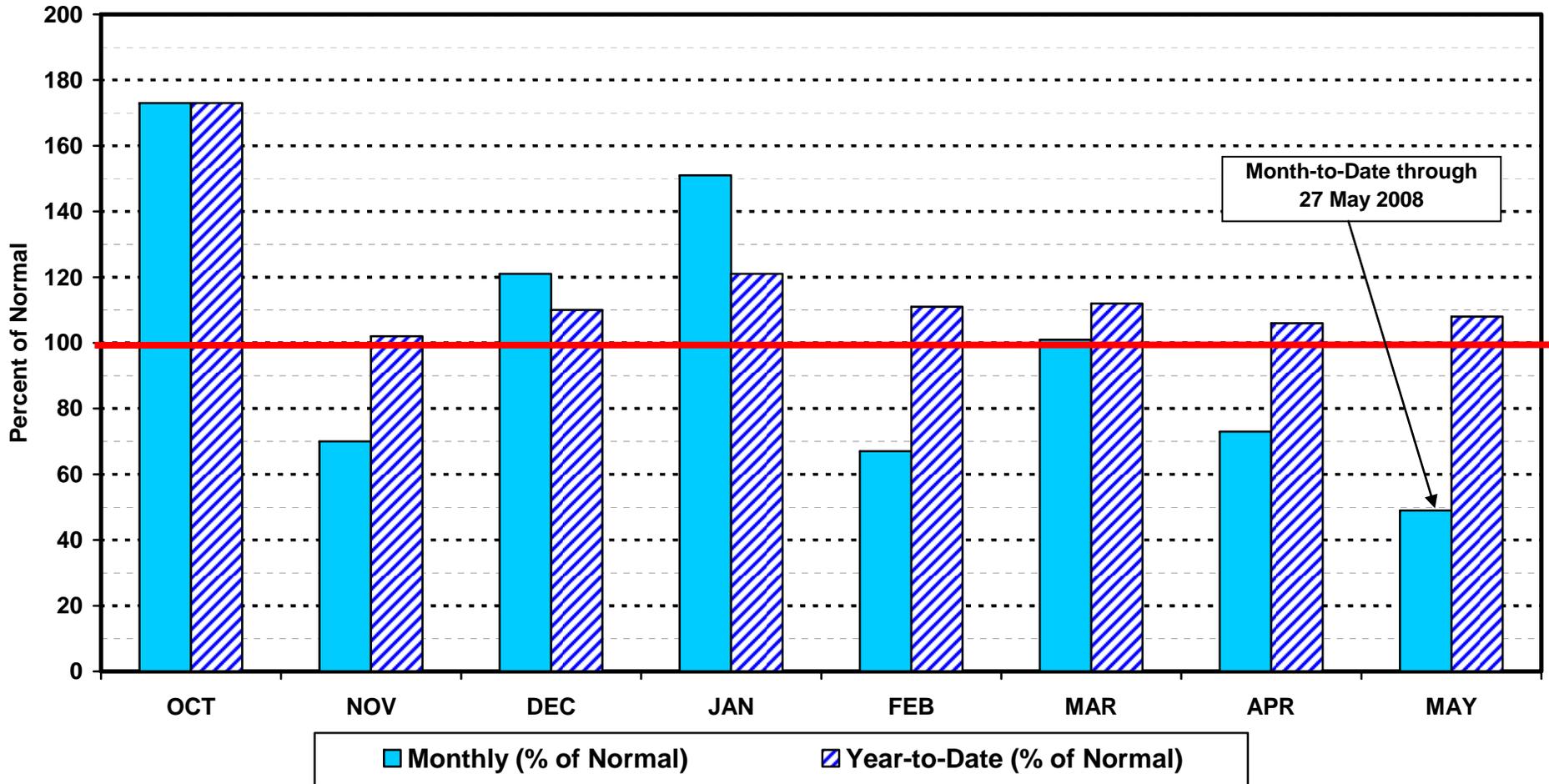
Applegate Outflow Temperature 2008



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Rogue Basin Precipitation (% of Average)

Rogue/Umpqua Basin Precipitation
(NRCS/NWS Reported)



Rogue Basin Snowpack

As of 27May08

ROGUE/UMPQUA BASIN DATA POINT	ELEV (ft)	SNOW WATER EQUIVALENT (in)			TOTAL PRECIPITATION (in)		
		CURRENT	AVG	% of AVG	CURRENT	AVG	% of AVG
BIG RED MOUNTAIN	6050	16.8	11.1	151	48.6	52.8	92
ANNIE SPRINGS	6010	29.3	28.1	104	72.0	65.9	109
FOURMILE LAKE	6000	12.9	8.7	148	55.4	50.4	110
COLD SPRINGS CAMP	5940	13.3	6.6	202	62.1	51.7	120
SEVENMILE MARSH	5700	19.7	9.1	216	66.7	60.0	111
SUMMIT LAKE	5600	45.8	30.1	152	76.7	67.9	113
DIAMOND LAKE	5315	-M	1.3	*	50.1	44.5	113
BILLIE CREEK DIVIDE	5300	3.6	0.7	514*	55.0	48.9	112
BIGELOW CAMP	5120	0.0	0.7	0*	-M	61.7	*
HOLLAND MEADOWS	4900	28.3	3.5	809	76.6	70.8	108
FISH LK.	4665	0.0	0.0	*	46.9	41.5	113
KING MOUNTAIN	4340	-M	0.0	*	51.9	58.8	88
TOKETEE AIRSTRIP	3240	0.0	N/A	*	46.8	N/A	*
BASIN WIDE PERCENT OF AVERAGE				172			108

