

Teanaway River Flow Restoration 1999 - 2016: *Results and Future Directions*



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Yakima Basin Science & Management Conference
June 15, 2016

Outline

- Teanaway Water Use
- Valley bottom flow restoration projects
- Hydrologic and fisheries implications
- Future opportunities

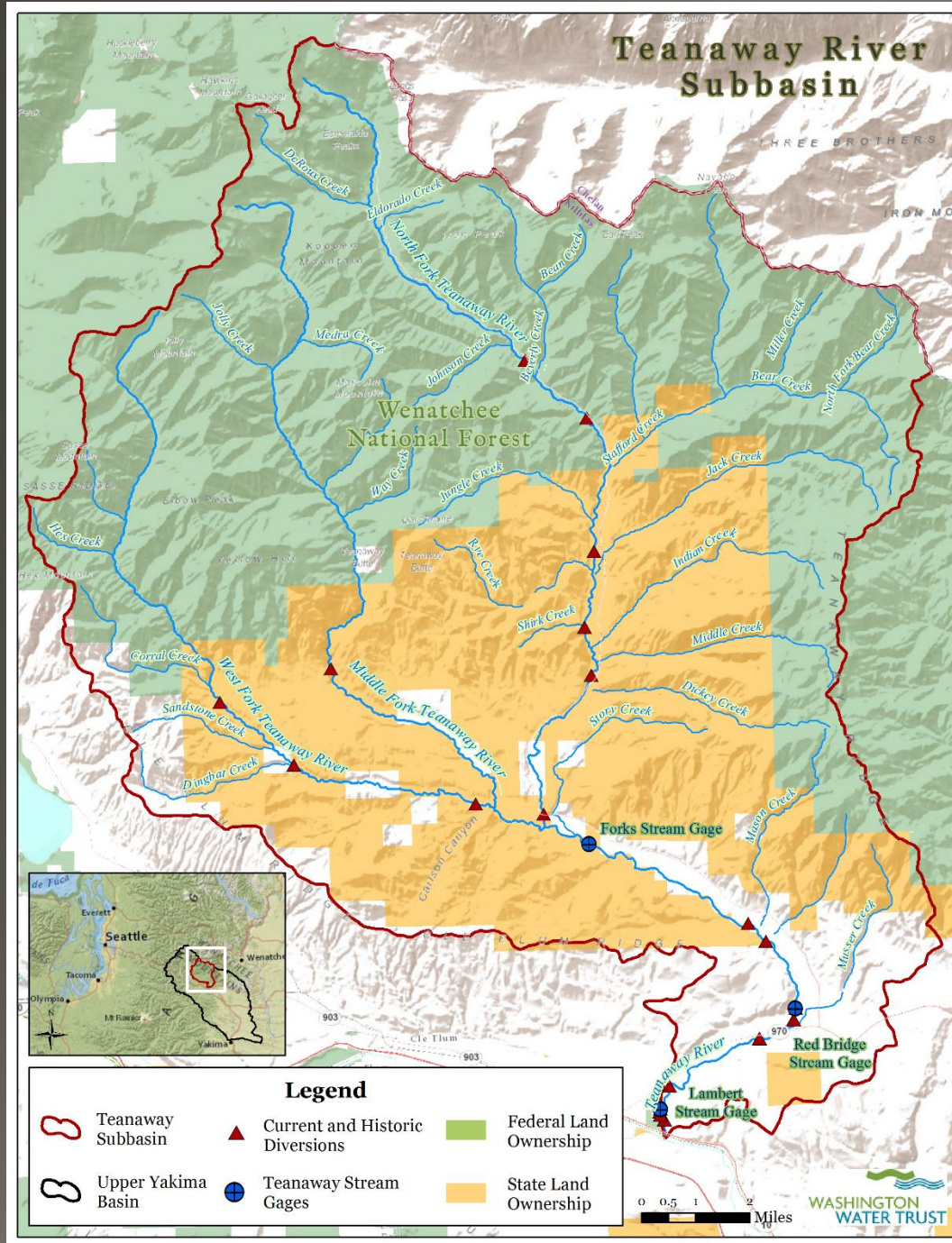


Washington Water Trust

Works to improve and protect stream flows and water quality throughout Washington, benefiting fisheries, wildlife and agriculture by using innovative, market-based transactions and building cooperative partnerships.

Founded in 1998,
offices in Seattle & Ellensburg






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Why the Teanaway?

