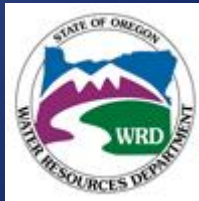


Streamflow Analysis for upper Fifteenmile Storage Sites

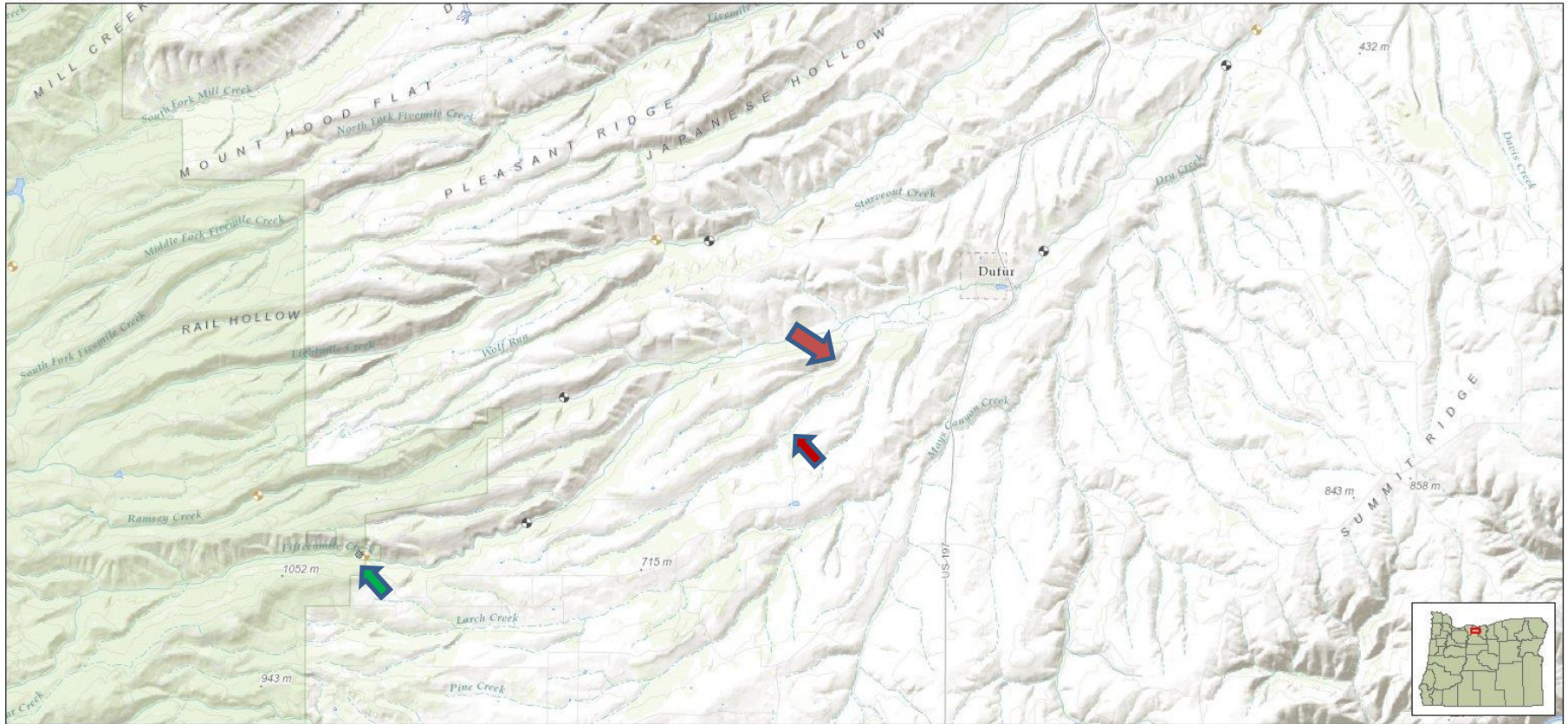
Jonathan La Marche, PE
Oregon Water Resources Department



Fifteenmile Gage Map

Printed: August 27, 2014

Oregon Water Resources Department
725 Summer St NE, Suite A, Salem, OR 97301
(503)986-0900



Water Rights by Type

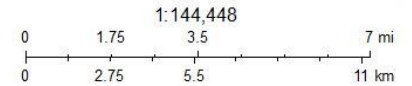
- | | |
|---------------------|---------------|
| Points of Diversion | Places of Use |
| Point of Diversion | Storage Water |
| Point of Diversion | Surface Water |
| Point of Diversion | Groundwater |

Water Rights by Use

- | | | |
|------------|-------------|------------|
| Recreation | Instream | Livestock |
| Fish | Misc. | Irrigation |
| Wildlife | Agriculture | Mining |

By Primary/Supplemental

- | | |
|--------------|--------------|
| Primary | Primary |
| Supplemental | Supplemental |
| Commercial | Domestic |



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

OAR 690-504-0160**Fifteenmile Creek Subbasin Reservation**

Unappropriated water in the Fifteenmile Creek subbasin is reserved as follows:

(1) Five thousand (5,000) acre-feet of unappropriated water of Fifteenmile Creek or its tributaries upstream of the City of Dufur water supply reservoir are reserved for storage in multipurpose reservoirs. The priority date of the reservation is November 6, 1992.