Applegate Site

Lost Creek Site

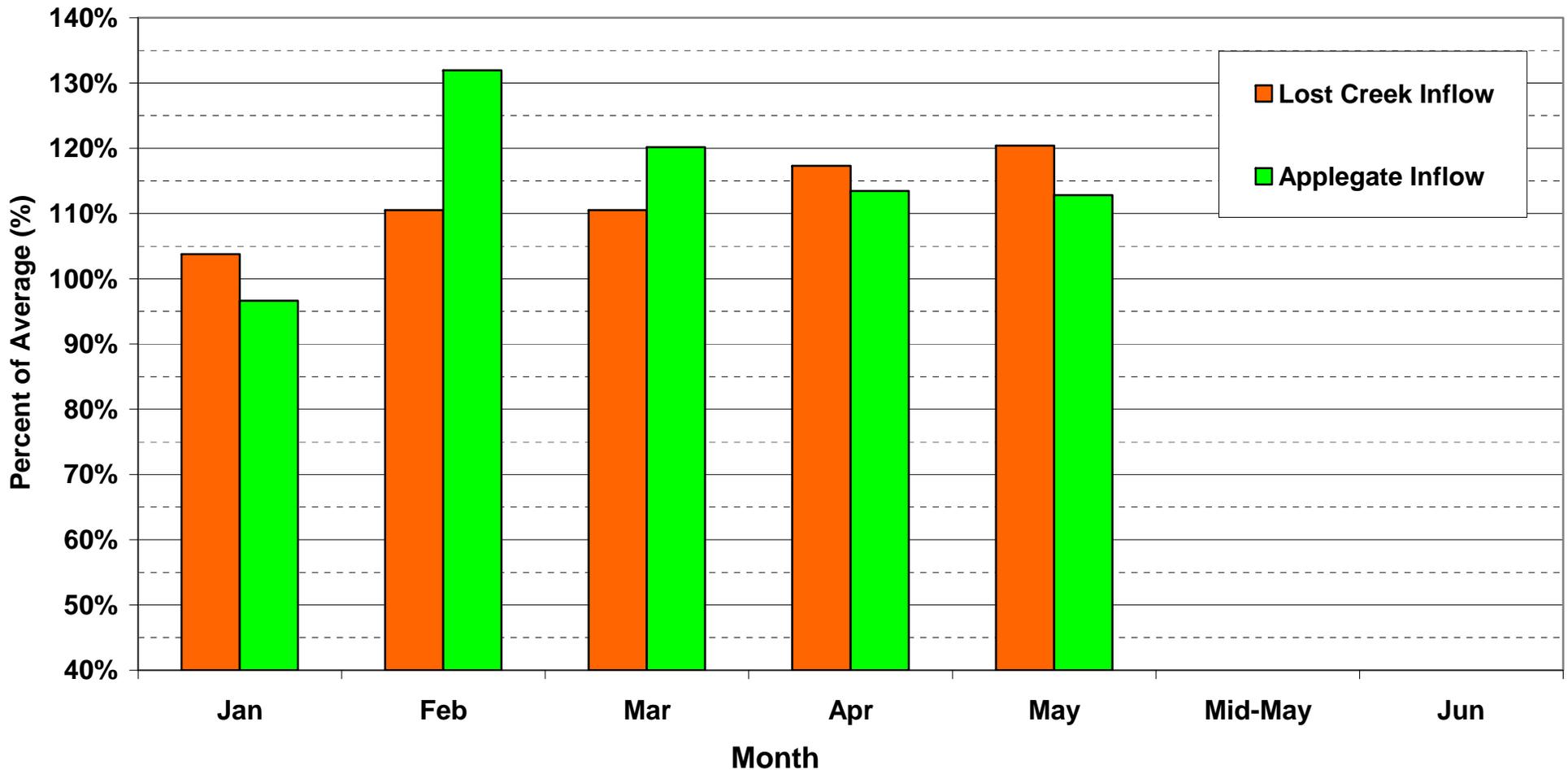
* May not be a valid measurement of conditions



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Rogue Projects Inflow Forecast 2008 Trend

NRCS 50% Exceedence Monthly Forecasts
for Period Apr-Sep 2008



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Water Supply Outlook

USDA Natural Resources Conservation Service

Lost Creek Lake

May-Sep 2008

620,000 acre-feet*

120% of Avg

****Estimate of the most probable runoff volume in acre-feet***



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Water Supply Outlook

USDA Natural Resources Conservation Service

Applegate Lake

May-Sep 2008

*88,000 acre-feet**

113% of Avg

**Estimate of the most probable runoff volume in acre-feet*



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Lost Creek Flow Recommendations from the State of Oregon

DATE	FLOW REQUESTED
Jun 01-10	Pass Inflow
Jun 11-Jul 10	2,800 cfs
Jul 11-20	2,600 cfs
Jul 21-Aug 20	2,500 cfs
Aug 21-31	2,400 cfs
Sep 01-10	2,200 cfs
Sep 11-20	1,800 cfs
Sep 21-Oct 31	Pass Inflow (1,200 cfs)



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Applegate Flow Recommendations from the State of Oregon

DATE	FLOW REQUESTED
Jun 01-20	Pass Inflow
Jun 21-Sep 20	300 cfs
Sep 21-Nov 20	280 cfs
Nov 21-Nov 30	200 cfs



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Forecast Analysis

- *Uses a Hydrologic Model (HEC-5) of the Rogue Projects & the May NRCS/NWS Water Supply Forecast*
- *Simulate the Operation of the Two Rogue Projects for the Period of Record (72 Years)*
- *Operational Criteria Previously Discussed*
- *Graphs with “50% Probability Bands”*



