A long-range reservoir operating plan study.

Mississippi River Headwaters
Reservoir Operating Plan Evaluation (ROPE)

A Partnership between:

the U.S. Army Corps of Engineers

and the U.S Forest Service.

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FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

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Objective of Today's Meeting

Provide an opportunity for the public to comment on the proposed operating plan for the Headwaters reservoirs as developed and described in the Draft ROPE report and Environmental Impact Statement (EIS).

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Today's Topics

Introduction and Background

Plan Development and Selection

Proposed Plan Details

Effects of the Proposed Plan

Wrap-up

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Introduction and Background

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What is the ROPE Study?

Reservoir **O**perating **P**lan **E**valuation

- Process used to assess the current and potential future operating plans of reservoirs.

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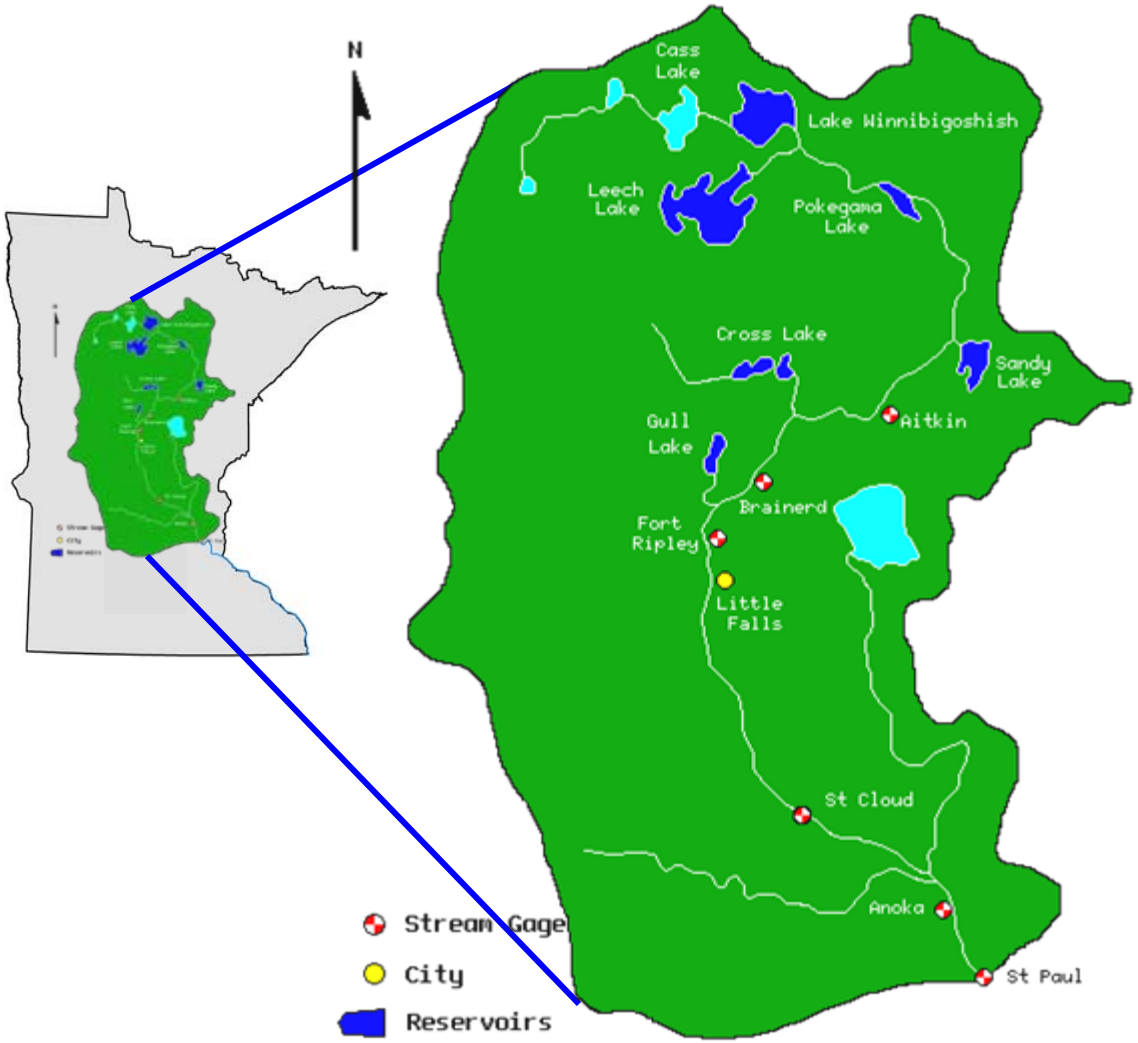
ROPE Study Area



Large Study Area:

7 inter-connected Federal reservoirs (6 COE, 1 USFS).

415 square miles of affected lake surface.

484 miles of affected rivers.

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Why Was the ROPE Study Initiated?

- MHB requested a review of Operating Plans in a letter to the Corps.
- Congressional interest.
- Improved understanding of the physical limits of the system.
- Human use of the system has increased.
- Higher value is being placed on environmental health.

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USFS Role in ROPE

- USFS signed on as partner in 2003 to include Knutson Dam on Cass Lake in the study.
- USFS will be issuing a separate decision for operation of Cass Lake/Knutson Dam

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Key Agency and Public Involvement

Public meetings in 1999, 2004, and 2006.

Numerous “Task Force” and Lake groups were assembled to help identify problems and opportunities.

Meetings were held periodically with Mille Lacs & Leech Lake Bands of Ojibwe to identify issues and assist in plan development.

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Agencies and Groups

U.S. Forest Service
Environmental Protection Agency
Minnesota Department of Natural Resources
Minnesota Pollution Control Agency
Leech Lake and Mille Lacs Bands of Ojibwe
Mississippi Headwaters Board
The Nature Conservancy
Audubon Society
Aitkin City and County
Star Island Protective League
Whitefish Area Property Owners Association
Round Lake Improvement Association
Big Sandy Lake Association
Gull Lake Association
Brainerd Rotary Club
Ottertail Power
Minnesota Power

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Plan Development and Selection

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Corps Headwaters Reservoirs Project Purposes

- Navigation
- Tribal Trust
- Flood Damage Reduction
- Recreation
- Water Quality & Water Supply
- Fish and Wildlife

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Operating Plan Alternatives

- **Current Plan** – No change.
- **R Plan** – Maximizes recreational and economic benefits.
- **E Plan** – Increases environmental benefits.
- **T Plan** – Maximizes environmental benefits through a 6” drop in water levels
- **P Plan** – Increases benefits to many resources while minimizes negative effects.

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Potential Effects Of Plan Alternatives

Alternative	Current Plan	R Plan	E Plan	T Plan	Proposed
Air Quality	0	-1	+1	+1	+1
Terrestrial Habitat	-1	-1	+1	+2	+1
Sedimentation and Bank Erosion	-1	-1	+1	+3	+1
Wetlands	-1	-1	+1	+1	+1
Aquatic Habitat	-1	-1	+1	+3	+1
Fishery	-1	-1	+1	+3	+1
Biological Productivity	-1	-1	+1	+2	+1
Biological Diversity	-1	-1	+1	+2	+1
Water Quality	-1	-1	+1	+2	+1
Threatened & Endangered Species	0	0	0	0	0
Recreational Opportunities	0	+1	-2	-3	-1
Public Health/Safety	0	0	-1	-1	0
Community Cohesion	0	0	-1	-2	0
Community Growth and Development	0	+1	-1	-1	0
Controversy	0	-1	-2	-3	-1
Property Values	0	+1	-1	-2	0
Regional Growth	0	0	0	0	0
Employment	0	0	-1	-1	0
Business Activity	0	0	-1	-2	0
Flooding Effects	0	-1	+1	+2	+1
Historic Architectural	0	0	0	0	0
Archeological	-1	-1	+1	+1	+1

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Adverse Effects of the Current Plan

- Stable water levels impact vegetation and the aquatic community.
- Low minimum flows impact downstream river habitat.
- Rapid decline in water levels in late fall and winter impact reservoir and river habitat.
- Delayed high spring flows impact spawning and nesting.

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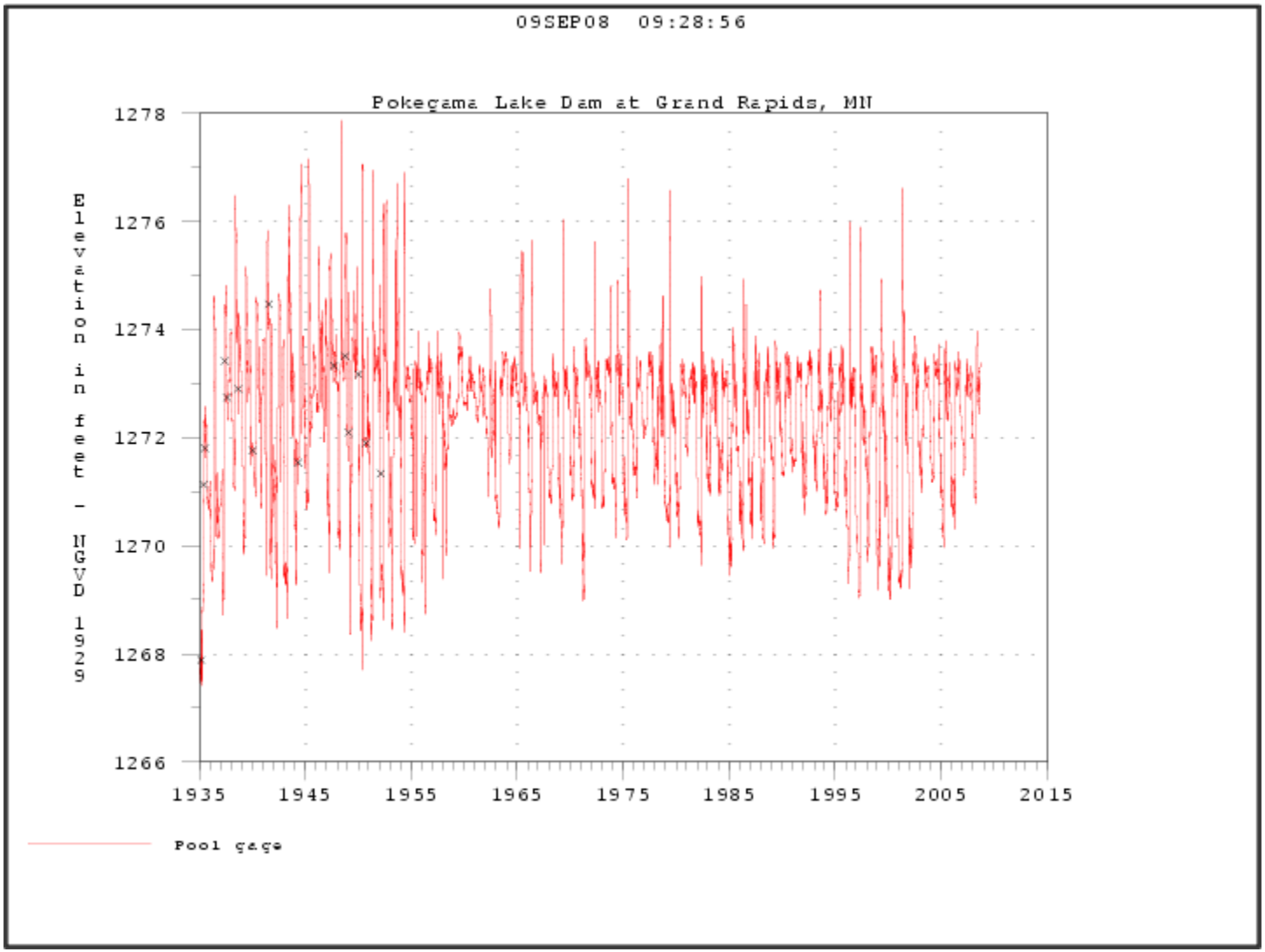
Pokegama Historic Stages



