

Water Quantity Analysis of Lowering
Chattahoochee River at Peachtree Creek
Minimum Flow
Through May 31, 2008

Mobile District
HEC-5 Reservoir Simulation
May 7, 2008

Modeling Assumption

- Current IOP and EDO operations
- Initial Reservoir conditions recorded 04May2008
- Year 2000 Demands
- Hydrology Alternatives
 - Year 2000
 - 7Q10 between Buford and Whitesburg, Year 2000 rest of basin
- Minimum Flow
 - Columbus
 - 1850 cfs when WP \geq 621.6
 - 1200 cfs when WP $<$ 621.6
 - Peachtree Minimum Flow Requirement Alternatives
 - 650 cfs
 - 750 cfs
- Approved Variance at West Point and WF George

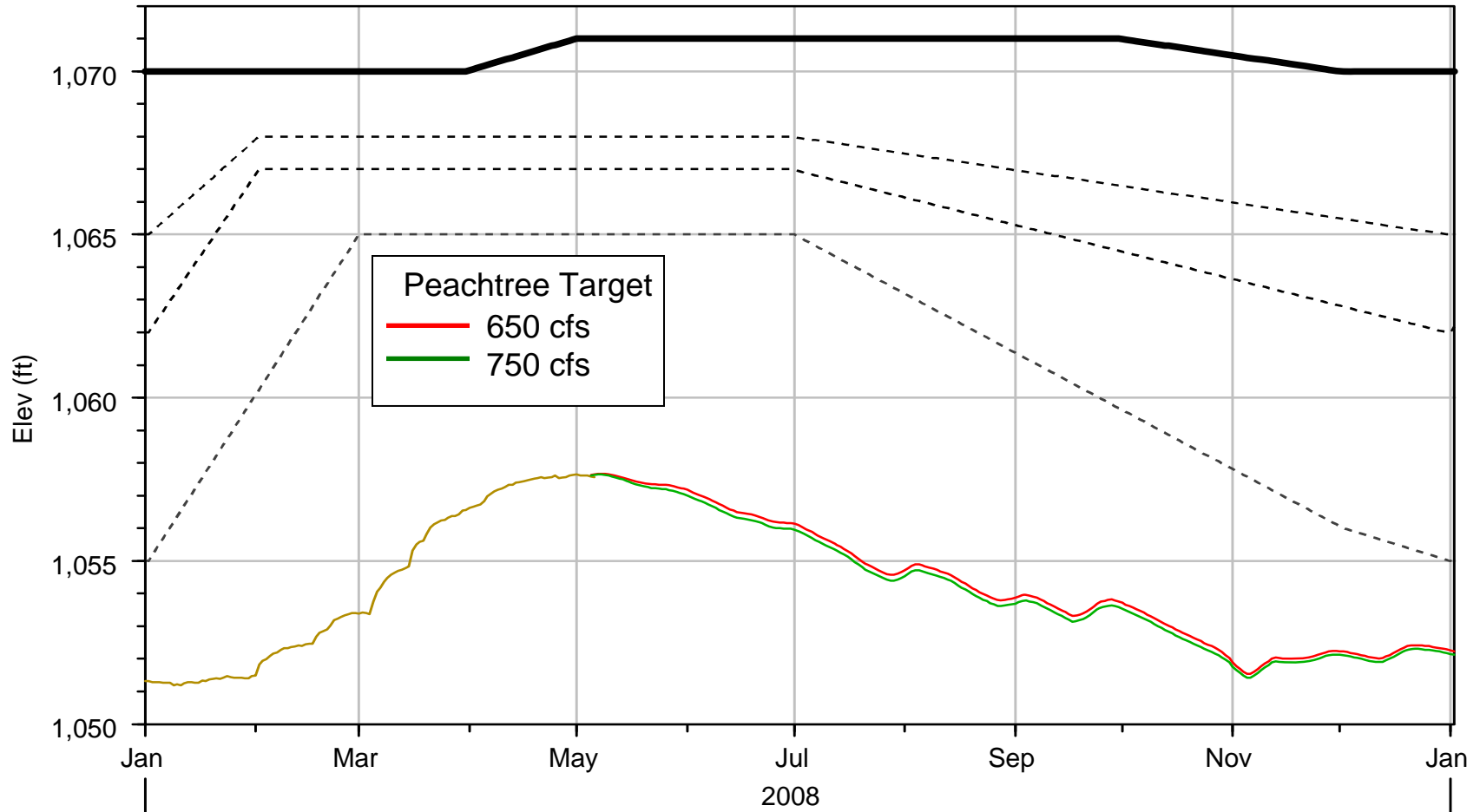
Summary of Impact on 01Jun2008

- Using 2000 Hydrology
 - If we reduce to 650
 - Buford elevation 0.18 feet higher
 - West Point elevation 0.24 feet lower
 - Buford storage increased by 5,544 ac-ft
 - Composite Storage decreased by 65 ac-ft
 - No impact downstream of West Point

Summary of Impact on 01Jun2008

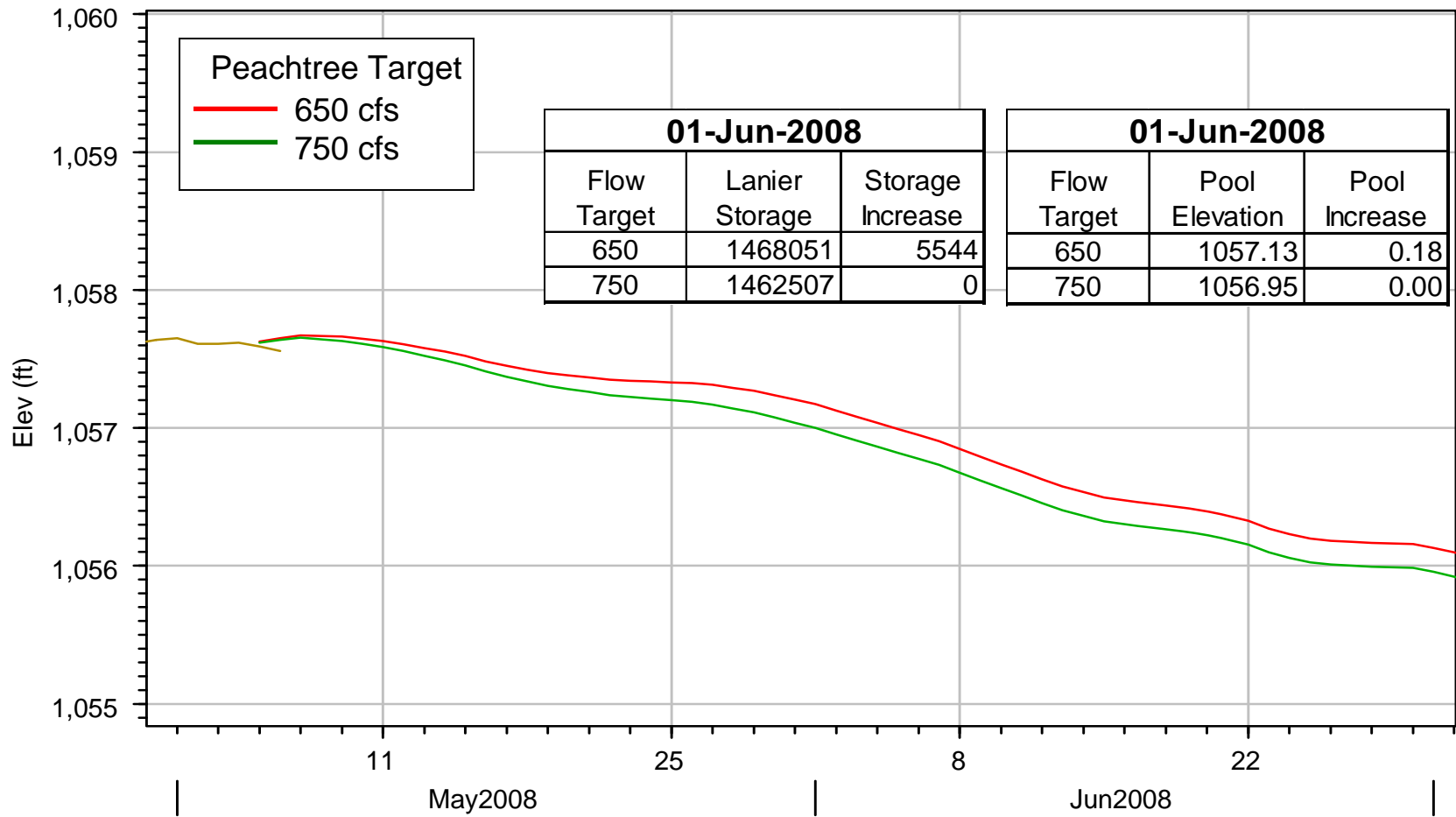
- Using 7Q10 Hydrology
 - If we reduce to 650
 - Buford elevation 0.18 feet higher
 - West Point elevation 0.25 feet lower
 - Buford storage increased by 5544 ac-ft
 - Composite Storage decreased by 67 ac-ft
 - No impact downstream of West Point

Buford 2000 Hydrology



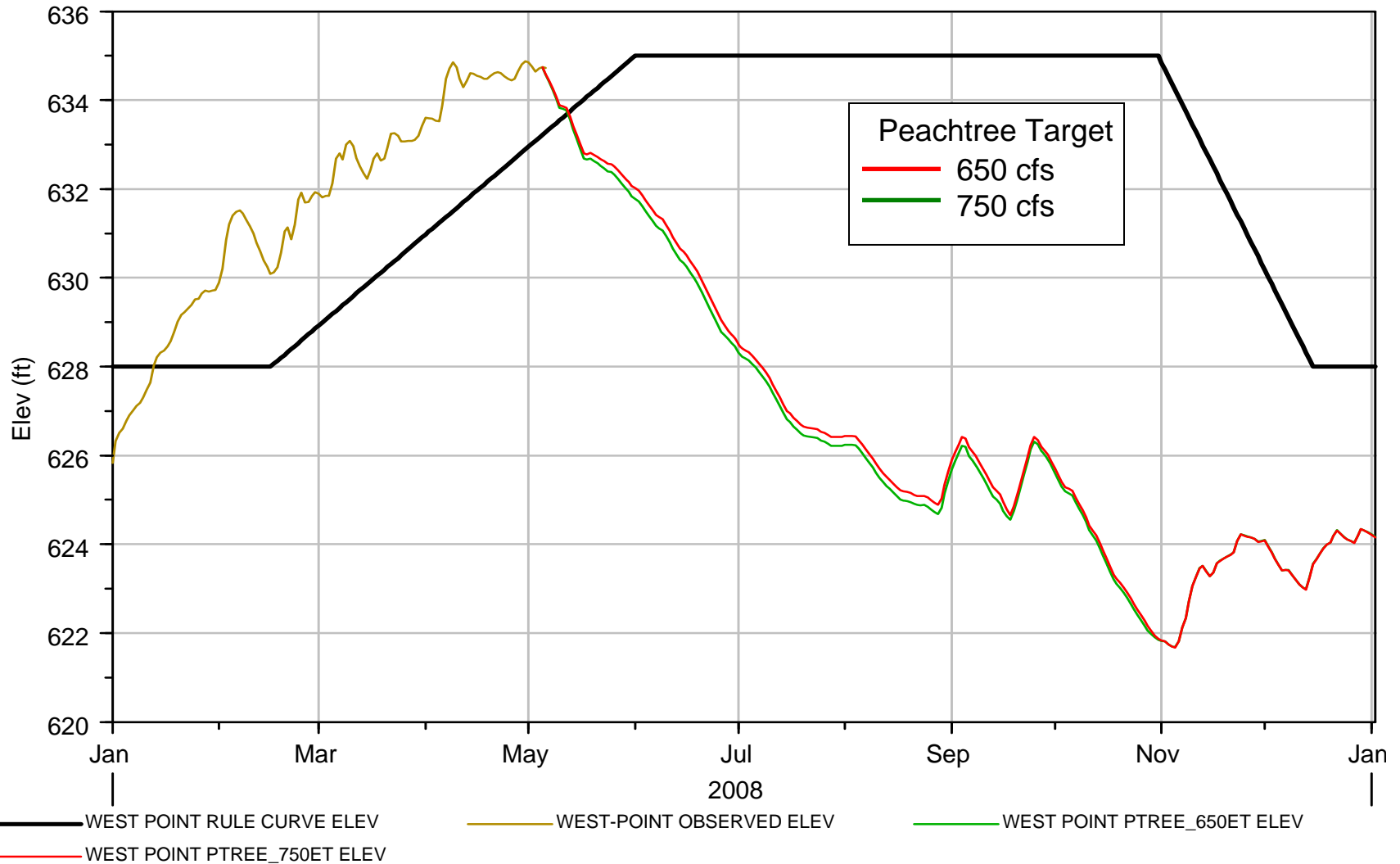
— BUFORD DAM RULE CURVE ELEV
--- BUFORD DAM ZONE2 ELEV
--- BUFORD DAM ZONE3 ELEV
--- BUFORD DAM ZONE4 ELEV
--- BUFORD DAM PTREE_650ET ELEV
--- BUFORD DAM PTREE_750ET ELEV
--- BUFORD OBSERVED ELEV

Buford 2000 Hydrology

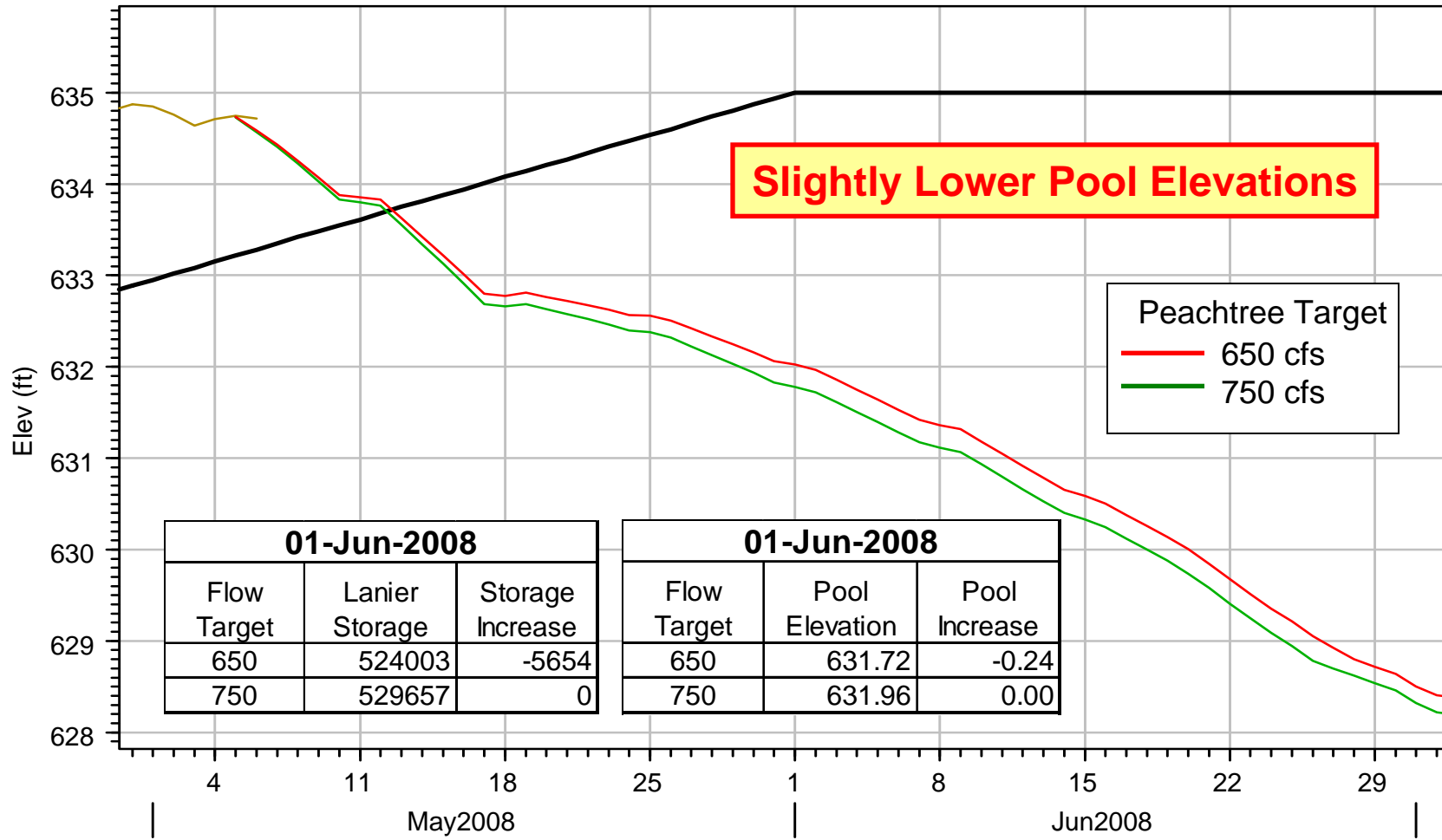


- BUFORD DAM RULE CURVE ELEV
- BUFORD DAM ZONE2 ELEV
- BUFORD DAM ZONE3 ELEV
- BUFORD DAM ZONE4 ELEV
- BUFORD OBSERVED ELEV
- BUFORD DAM PTREE_650ET ELEV
- BUFORD DAM PTREE_750ET ELEV