LOST CREEK LAKE

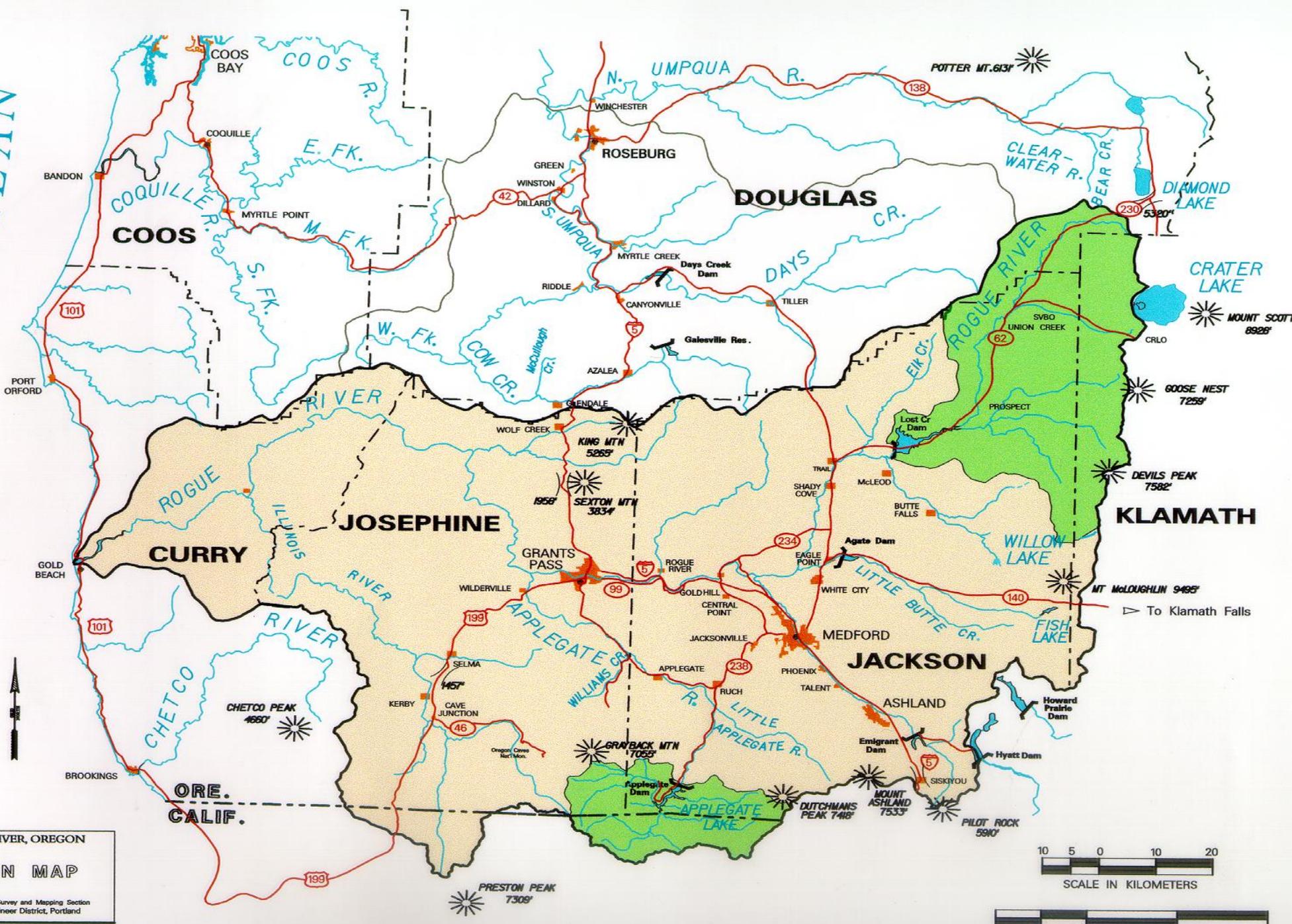
Proposed 2008 Water Management Plan

- ***Forecast Inflows***
- ***Proposed Outflows***
- ***Forecast Lake Elevations***
- ***Downstream River Flows***
- ***Comparison to Last Year***

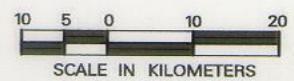


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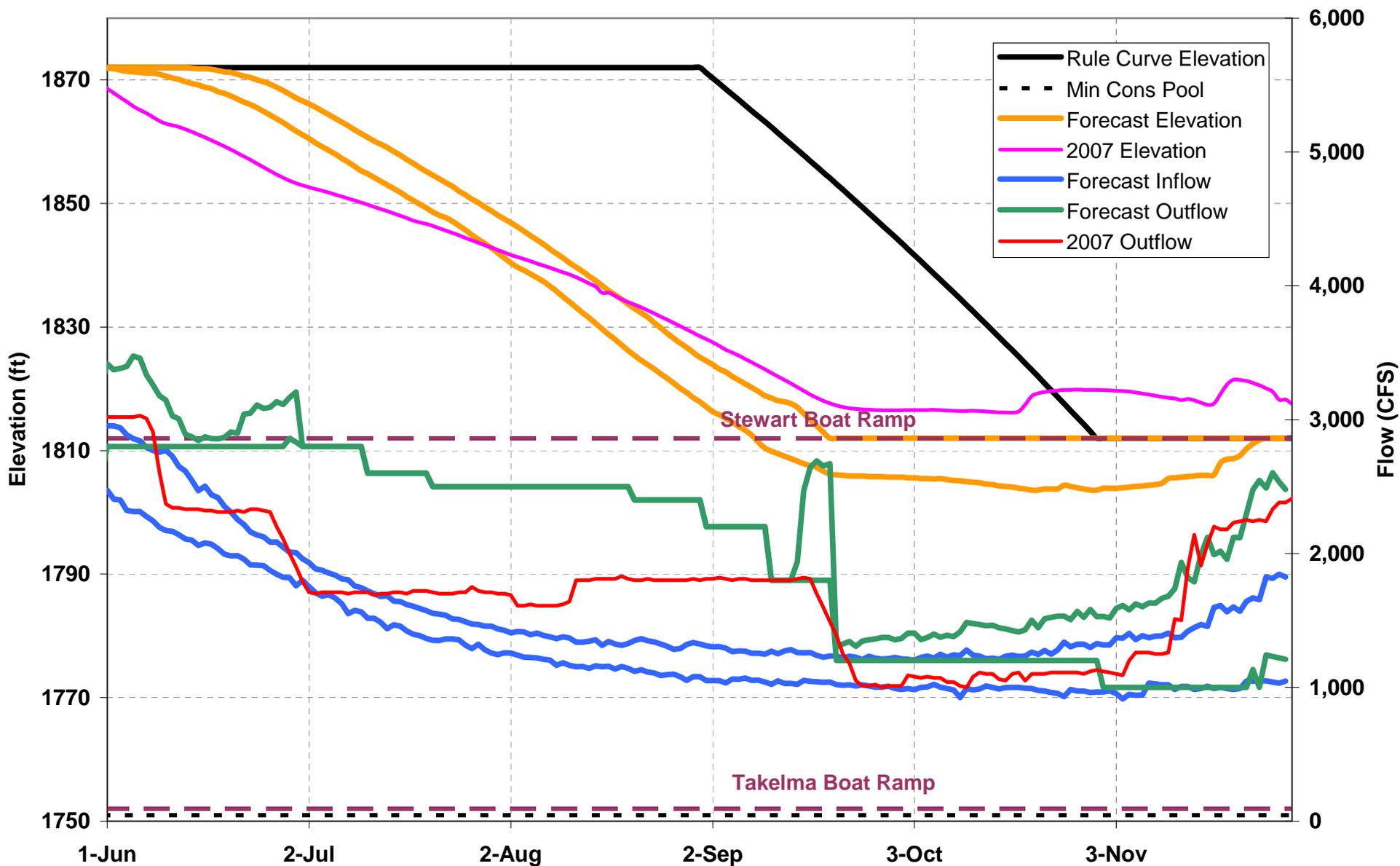
PACIFIC OCEAN



ROGUE RIVER, OREGON
BASIN MAP
 Produced by GIS, Survey and Mapping Section
 U.S. Army Engineer District, Portland



LOST CREEK LAKE 2008 Planned Operations



The area between the exceedance curves represents the range of elevations and flows that have a 50% probability of occurring under this scenario based on the NRCS most probable forecast (50% exceedance).

