

# RESERVOIR DROUGHT OPERATIONS

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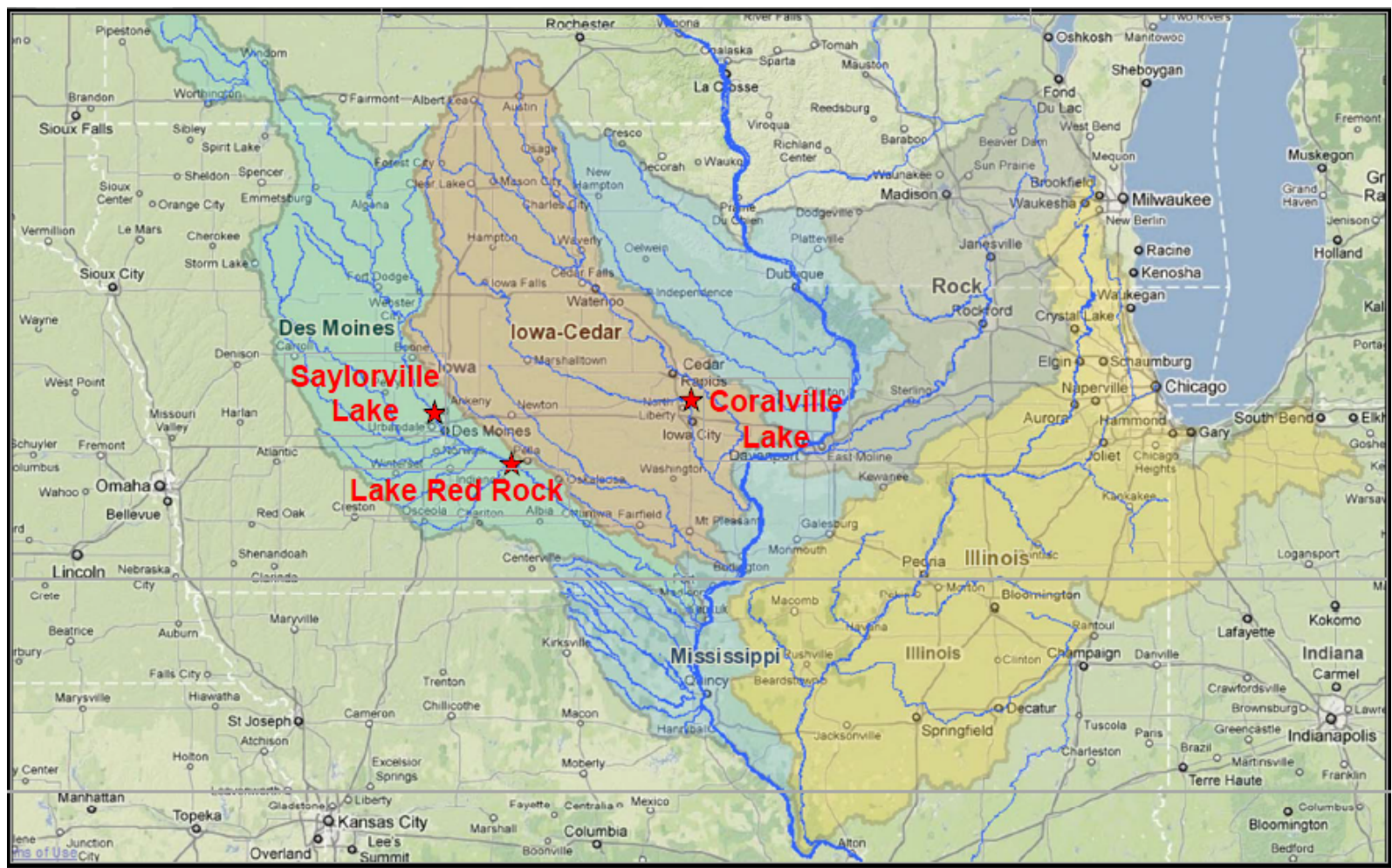
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**US Army Corps  
of Engineers.**



# ROCK ISLAND DISTRICT



US Army Corps of Engineers.



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# COMMON PURPOSES

## Coralville Lake, Saylorville Lake, and Lake Red Rock:

- Flood Control
- Water Conservation
  - Water Supply
  - Low-Flow Augmentation
  - Fish and Wildlife Enhancement
  - Recreation



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# RESERVOIR DROUGHT OPERATIONS

Balance of available storage with anticipated inflows and outflows

- Level of drought response determined by pool elevation and reservoir inflows

Drought management

- Integrated component of the Water Control Manuals
- Drought schedule developed in coordination with State of Iowa
- Water supply has priority over water quality/conservation releases