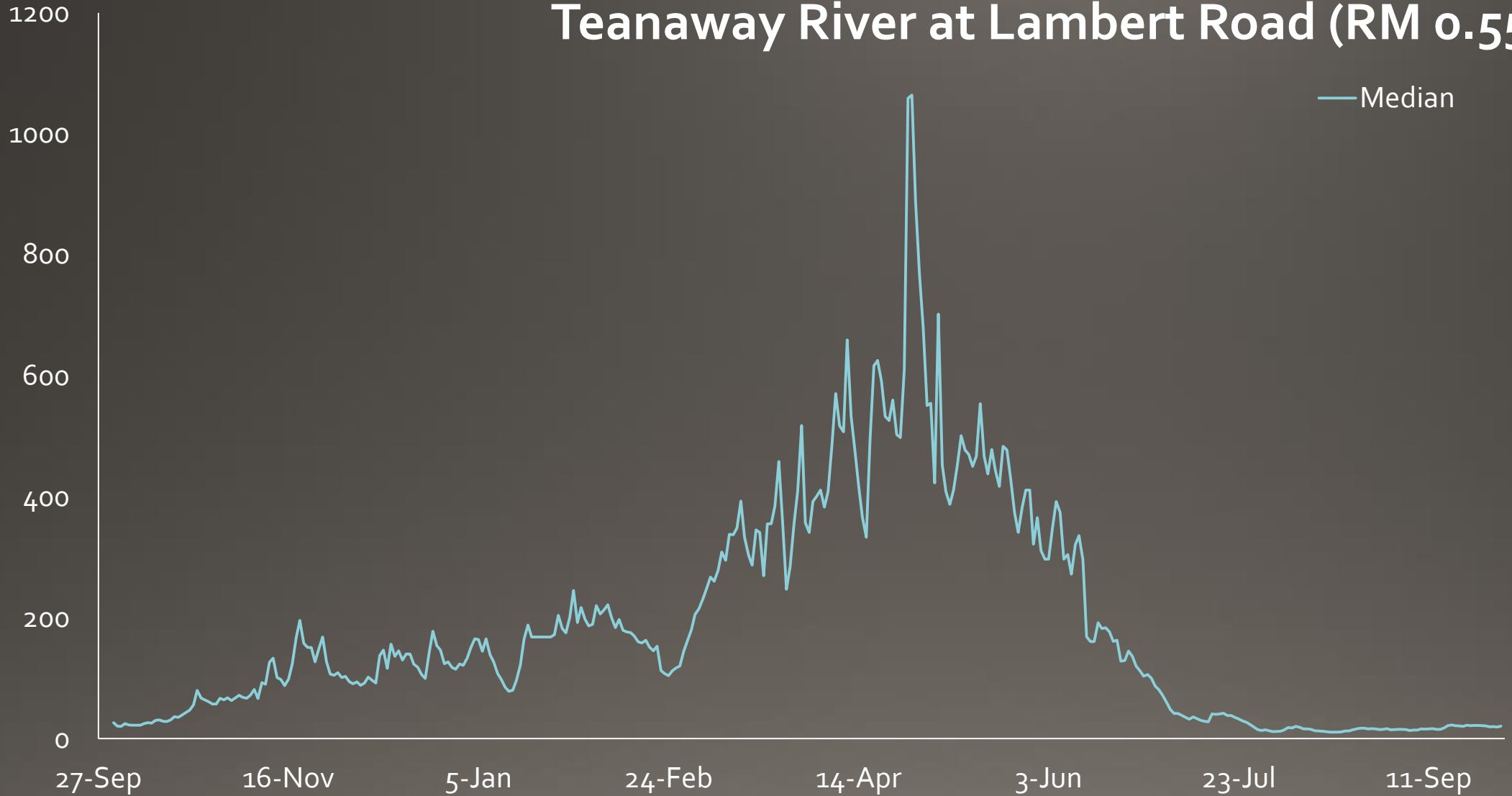


3M Diversion – Full passage blockage and low flows - 2008

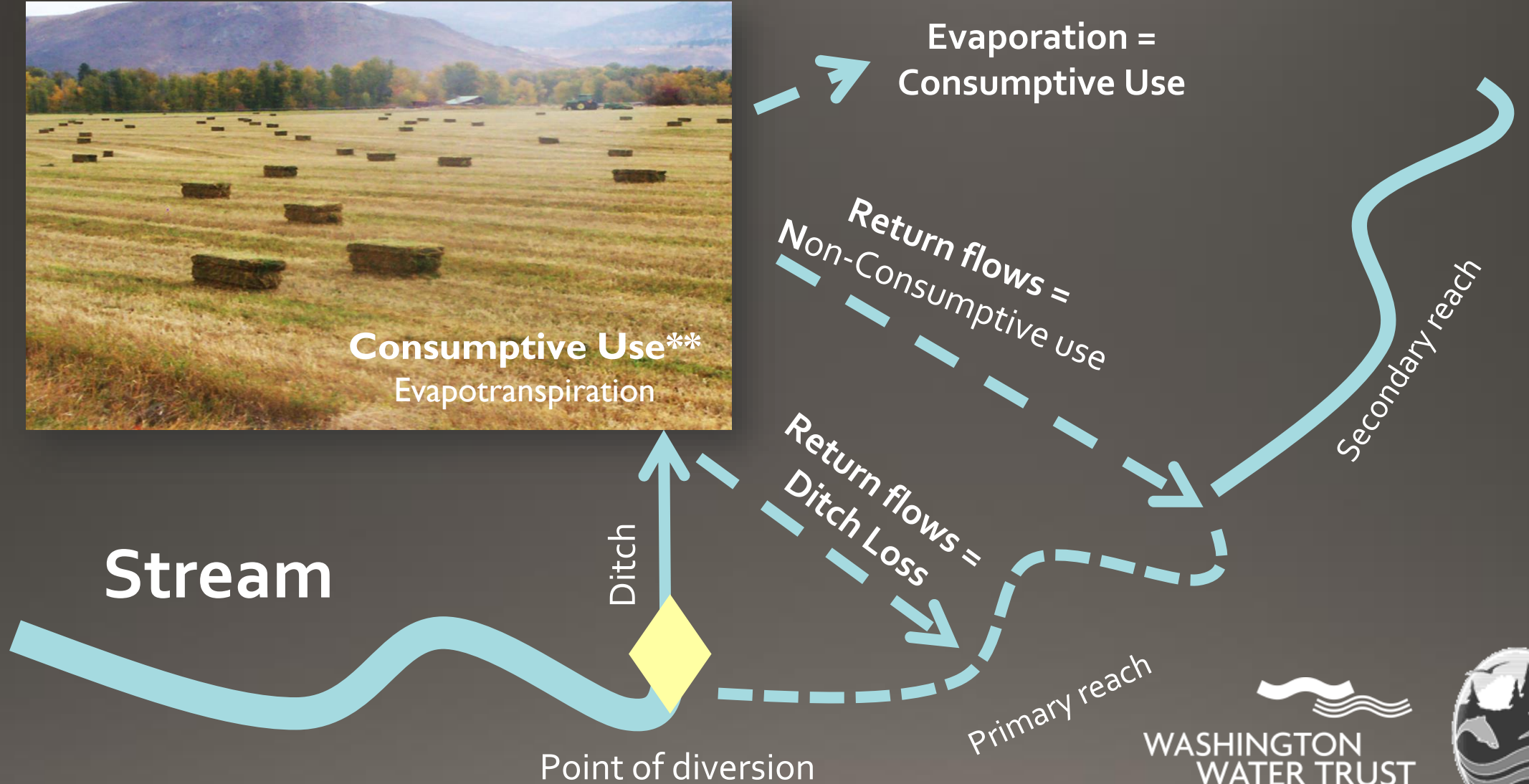

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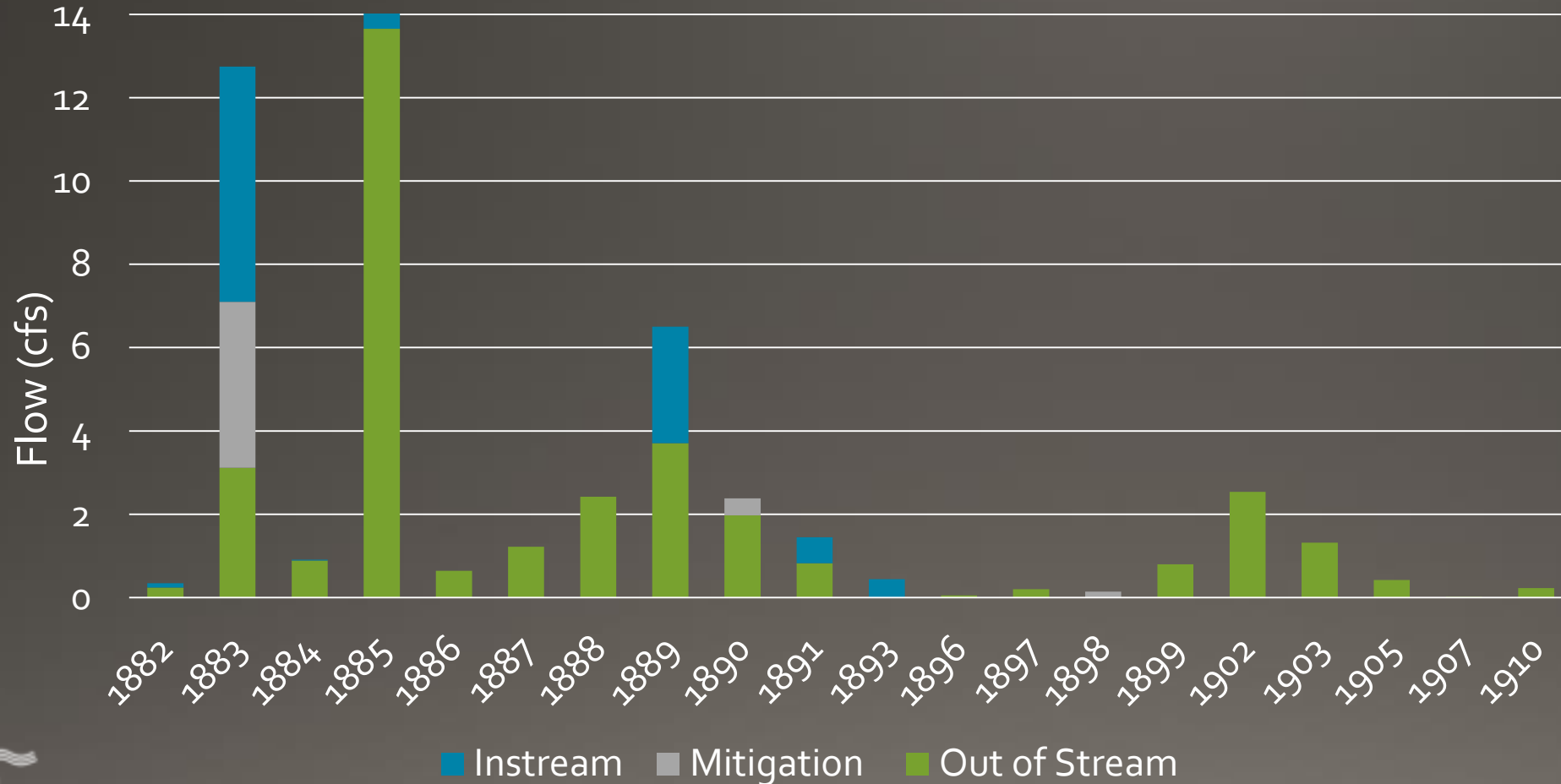
Teaway River at Lambert Road (RM 0.55)