Lost Creek Lake

Holiday Pool Elevations

<u>Year</u>	<u>Mem. Day</u>	<u>July 4th</u>	<u>Labor Day</u>
1999	1866.9	1862.2	1813.5
2000	1872.1	1850.7	1823.4
2001	1841.0	1826.2	1792.8
2002	1871.6	1854.4	1822.6
2003	1872.0	1852.2	1822.3
2004	1871.6	1852.5	1821.4
2005	1872.0	1860.3	1821.3
2006	1871.9	1859.8	1823.0
2007	1871.2	1852.1	1827.0
<i>Average</i>	1867.8	1852.3	1818.6

2008 Estimated (50% Prob. Range)

1866.28

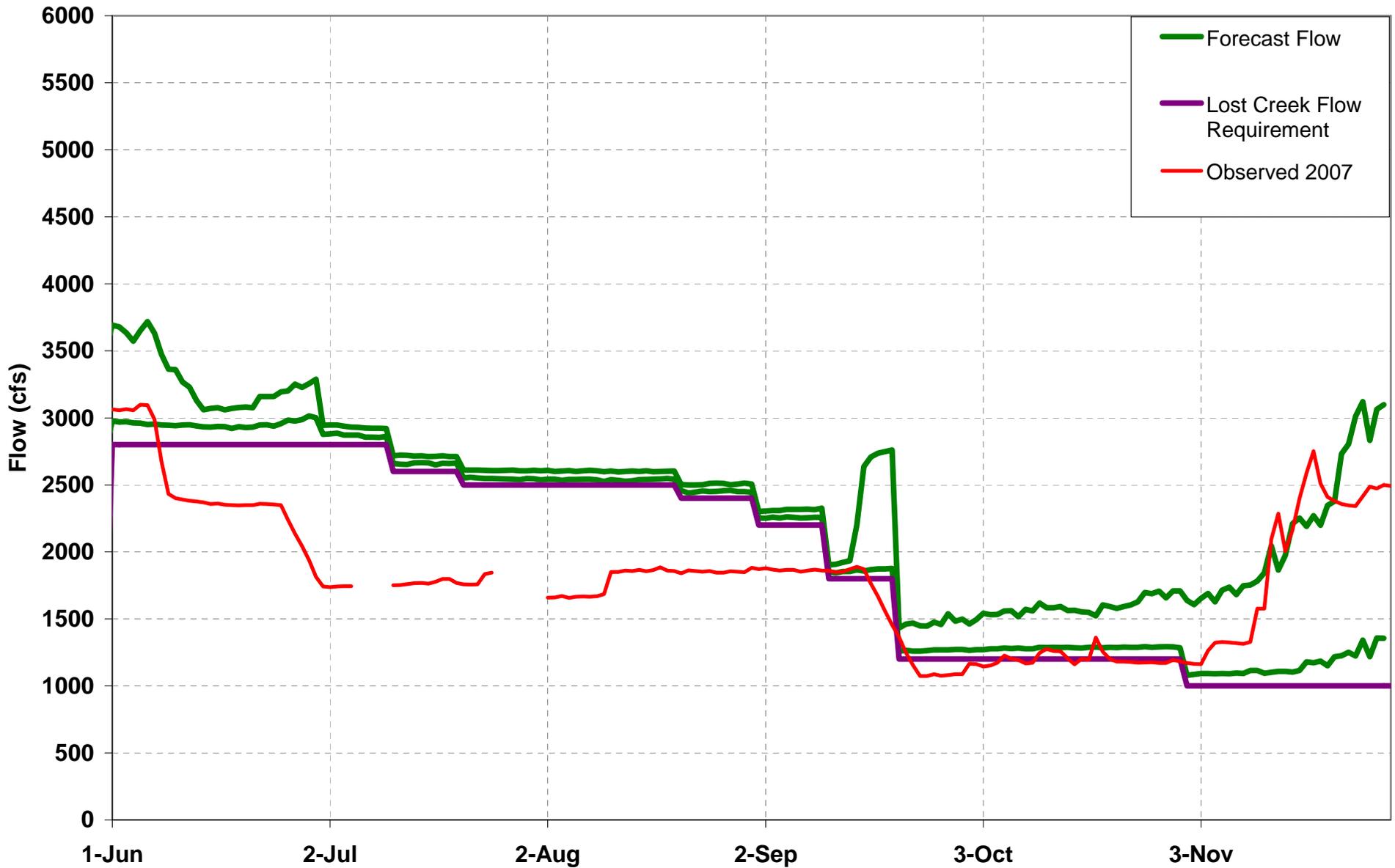
1859.2 – 1865.0

1817.1 – 1824.5



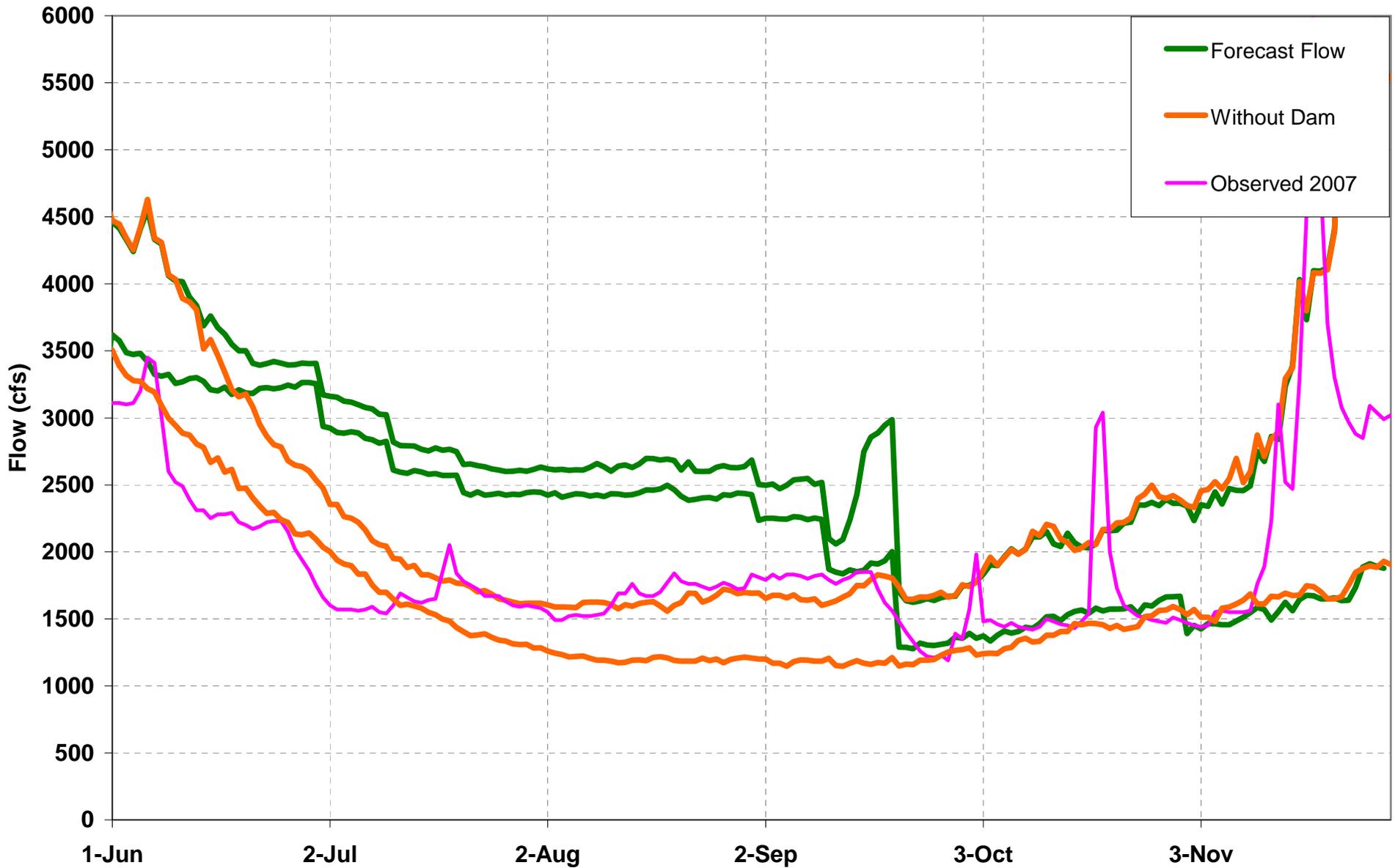
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ROGUE RIVER at MCLEOD NRCS May 50% Exceedance Forecast



The area between the exceedance curves represents the range of flows that have a 50% probability of occurring under this scenario based on the NRCS most probable forecast (50% exceedance).

ROGUE RIVER at GRANTS PASS NRCS May 50% Exceedance Forecast



The area between the exceedance curves represents the range of flows that have a 50% probability of occurring under this scenario based on the NRCS most probable forecast (50% exceedance).