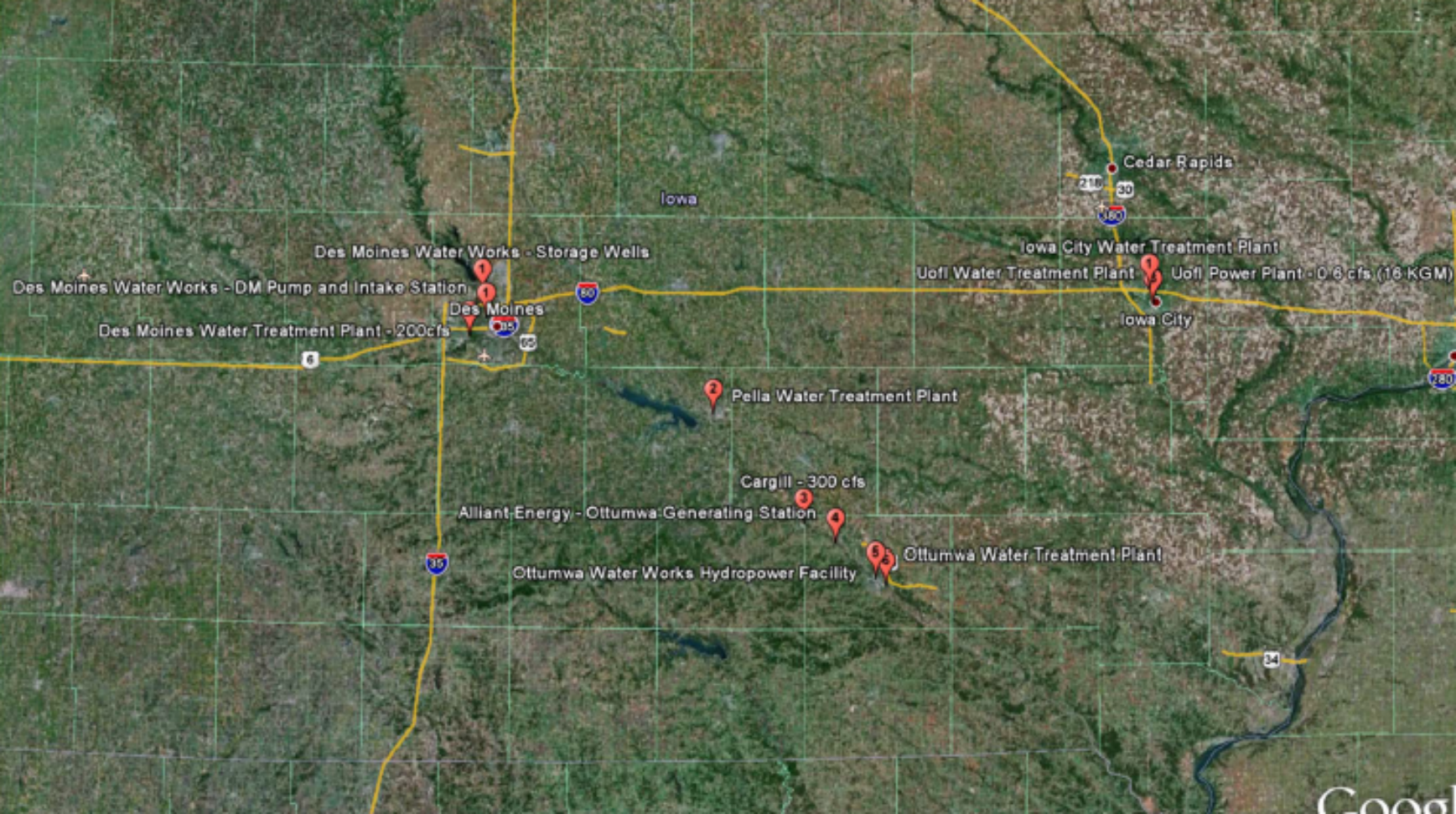


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# DOWNSTREAM WATER USERS

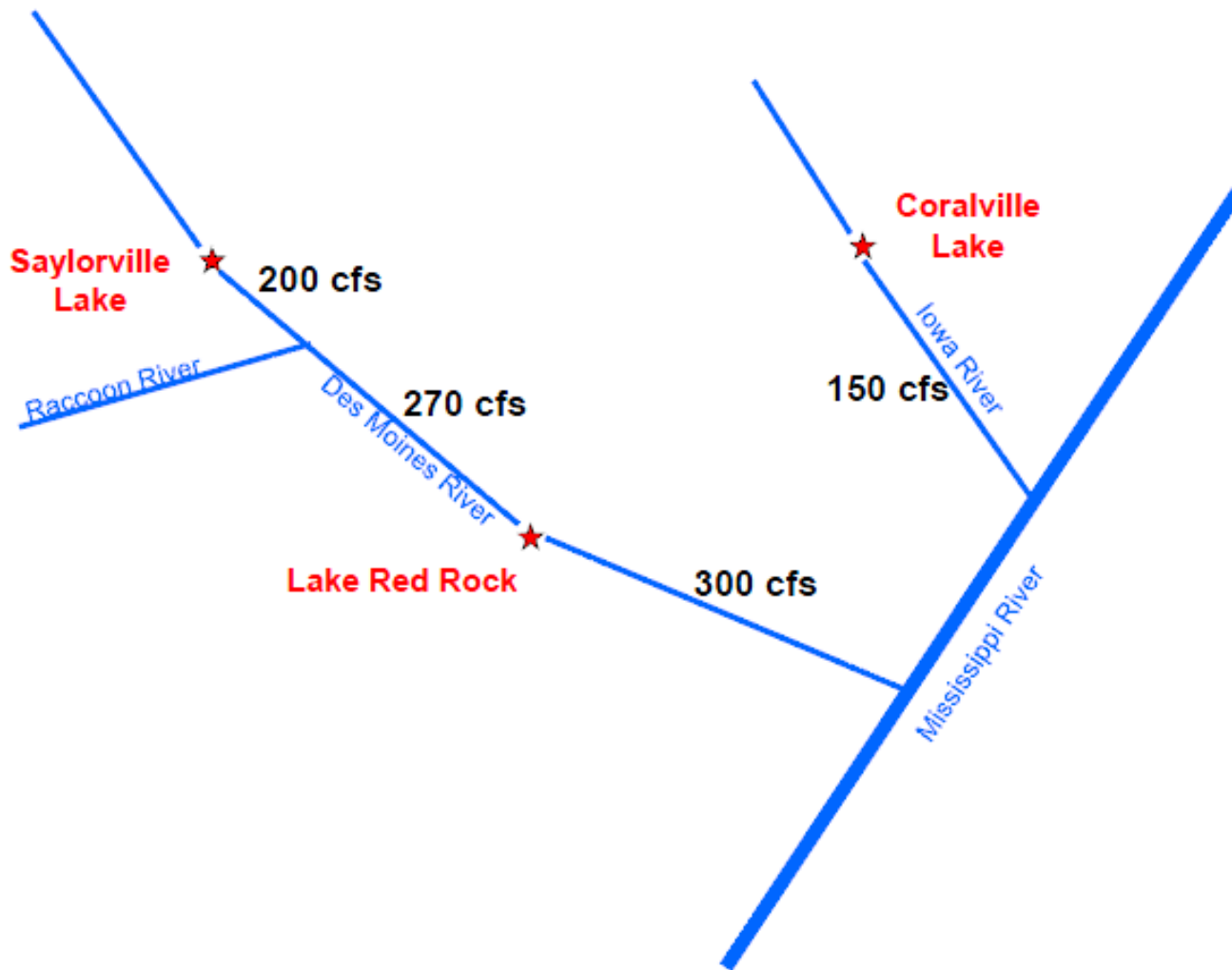


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# Conservation Release Targets



# Reservoir Drought Index Levels

LEVEL	Coralville	Saylorville	Red Rock
I	Always	Always	Always
II	Inflow < 150	Inflow < 200	Inflow < 300
III	Pool < 678	Pool < 827	Pool < 734
IV	Pool < 677	Pool < 823.5	Pool < 730



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# Drought Response Activities

Level	Activity
I	Monitor- stream flow, storage, rainfall, climate
II	Reduce release to base, activate CDMC, increase flow measurements, evaluate gate leakage and reservoir facilities, notify concession operators
III	Further reduction of release, increase CDMC meetings, activate IDMC, evaluate storage for emergency water needs
IV	Further reduction of release, allocate water for emergency needs, increase meetings of IDMC



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# Corps Drought Management Committee

DIVISION / BRANCH	REPRESENTATIVE	POSITION
Executive Office	COL Baumgartner	District Engineer
Engineering & Const. Division	Roger Perk	Chief-Eng & Const. Division
Programs & Project Mgmt. Division	Dennis Hamilton	Chief-PPM
Real Estate Division	Vacant	Chief-Real Estate Division
Operations Division	Michael Cox	Chief-Operations Division
Office of Counsel	Rian Hancks	District Counsel
Emergency Mgmt. Division	Rodney Delp	Chief-Emerg. Mgmt. Division
Safety & Occ. Health Office	Troy Larson	Chief-Safety & O.H. Office
Corporate Communications	Allen Marshall	Chief-Corporate Comm.