West Point 2000 Hydrology



West Point 2000 Hydrology

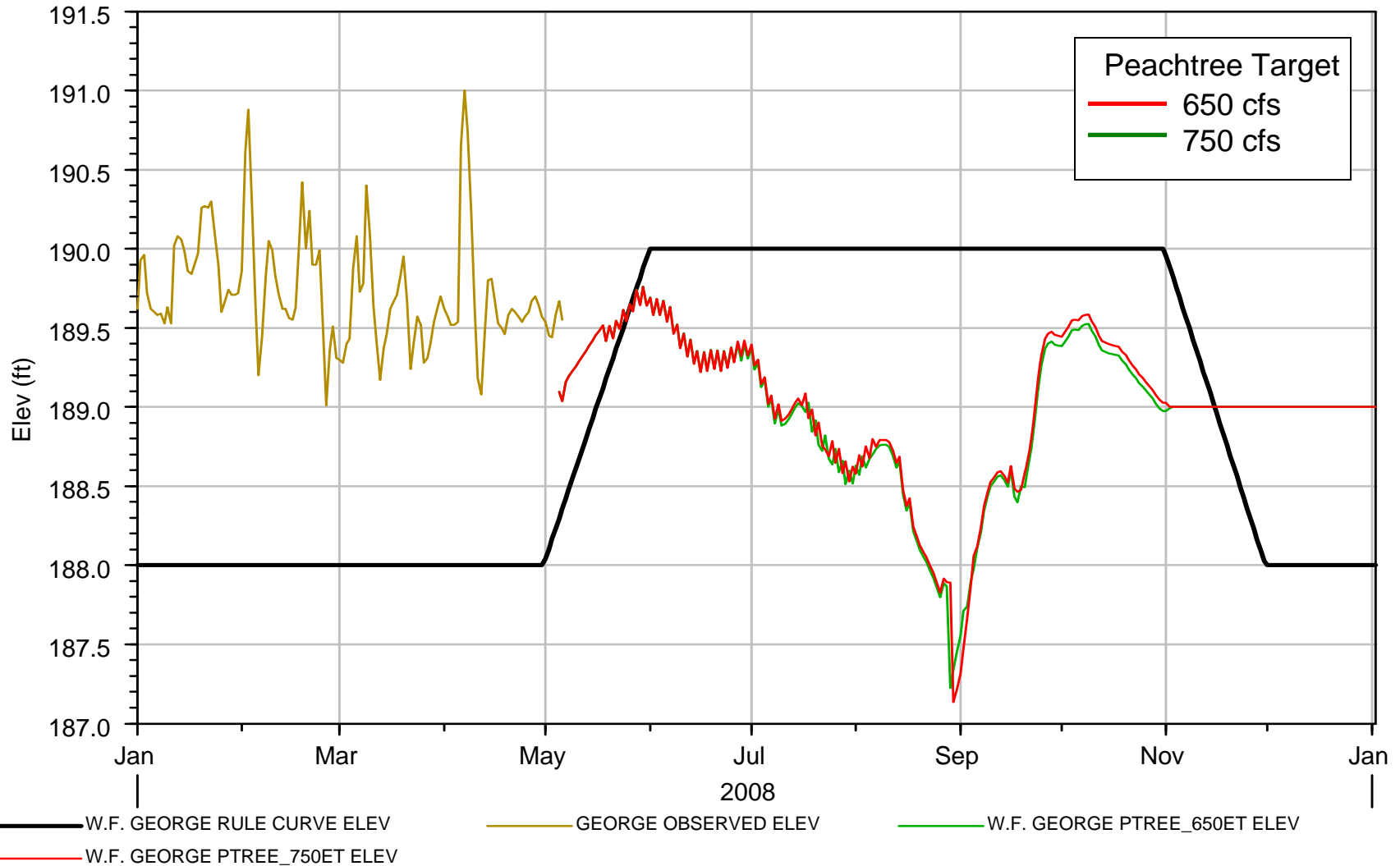


— WEST POINT RULE CURVE ELEV
 — WEST POINT PTREE_750ET ELEV

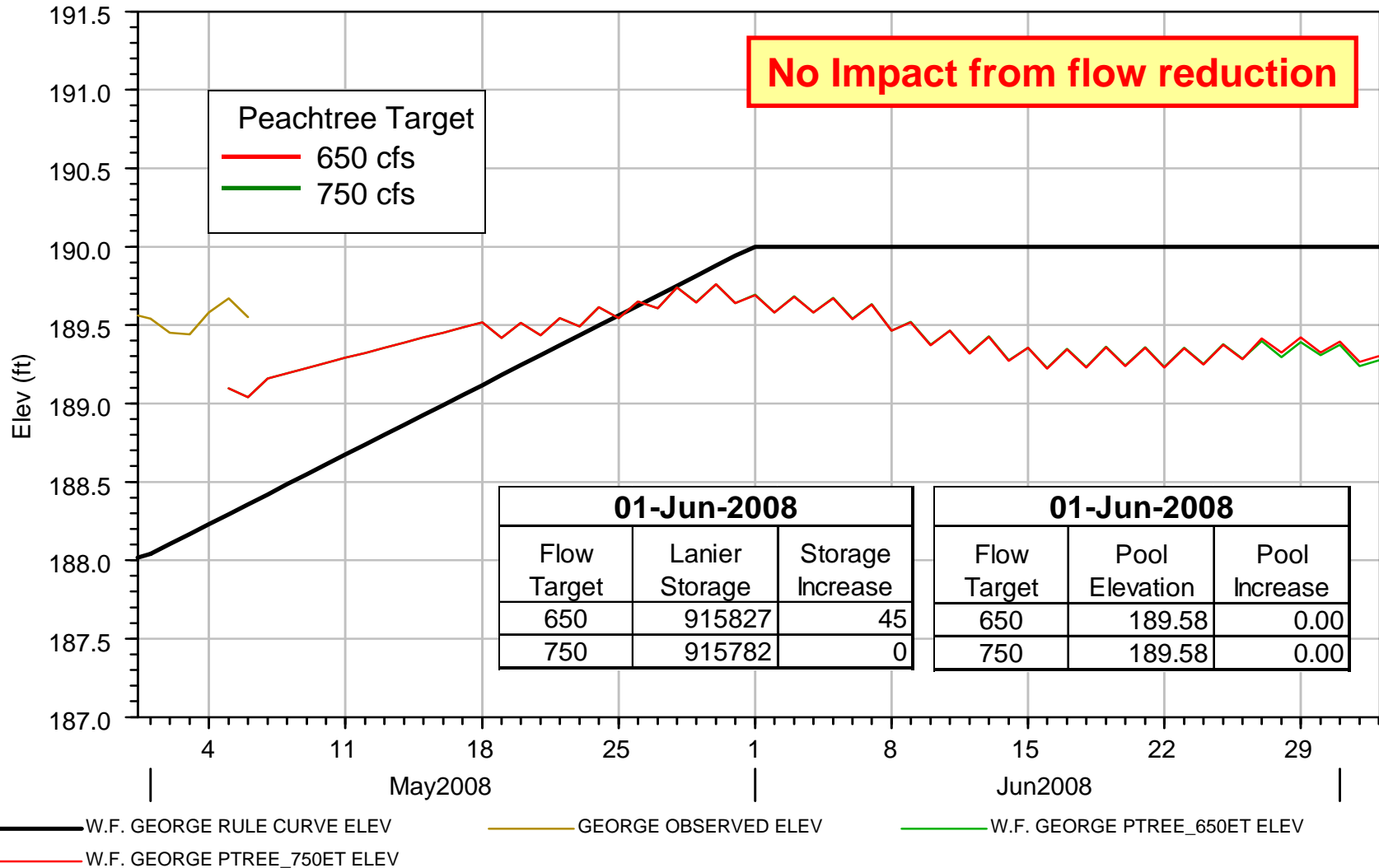
— WEST-POINT OBSERVED ELEV

— WEST POINT PTREE_650ET ELEV

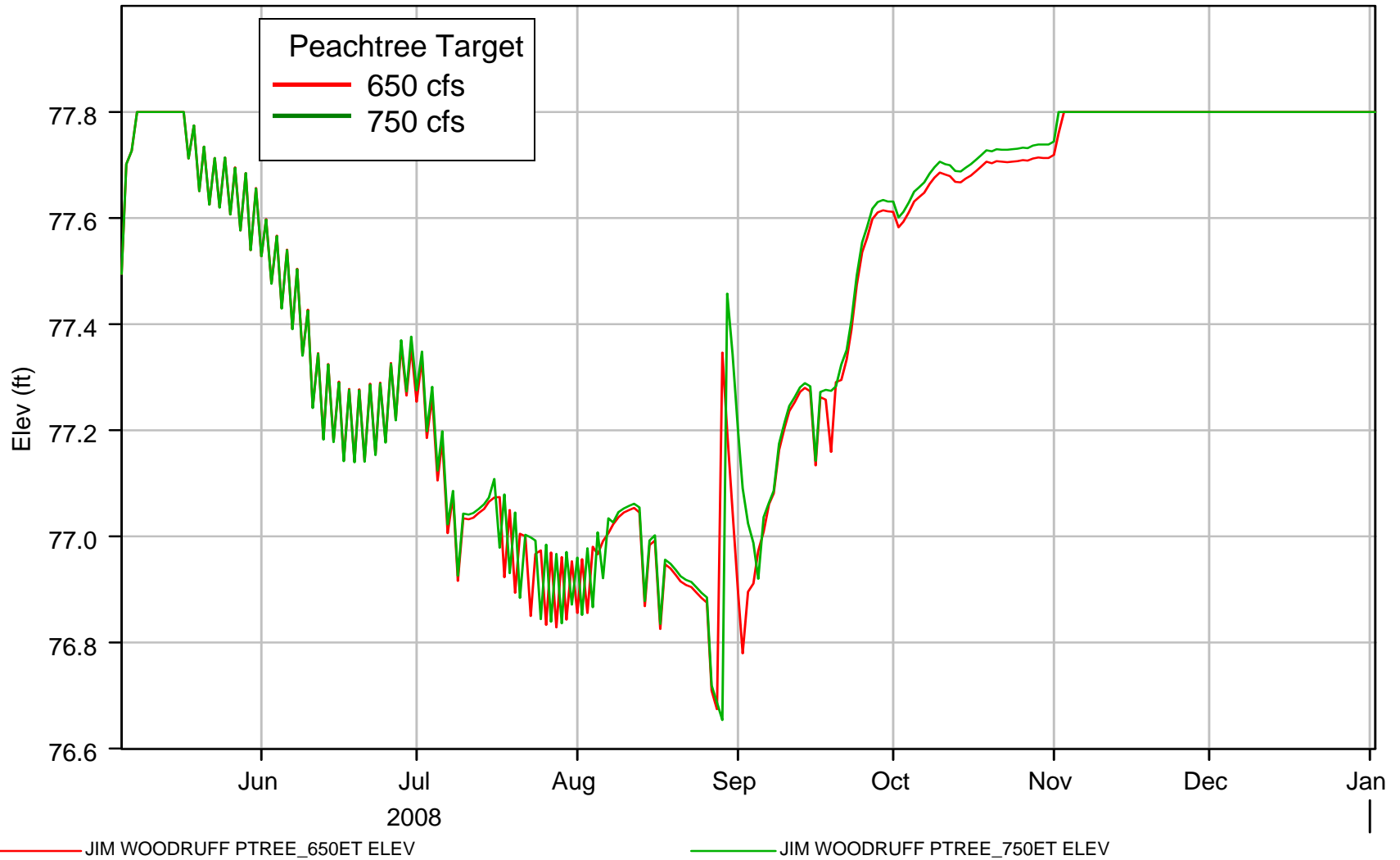
WF George 2000 Hydrology



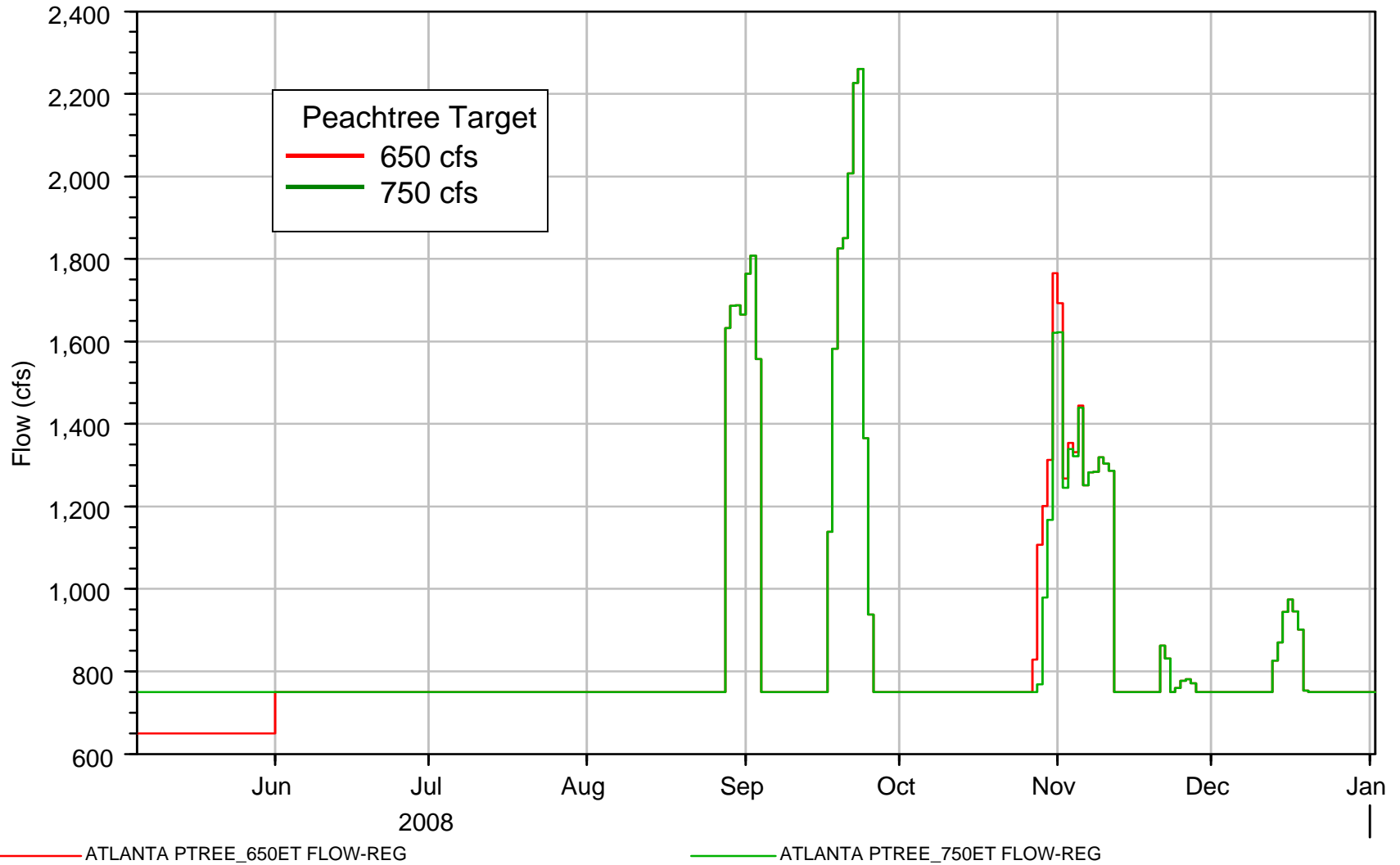
WF George 2000 Hydrology



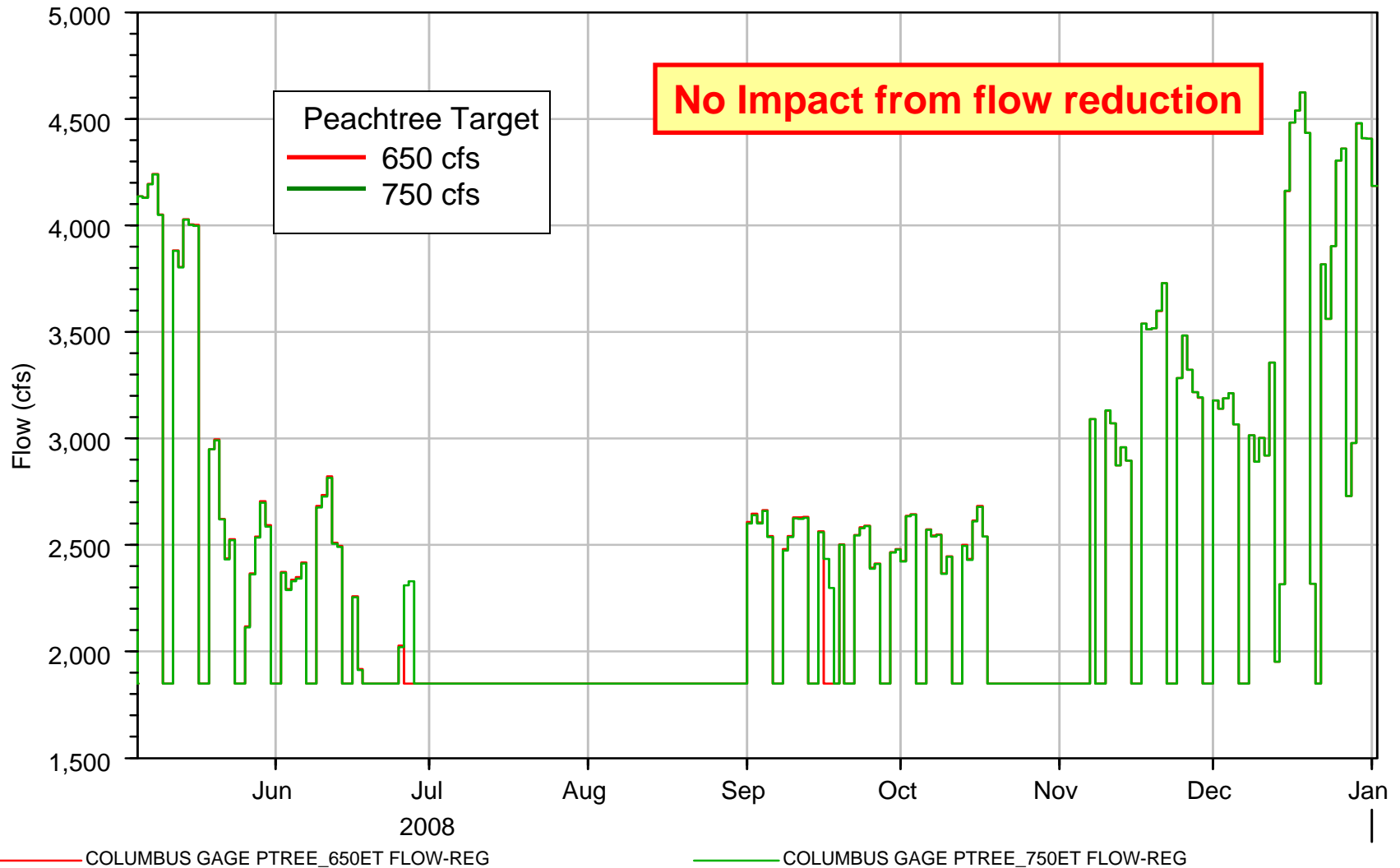
Jim Woodruff 2000 Hydrology