APPLEGATE LAKE

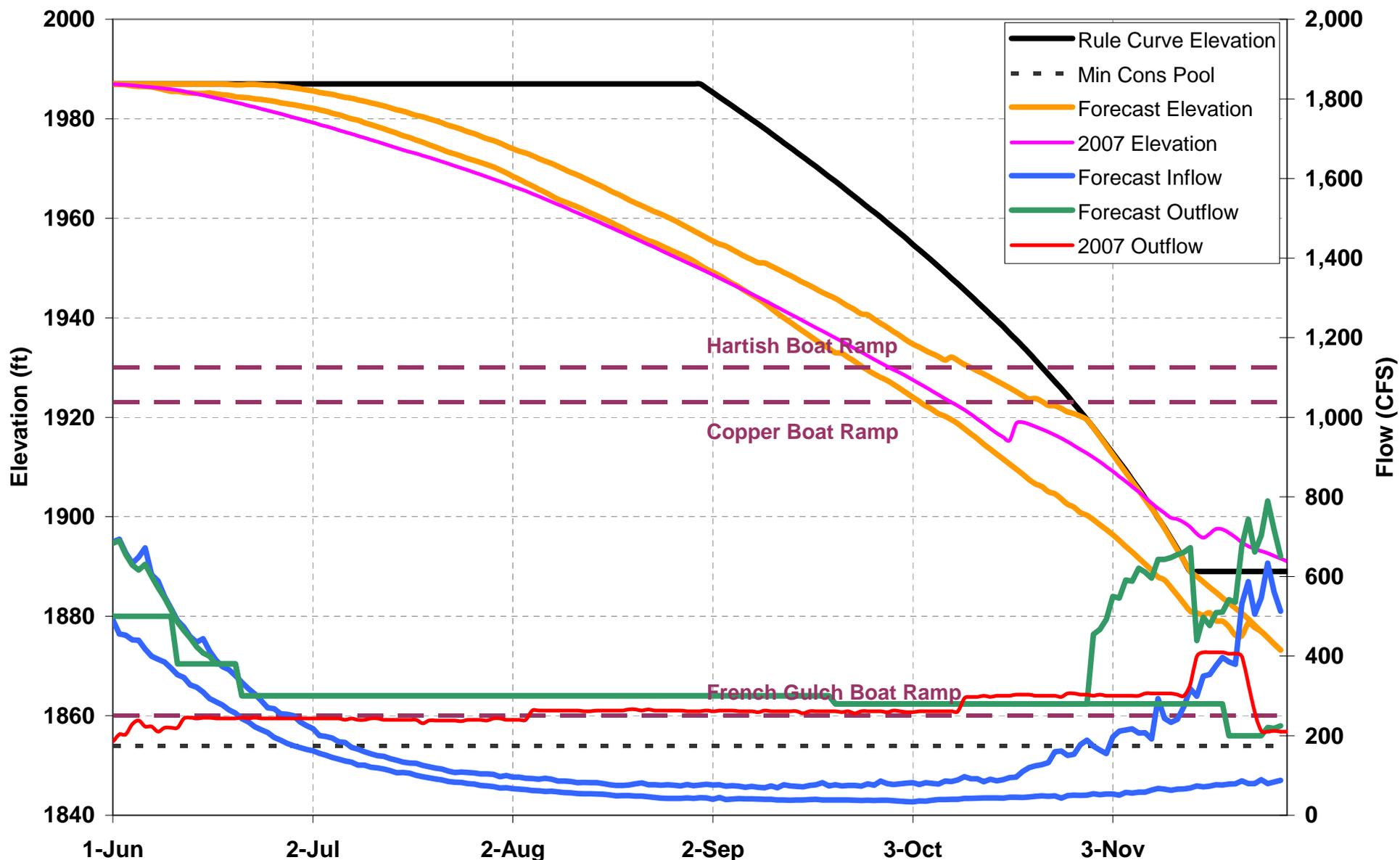
Proposed 2008 Water Management Plan

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APPLEGATE LAKE 2008 Planned Operations



The area between the exceedance curves represents the range of elevations and flows that have a 50% probability of occurring under this scenario based on the NRCS most probable forecast (50% exceedance).

Applegate Lake Holiday Pool Elevations

<u>Year</u>	<u>Mem. Day</u>	<u>July 4th</u>	<u>Labor Day</u>
1999	1982.6	1985.1	1941.9
2000	1985.0	1978.6	1948.7
2001	1904.3	1903.6	1894.1
2002	1986.6	1978.8	1952.0
2003	1987.0	1981.2	1954.1
2004	1987.0	1982.1	1949.2
2005	1987.0	1984.5	1951.1
2006	1986.5	1981.2	1940.6
2007	1987.0	1978.6	1948.3
<i>Average</i>	1977.0	1972.6	1942.2