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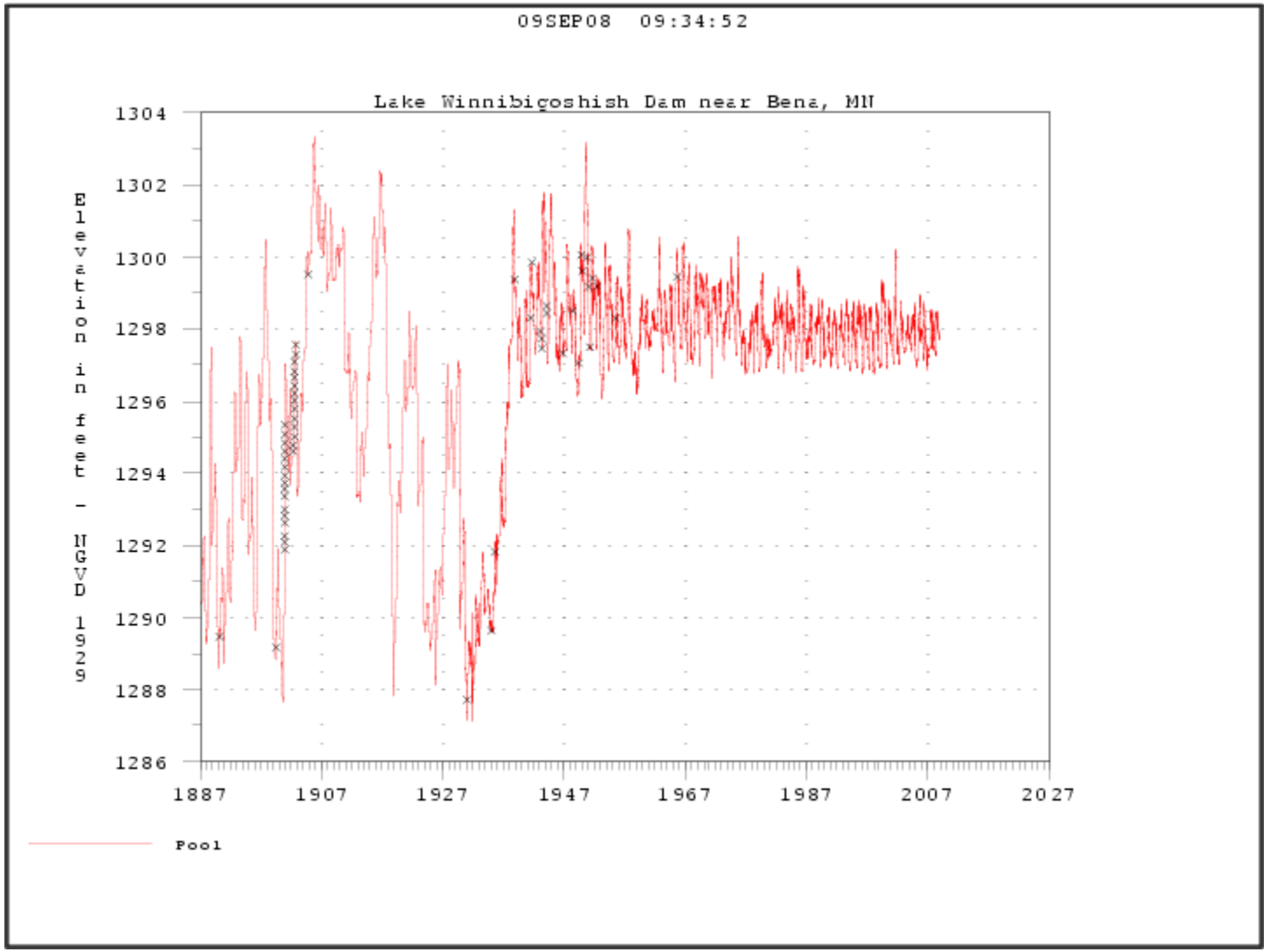
Winnibigoshish Stages



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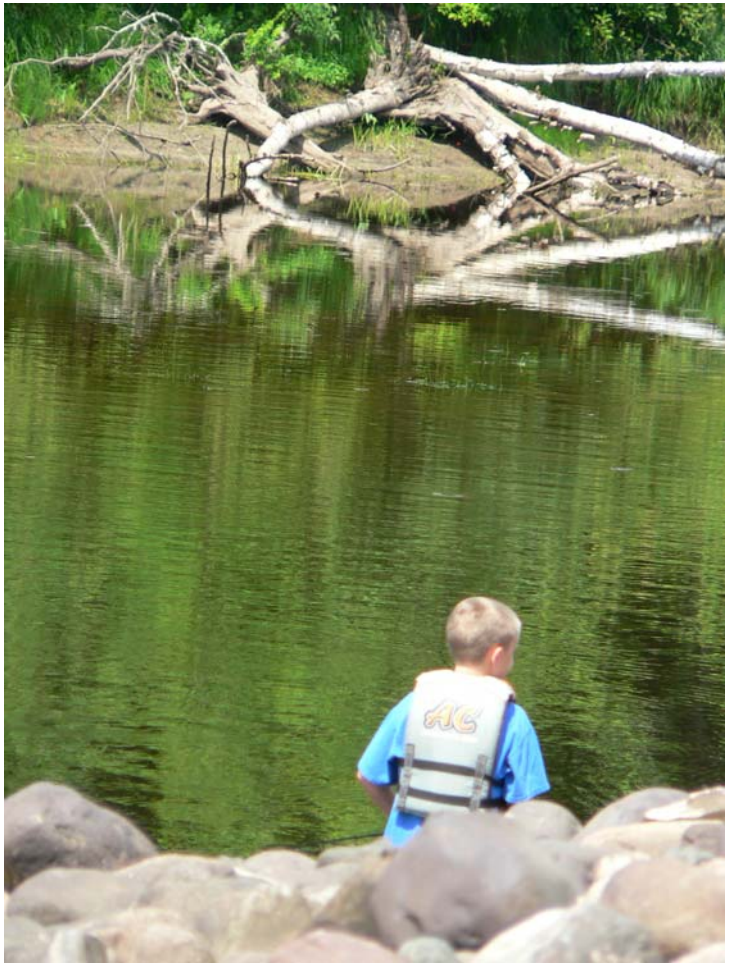
General Benefits of the Proposed Plan

- Protect and enhance all the resources and uses in the Headwaters for future generations.



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Proposed Plan Myths

- Dramatic declines in water levels.
- Declines in water levels are being proposed to enhance water supply downstream.
- Environmental benefits are for downstream areas (reservoir habitat would not benefit)

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Plan Implementation and Adaptive Management

- Retain the ability to modify the plan to reinstate components of the current plan.
- 5-year “break-in” period
- Annual meeting to review operating plan performance and potential modifications.

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Proposed Plan Details
Pokegama Lake

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Current vs. Proposed Plan

POKEGAMA LAKE OPERATING RULES		
	CURRENT	**PROPOSED**
Summer Band (elev. - ft.)	1273.17-1273.67	1273.17-1273.67
Summer Target (elev. - ft.)	1273.42	1273.42 (May 1 – Jul 15)
Band Width (ft.)	0.5	0.5
Normal Drawdown (elev. - ft.)	1270.42	1270.42
Maximum Drawdown (elev. - ft.)	1270.42	1270.42
Rate of Release (change/day)	20-30%	20-30%
Spring Pulse	NA	2410 cfs
Minimum Flow Requirements April through September	>=(1273.17): 200 cfs	(>= bottom of band): W+L+50 or 240 cfs
		< (bottom of band) >= (bottom of band – 15"): W+L+10 or 200 cfs
	<(1273.17): Winni + Leech	< (bottom of band – 15"): 120 cfs
Minimum Flow Requirements October through March	>=(1273.17): 200 cfs	>= (target - 6"): W+L+10 or 200 cfs
	<(1273.17): Winni + Leech	< (target - 6"): 120 cfs