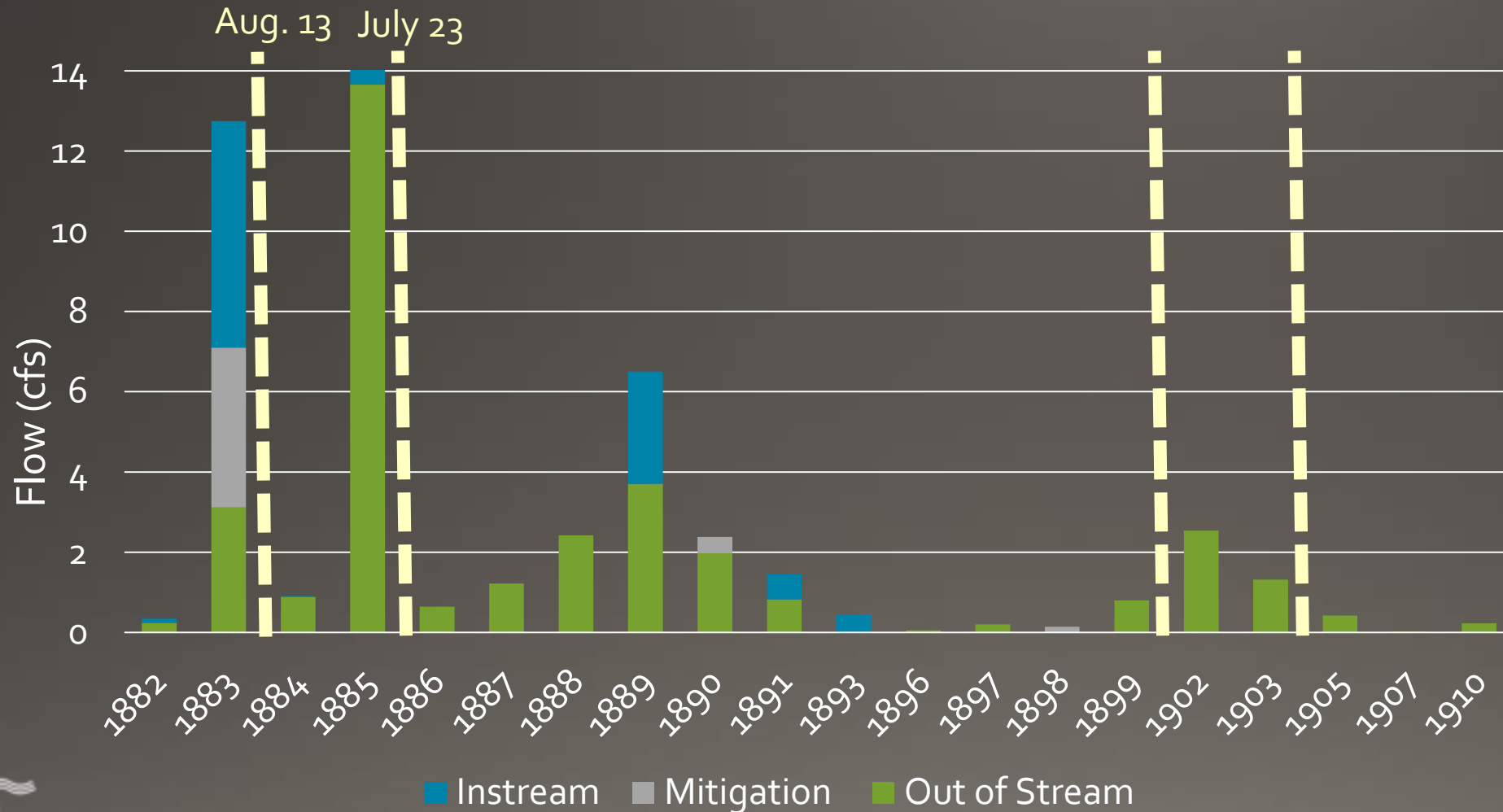
Understanding stream diversions



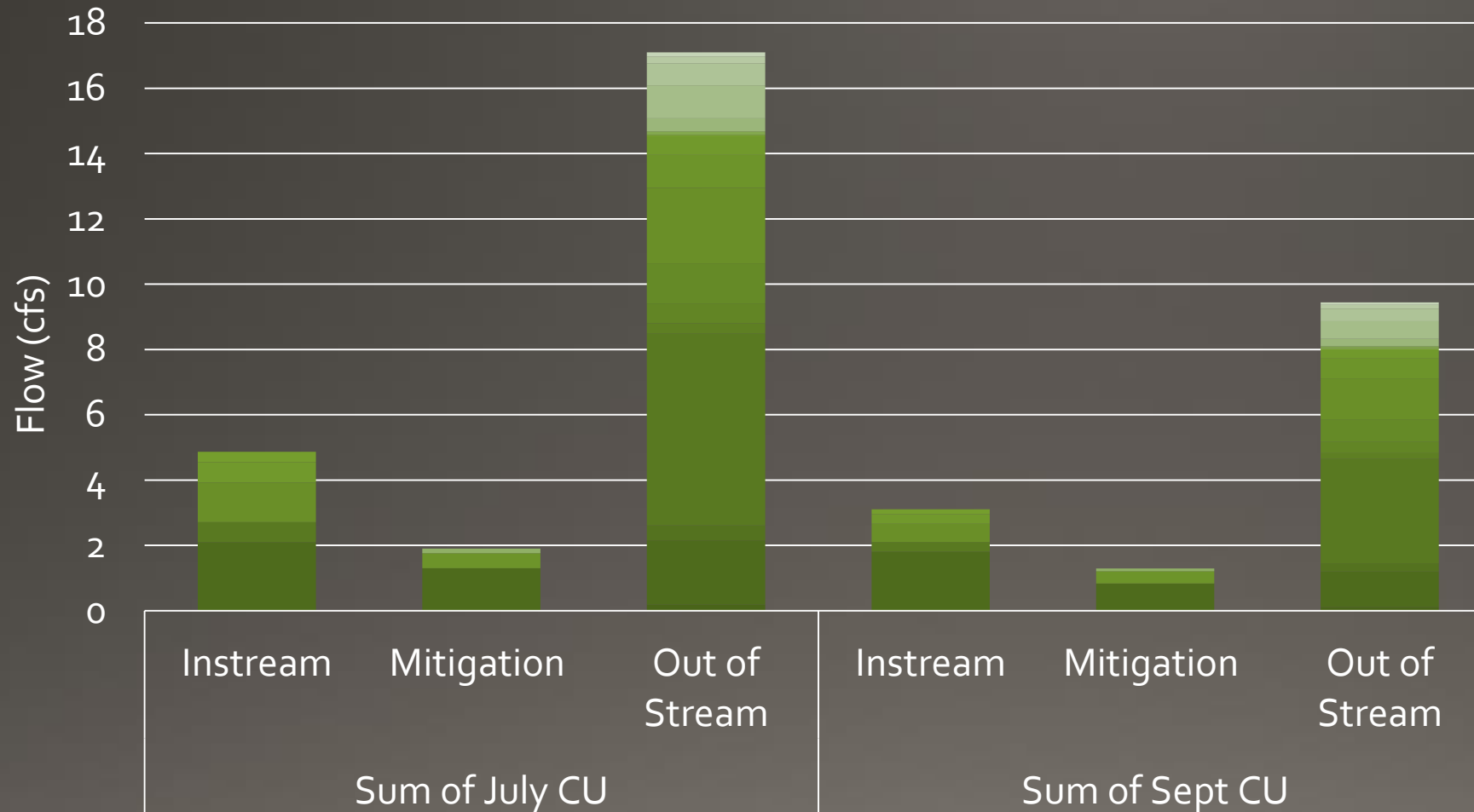
How much Teanaway water is diverted?