Contracting Division	Scott Harris	Chief-Contracting Division
Hydraulics & Hydrology Branch	Kevin Landwehr	Chief-H&H Branch



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# **Interagency Drought Management Committee (Level III)**

## **Agencies Represented:**

**Iowa Department of Natural Resources**

**Iowa Department of Agriculture**

**Iowa State Climatologist**

**Iowa Dept. of Public Defense**

**National Weather Service**

**U.S. Army Corps of Engineers**

**Chief Water Management**

**Chief Emergency Management**

**Iowa Agricultural Statistician**

**U.S. Fish & Wildlife**

**U.S. Environmental Protection Agency**

**U.S. Geological Survey – Iowa**



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# STATE OF IOWA WATER SUPPLY CONTRACT

- In 1982 Iowa purchased storage in Saylorville Lake for consumptive water supply – 18.86% of conservation storage
- This storage was determined to provide a continuous flow of 75 cfs with 99% reliability
- Conservation pool was raised 3 feet to accommodate the contract
- State has authority to withdraw water from the lake or to order releases through the outlet works
- Iowa has subcontracted 2/3 of the water to the Des Moines Water Works and 1/3 to the Iowa Southern Utilities
- Water has never been requested by the State



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# ADDITIONAL DROUGHT MANAGEMENT MEASURES

- Sale of Water for Consumptive Use
  - Requires State Declaration
  - Approval level depends on amount:
    - < 100 Acre-ft - District
    - 100-500 Acre-ft - Division
    - 500+ - ASA (CW)
  - Historical Perspective – No requests
  