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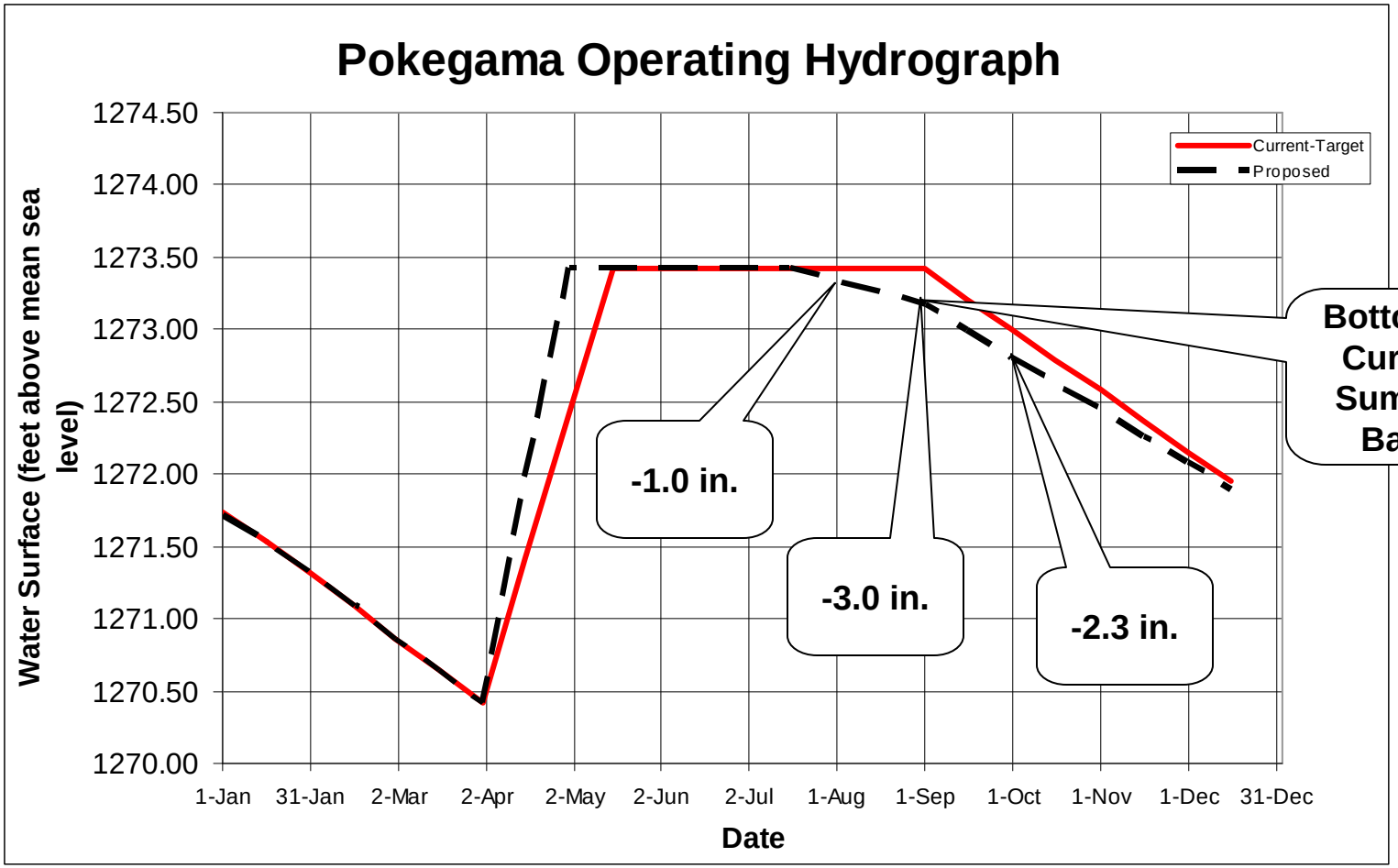
Current vs. Proposed Plan



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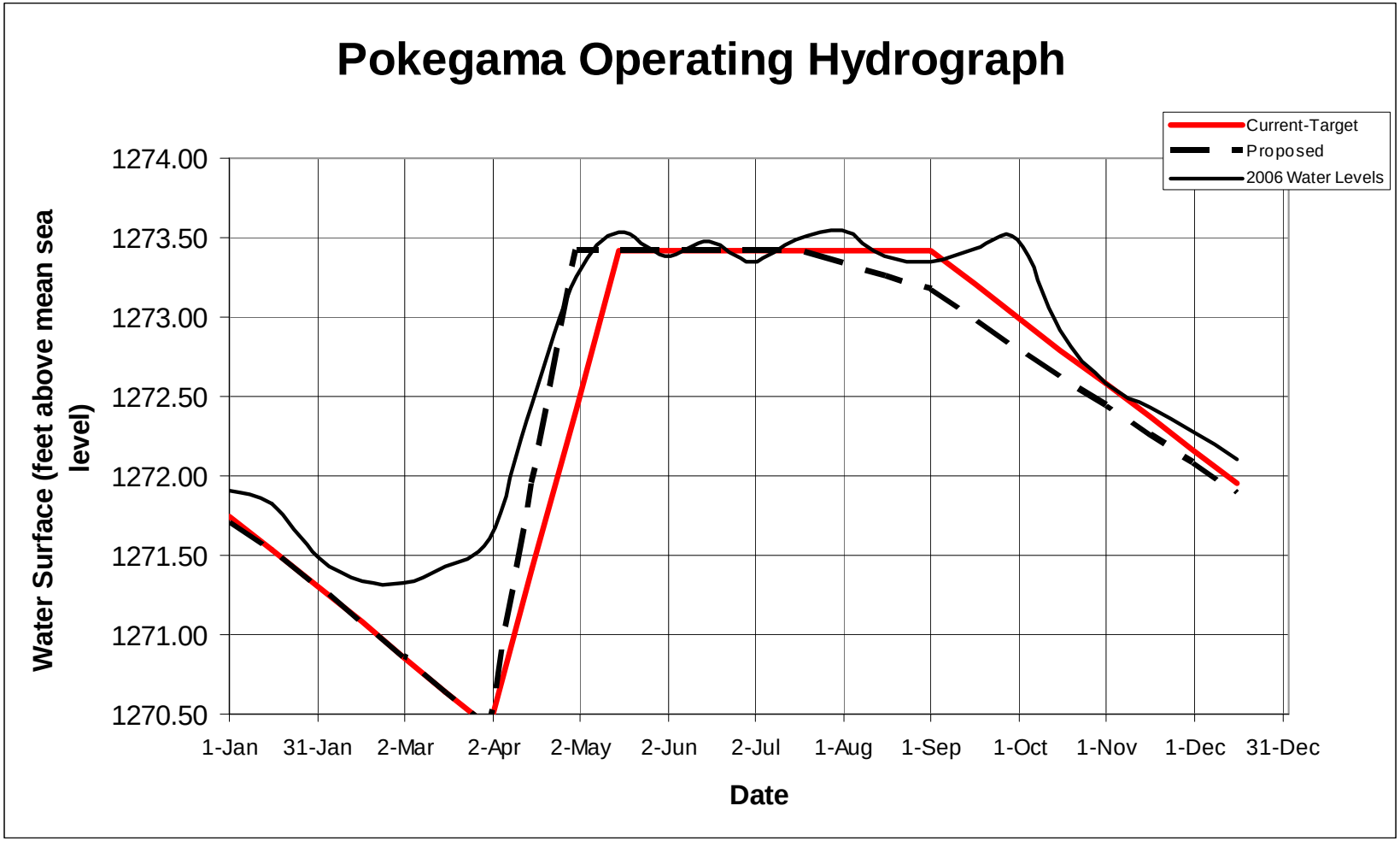
2006-2008 Water Levels



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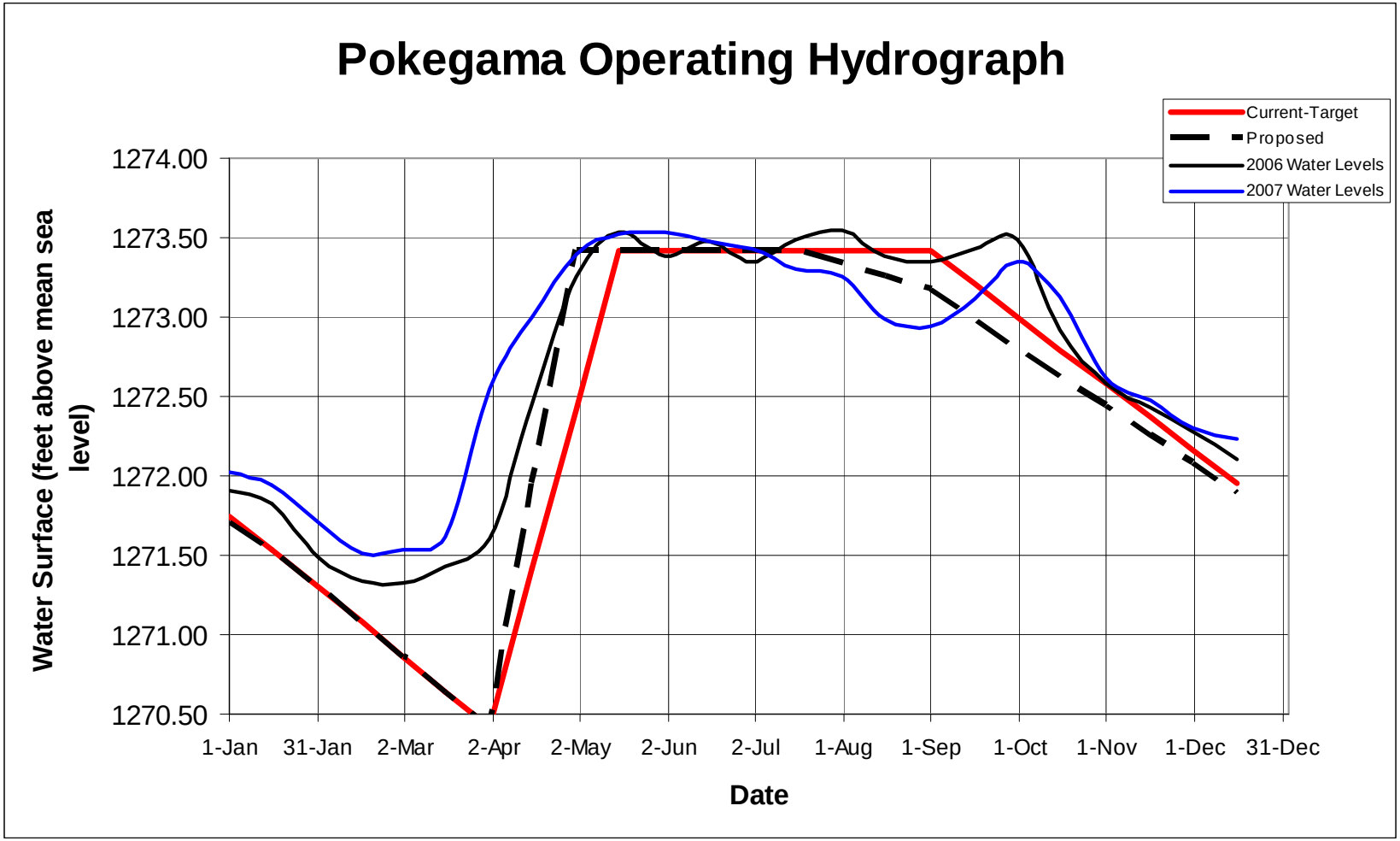
2006-2008 Water Levels