Stat. Auth.: ORS 537

Stats. Implemented: [ORS 537.249](#) & [ORS 537.356](#)

Hist.: WRD 8-1996, f. & cert. ef. 11-14-96

Water Availability Analysis (8/26/2014). Values in CFS unless otherwise noted.

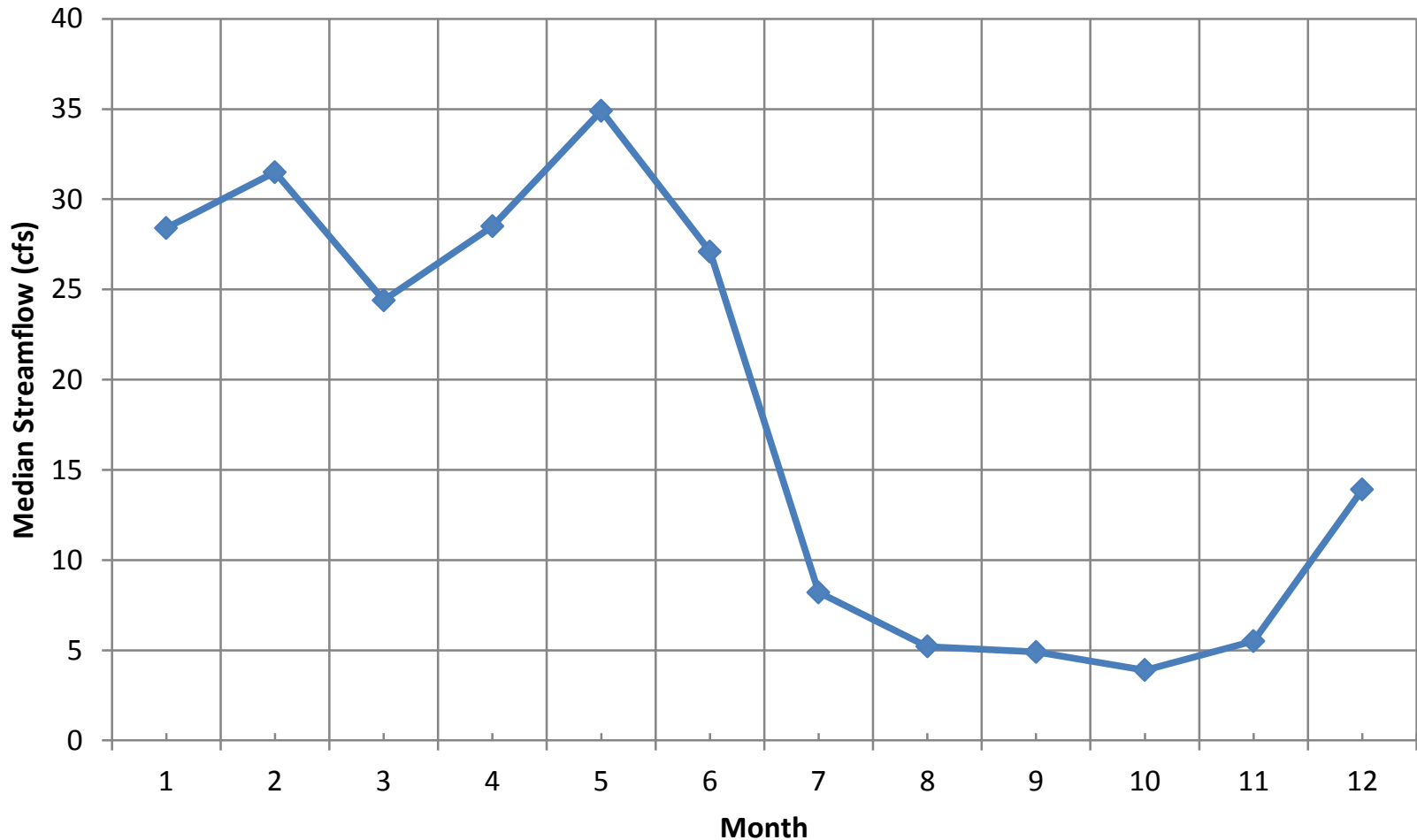
Fifteenmile Creek Storage Analysis				(upstream of Ramsey Creek)	
Month	Natural Stream Flow	Consumptive Use	ISWR	Available for Storage	Storage Reserved Stream Flow
JAN	28.4	1.3	4	23.1	19.3
FEB	31.5	1.3	4	26.2	21.5
MAR	24.4	2.0	13	9.4	14.9
APR	28.5	6.4	20	2.1	16.0
MAY	34.9	14.9	20	0.0	0.0
JUN	27.1	12.6	20	0.0	0.0
JUL	8.2	4.7	13	0.0	0.0
AUG	5.2	2.9	13	0.0	0.0
SEP	4.9	2.9	4	0.0	0.0
OCT	3.9	1.8	4	0.0	0.0
NOV	5.5	1.3	4	0.2	3.1
DEC	13.9	1.3	4	8.6	9.0
Total (ac-ft) >>	13000	3230	7440	4300	5000