- EM – PL84/99 Emergency Water Assistance



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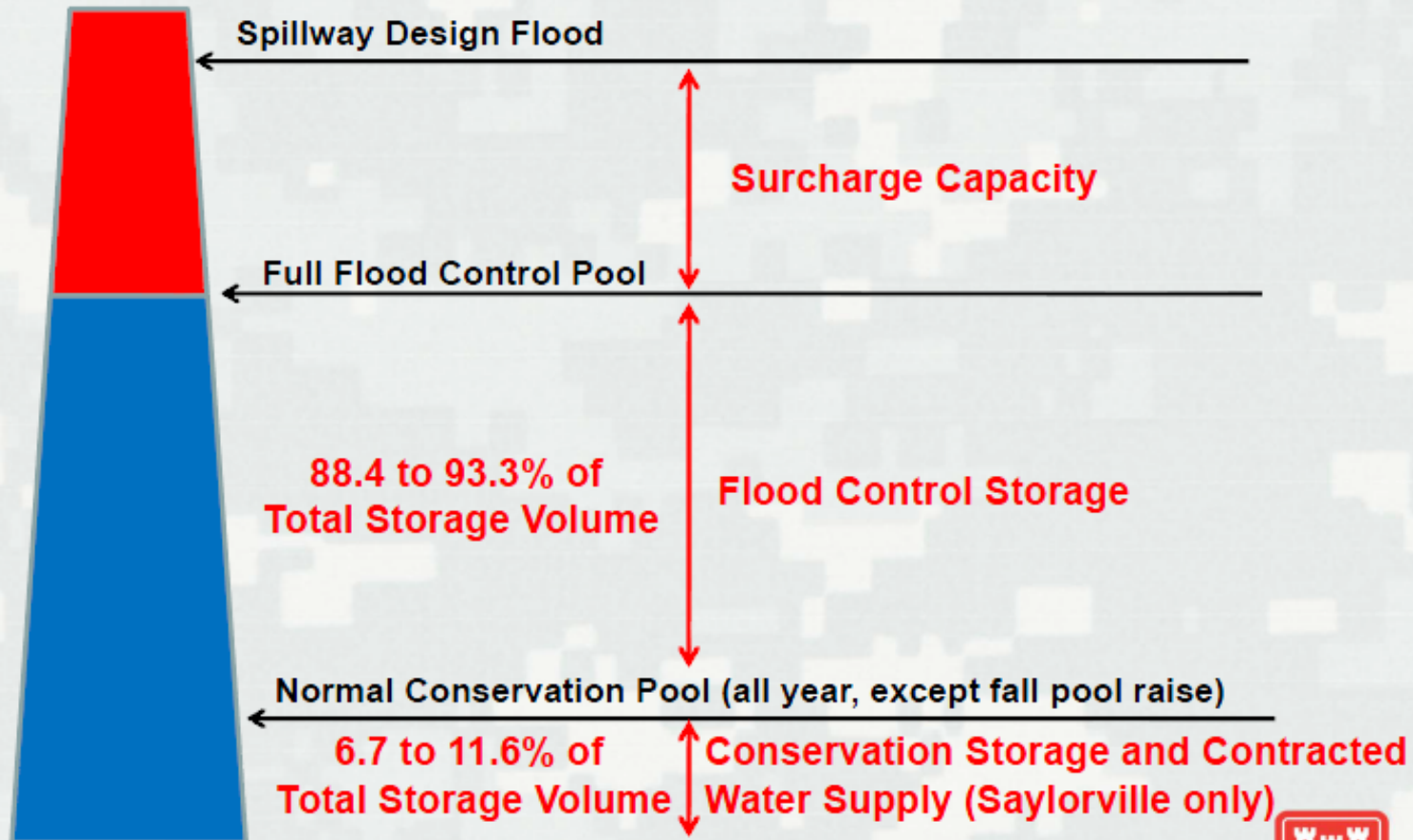
**ADDITIONAL SLIDES...**