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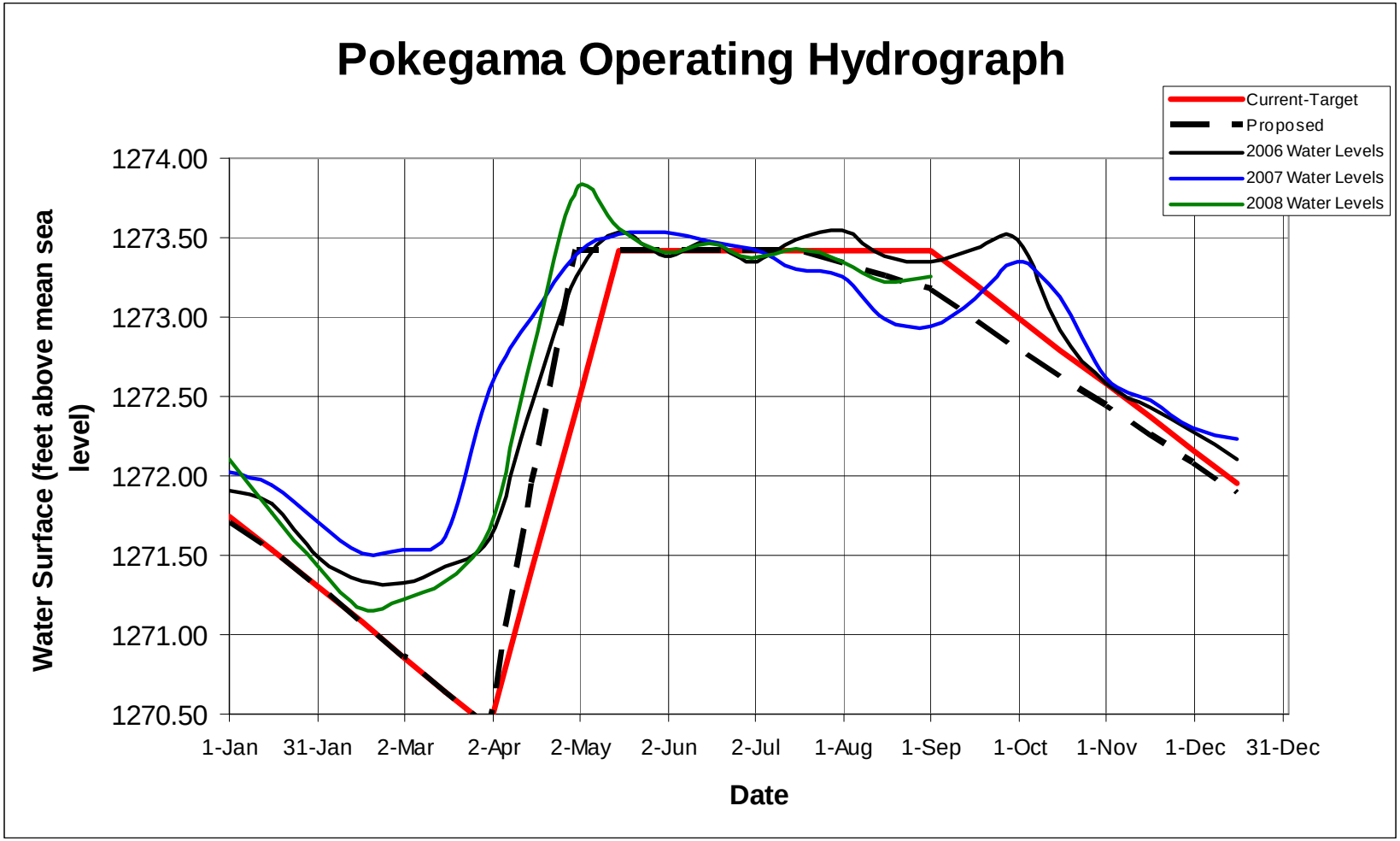
2006-2008 Water Levels



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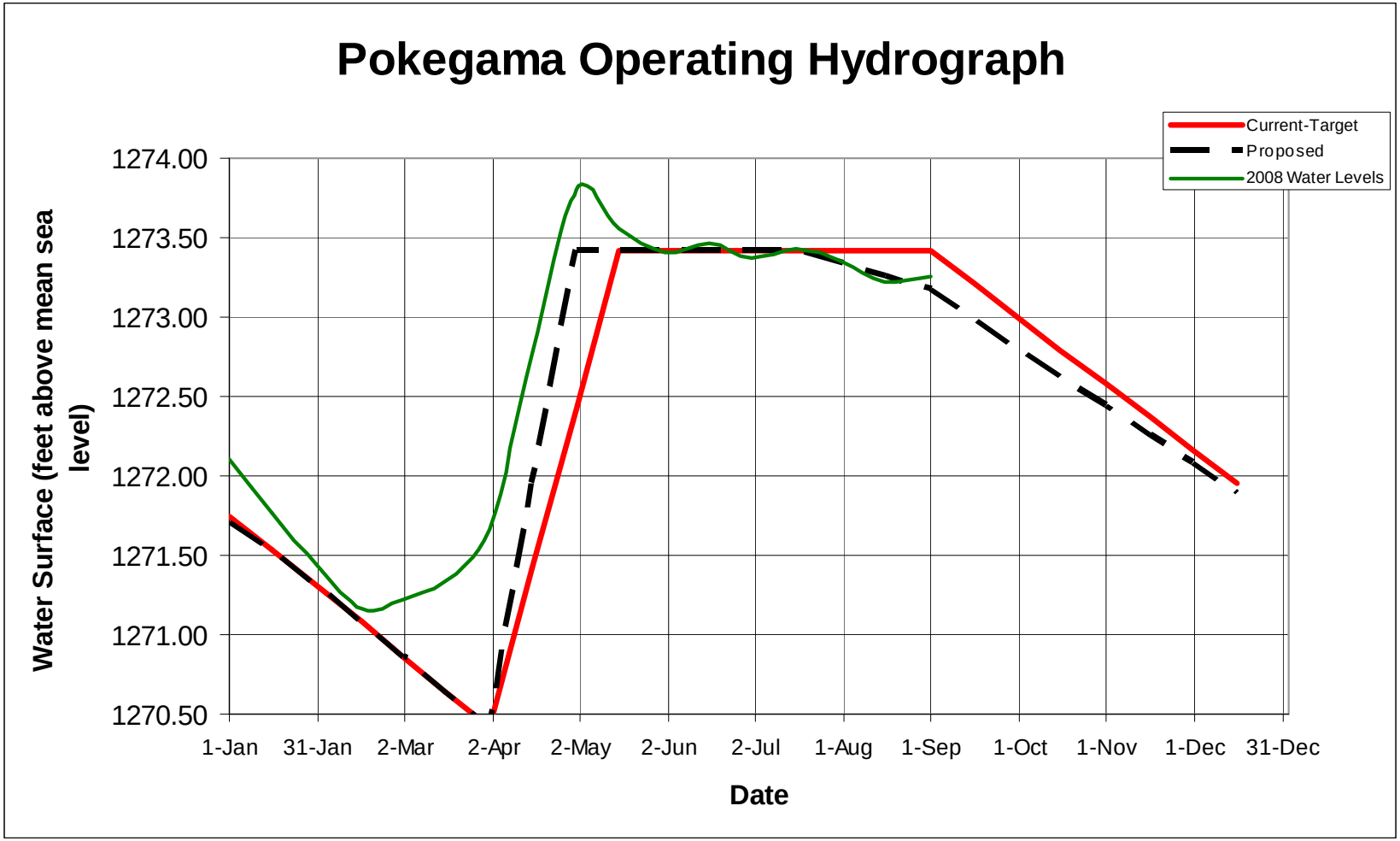
2006-2008 Water Levels



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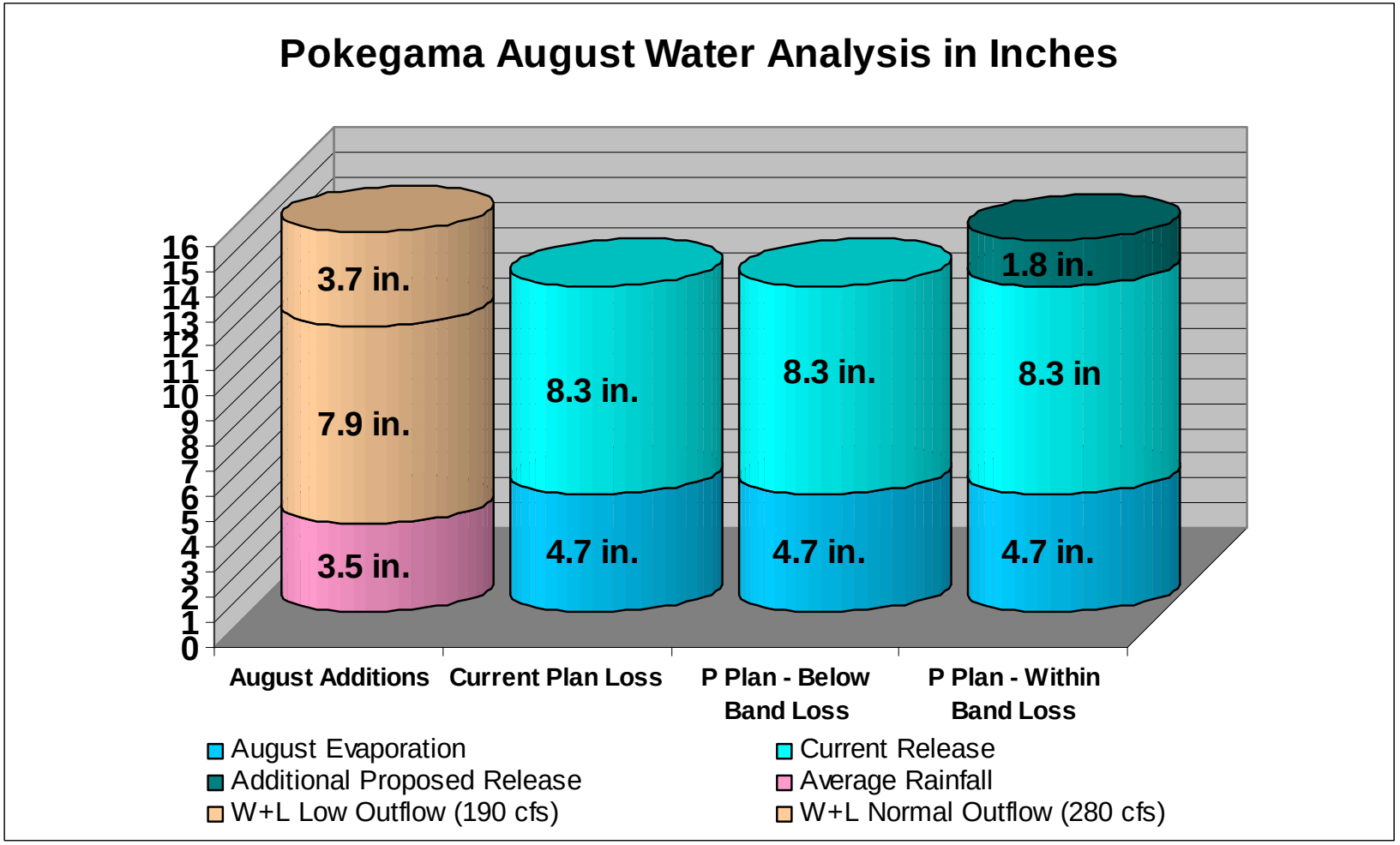
Pokegama Minimum Releases