Streamflow Characteristics



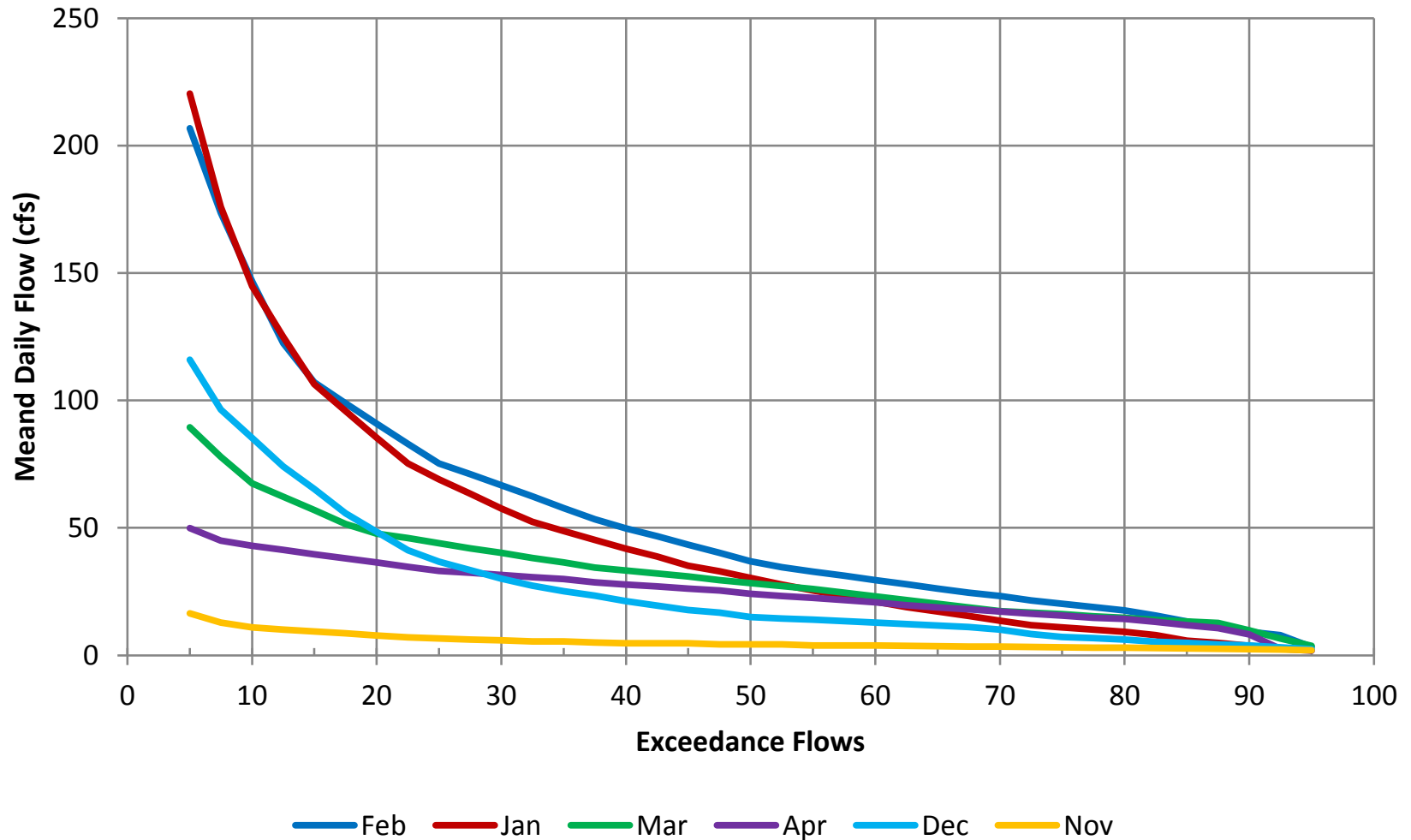
Median Streamflow Fifteenmile Cr above Dufur POD