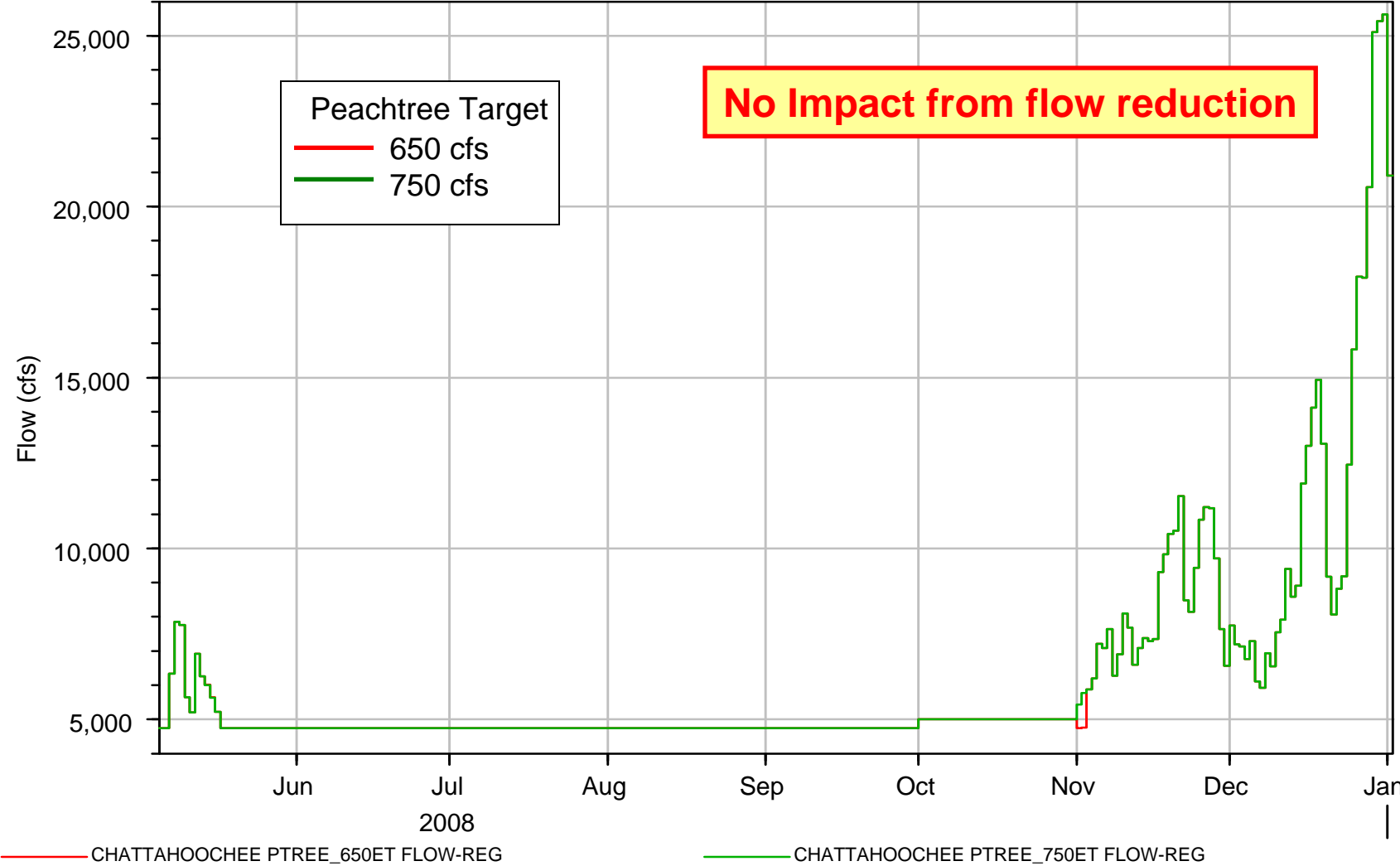
Atlanta Flow 2000 Hydrology



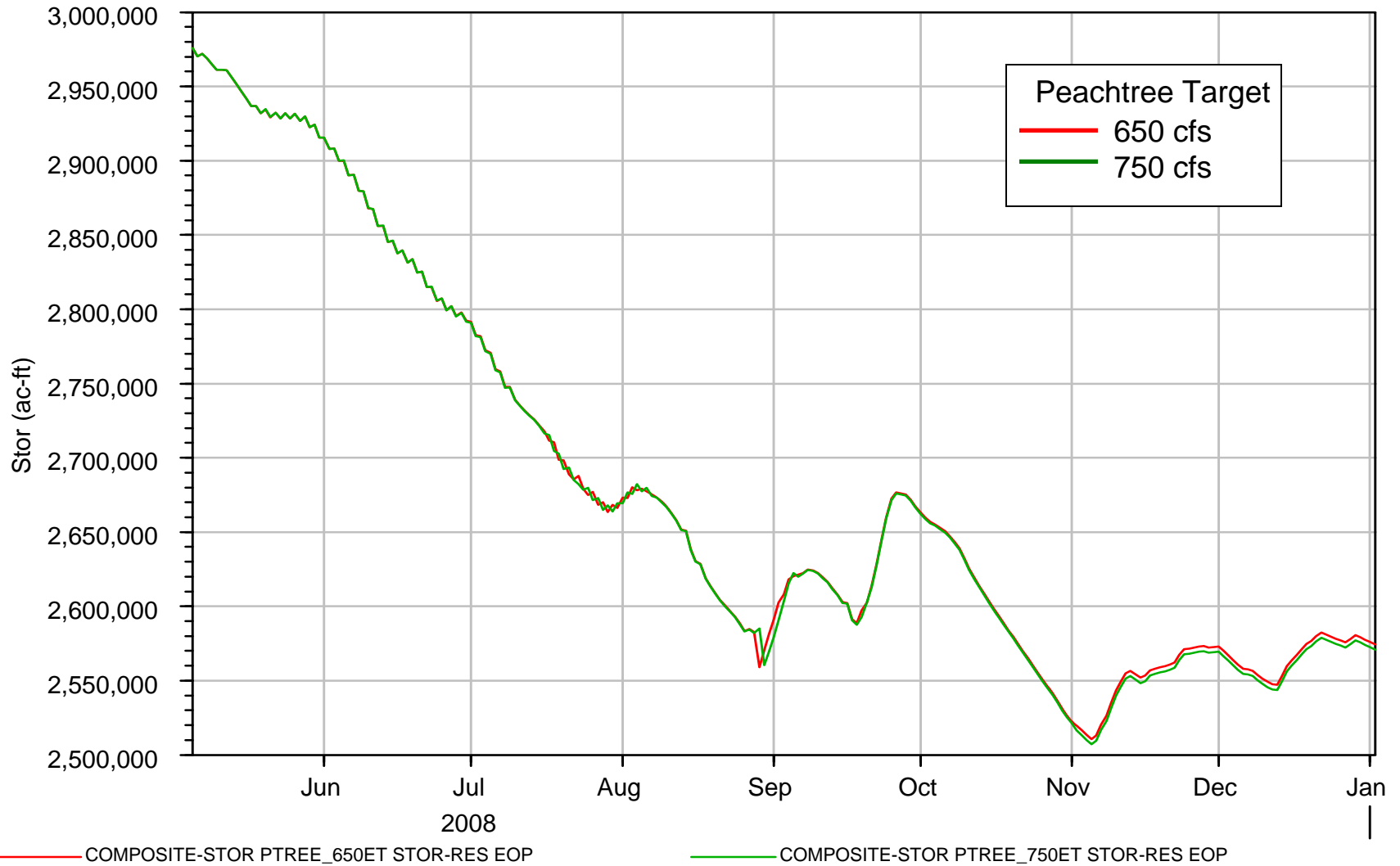
Columbus Flow 2000 Hydrology



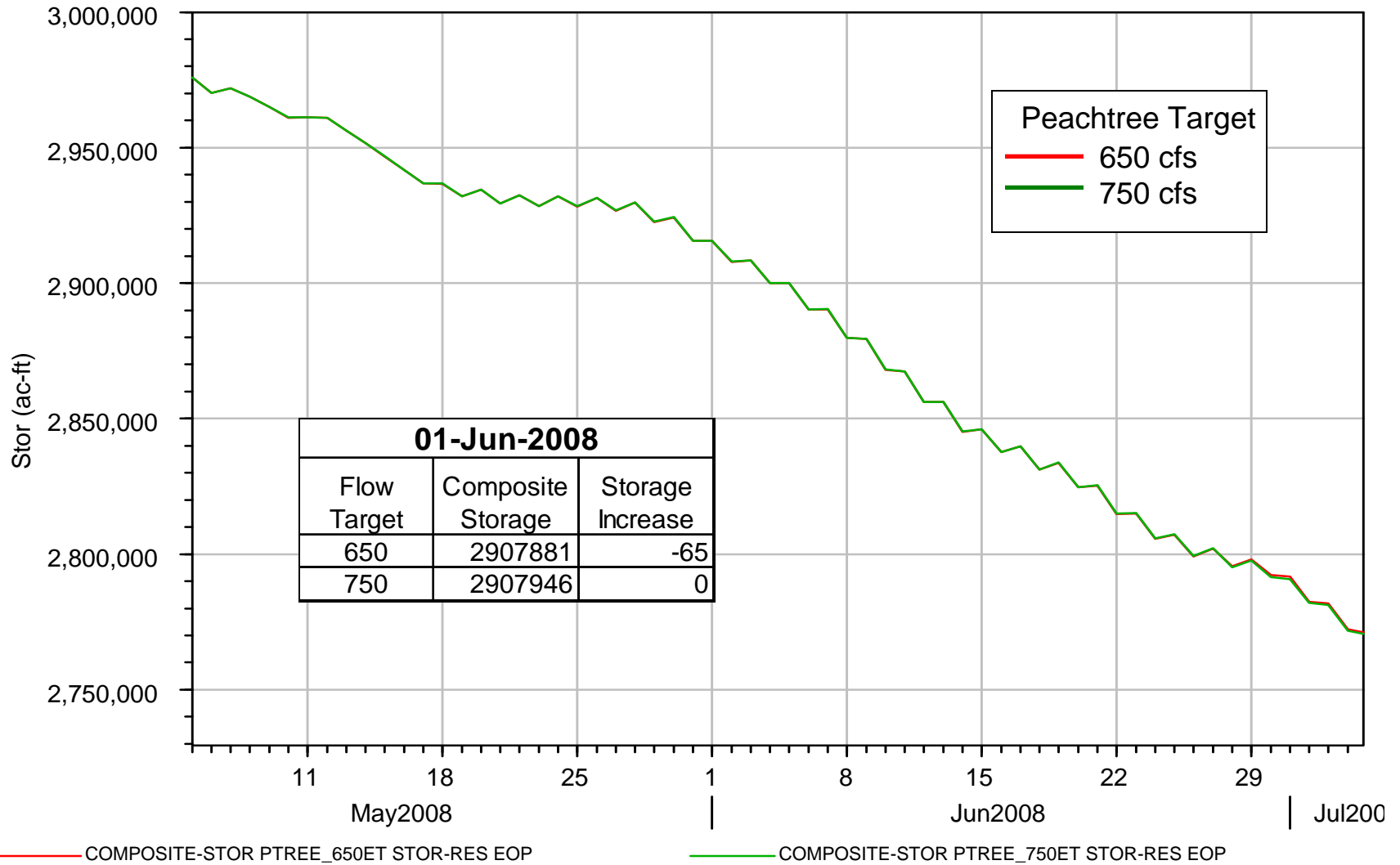
Chattahoochee Flow 2000 Hydrology



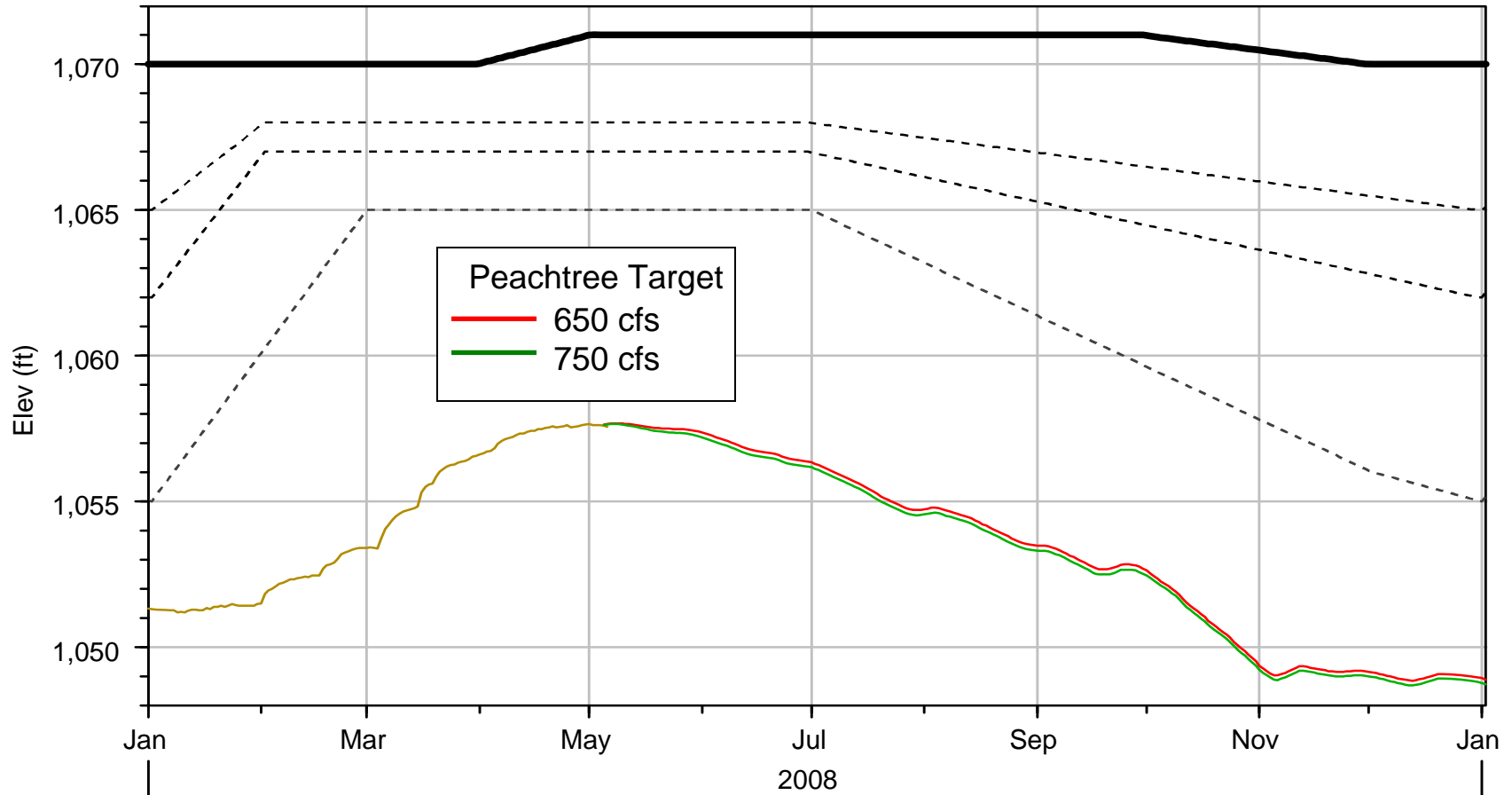
Composite Storage 2000 Hydrology



Composite Storage 2000 Hydrology



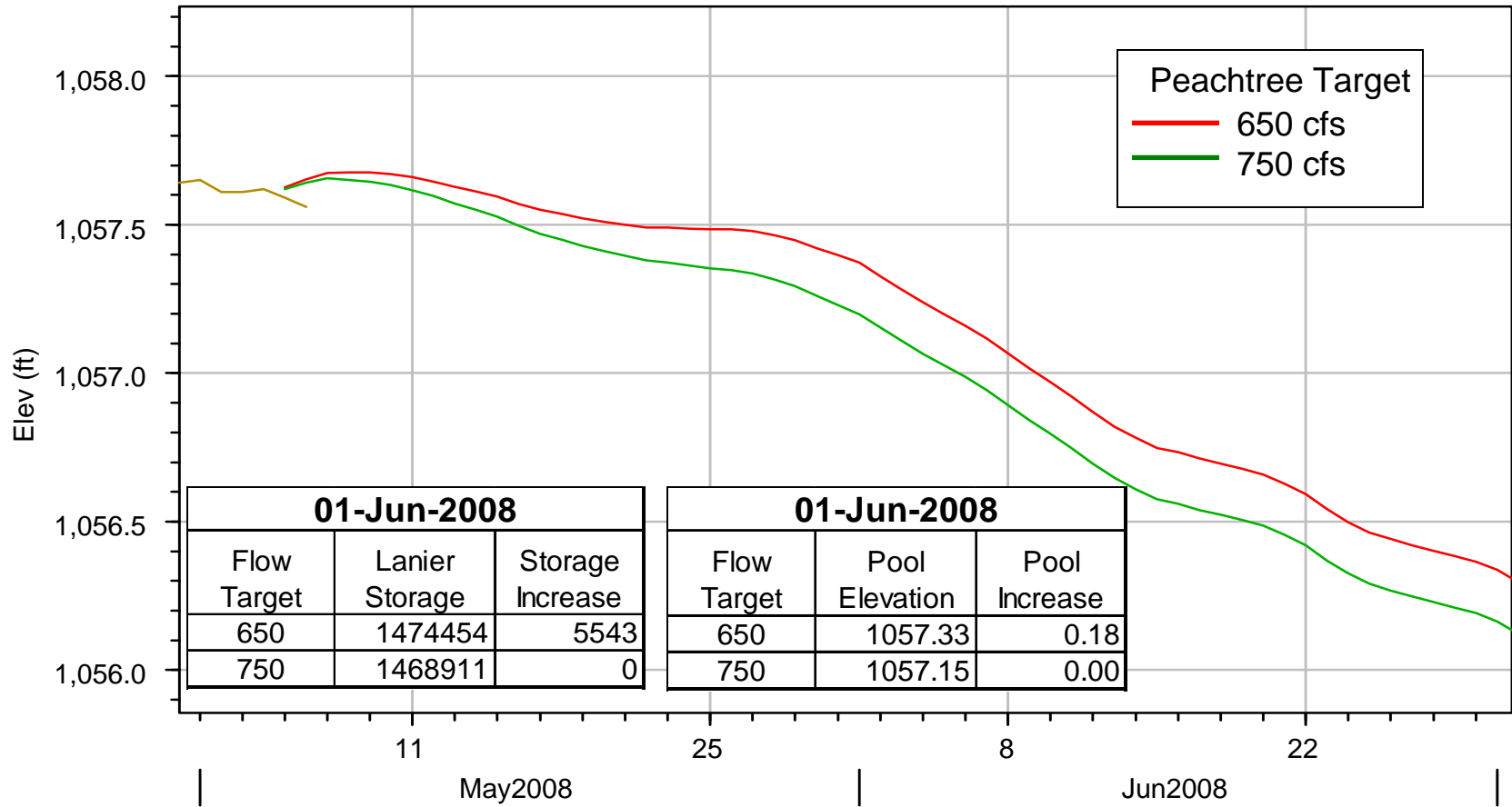
Buford Elevation 7Q10 Hydrology



— BUFORD DAM RULE CURVE ELEV
- - - - - BUFORD DAM ZONE3 ELEV
— BUFORD OBSERVED ELEV