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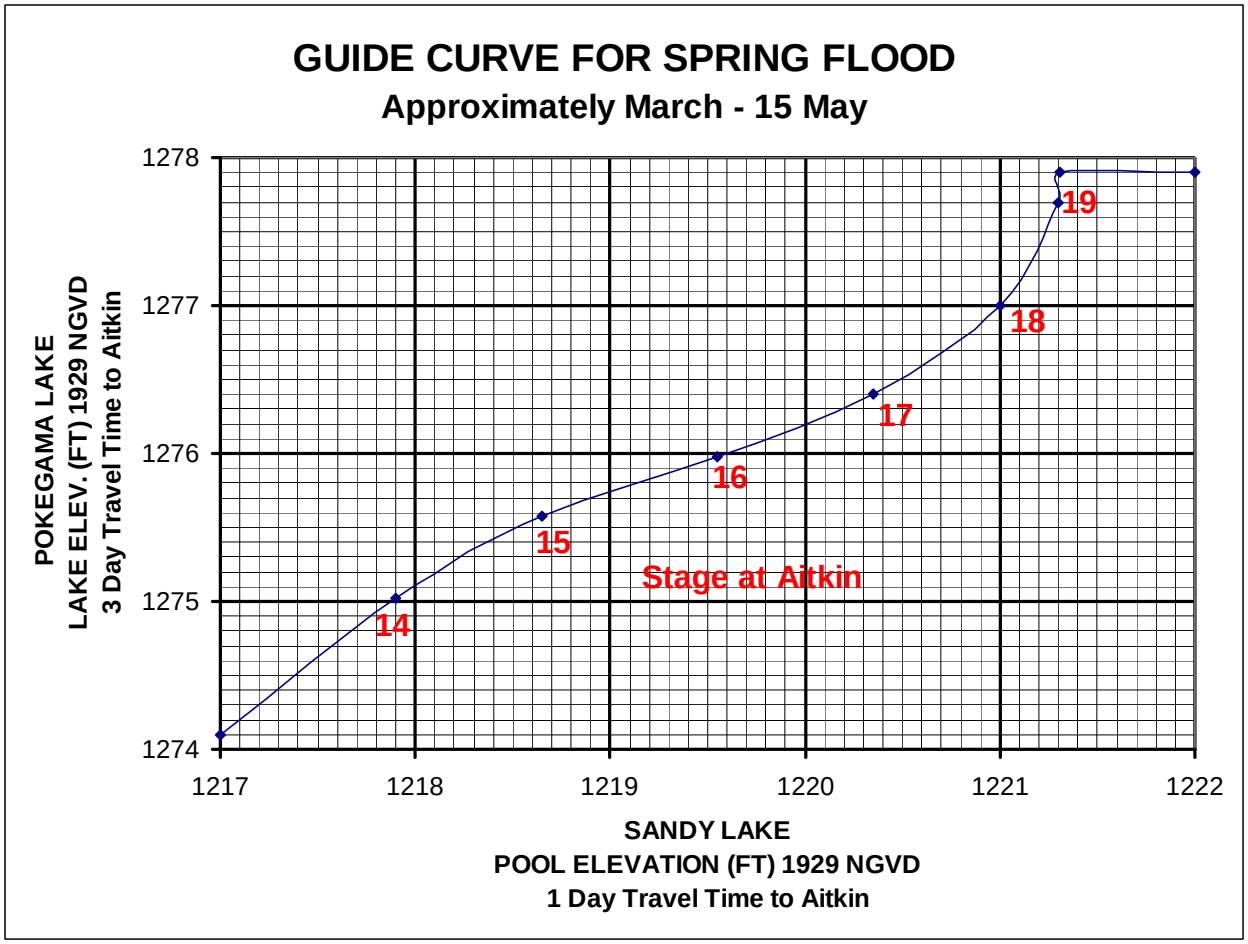
Current Operating Plan
Spring Flood Rules



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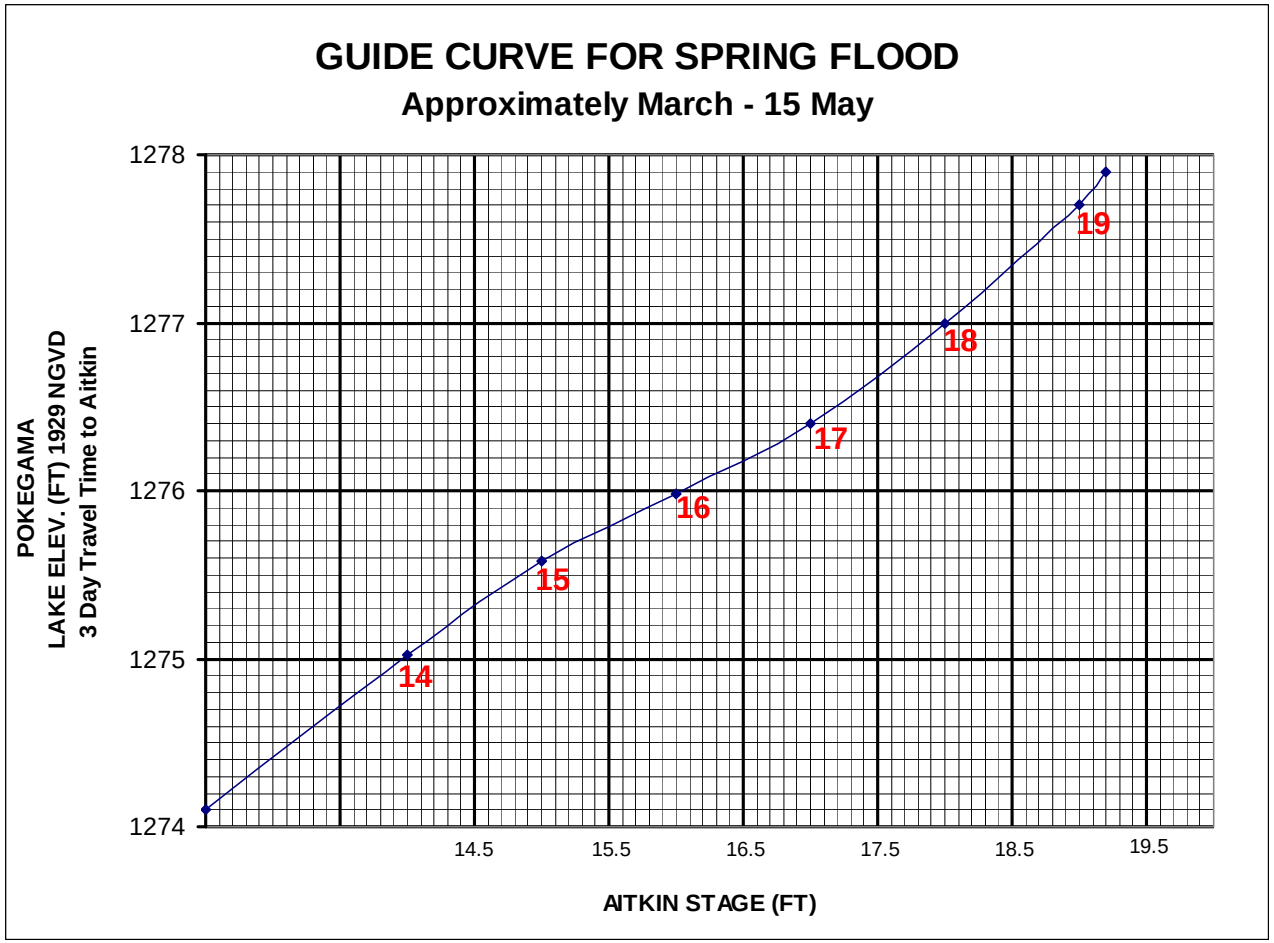
Proposed Operating Plan
Spring Flood Rules



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Proposed Plan Details
Lake Winnibigoshish

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Current vs. Proposed Plan

LAKE WINNIBIGOSHISH OPERATING RULES		
	CURRENT	**PROPOSED**
Summer Band (elev. - ft.)	1297.94 -1298.44	1297.94 -1298.44
Summer Target (elev. - ft.)	1298.19	1298.19 (May 1 – Jul 15)
Band Width (ft.)	0.5	0.5
Normal Drawdown (elev. - ft.)	1296.94	1296.94
Maximum Drawdown (elev. - ft.)	1294.94	1294.94
Rate of Release (change/day)	200 cfs or 0.5 ft. of TW change	20-30%
Spring Pulse	NA	1060 cfs
Minimum Flow Requirements April through September	>=(1294.94): 100 cfs	(>= bottom of band): 160 cfs
		< (bottom of band) >= (bottom of band – 15"): 110 cfs
	<(1294.94): 50 cfs	< (bottom of band – 15"): 50 cfs
Minimum Flow Requirements October through March	>=(1294.94): 100 cfs	>= (target - 6"): 110 cfs
	<(1294.94): 50 cfs	< (target - 6"): 50 cfs