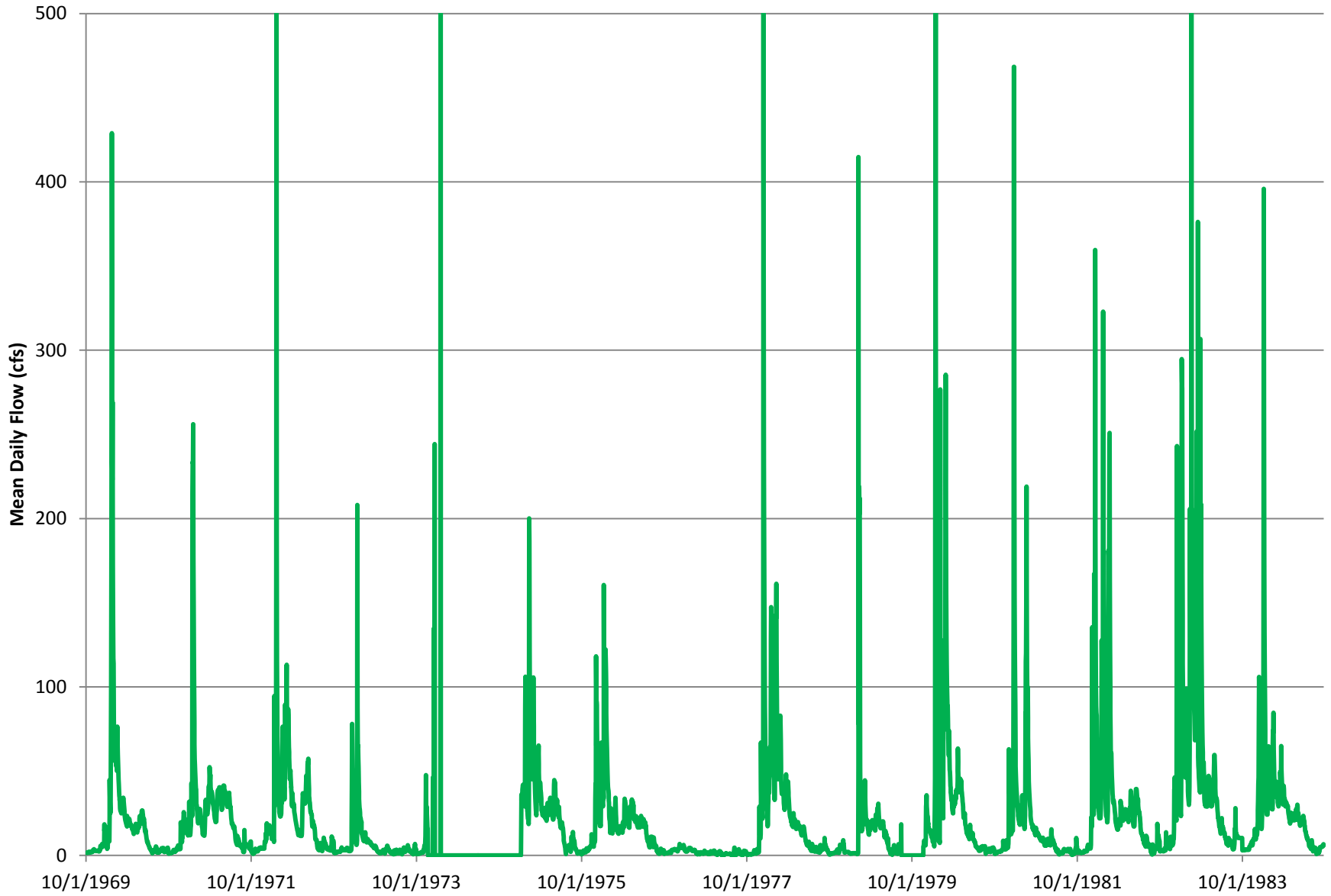
Streamflow Characteristics



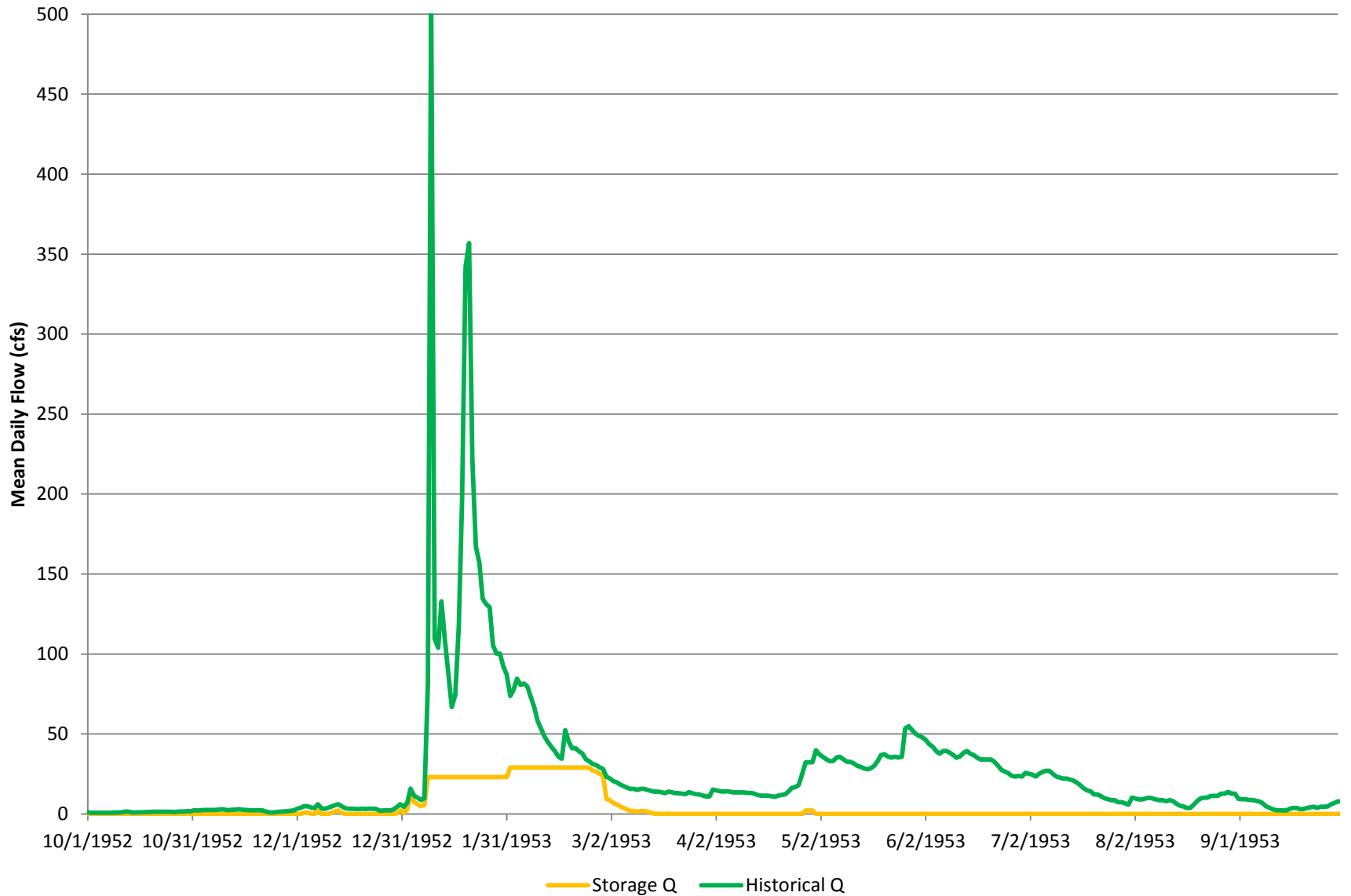
Streamflow Characteristics Fifteenmile Cr above Dufur POD