— BUFORD DAM PTREE_750ET_7Q ELEV

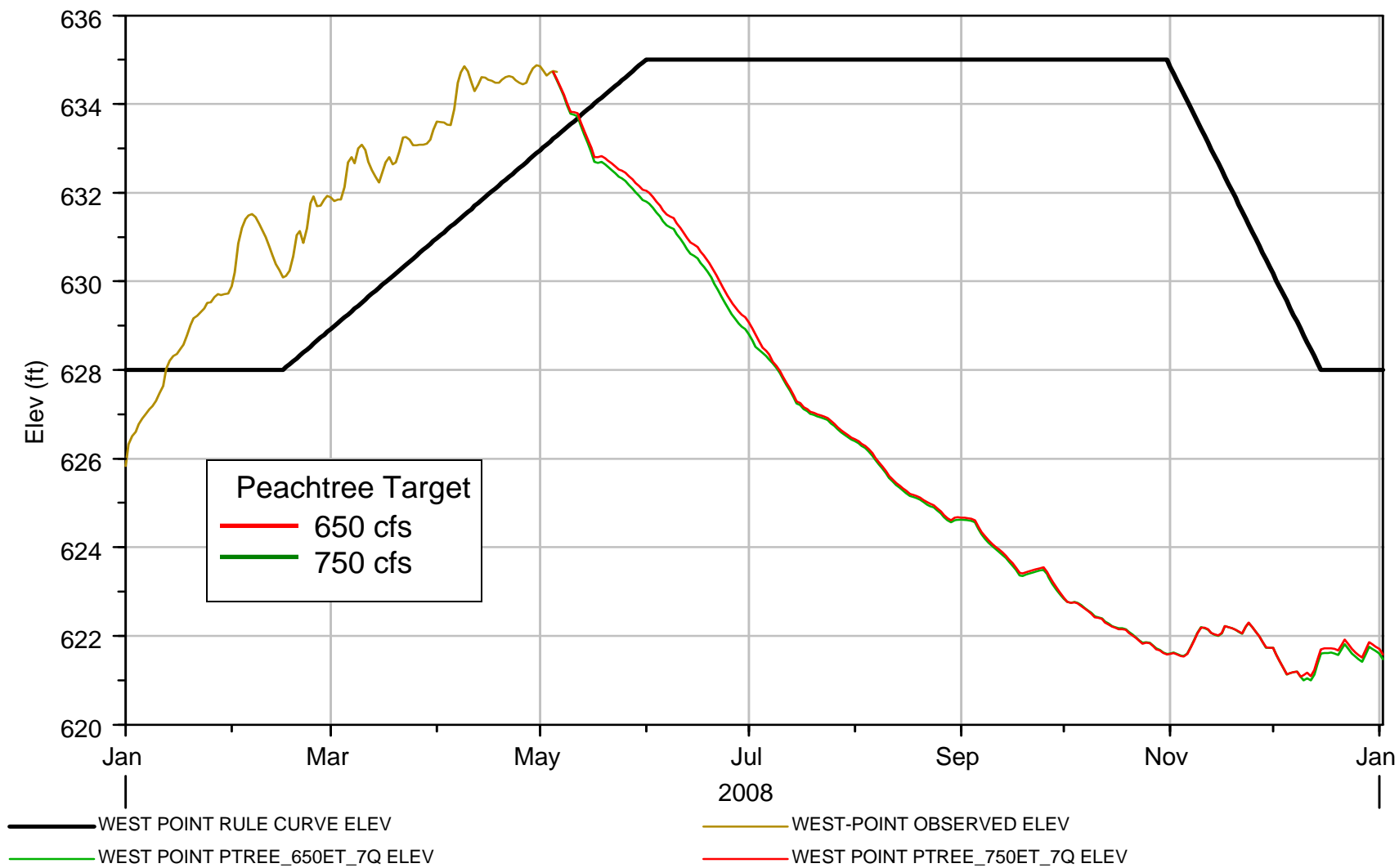
- - - - - BUFORD DAM ZONE2 ELEV
- - - - - BUFORD DAM ZONE4 ELEV
— BUFORD DAM PTREE_650ET_7Q ELEV

Buford Elevation 7Q10 Hydrology

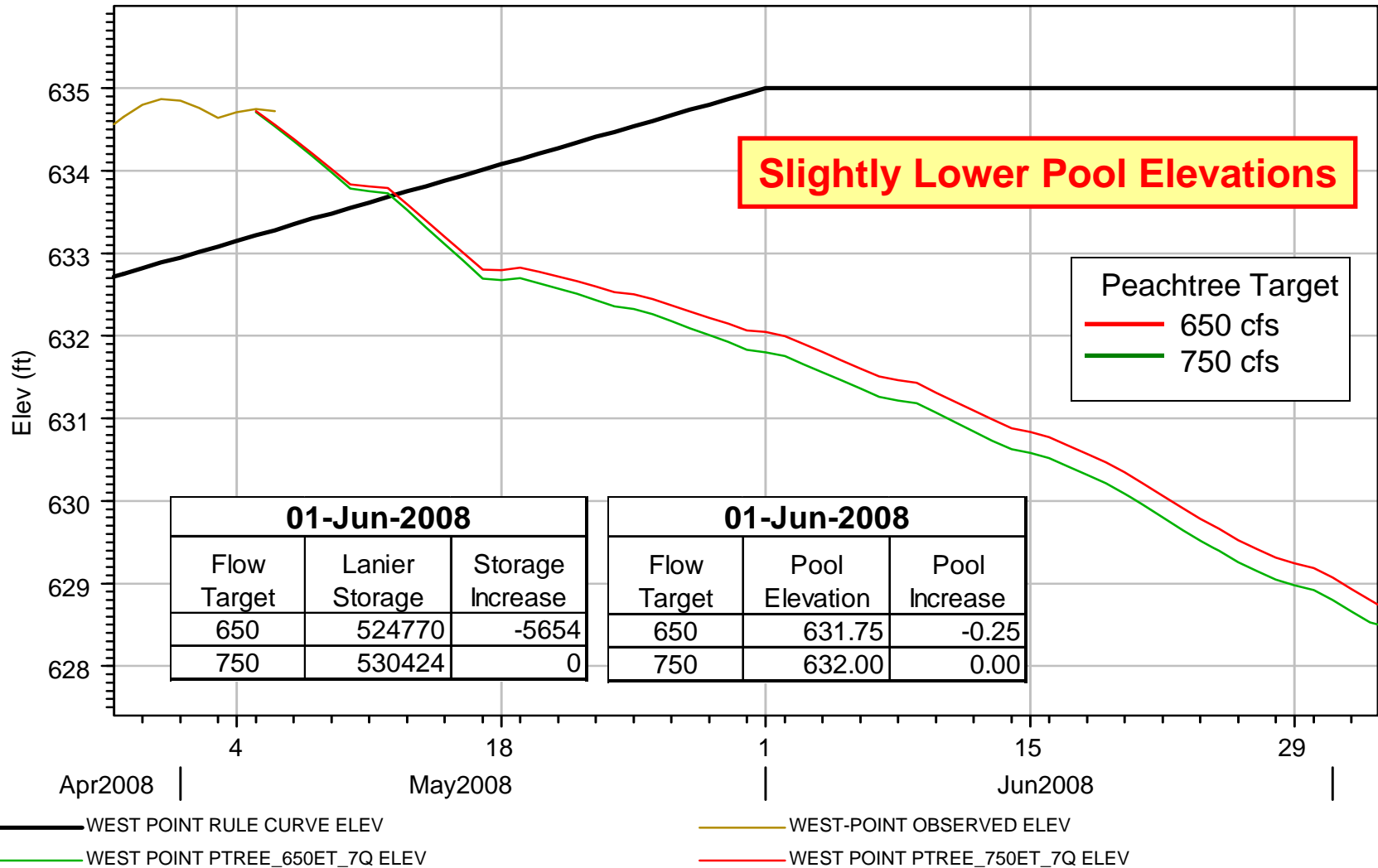


- BUFORD DAM RULE CURVE ELEV
- - - - - BUFORD DAM ZONE2 ELEV
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- - - - - BUFORD DAM ZONE4 ELEV
- BUFORD DAM PTREE_650ET_7Q ELEV
- BUFORD DAM PTREE_750ET_7Q ELEV
- BUFORD OBSERVED ELEV