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# Storage Allocation



BUILDING STRONG<sup>®</sup>

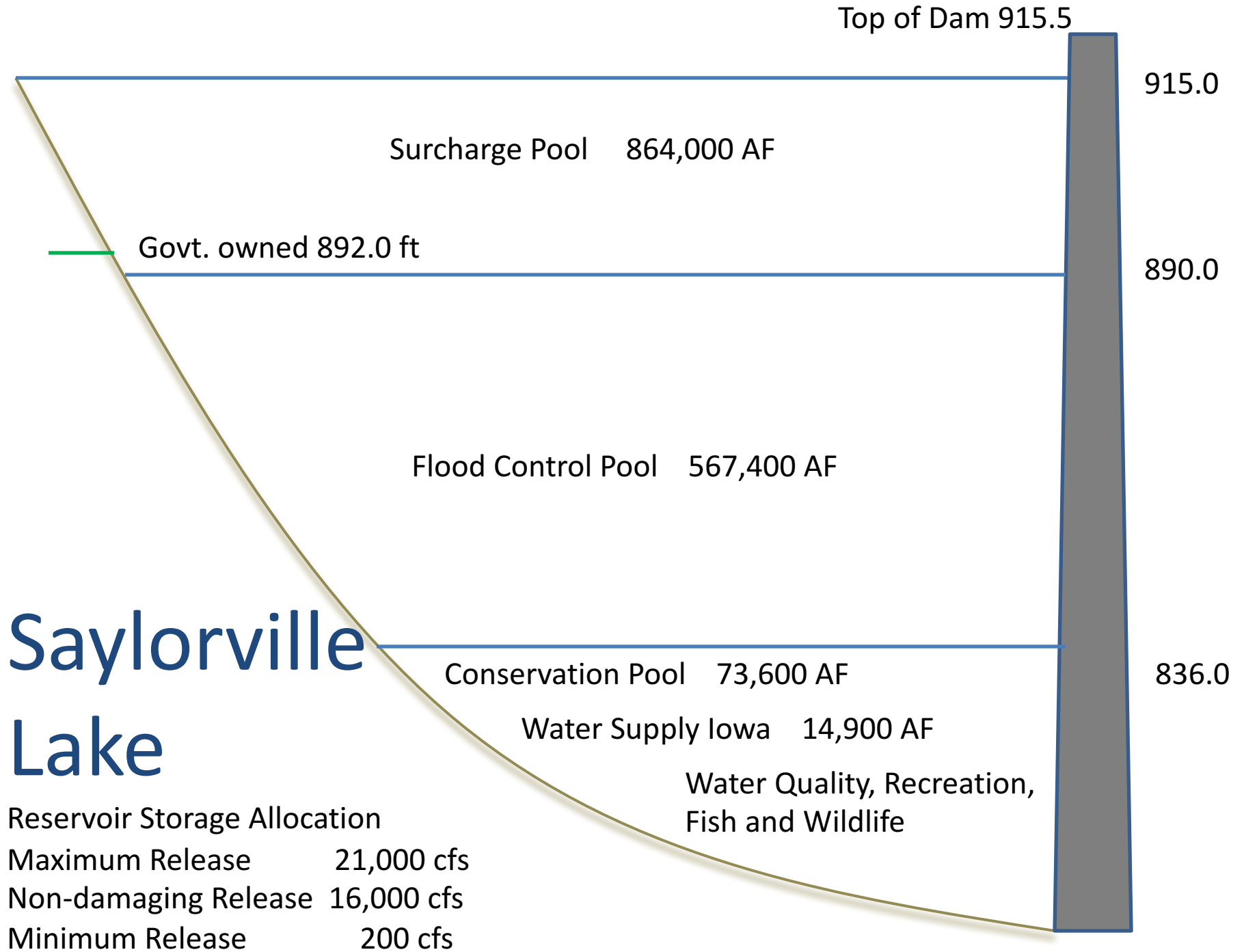




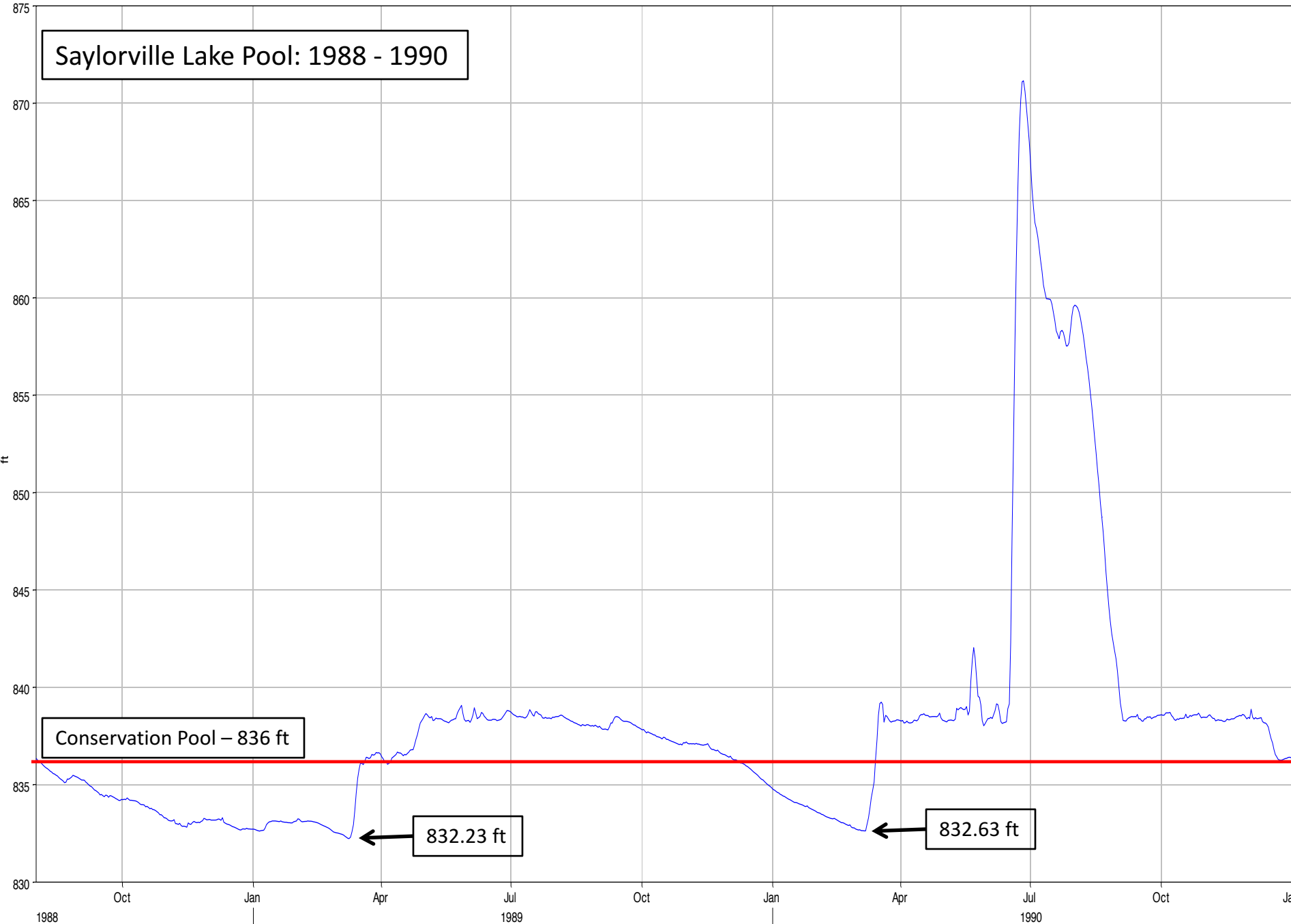
# Saylorville Lake

## Reservoir Storage Allocation

Maximum Release	21,000 cfs
Non-damaging Release	16,000 cfs
Minimum Release	200 cfs