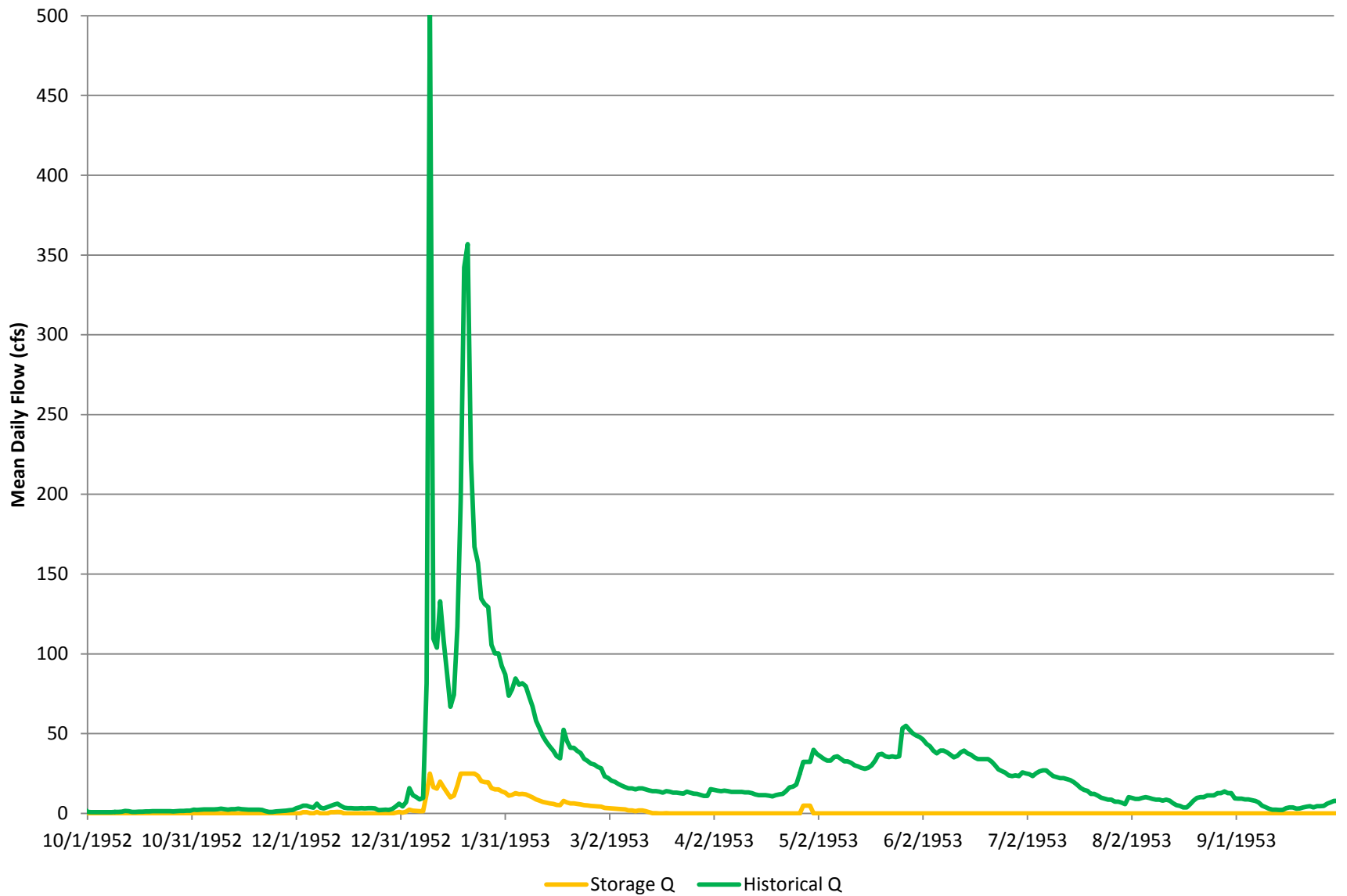
Fifteenmile Creek Streamflow abv Dufur