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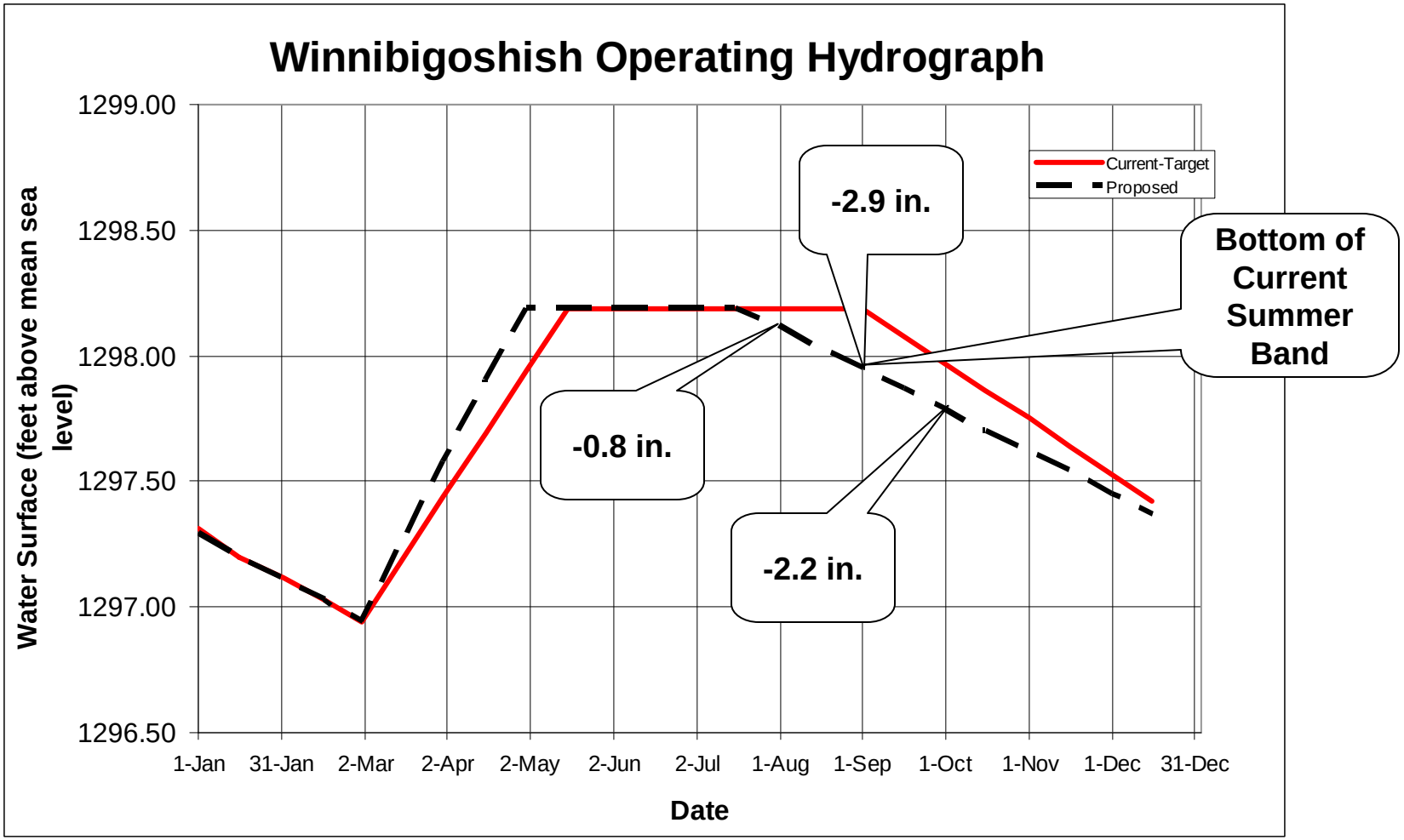
Current vs. Proposed Plan



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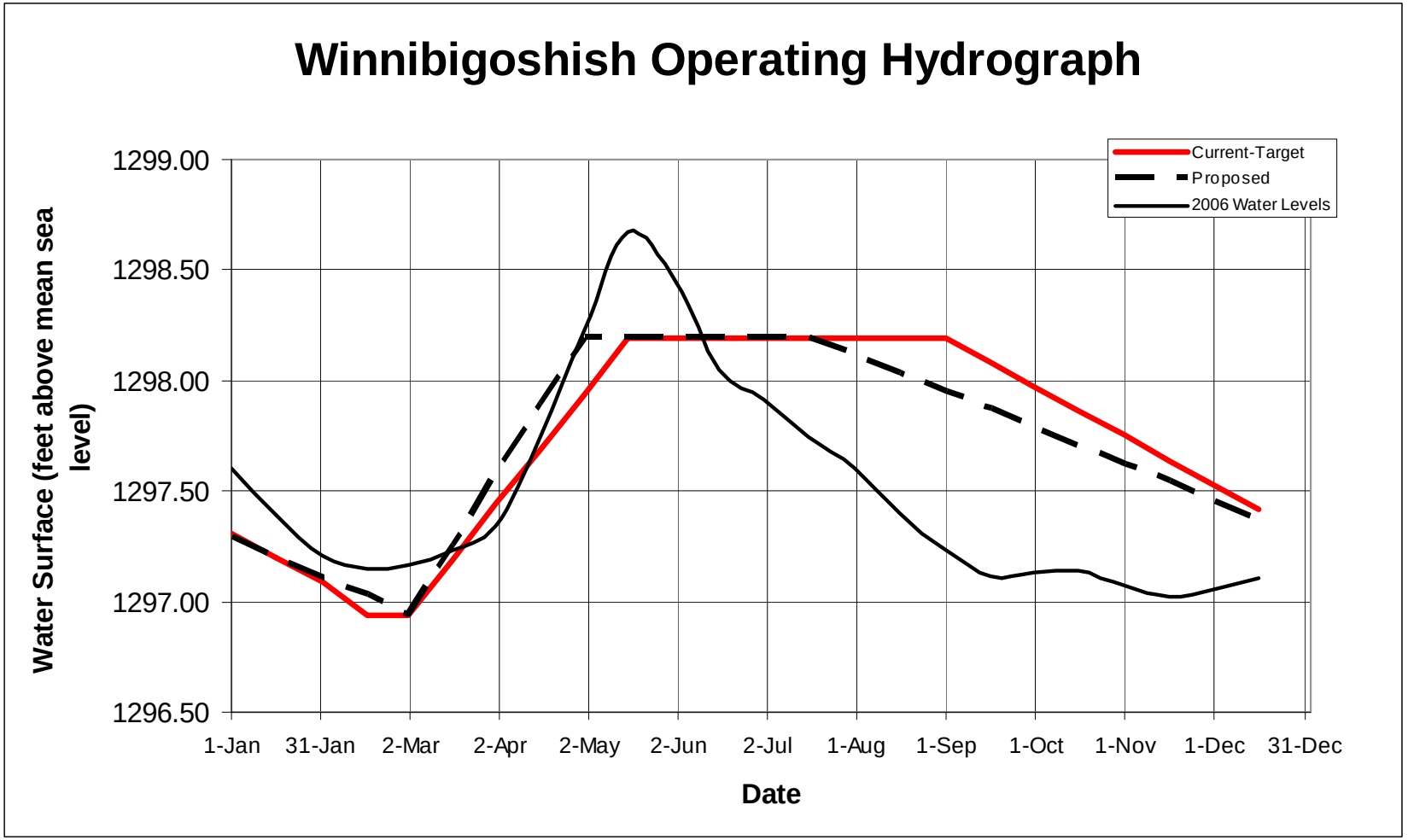
2006-2008 Water Levels



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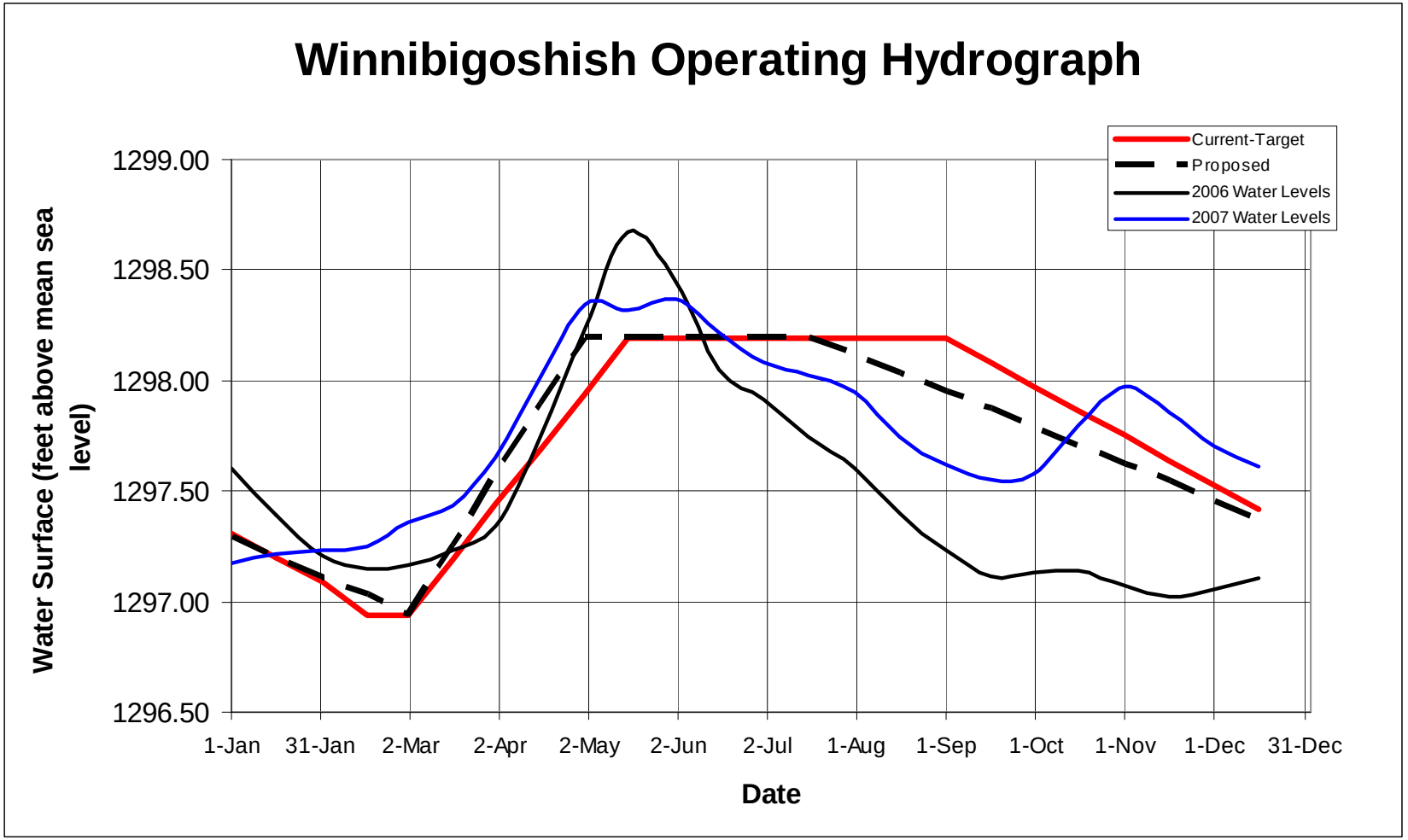
2006-2008 Water Levels