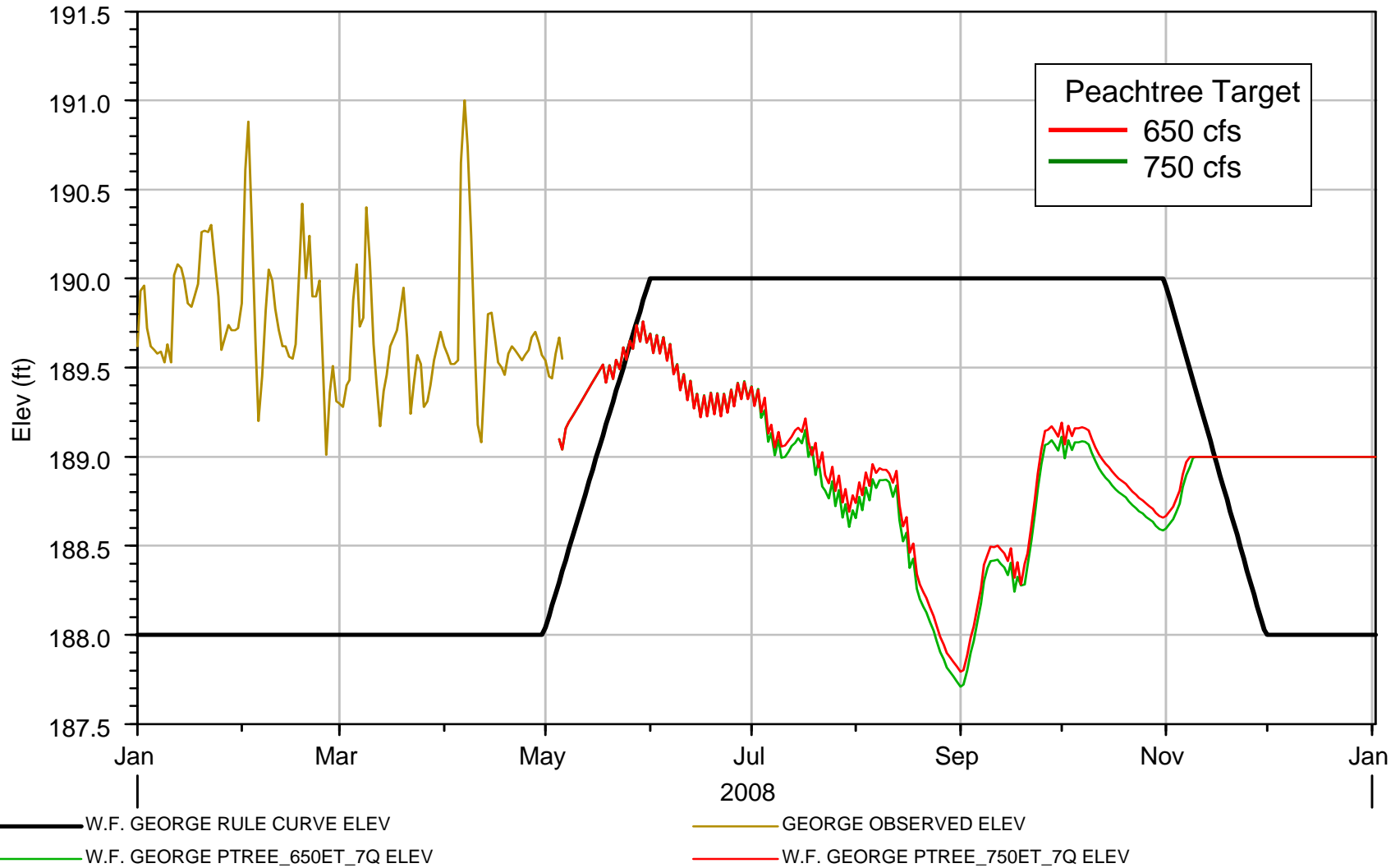
West Point Elevation 7Q10 Hydrology



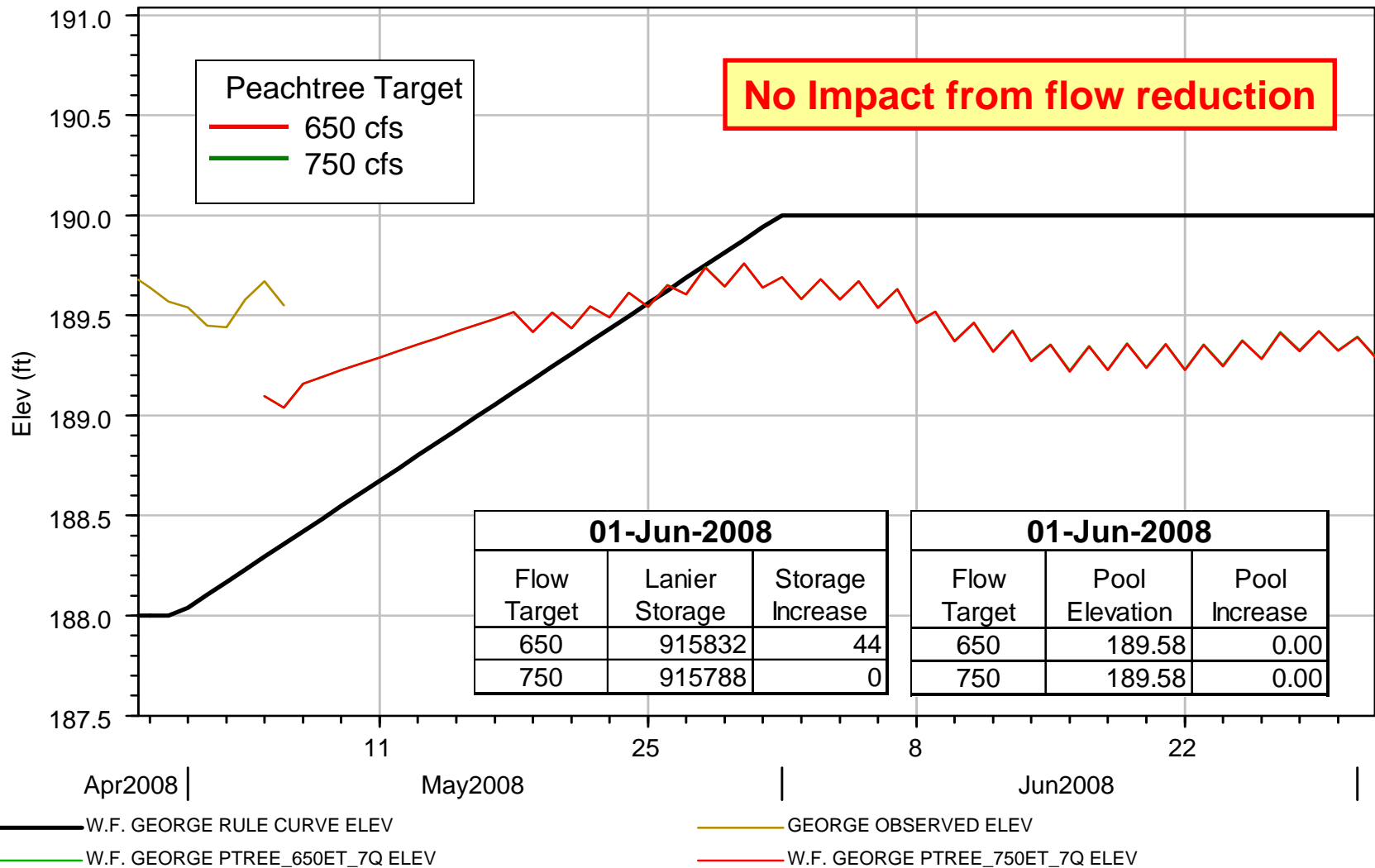
West Point Elevation 7Q10 Hydrology



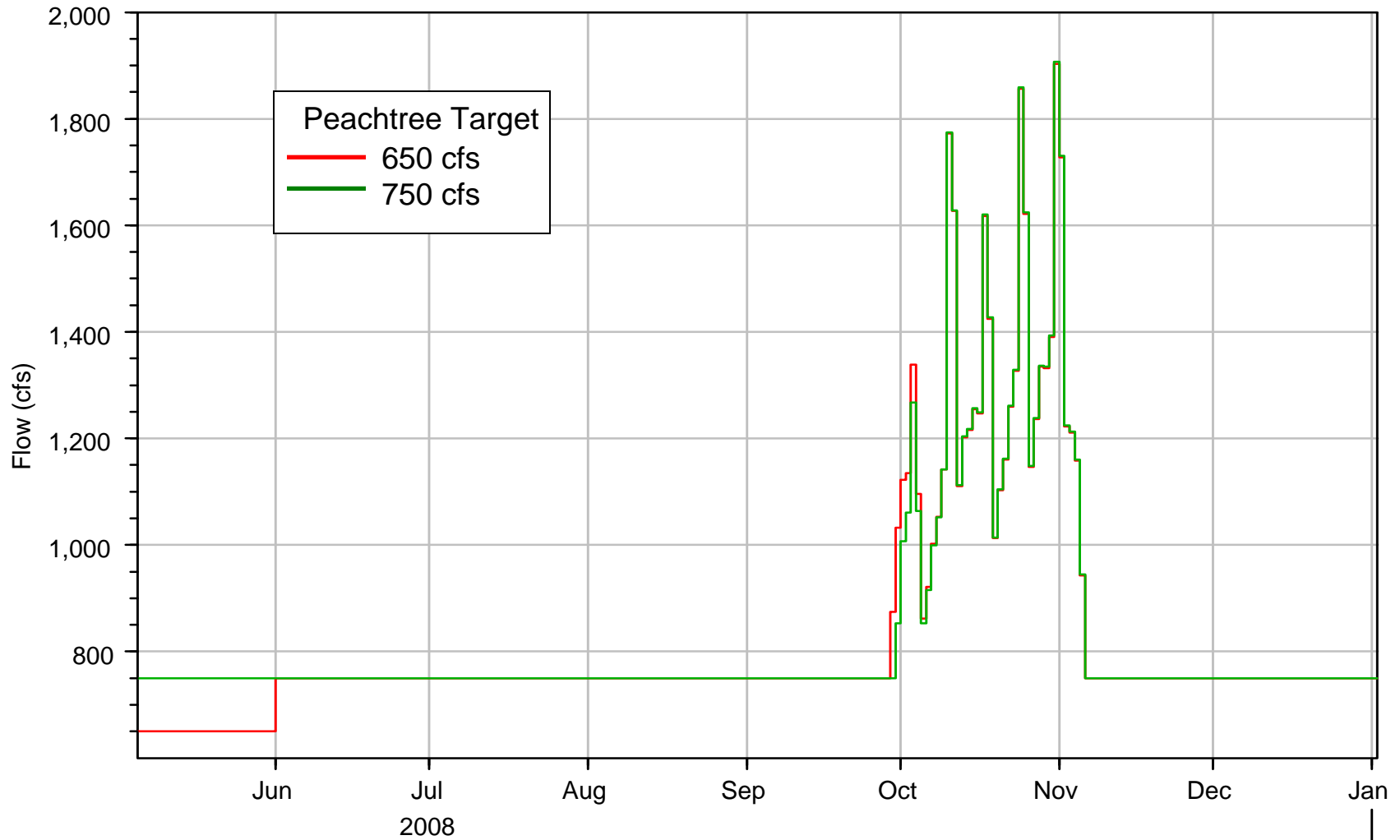
WF George Elevation 7Q10 Hydrology



WF George Elevation 7Q10 Hydrology



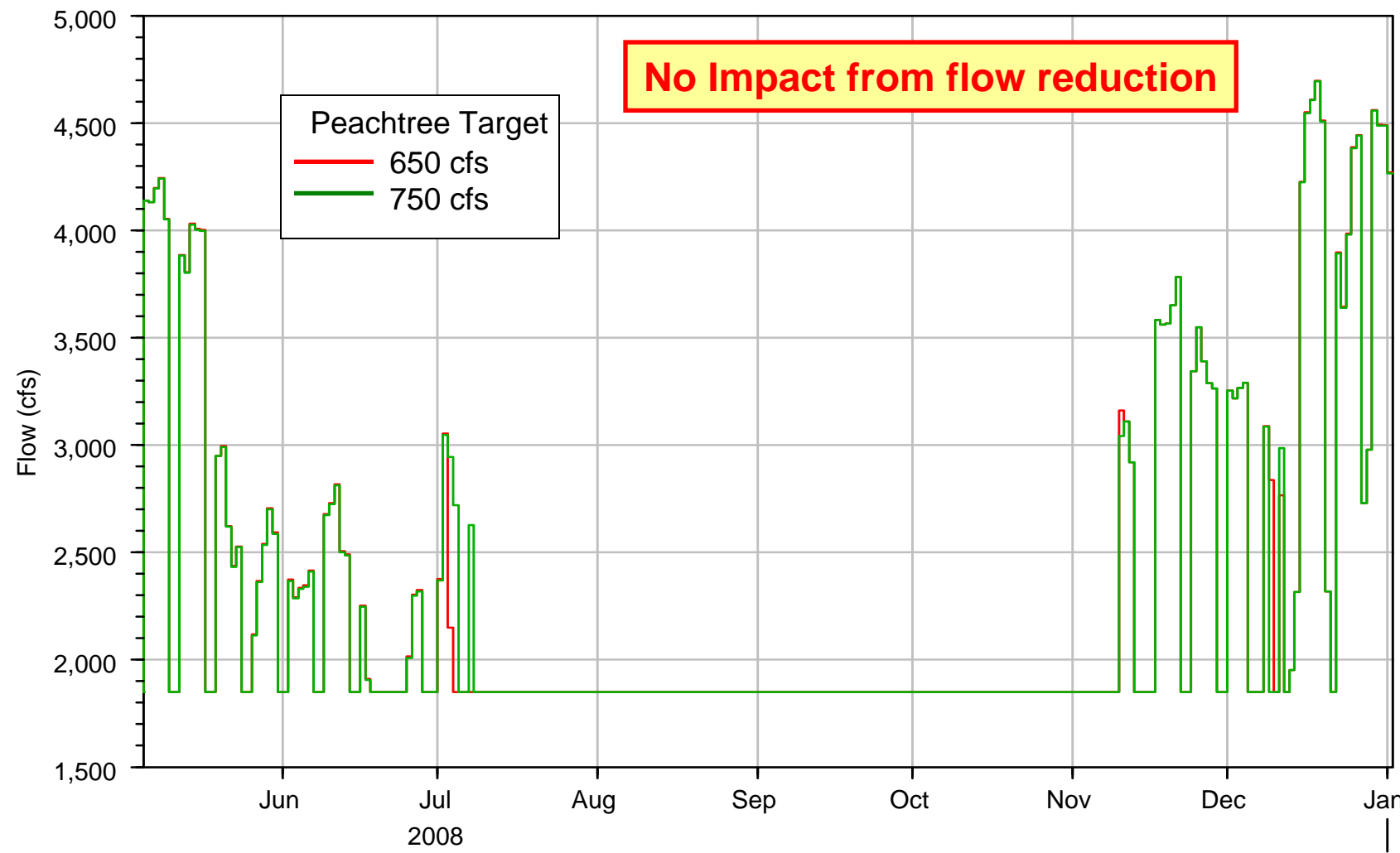
Atlanta 7Q10 Hydrology



ATLANTA PTREE_650ET_7Q FLOW-REG

ATLANTA PTREE_750ET_7Q FLOW-REG

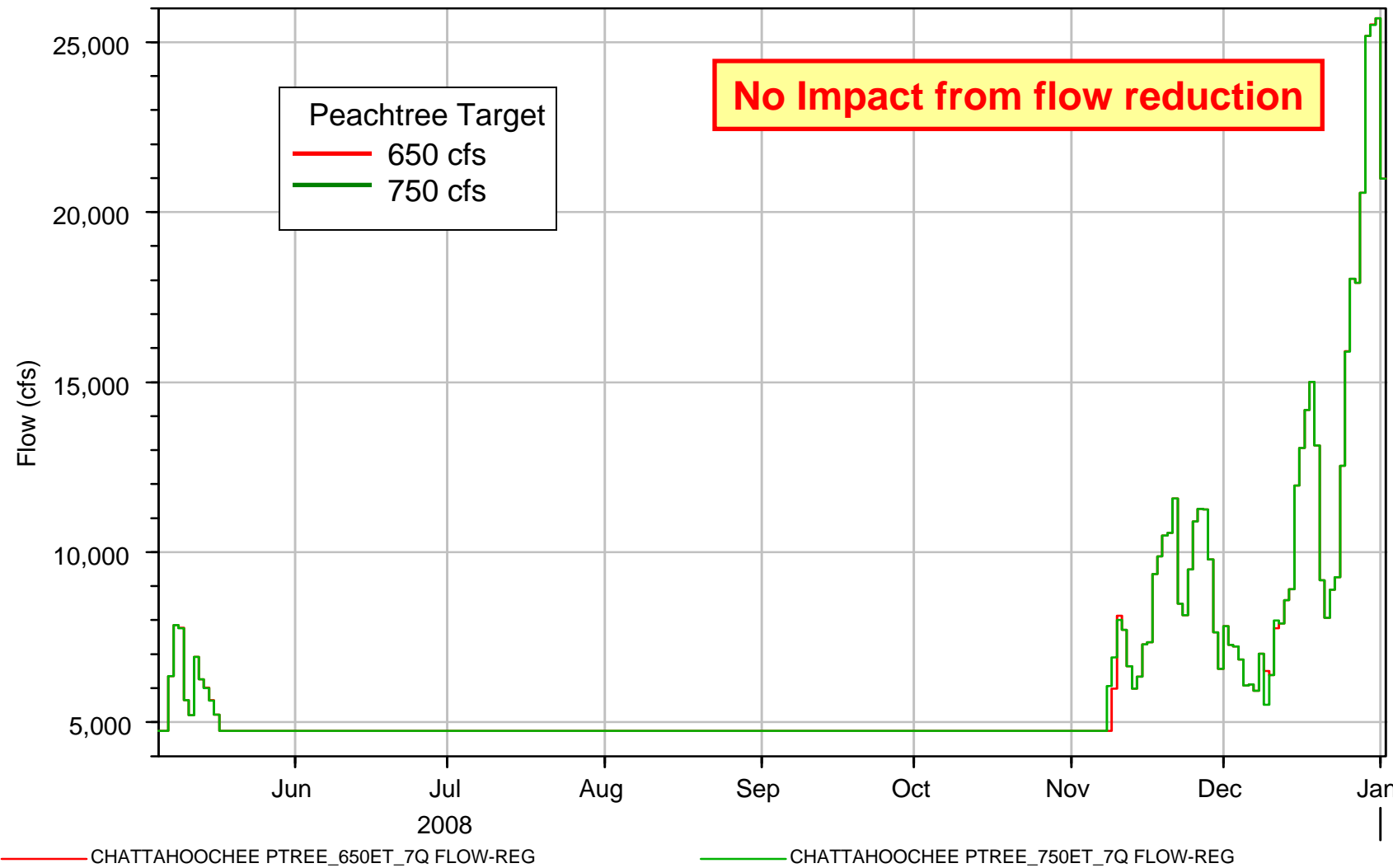
Columbus 7Q10 Hydrology



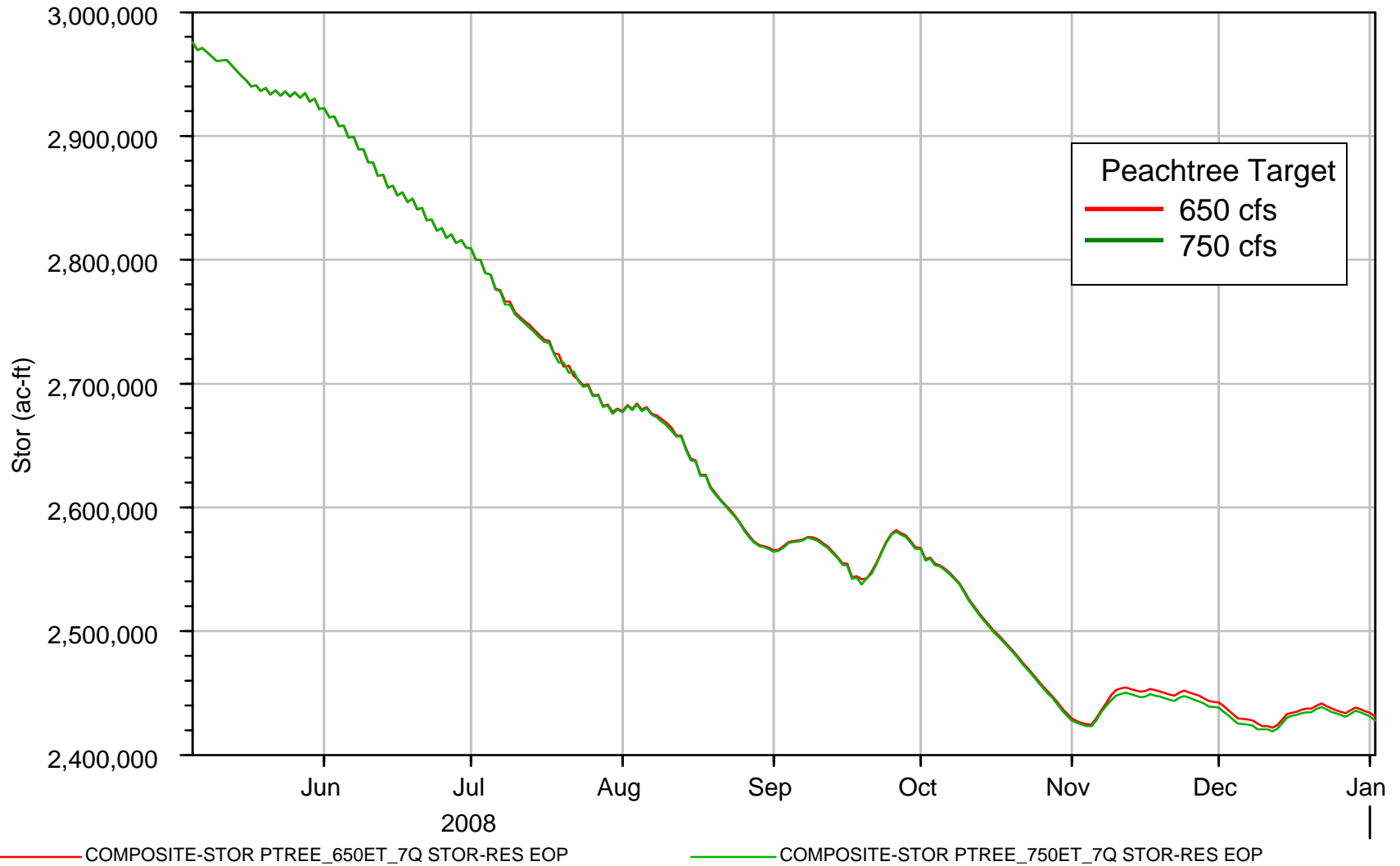