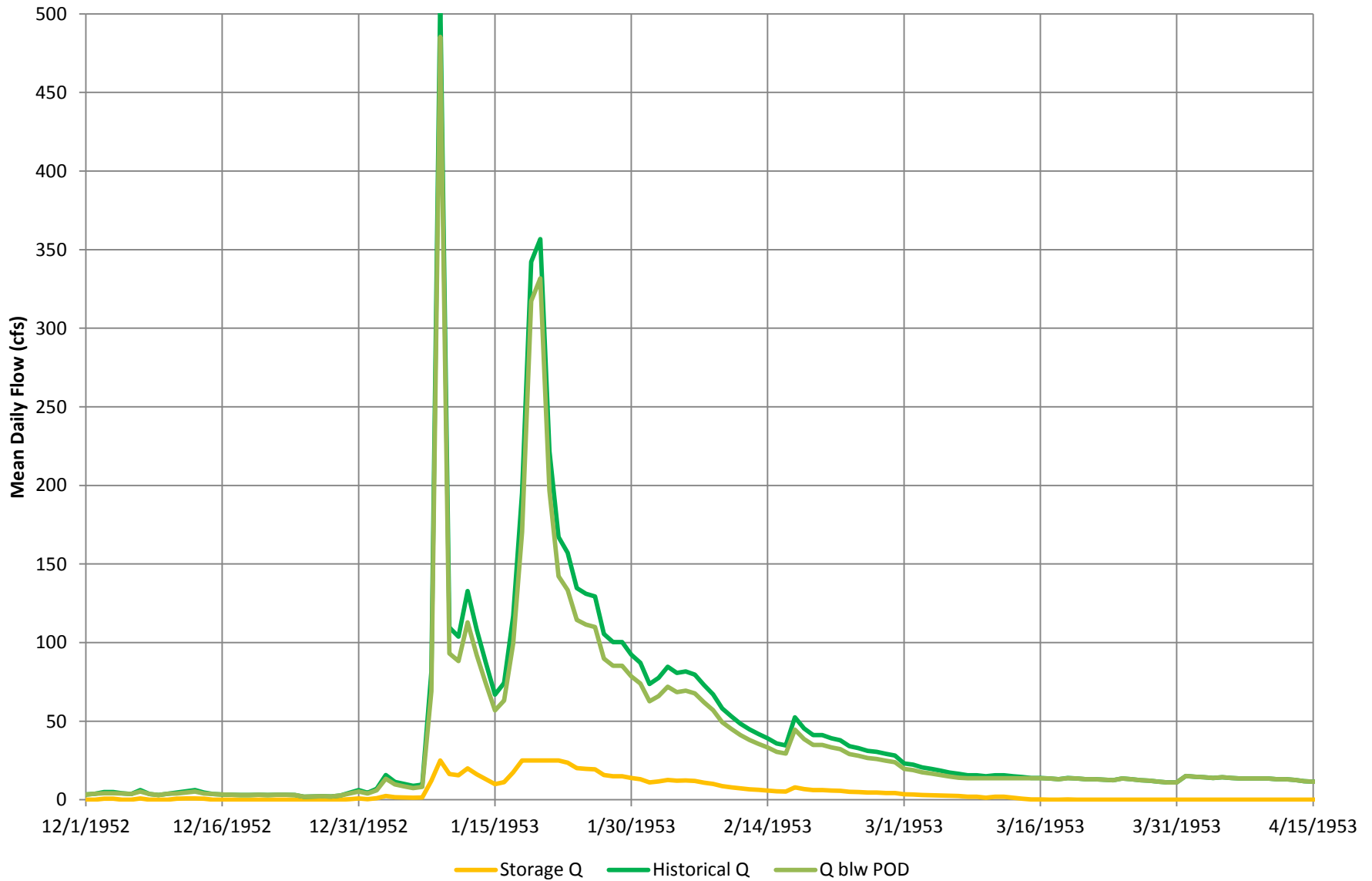
Fifteenmile Creek Streamflow and Simulated Diversion above Dufur