How much Teanaway water is diverted?



How much Teanaway water is used?

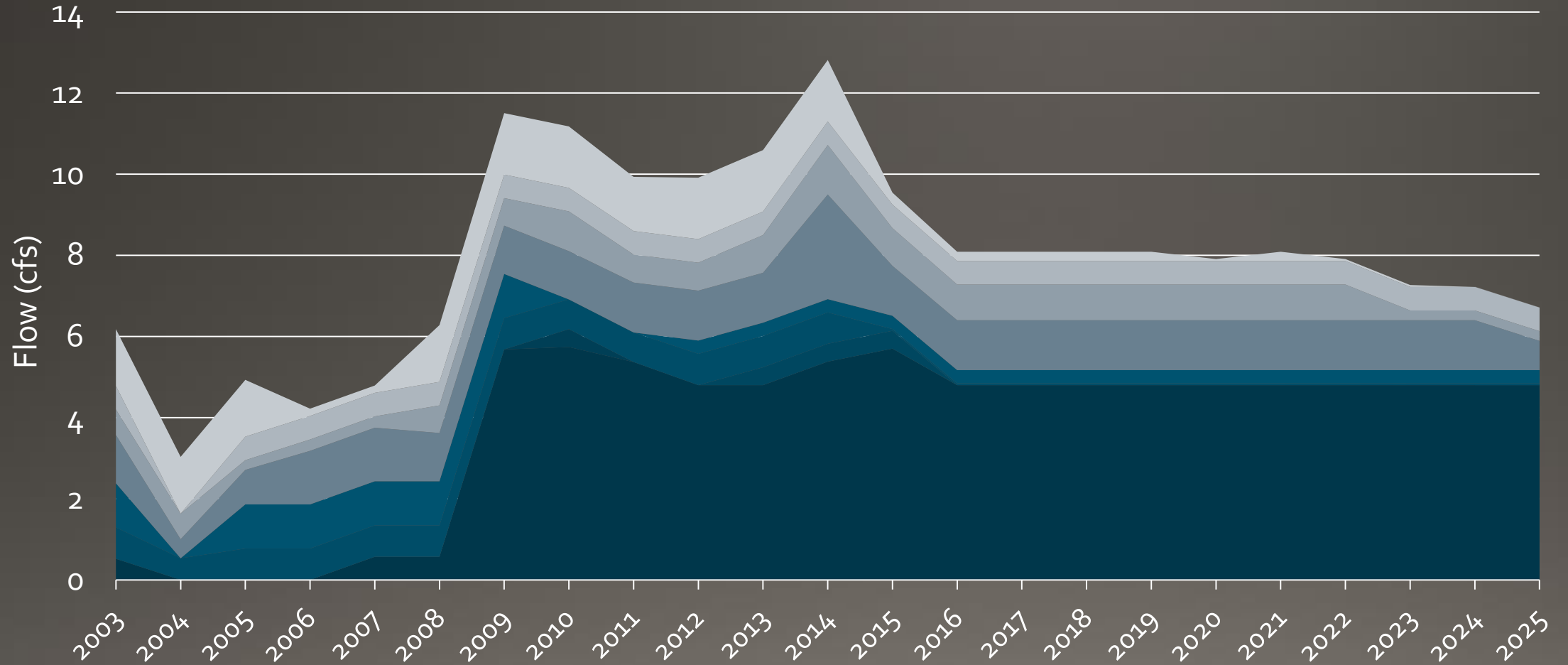


What has been done to restore instream flow?

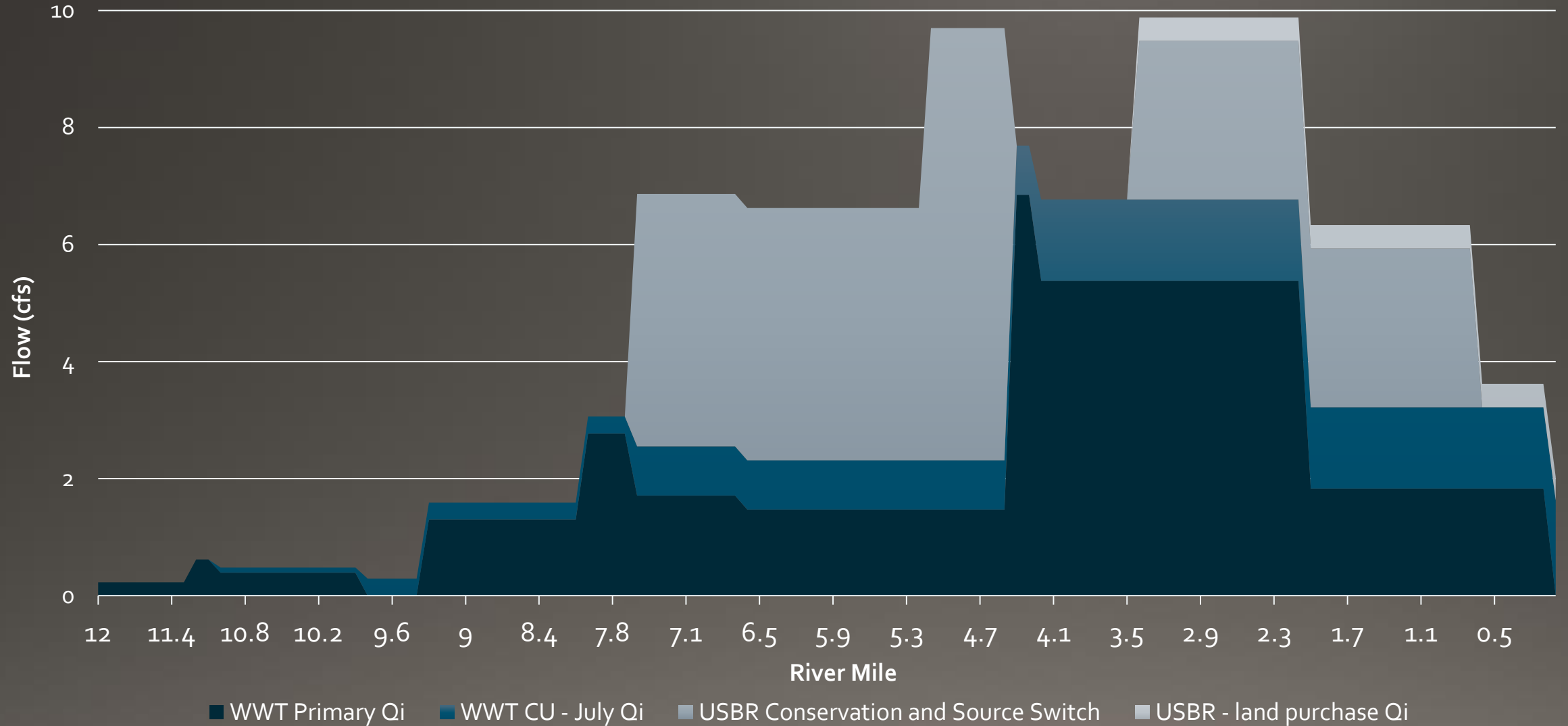
- >20 Landowners – leases
 - Full or late season
 - Drought year
 - “Corner water”
- 2 Purchases
- >5 Point of Diversion Relocations
- >8 Conservation Projects