2008 Estimated (50% Prob. Range)

1984.0

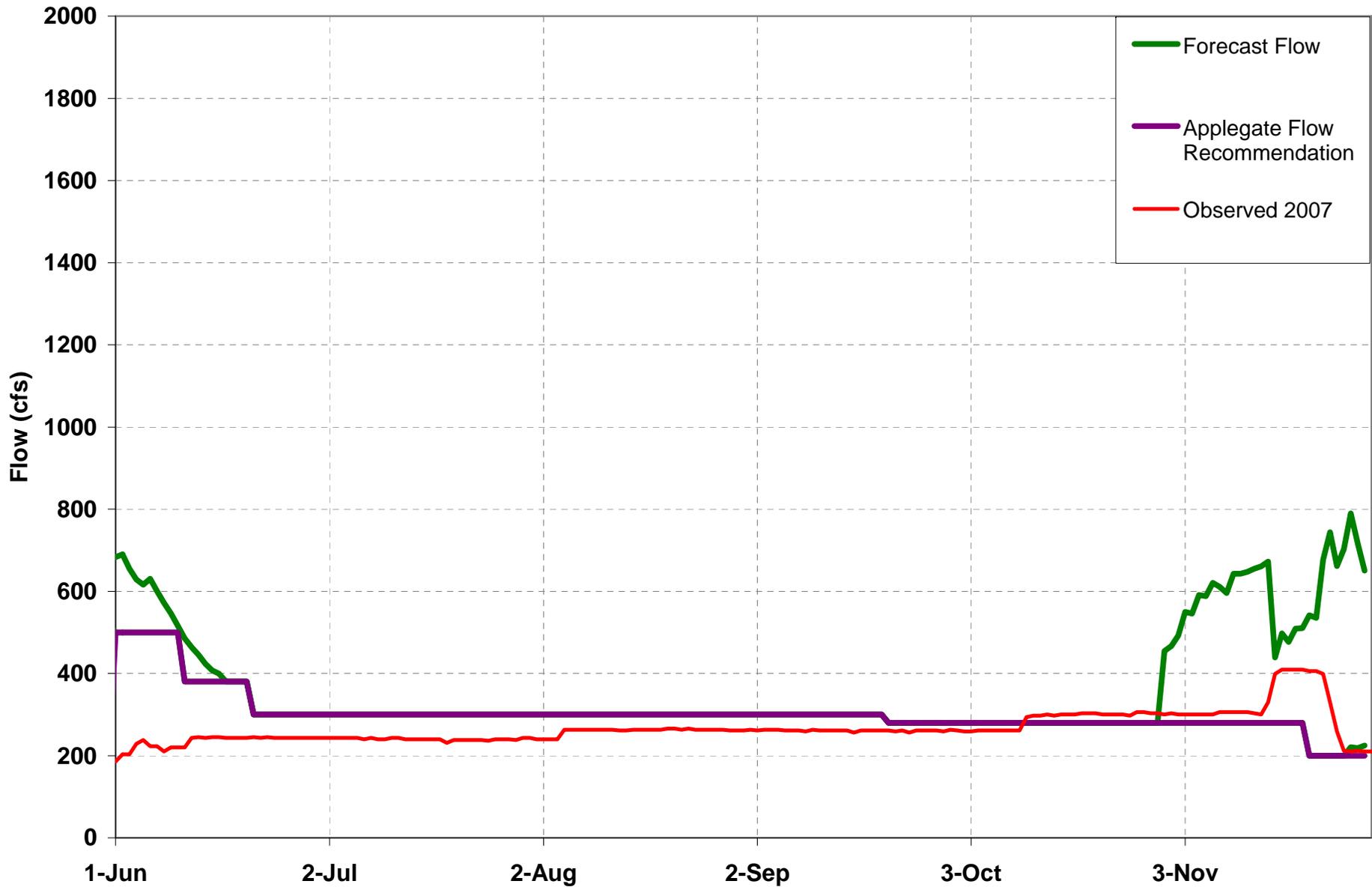
1981.5 – 1985.1

1949.8 – 1956.1



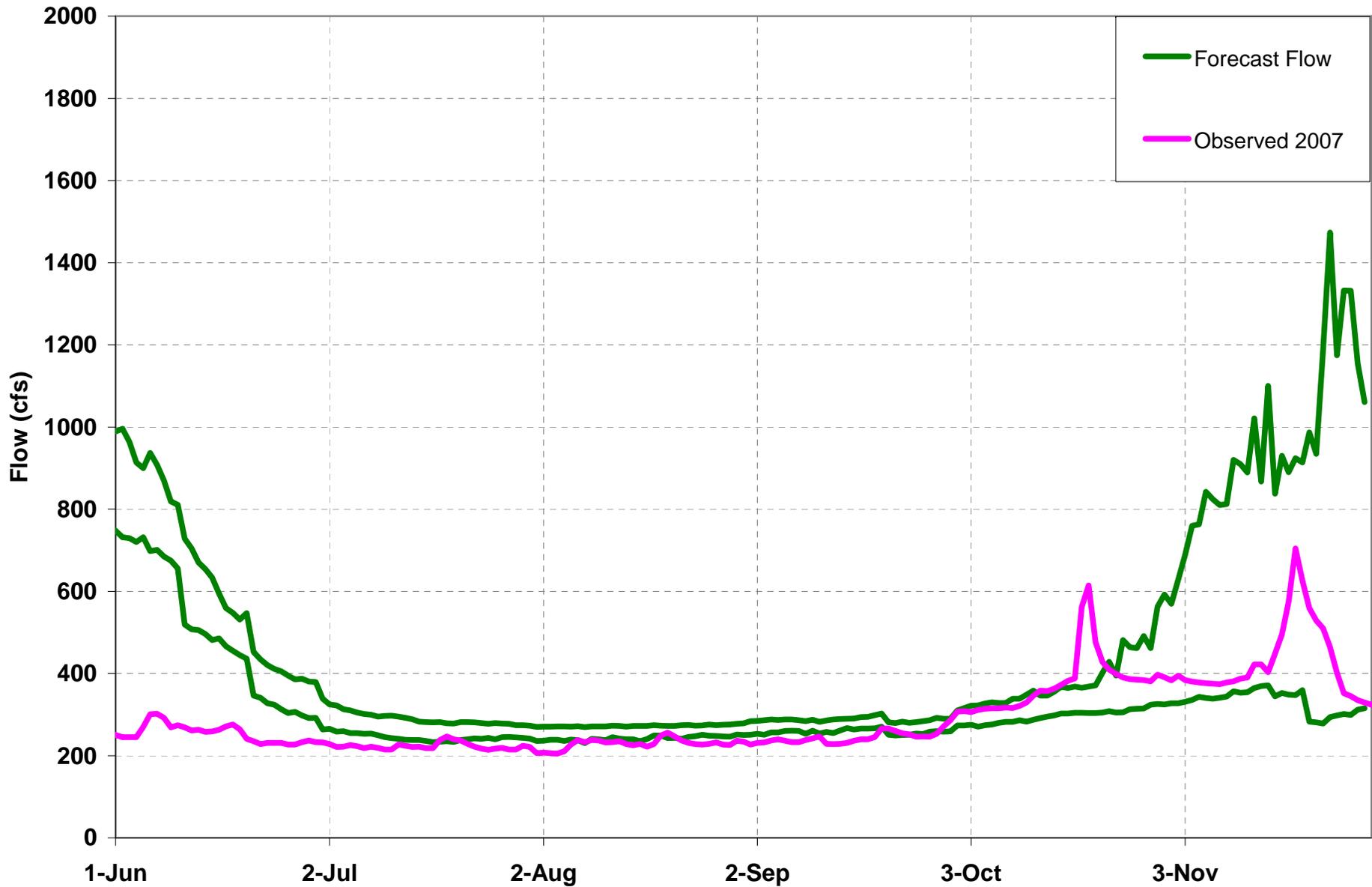
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APPLEGATE RIVER at COPPER NRCS May 50% Exceedance Forecast