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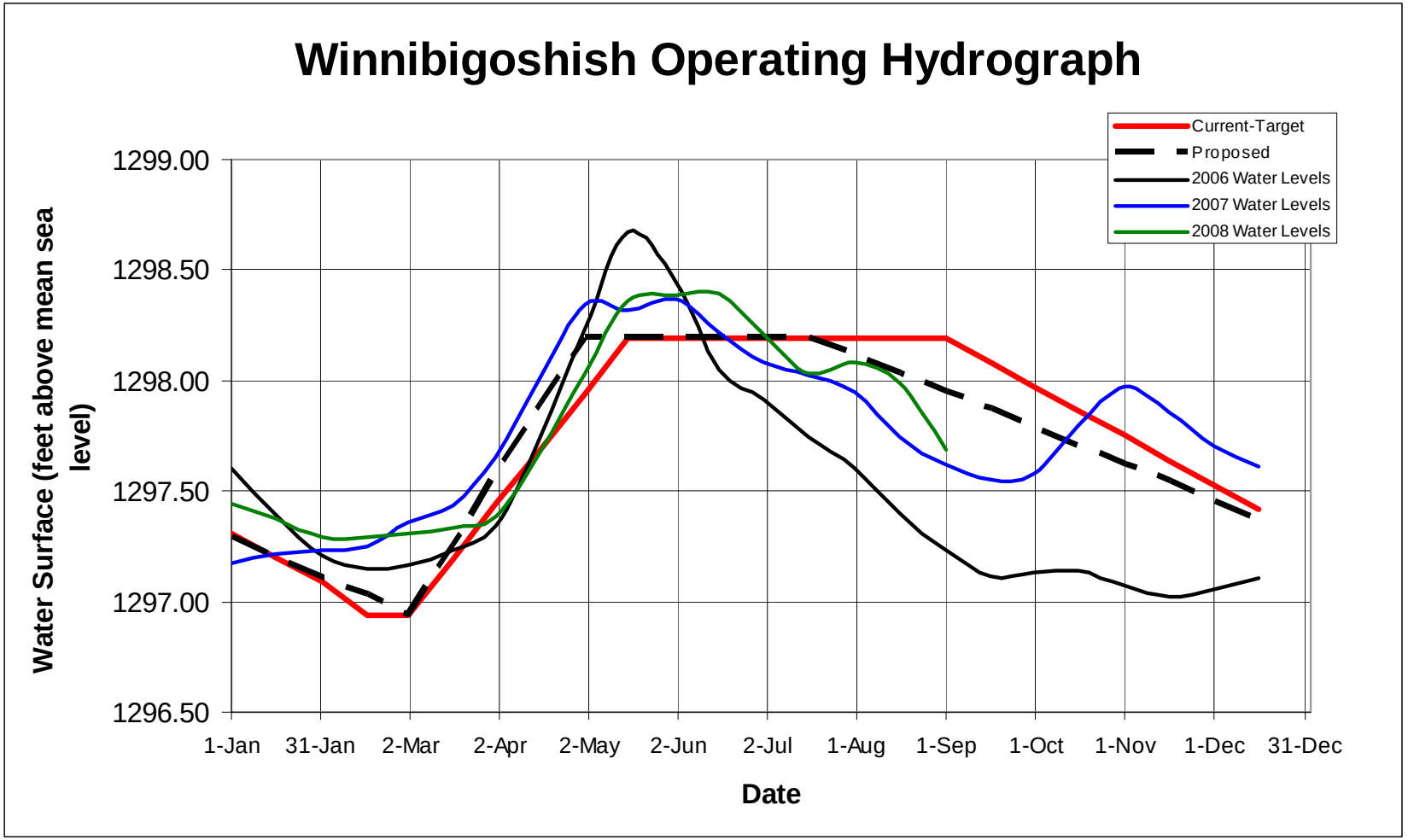
2006-2008 Water Levels



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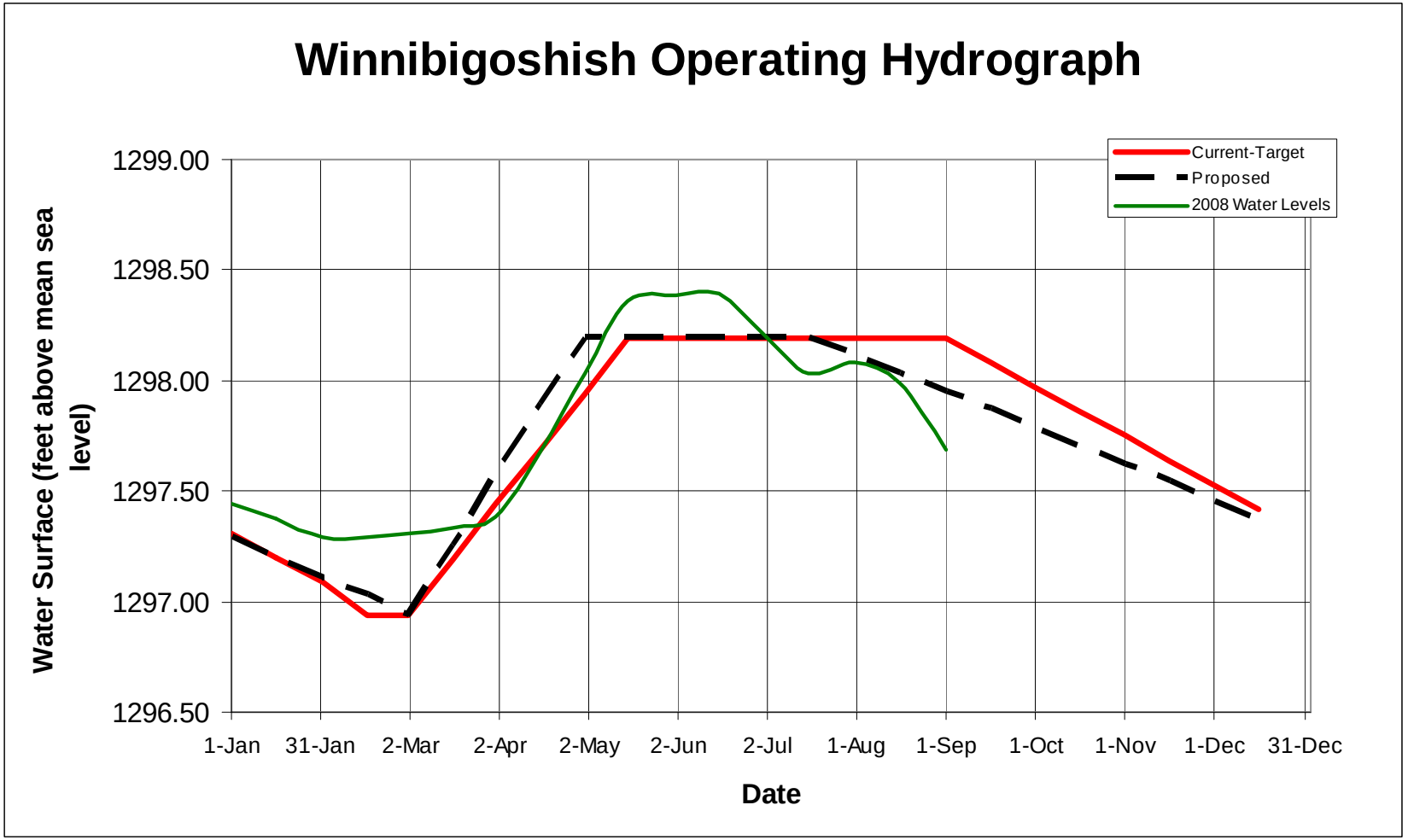
2006-2008 Water Levels