WWT – Diverted Qi (cfs)

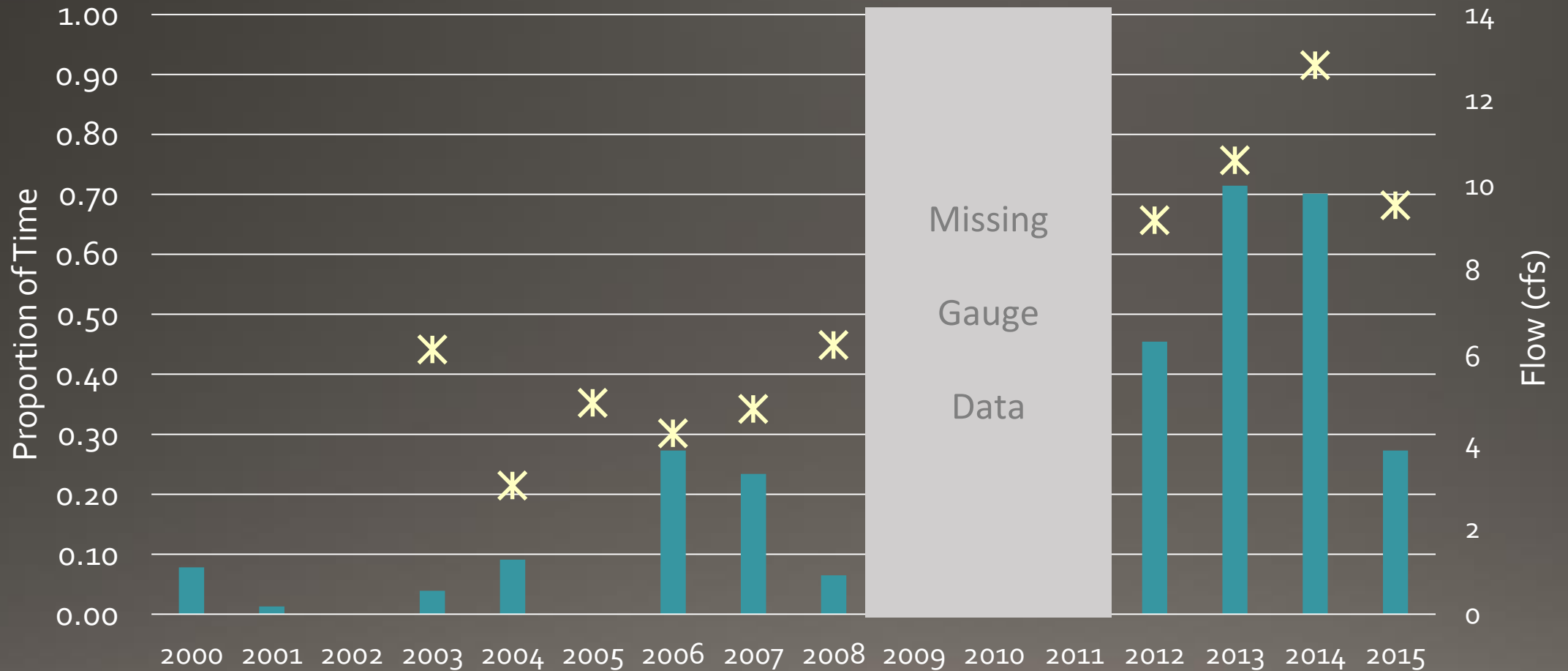


What are the results of these efforts in 2016?



Water Year	Lambert Rd Low flows (cfs)	Lambert Rd Low Flow Period
2000	7.5	Late Aug.
2001	8.3	Late July
2002	7.8	Late Aug.
2003	6.2	Mid - Aug.
2004	8.3	Mid - Aug.
2005	7.7	Late Aug.
2006	12.5	Early Sept.
2007	13.1	Mid - Aug.
2008	15.3	Mid - Aug.
2009	N/A	N/A
2010	N/A	N/A
2011	N/A	N/A
2012	21.2	Mid - Sept.
2013	21.3	Early Oct.
2014	25.1	Mid - Sept.
2015	5.9	Late July

What proportion of the time did flows at RM 0.55 exceed flows at RM 10?



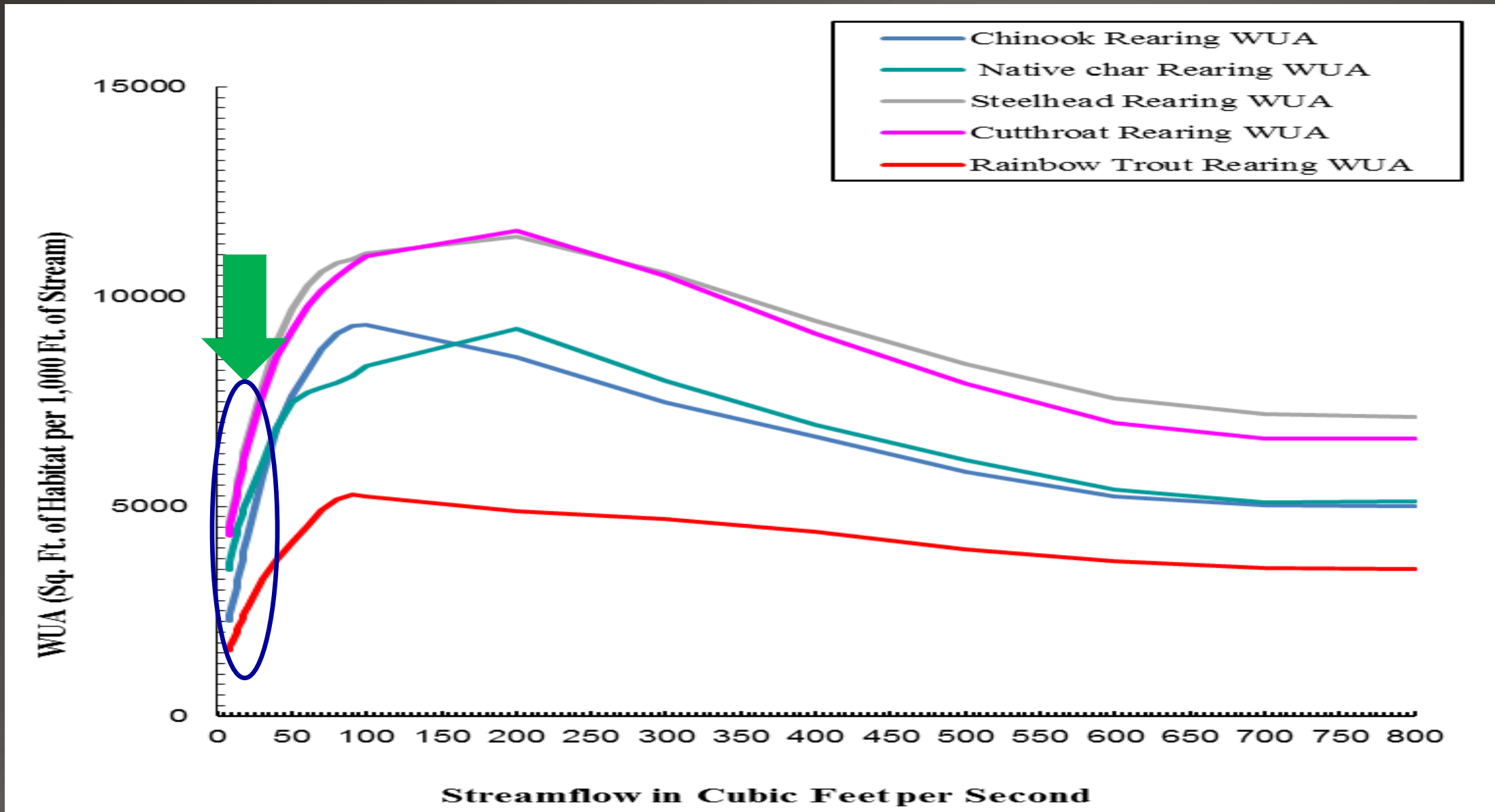
Does more flow = More fish?