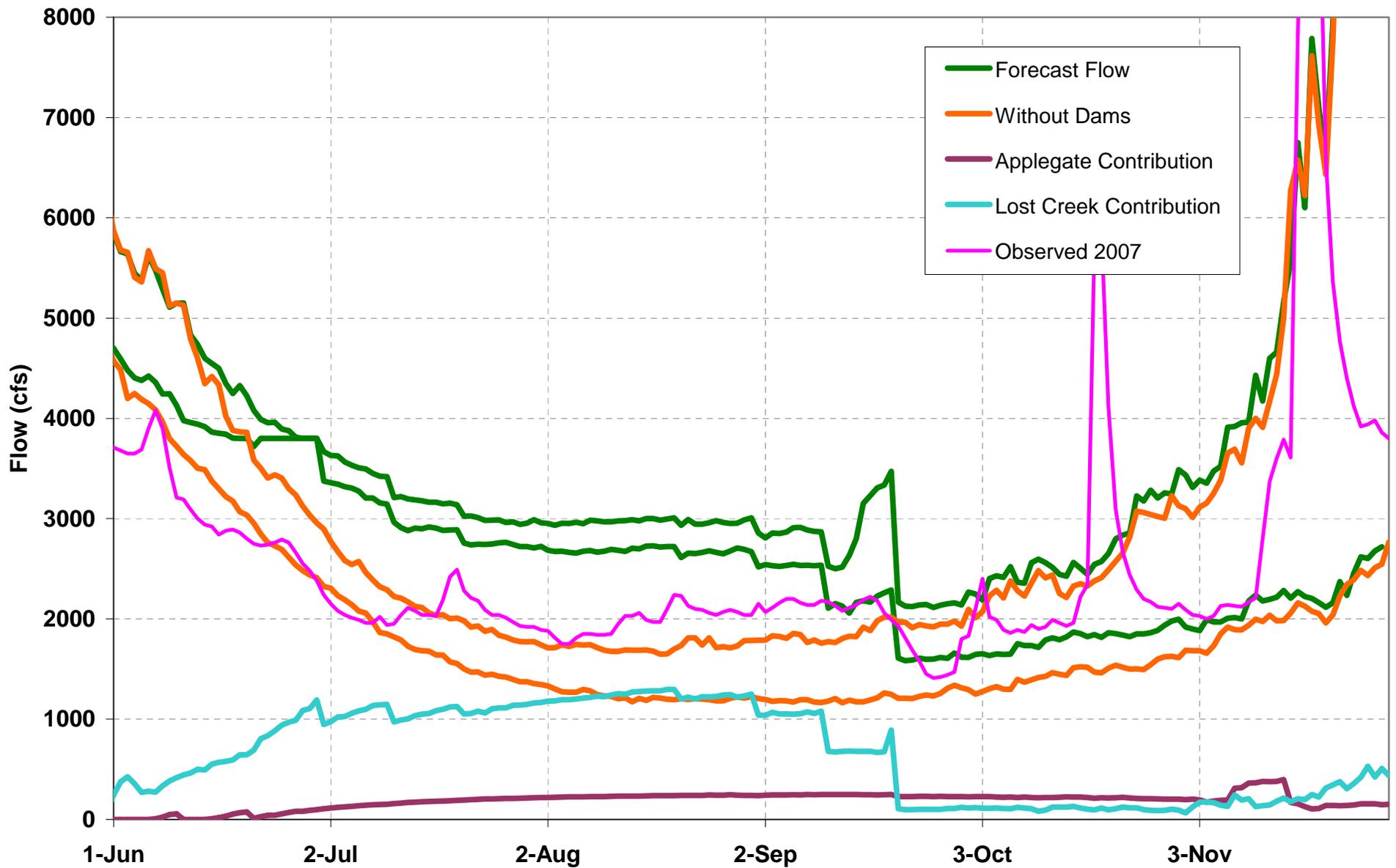
The area between the exceedance curves represents the range of flows that have a 50% probability of occurring under this scenario based on the NRCS most probable forecast (50% exceedance).