Saylorville Lake Pool: 1988 - 1990



Conservation Pool – 836 ft

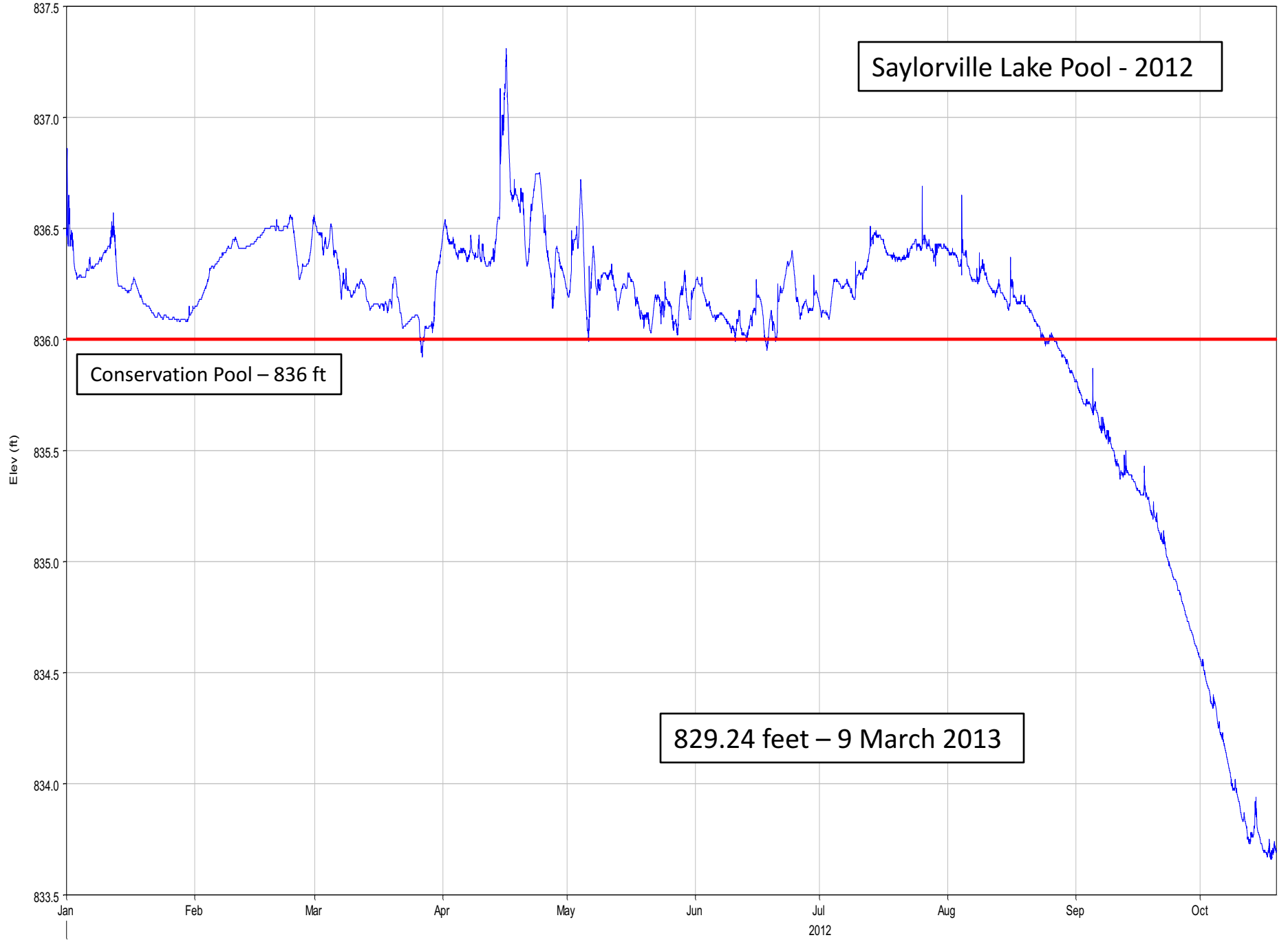
832.23 ft

832.63 ft

Saylorville Lake Pool - 2012

Conservation Pool – 836 ft

829.24 feet – 9 March 2013



Top of Dam 797.0

Govt. easement 783.0 ft (occasional)