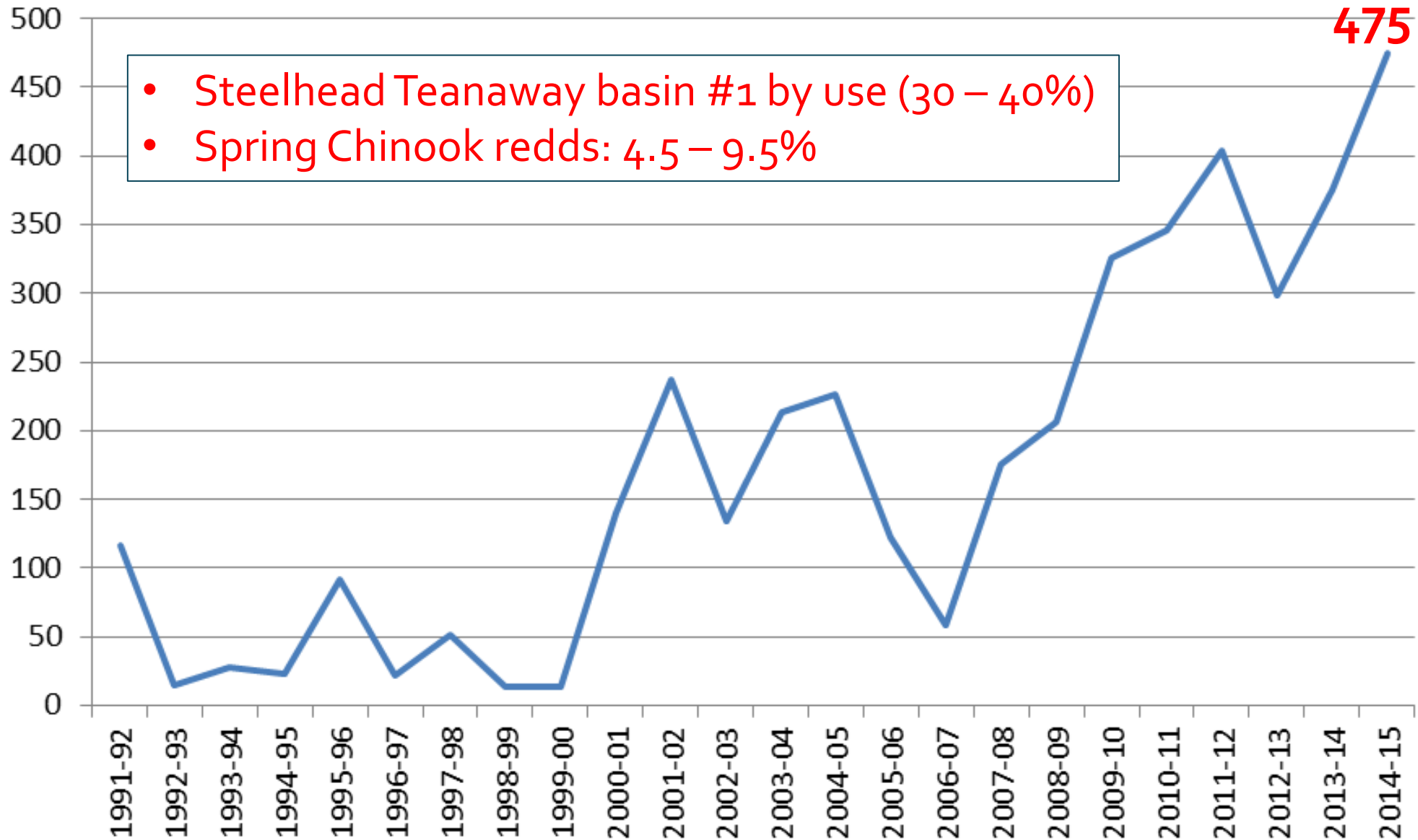
Flow to fish?



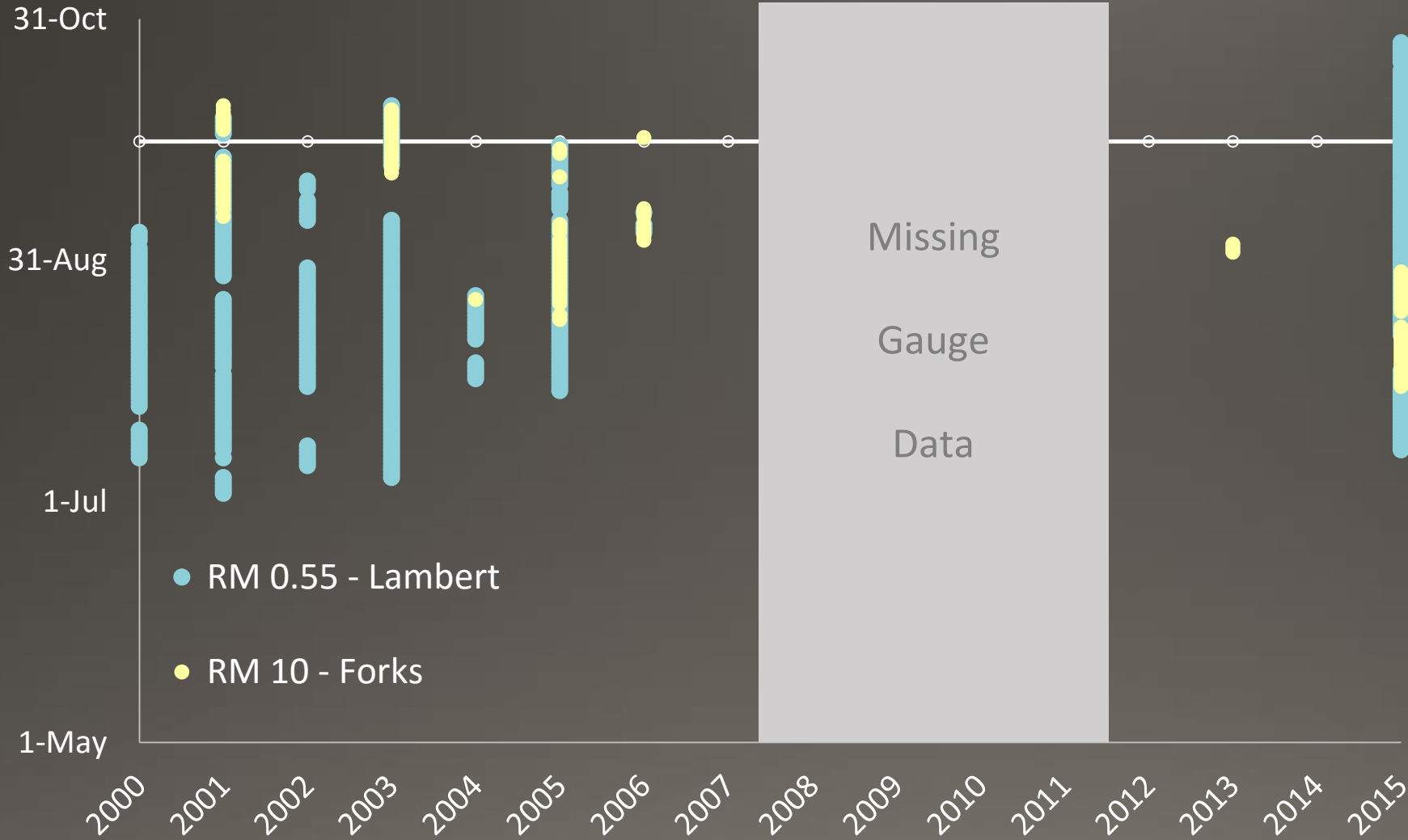
At observed flows, how much rearing habitat is available?