COLUMBUS GAGE PTREE_650ET_7Q FLOW-REG

COLUMBUS GAGE PTREE_750ET_7Q FLOW-REG

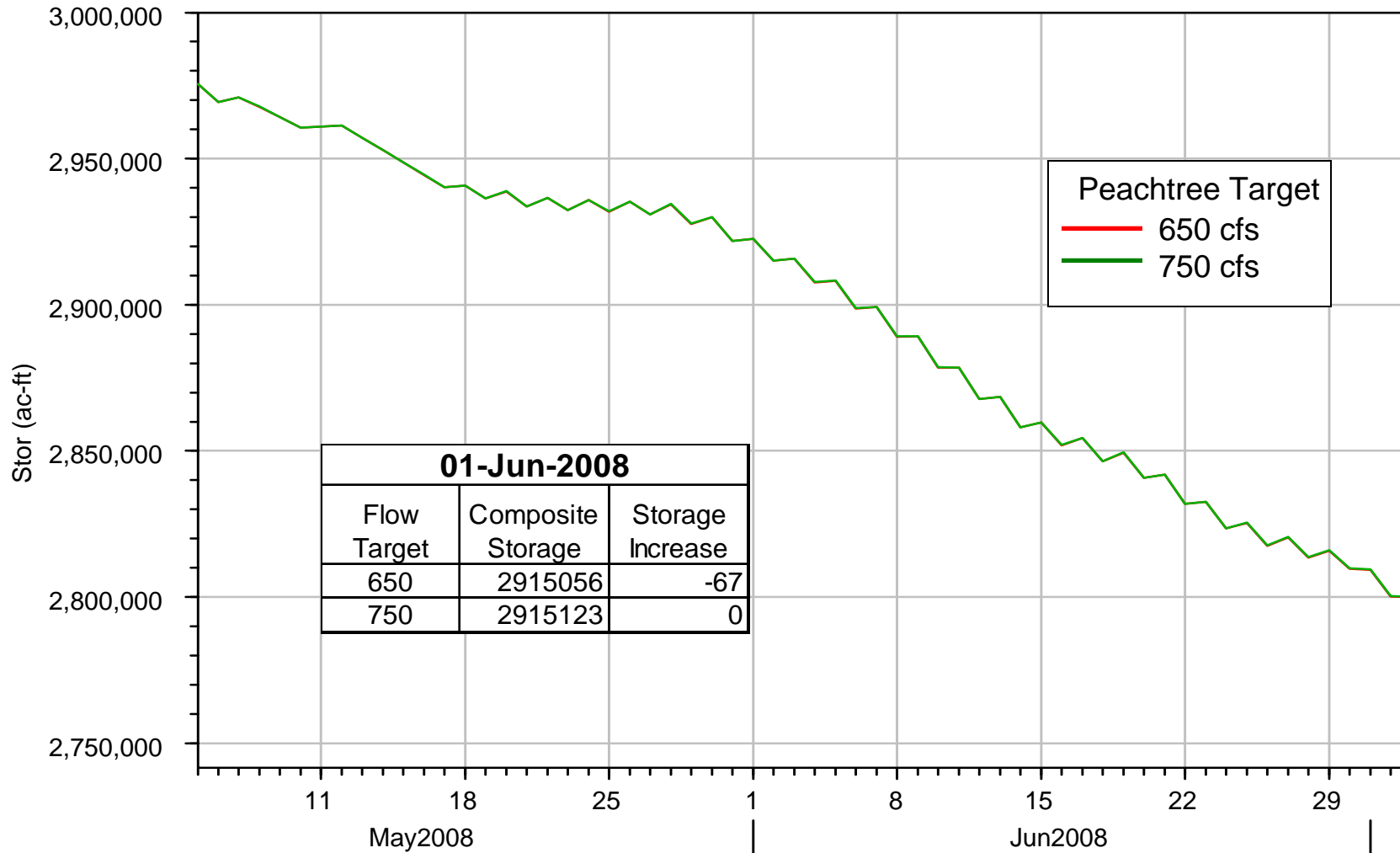
Chattahoochee 7Q10 Hydrology



Composite Storage 7Q10 Hydrology



Composite Storage 7Q10 Hydrology

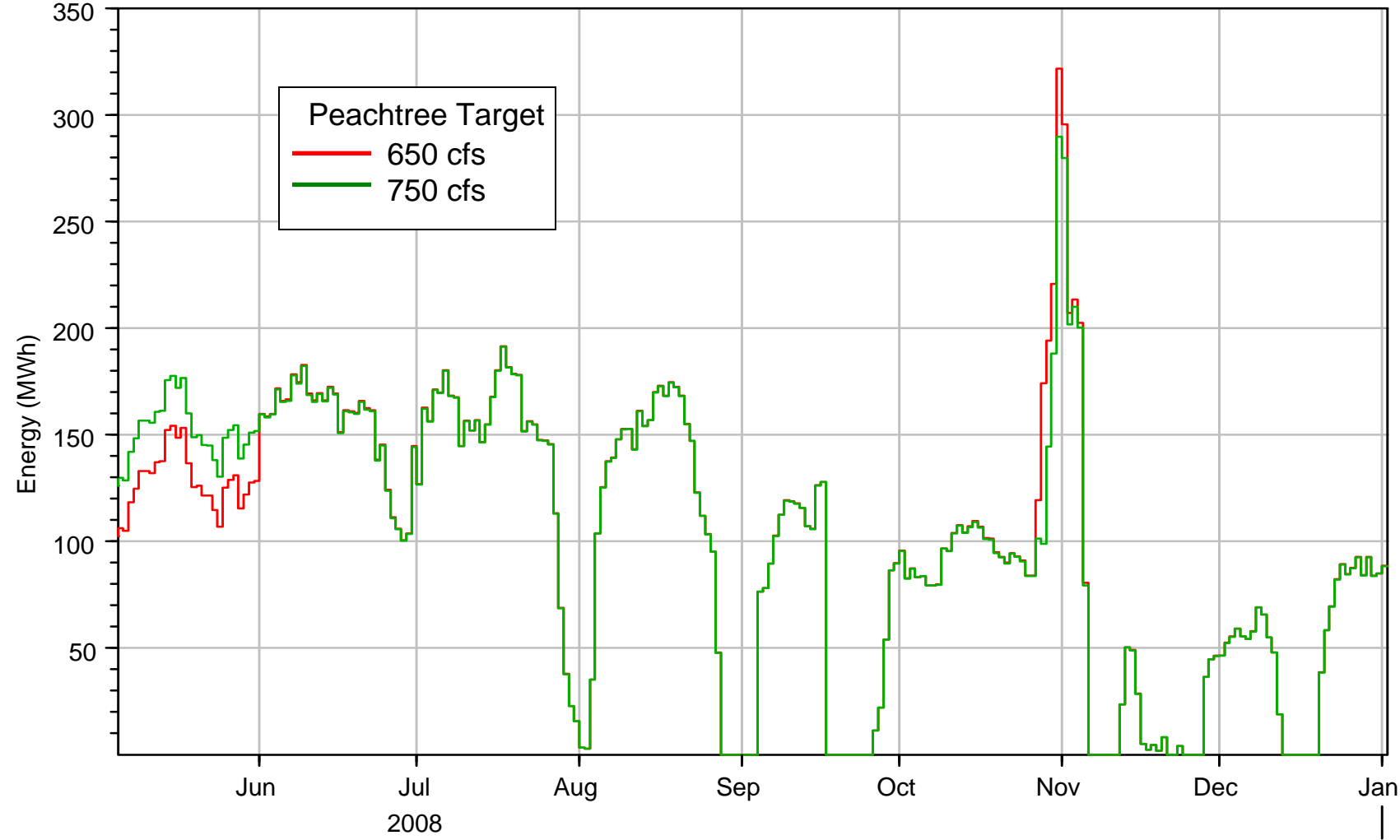


COMPOSITE-STOR PTREE_650ET_7Q STOR-RES EOP

COMPOSITE-STOR PTREE_750ET_7Q STOR-RES EOP

Hydropower

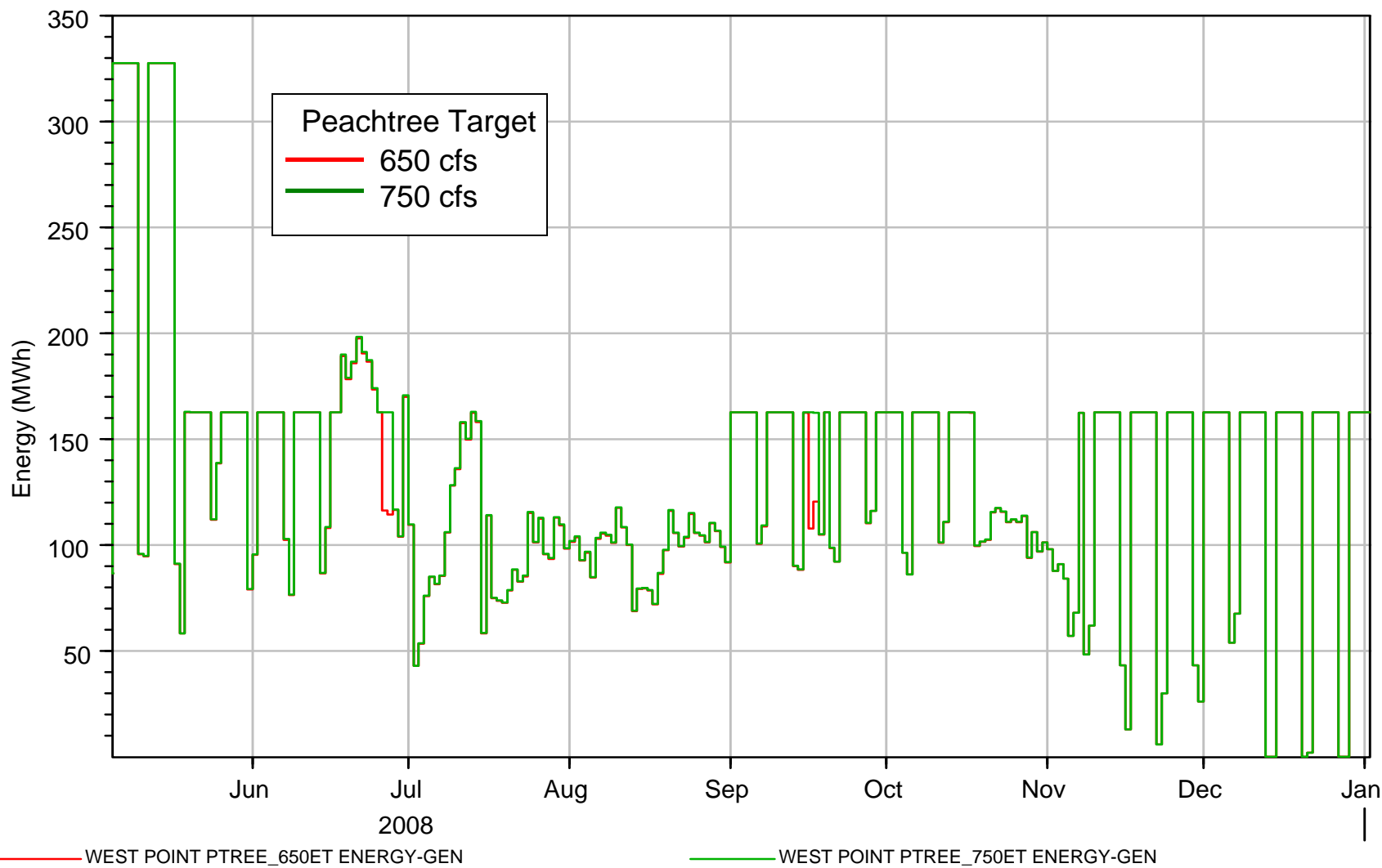
Buford Generation 2000 Hydrology



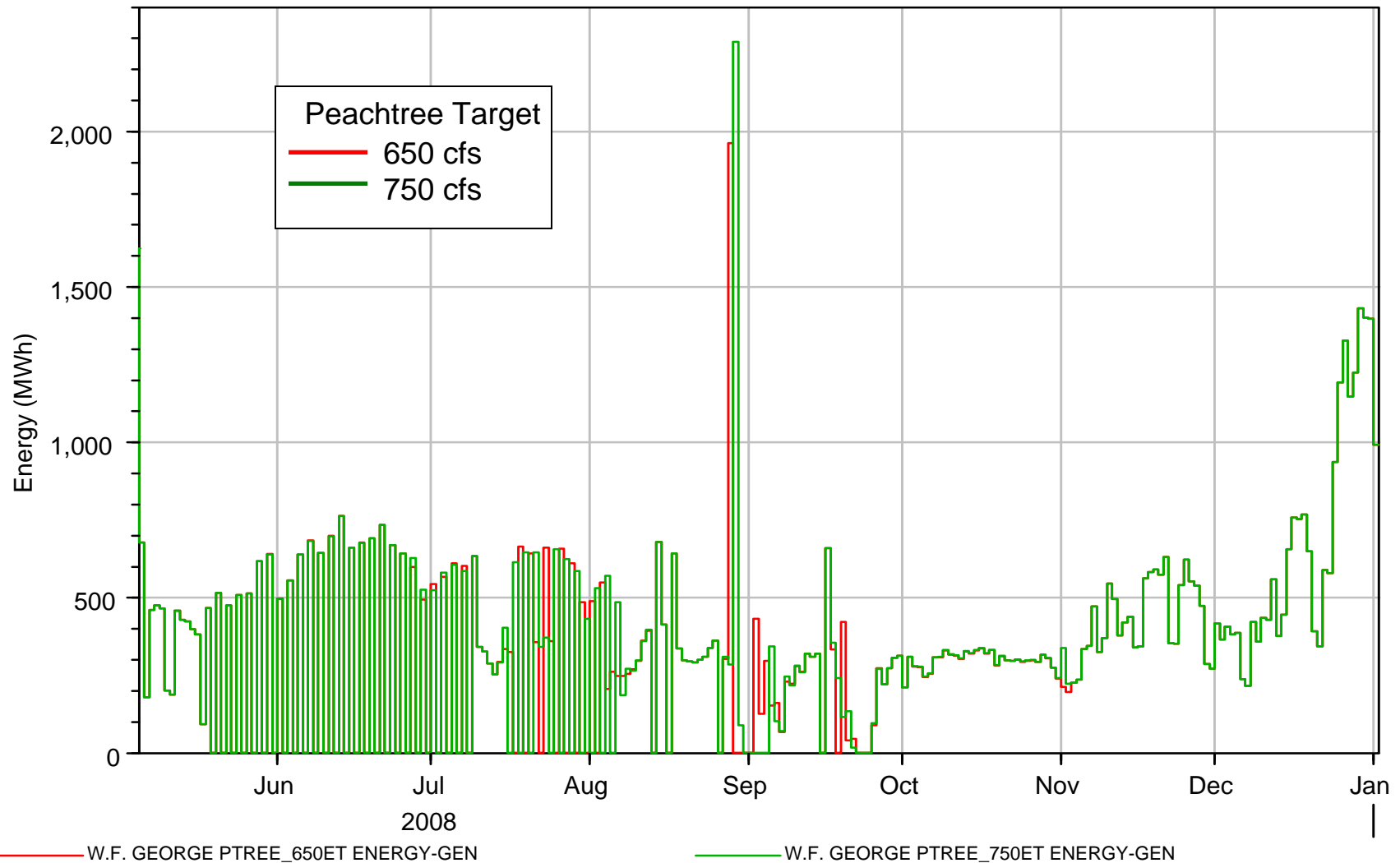