780.0

Govt. owned  
760.0 ft

Flood Control Pool 1,436,000 AF

# Red Rock Lake

742.0

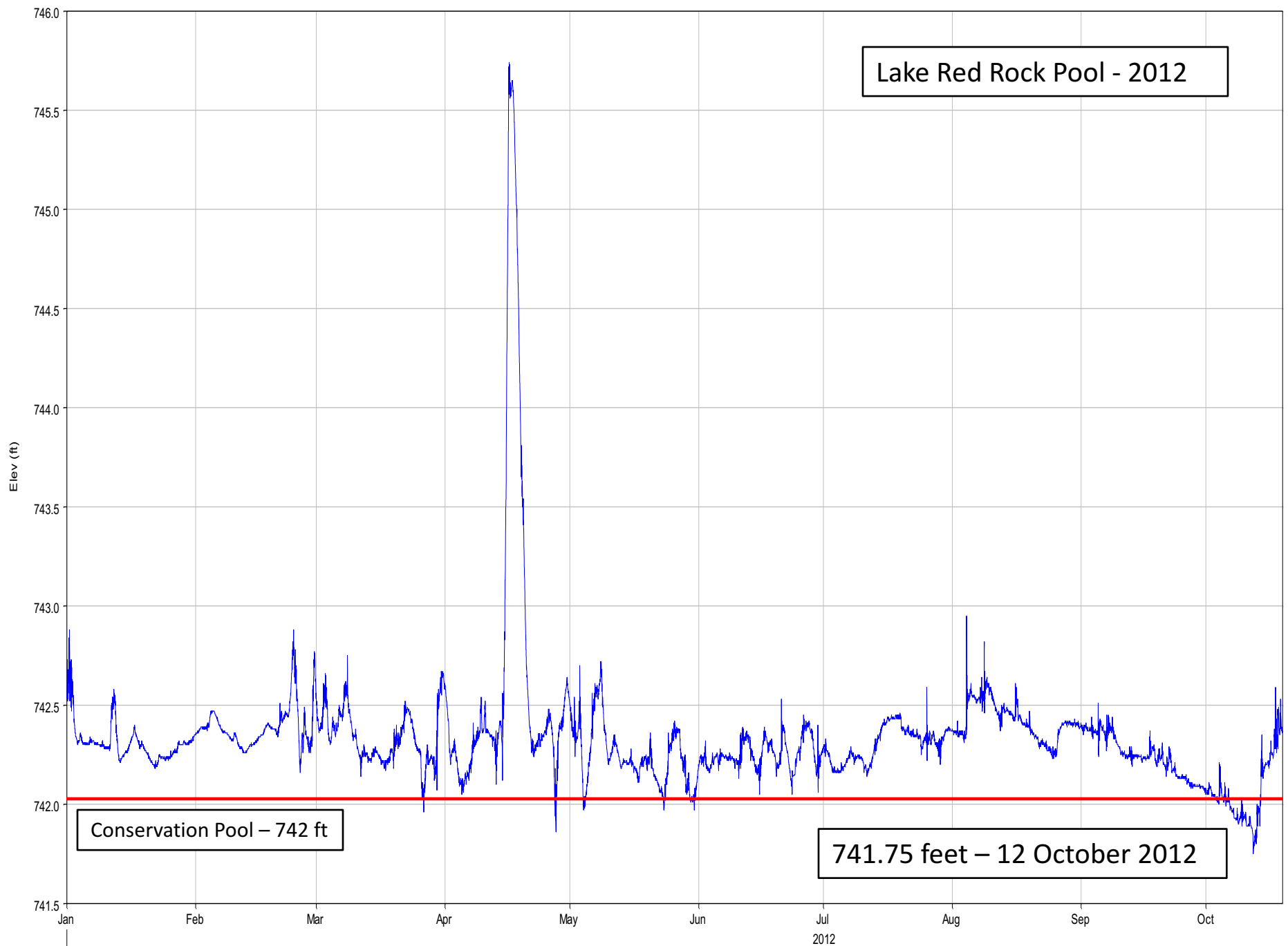
Conservation Pool 189,000 AF

Water Conservation, Water  
Quality, Recreation, Fish and  
Wildlife

## Reservoir Storage Allocation

- Maximum Release 38,000 cfs – sluice gates
- Non-damaging Release 30,000 cfs
- Minimum Release 300 cfs