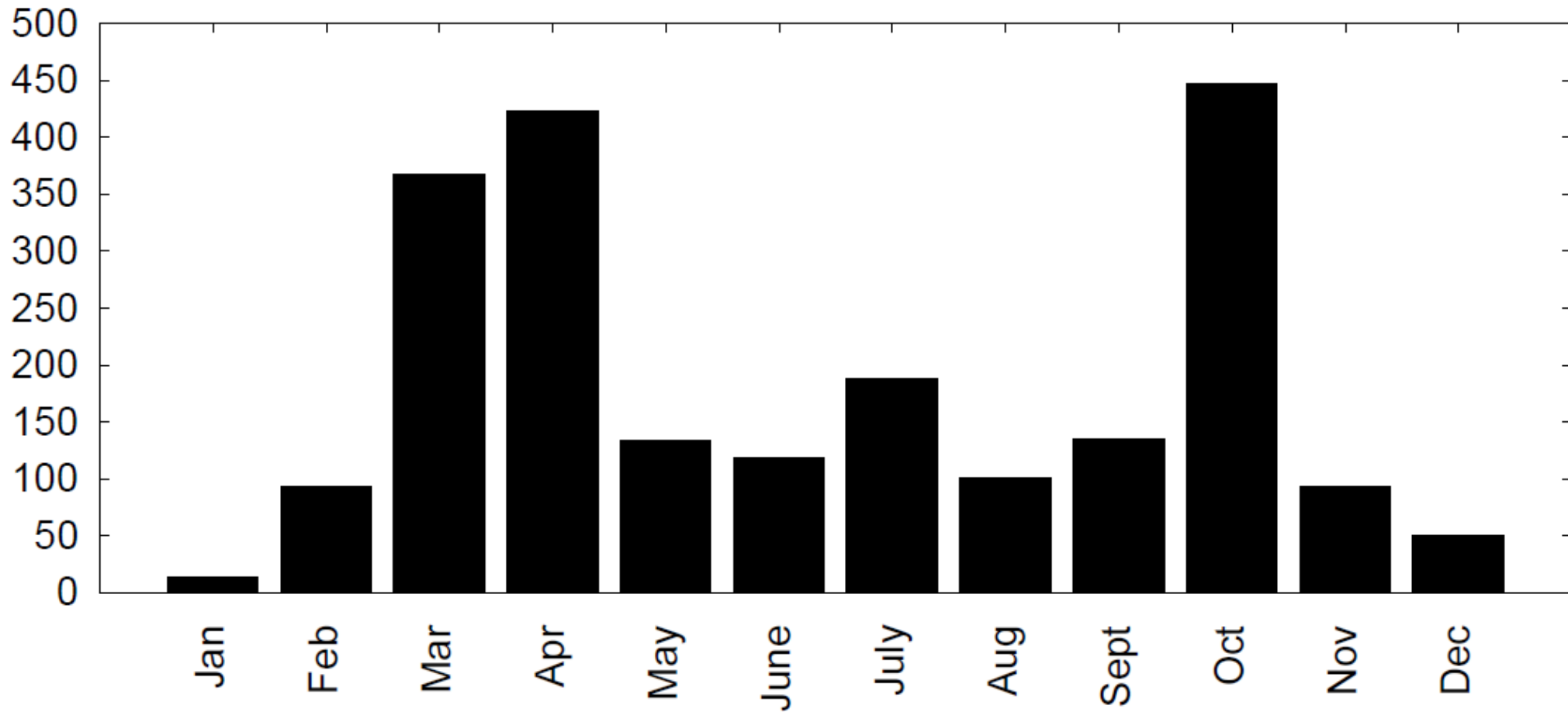
Roza Dam Count - Steelhead Adult



When did low flows impede passage?