— BUFORD DAM PTREE_650ET ENERGY-GEN

— BUFORD DAM PTREE_750ET ENERGY-GEN

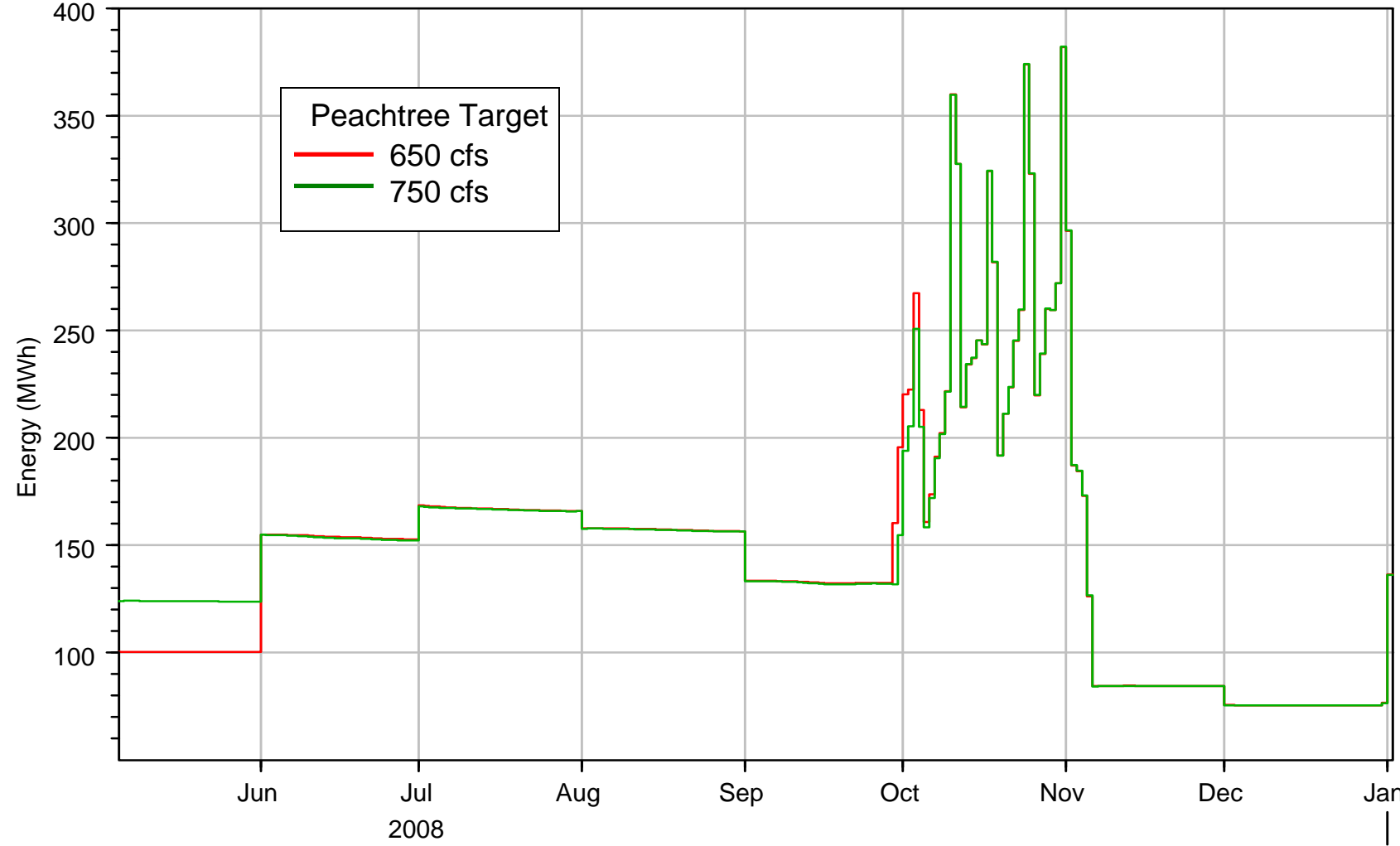
West Point Generation 2000 Hydrology



WF George Generation 2000 Hydrology



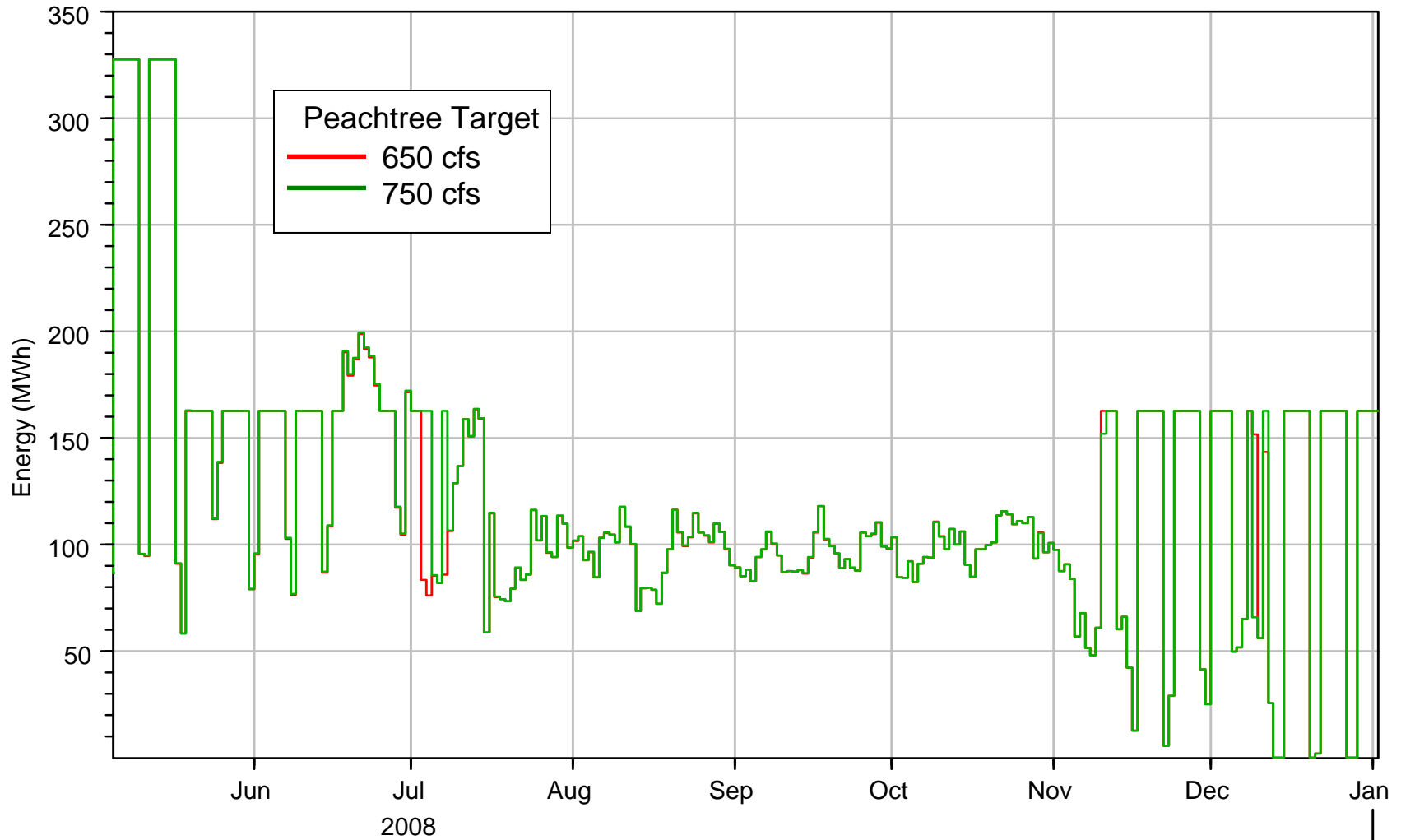
Buford Generation 7Q10 Hydrology



— BUFORD DAM PTREE_650ET_7Q ENERGY-GEN

— BUFORD DAM PTREE_750ET_7Q ENERGY-GEN

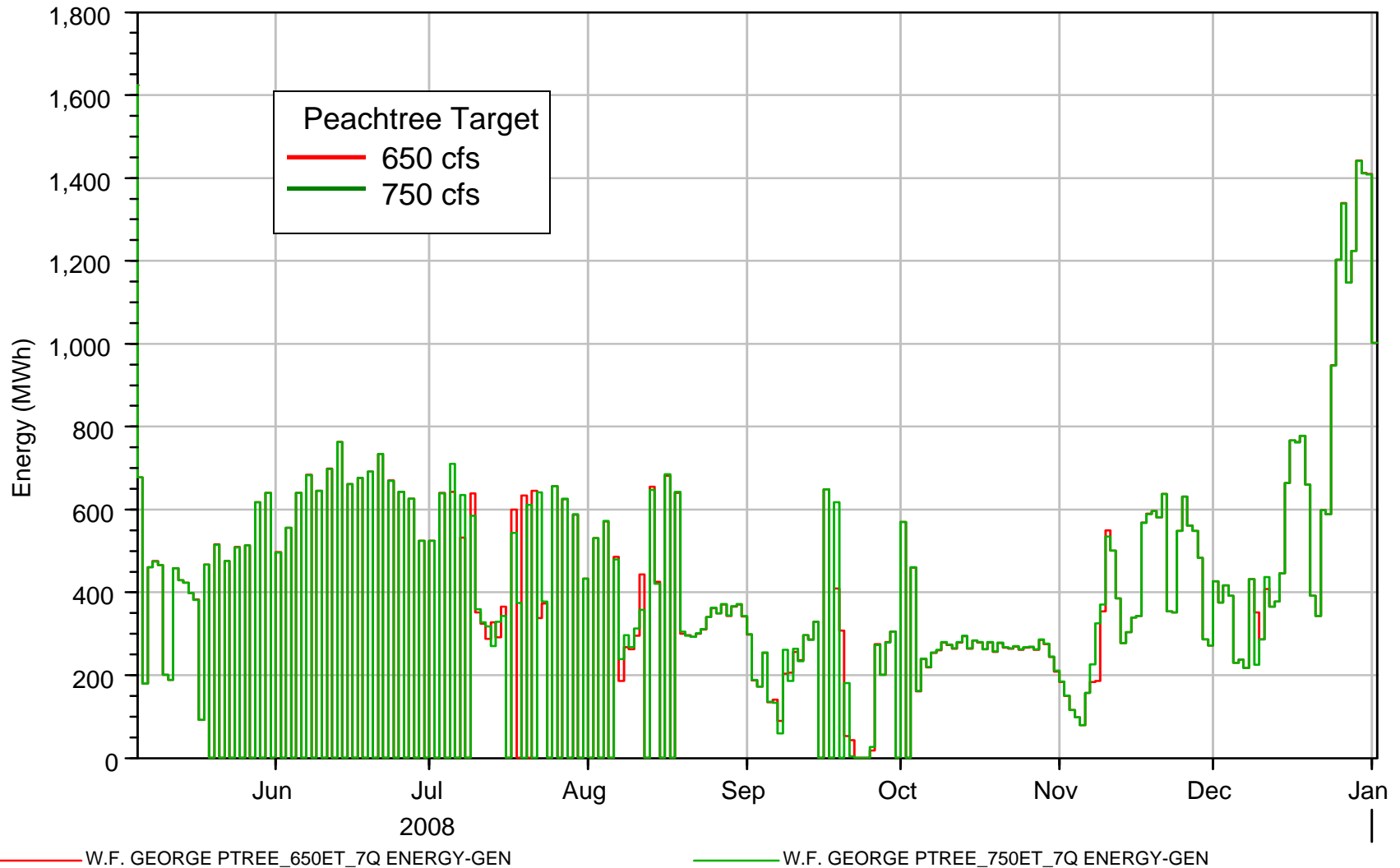
West Point Generation 7Q10 Hydrology



WEST POINT PTREE_650ET_7Q ENERGY-GEN

WEST POINT PTREE_750ET_7Q ENERGY-GEN