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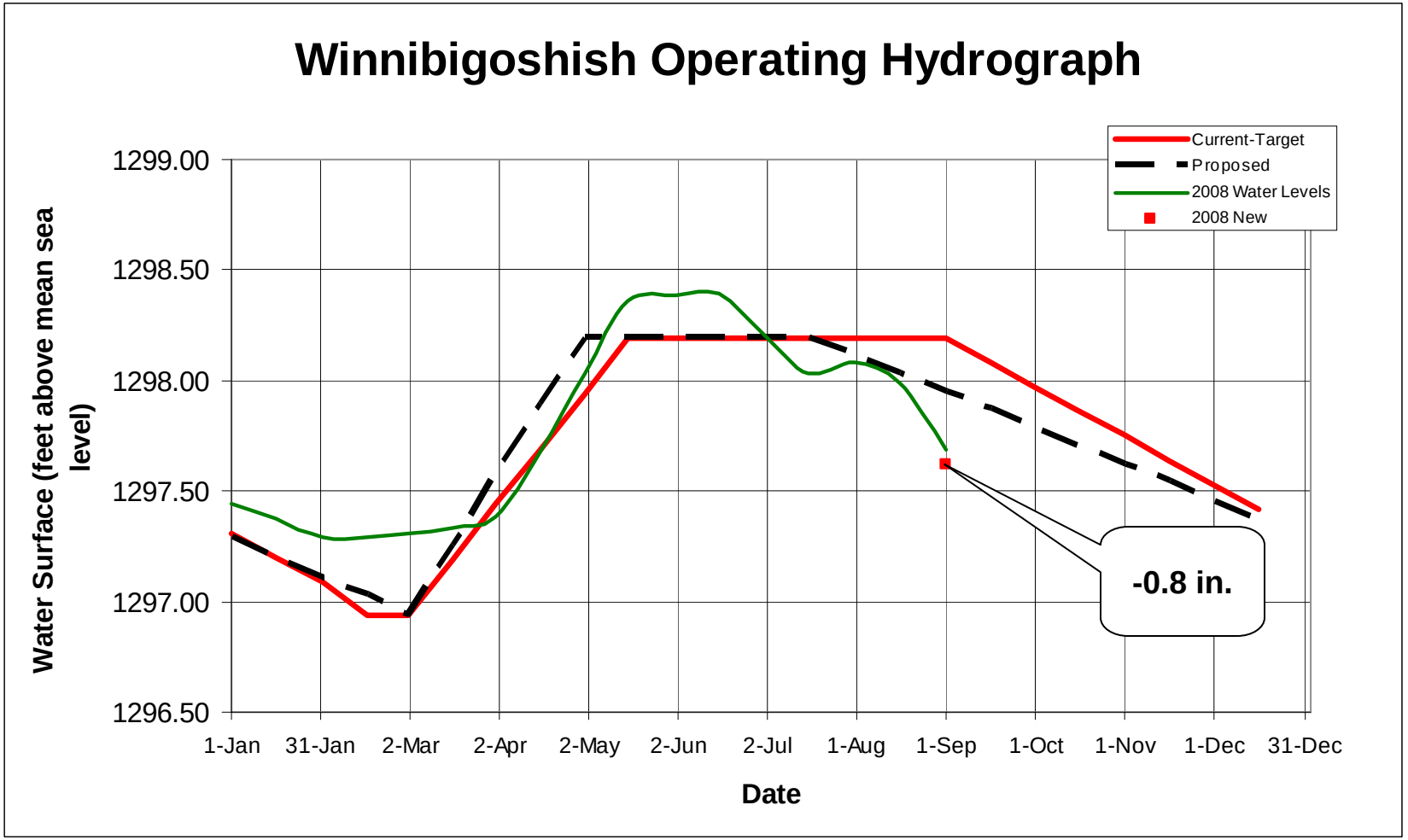
2006-2008 Water Levels



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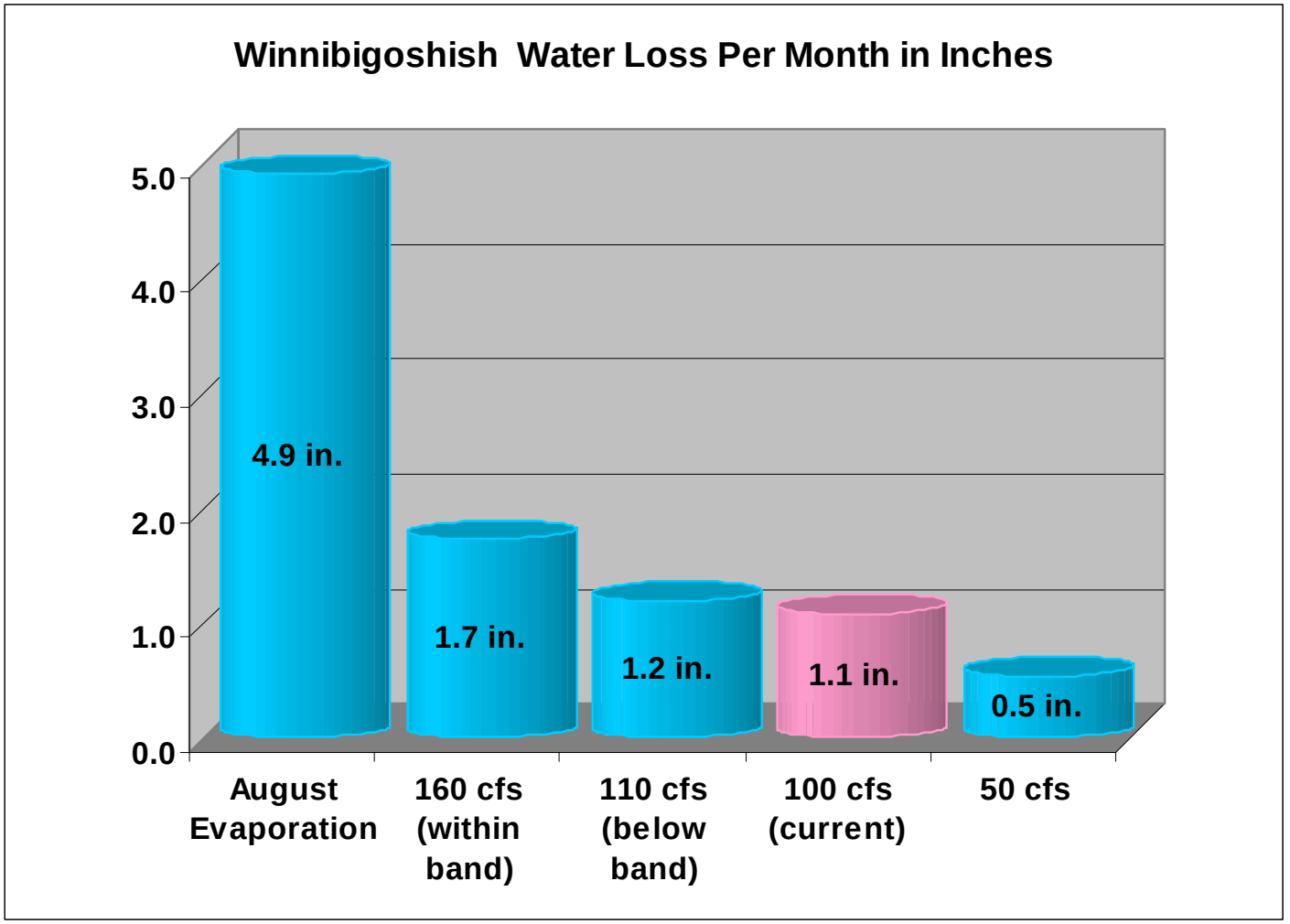
Winni Minimum Releases



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Effects of the Proposed Plan

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General Ecological Benefits of the Proposed Plan

- More natural flows and reservoir stages will benefit the health of aquatic and wetland communities and ensure their integrity for future generations.

Fish

Waterfowl

Mammals

Reptiles

Amphibians

Wetland Birds

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Benefits of the Gradual Summer Decline

- Improved conditions for aquatic vegetation, including wild rice.
- Reduced shoreline erosion (property values, archeological resources, habtitat)
- Benefits to reptiles and amphibians that overwinter in wetlands.
- Reduced winter flows in rivers to benefit fish.

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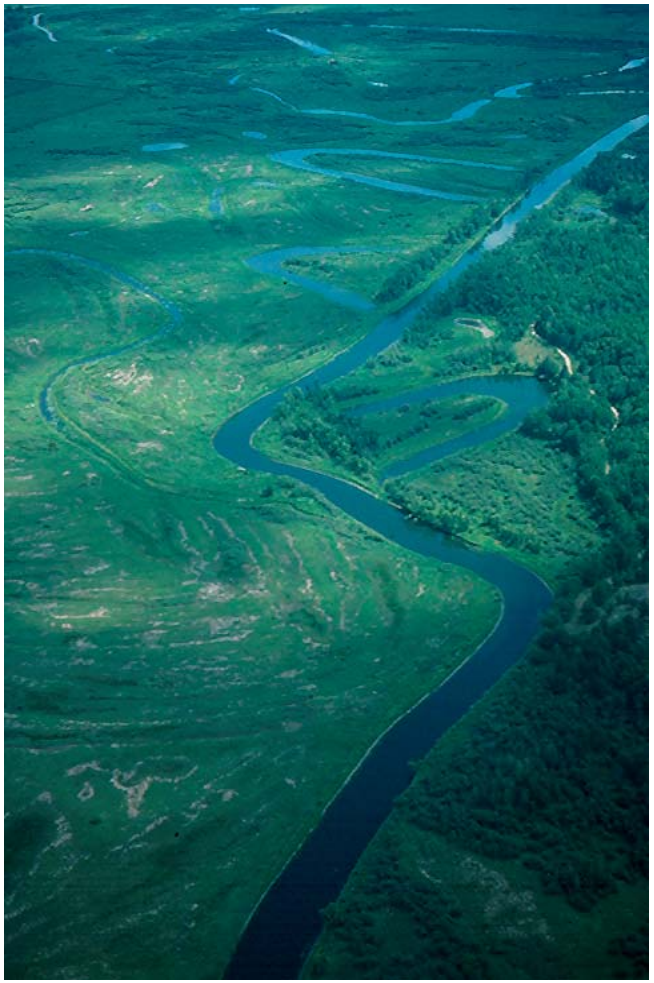
Benefits of the Spring Pulse Flows

- Improve fish spawning success.
- Cleans silt from rocky habitat in the rivers.
- Benefits to waterfowl nesting.



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Benefits of the Increased Minimum Releases

- Improved habitat conditions during dry conditions.
- Hydropower generation benefits.
- River recreation benefits.

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Other Benefits of the Proposed Plan

- More natural hydrology would encourage “spin-off” environmental restoration projects.
- Protecting environmental health will ensure quality future recreational opportunities.

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Adverse effects of the Proposed Plan

- Lower normal water levels in late summer and fall. Reduced boat access in shallow areas including channels, boat docks, lifts, and ramps.
- Slight additional reduction in water levels during droughts – normally less than 2 inches.

Wrap-up

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ROPE Schedule

Public Meetings on Draft Proposed Operating Plan and EIS	TODAY
Public Review Period Ends for Draft EIS	November 3rd
Release of Final EIS for Public Review	Winter 2008-2009
Record of Decision is Signed and Released	Spring 2009

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For More Information

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