Teanaway Basin

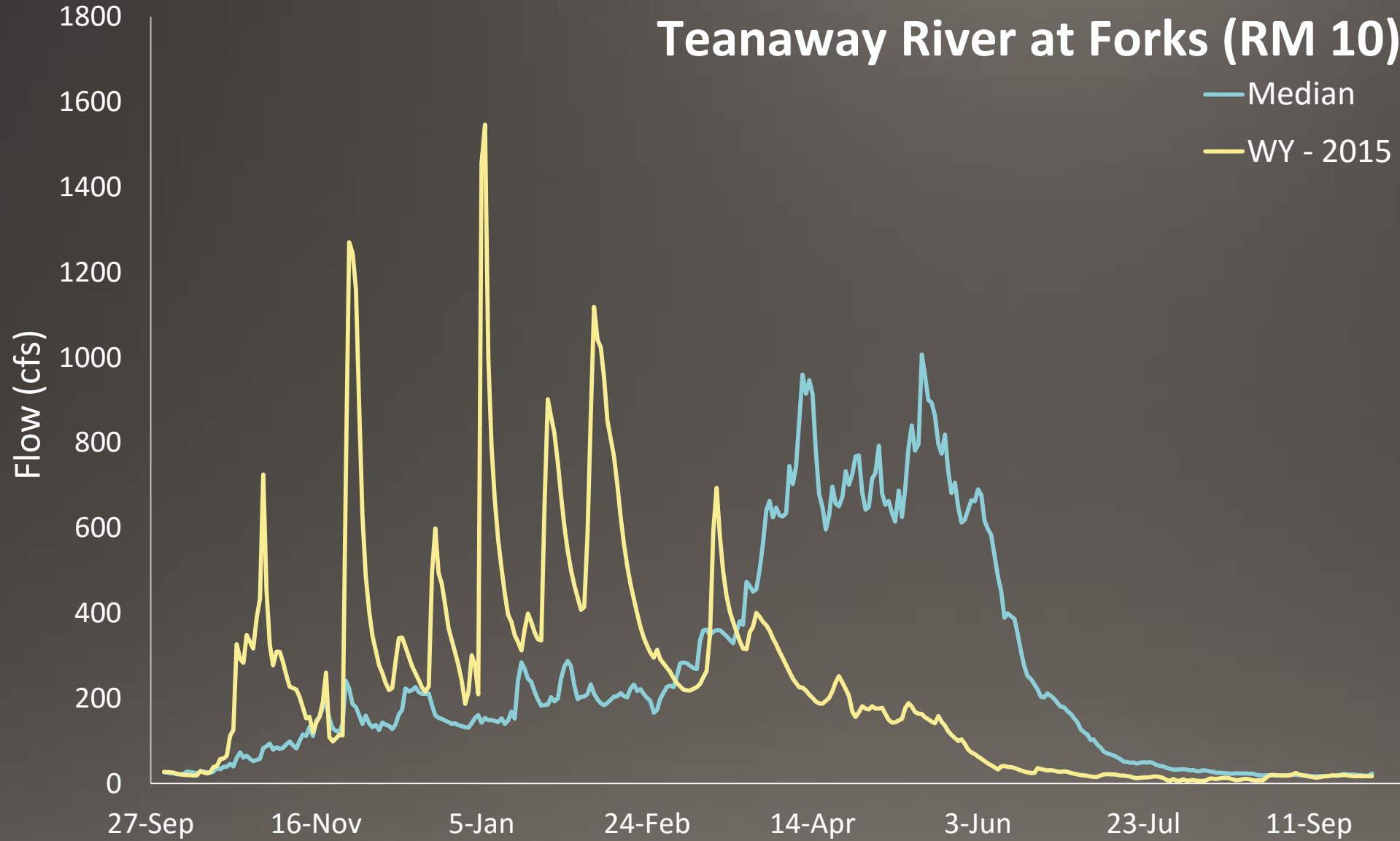


Number of out-migrating juvenile *O. mykiss* (2009 – 2014)
Temple, Mays, and Frederiksen. 2015. Yakima Steelhead VSP Project

Teaway River,
July 16, 2015



Teanaway River at Forks (RM 10)



Using the Full Tool Box

Acquisitions and Conservation



Watershed Scale Restoration
(Natural System Storage)



Teanaway Story Map

- Restoration Priority
- Success Stories
- Flow Benefits
- Habitat Improvements
- Acknowledgements

Created by Blue Water GIS



A Restoration Priority

From high elevation alpine lakes and granite mountain peaks, to hidden swimming holes and fertile bottom lands, the Teanaway River Basin is treasured by many. Over the past 15 years [Washington Water Trust](#) has worked closely with local residents to restore instream flows, improve habitat, and support working lands.

The Teanaway River flowed through the historic drought of 2015, a testament to the watershed-scale restoration efforts that Washington Water Trust is proud to be a part of. The story of the Teanaway epitomizes how smart water use can benefit both farmers and fish alike.

SCROLL DOWN FOR MORE

The Importance Of The Teanaway

Degradation of habitat in the 19th and 20th centuries is the key driver behind dwindling anadromous fish numbers, and in some cases outright species loss, in the Yakima Basin. Salmon and steelhead face many challenges both in the expanse of the sea and at the constraint of the dam, but actions taken at the tributary scale, like those achieved on the Teanaway, are invaluable in the effort to restore and sustain these species.

Click on the fish species below to update the map with species specific distribution and migration areas.

- [Spring Chinook Distribution](#)
- [Coho Distribution](#)
- [Summer Steelhead Distribution](#)



Steelhead Trout

Video was filmed by Yakama Nation Fisheries and Washington Dept. of Fish and Wildlife during Yakima Steelhead Viable Salmonid Population (VSP) project research.

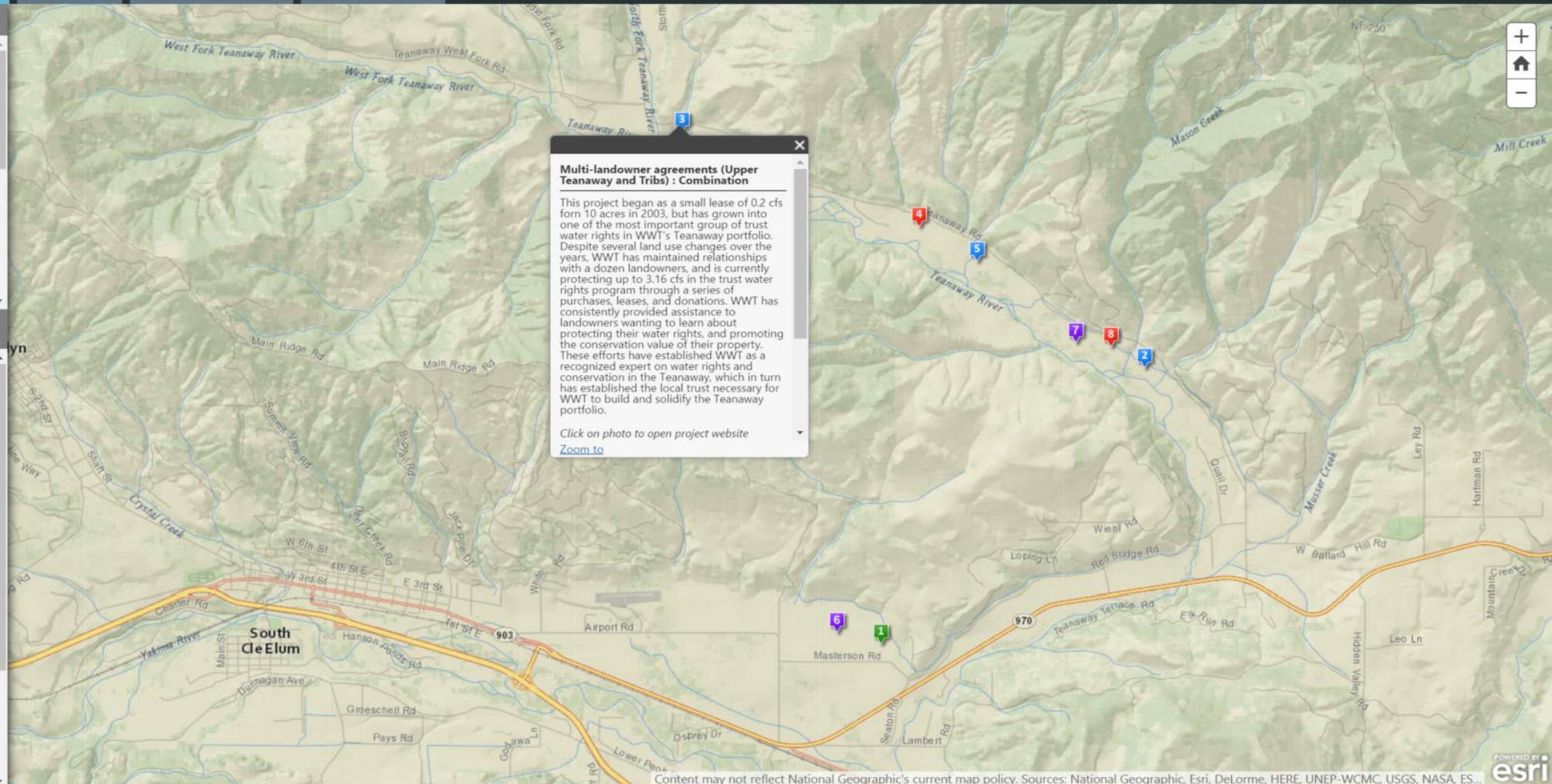
Teanaway Story Map

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- Success Stories**
- Flow Benefits
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Washington Water Trust works with landowners to craft projects that are unique to the landowner and their needs. We have an array of flow restoration tools including:

- 1) Water Bank Development:** programs that allow new water users to offset their water consumption,
- 2) Drought-year agreements:** payments to landowners to leave water instream during drought years,
- 3) Late-season agreement:** payments to landowners to leave

- Conservation Project (Lower Teanaway)**
- Partial Field Fallowing and Late Season...**
- Multi-landowner agreements (Upper...**
- Late Season Lease (Upper Teanaway)**
- Multiple tools help farms and fish...**
- Water Purchase and Water Bank...**



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