WF George Generation 7Q10 Hydrology

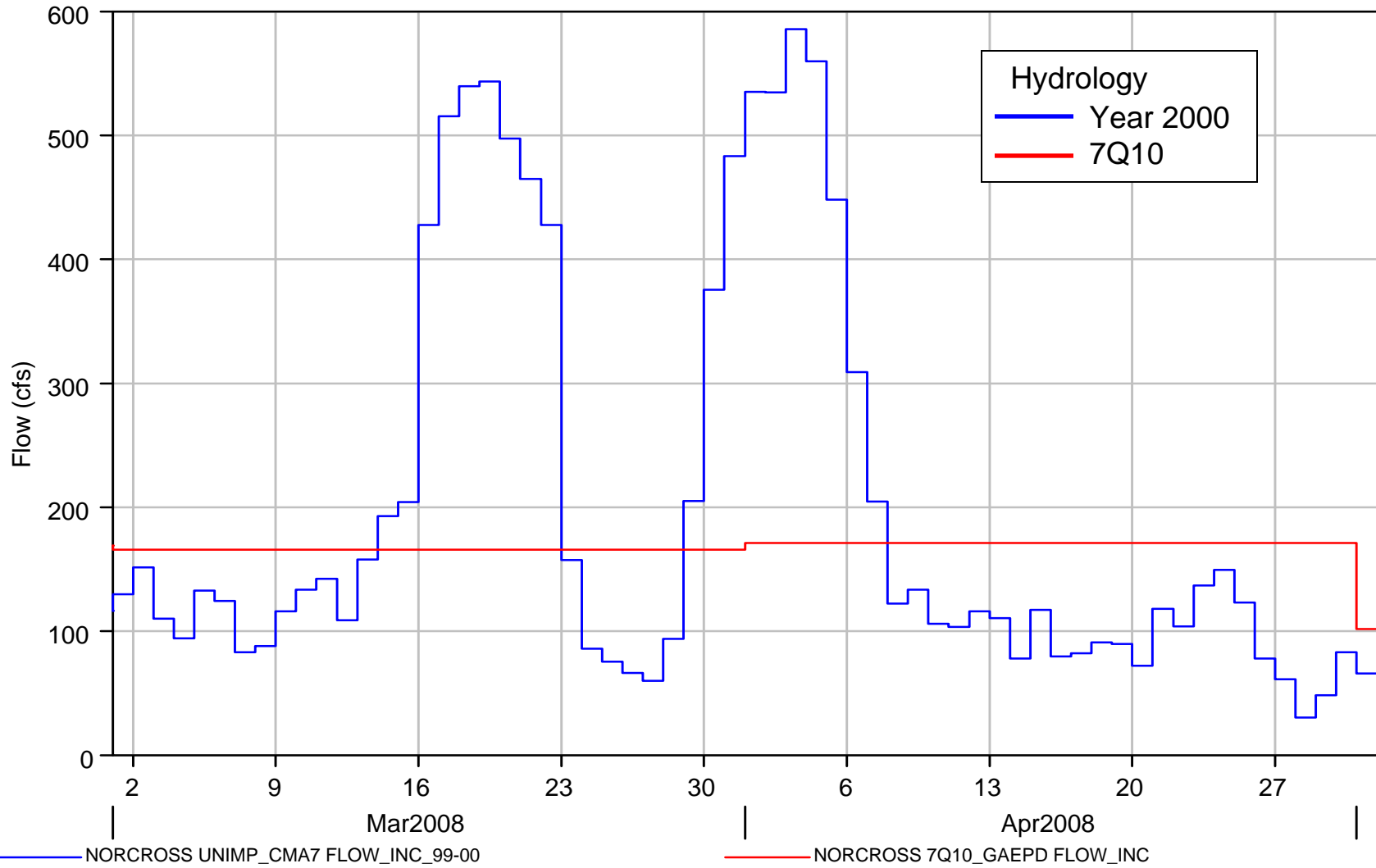


Hydrology Comparison

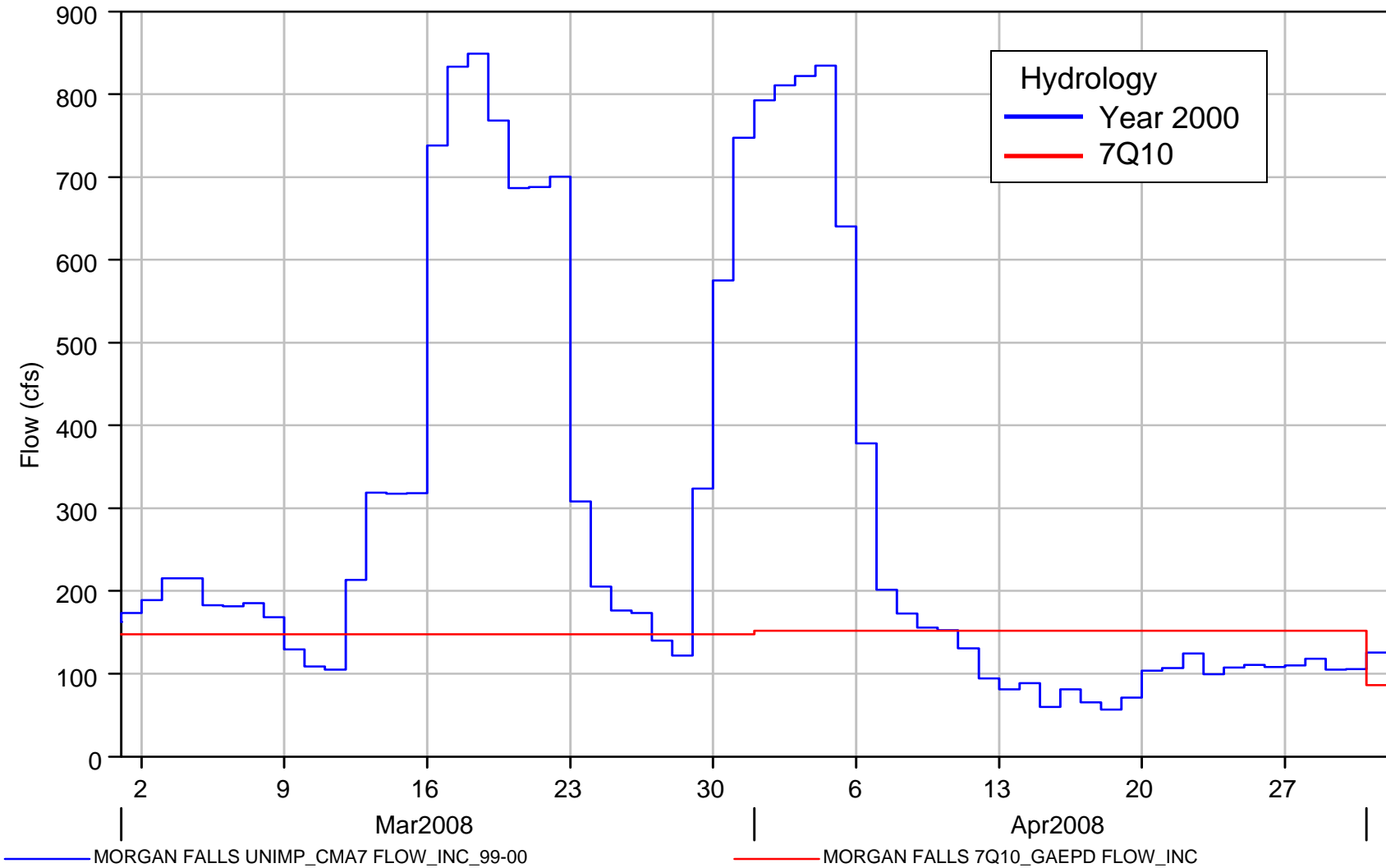
Year 2000 vs Monthly 7Q10

- Hydrology Alternatives
 - Year 2000
 - 7Q10 between Buford and Whitesburg, Year 2000 rest of basin
- Model Nodes Impacted
 - Norcross
 - Morgan Falls
 - Atlanta
 - Whitesburg

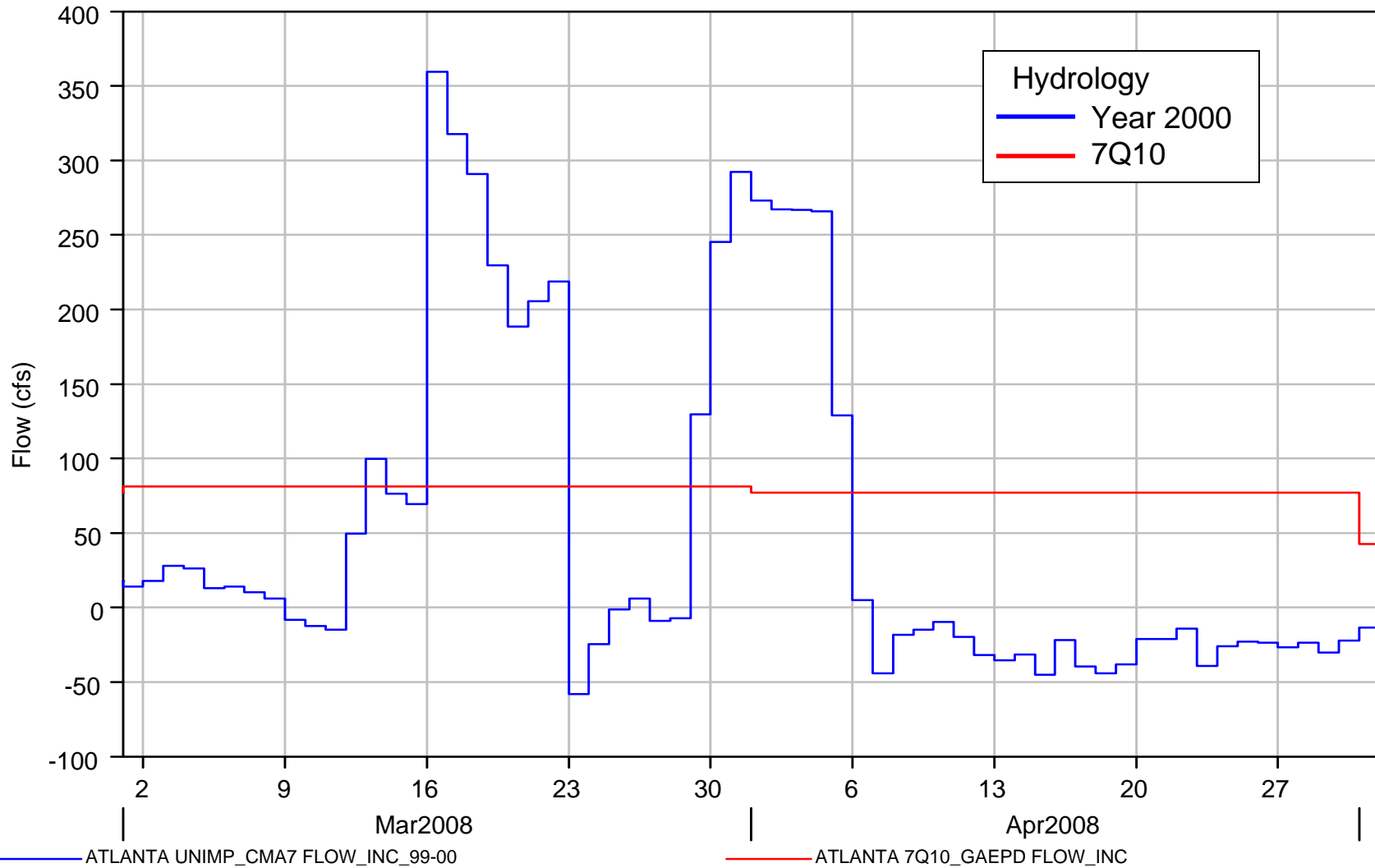
Norcross Increment Flow



Morgan Falls Increment Flow



Atlanta Increment Flow



Whitesburg Increment Flow