APPLEGATE RIVER at WILDERVILLE NRCS May 50% Exceedance Forecast



The area between the exceedance curves represents the range of flows that have a 50% probability of occurring under this scenario based on the NRCS most probable forecast (50% exceedance).

ROGUE RIVER at AGNESS NRCS May 50% Exceedance Forecast



The area between the exceedance curves represents the range of flows that have a 50% probability of occurring under this scenario based on the NRCS most probable forecast (50% exceedance).

Questions and Comments??

Presentation will be available at:

- <https://www.nwp.usace.army.mil/issues/>

Rogue & Applegate Flow Information at:

- <http://waterdata.usgs.gov/or/nwis/rts>
- <http://www.nwrfc.noaa.gov>

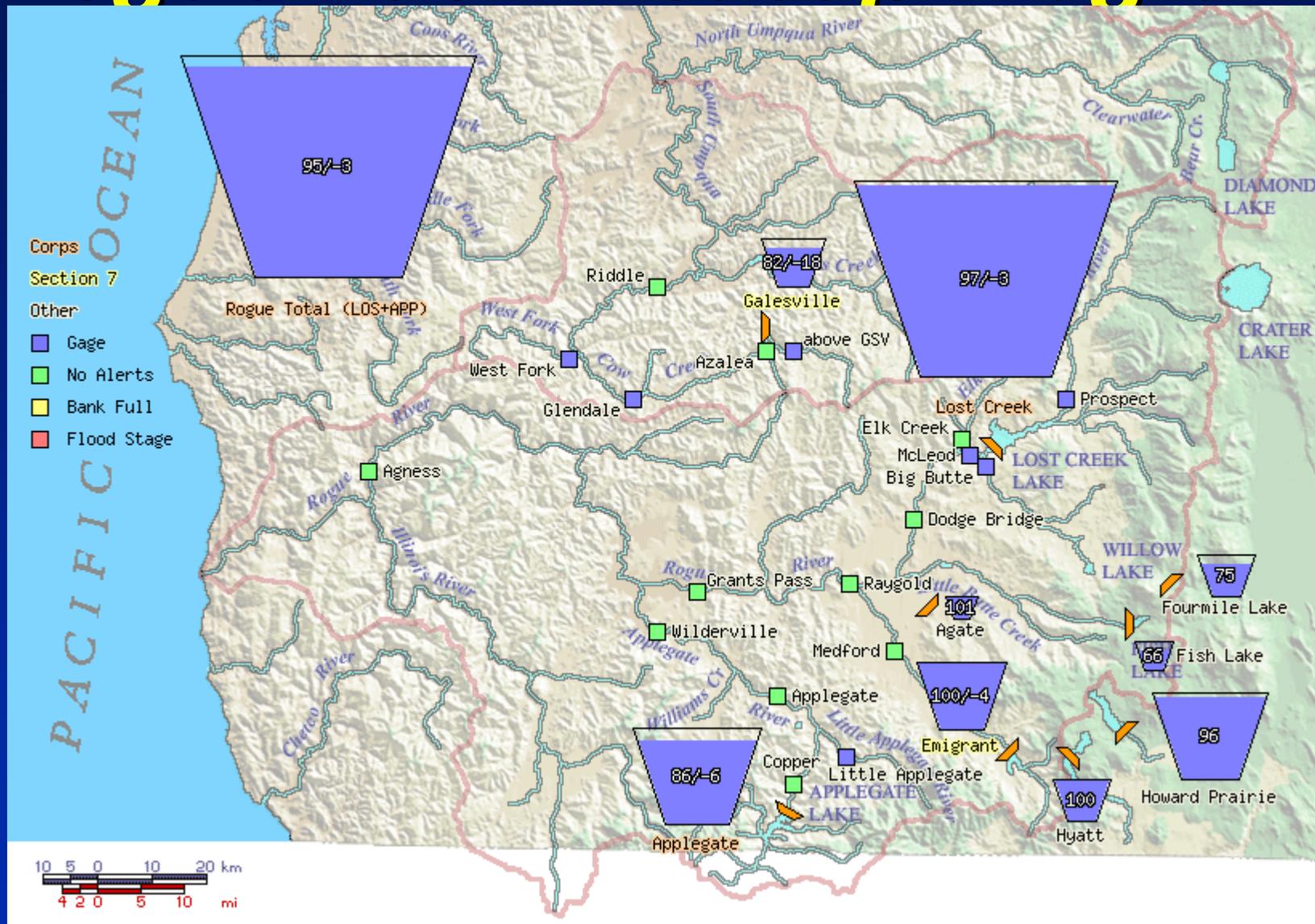
Lost Creek & Applegate Reservoir Information at:

- <http://www.nwd-wc.usace.army.mil/nwp/>
- <https://www.nwd-wc.usace.army.mil/nwp/teacup/rogue/>



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Rogue Basin Teacup Diagram



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<https://www.nwd-wc.usace.army.mil/nwp/teacup/rogue/>