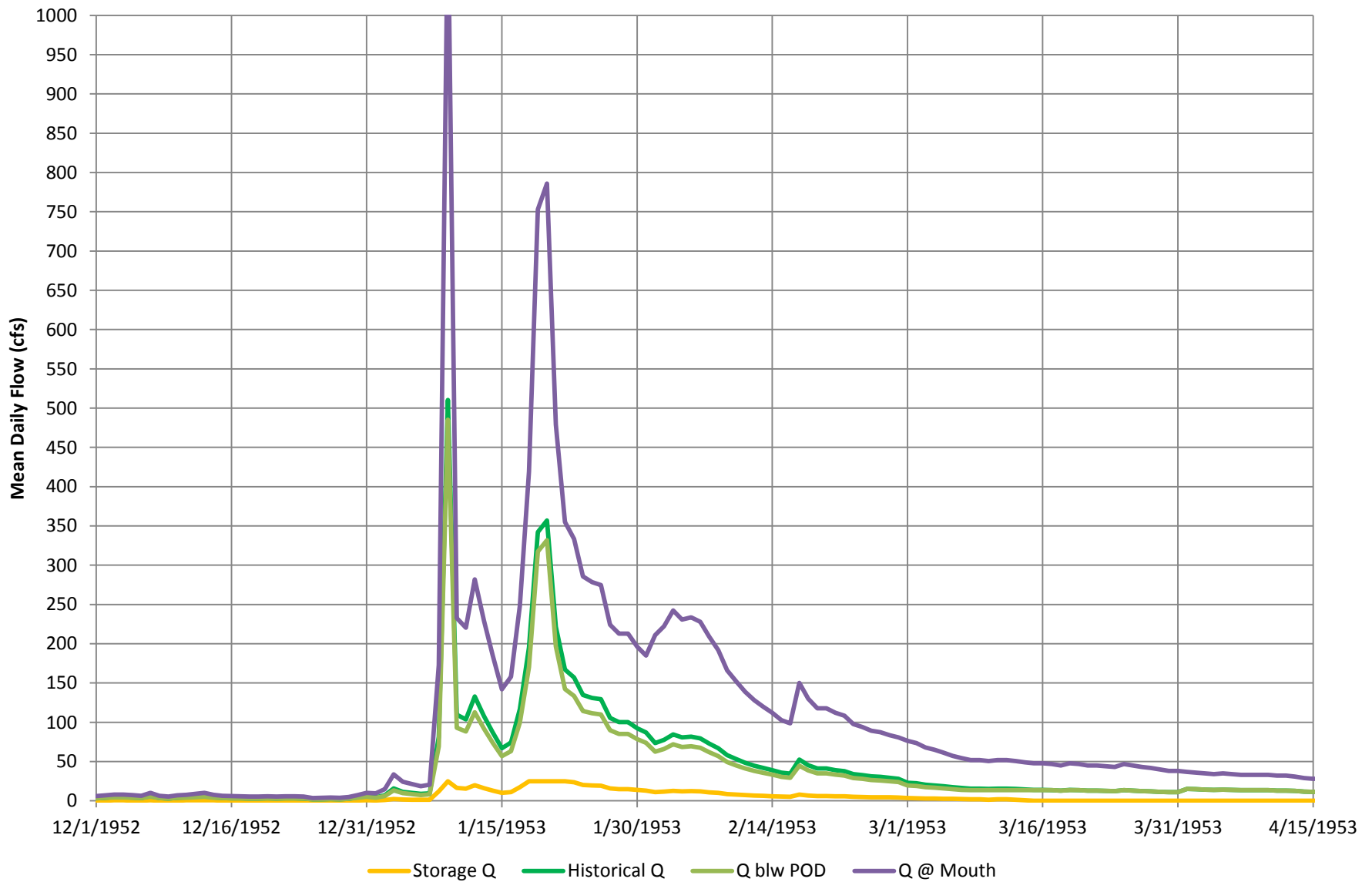
Fifteenmile Creek Streamflow and Simulated Diversion above Dufur