Lake Red Rock Pool - 2012



Conservation Pool - 742 ft

741.75 feet - 12 October 2012



Top of Dam 743.0

720.0

712.0

683.0

Govt. easement 717.0 ft

Surcharge Pool 223,510 AF

Flood Control Pool 392,900 AF

Conservation Pool 28,100 AF

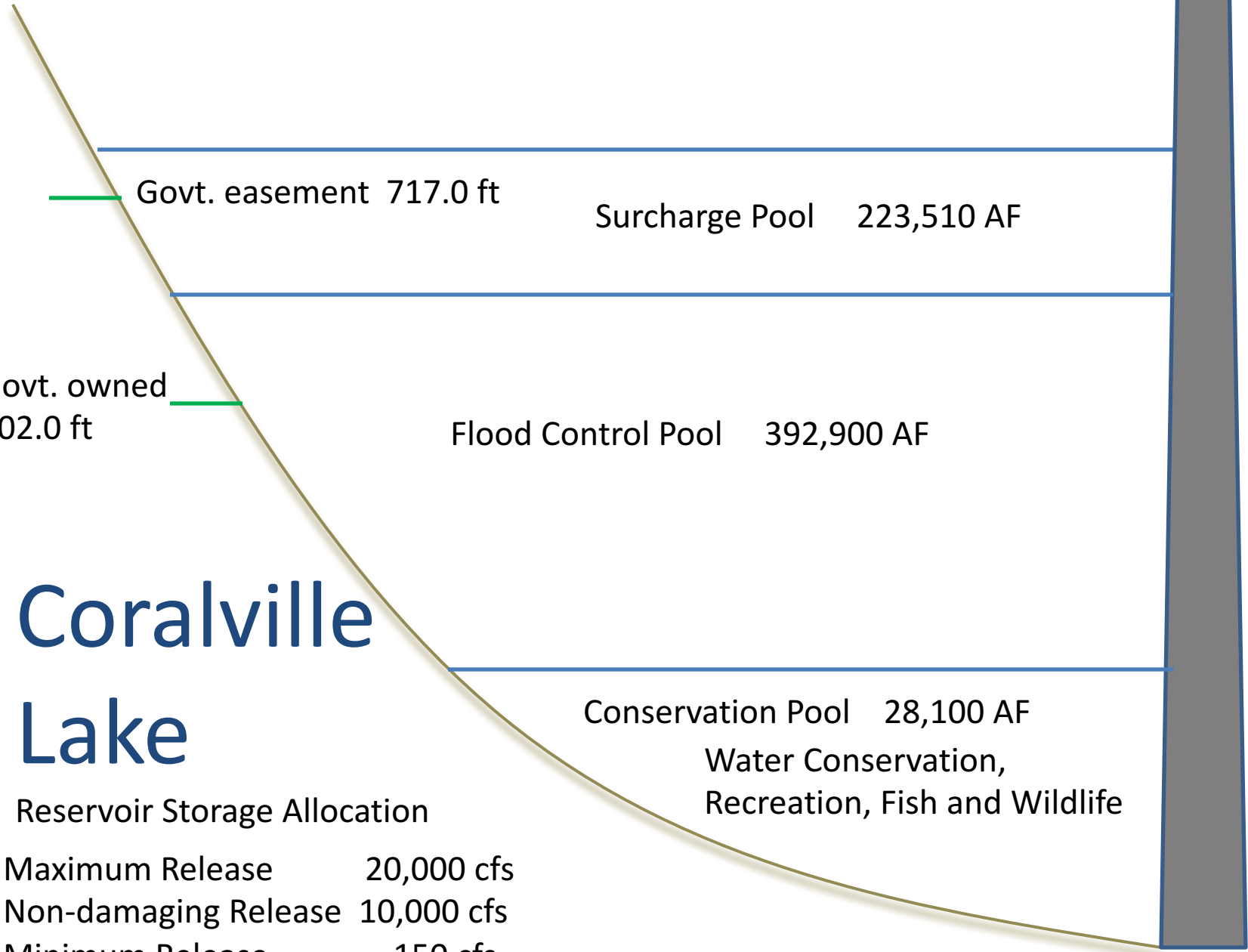
Water Conservation,  
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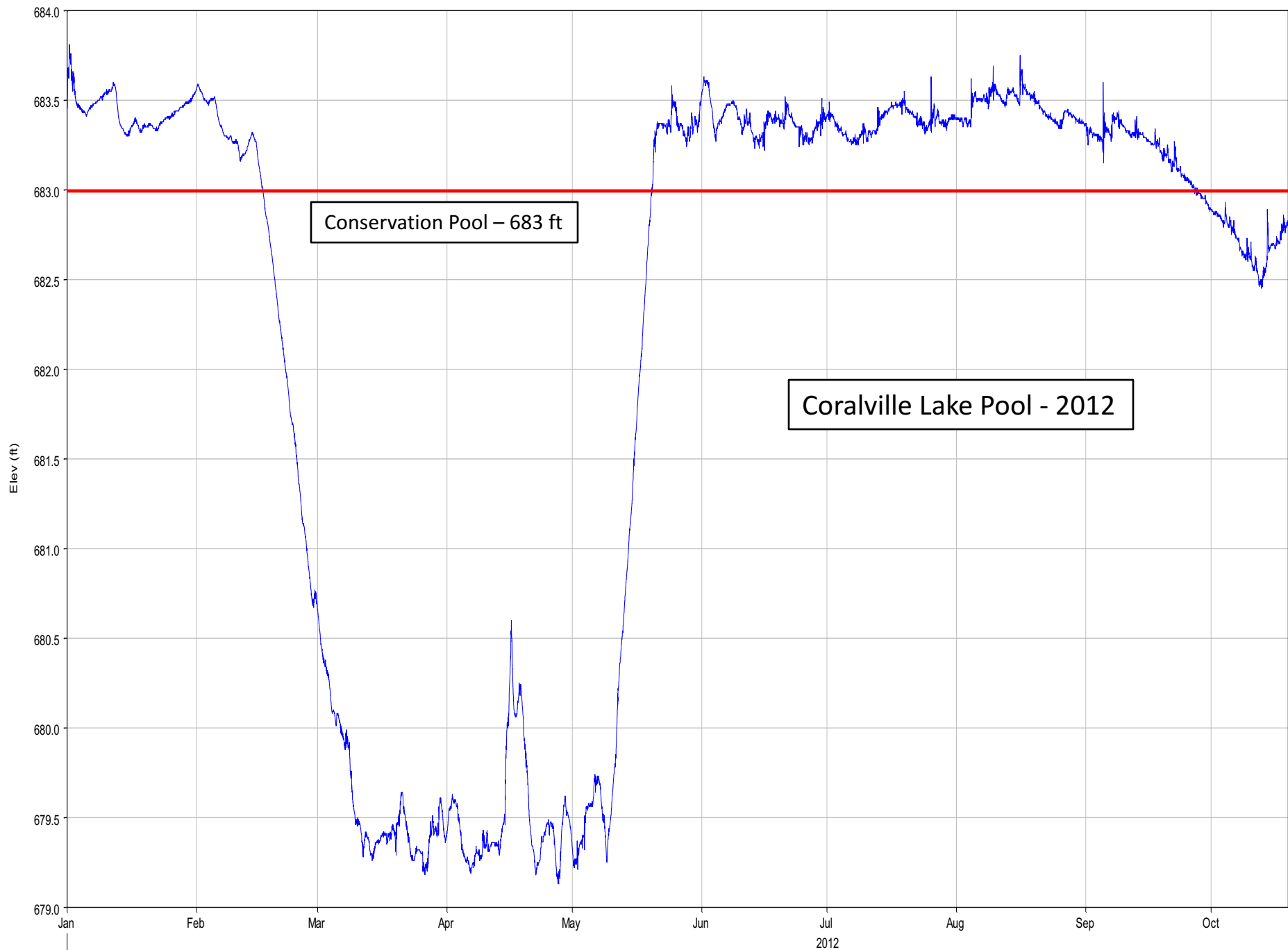
Govt. owned  
702.0 ft

# Coralville Lake

## Reservoir Storage Allocation

- Maximum Release 20,000 cfs
- Non-damaging Release 10,000 cfs
- Minimum Release 150 cfs





Conservation Pool – 683 ft

Coralville Lake Pool - 2012