Fifteenmile Creek Streamflow and Simulated Diversion above Dufur

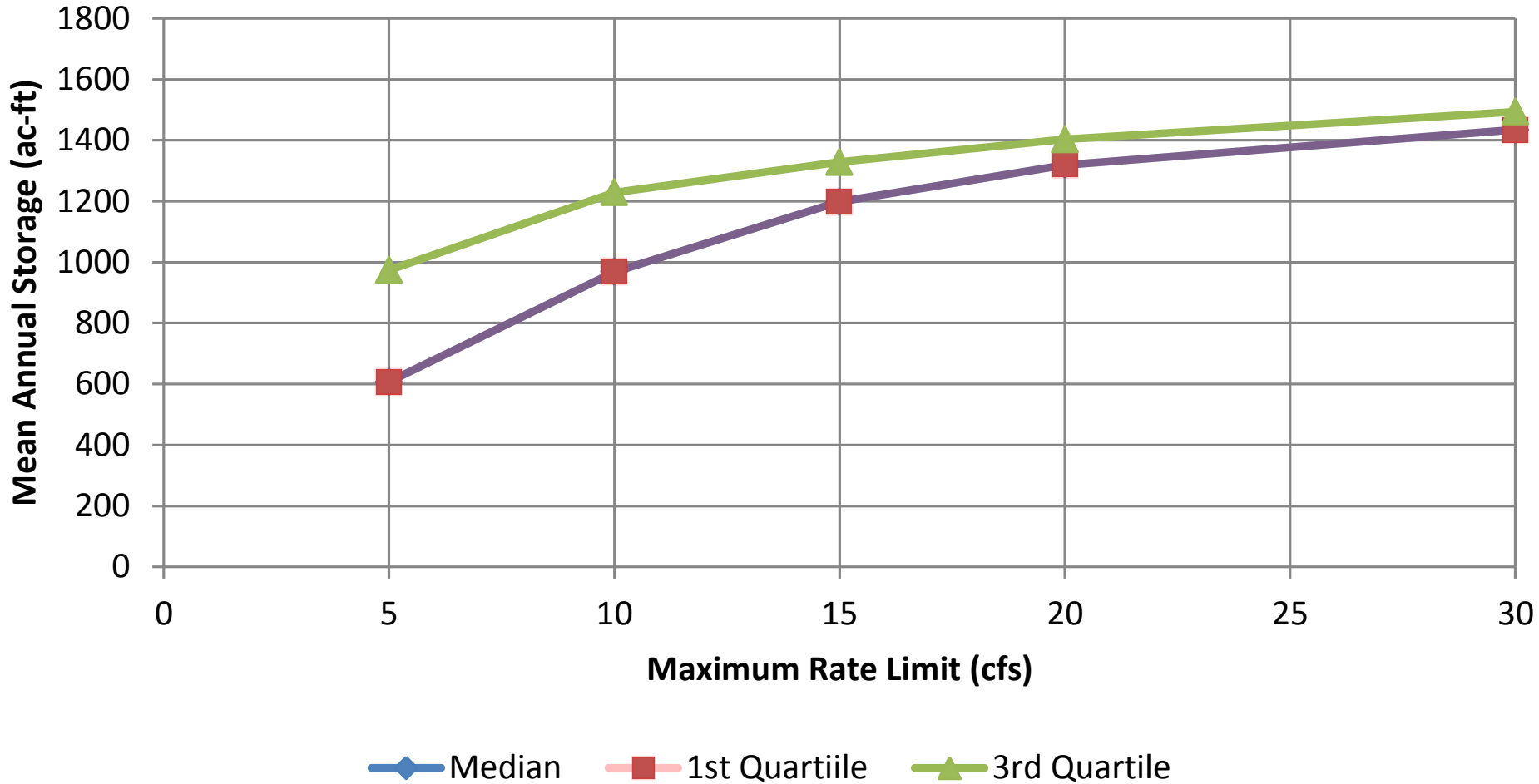


Fifteenmile Creek Streamflow and Simulated Diversion above Dufur



Annual Average Storage Estimate Fifteenmile Cr near Dufur

with diversion constraints 15% mean daily flow or rate limit given, whichever is less



Supply Summary

- Regulatory limits (4,300-5,000 ac-ft).
- Amount of water actually stored depends on conveyance and environmental considerations.
 - 1,200 ac-ft, if a straight 10 cfs diversion limit is used*
 - 1,500 ac-ft if the diversion constraints for SB 839 funding are used.*

Surface Water Demand

- 3300 irrigated acres from Fifteenmile Creek
 - 2100 irrigated acres of Dufur. (2/3)
- 3 ac-ft/ac duty limit
 - 6300 ac-ft demand above Dufur
- Demand > Reservoir capacity

Upstream of Dufur

Surface Water Partial Demand

- Partial season demand (July-August)
 - Alfalfa ET ~12.5 inches (Cuenca, 1992)
 - Demand (~2,700 ac-ft)
- Peak Demand (during exceedingly hot days).
 - 1,000 ac-ft = same as 10 cfs of supply over 50 days.

Fifteenmile Creek Streamflow and Simulated Diversion above Dufur POD

