

Steelhead Movements and Habitat Use in the Upper Yakima Basin

Acknowledgements

- Bureau of Reclamation – Denver and Yakima
- Yakama Nation – Mark Johnston and crew
- Travis Dick - University of Idaho
- FWS and USGS

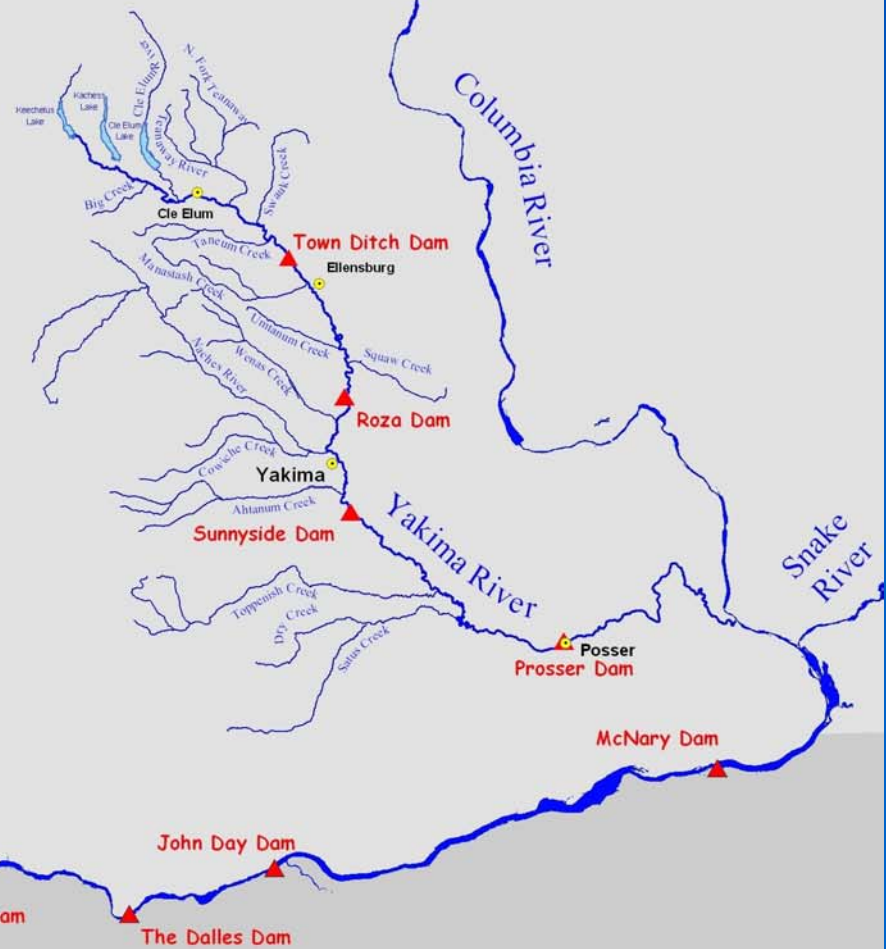
Objectives

- Determine wild steelhead habitat use in the upper Yakima River Basin
- Determine adequate outmigration passage flows at Roza Dam
- Determine effects of Reclamation's Yakima Water Project on steelhead in the upper Yakima basin

Pacific Ocean

Washington

Oregon



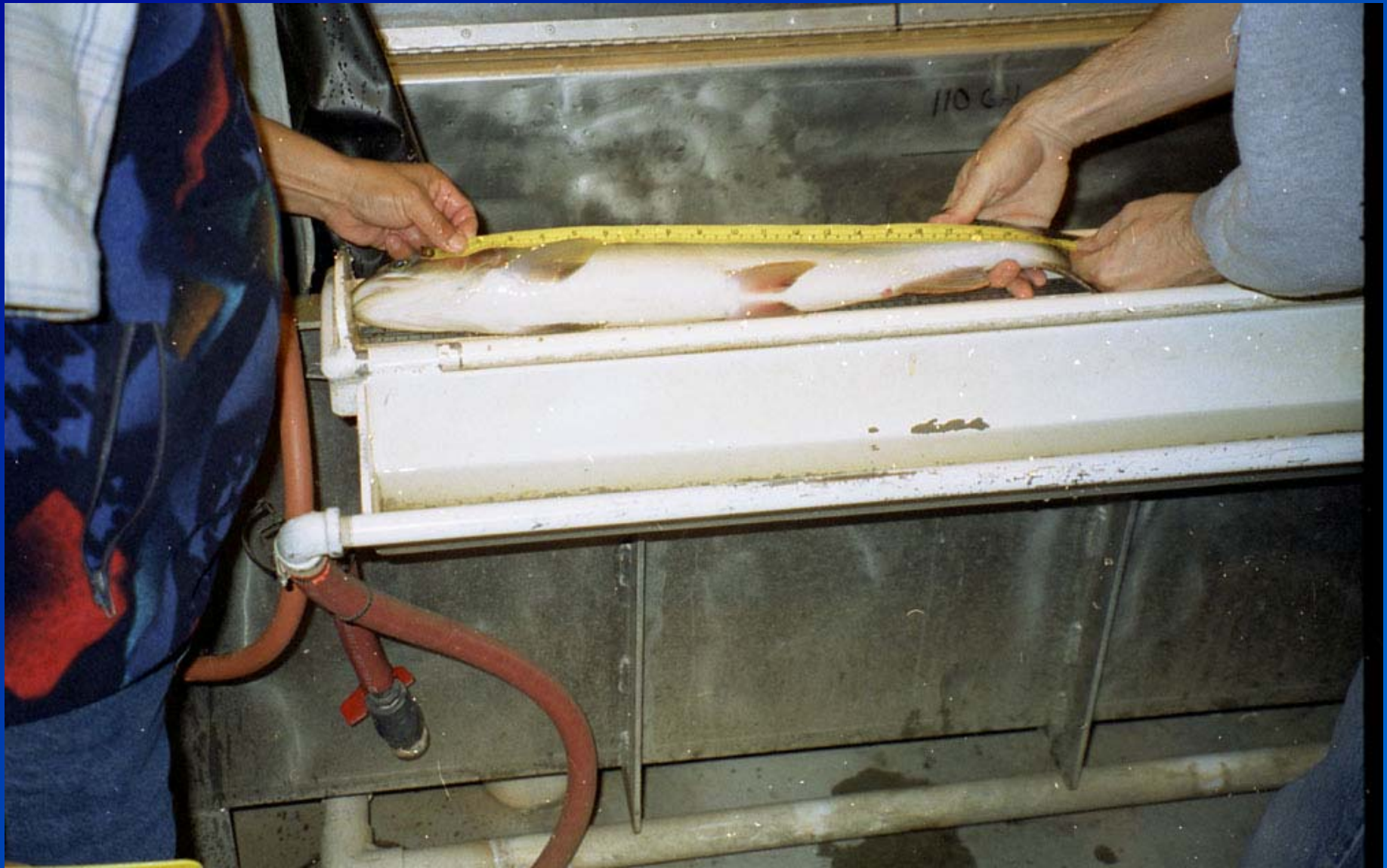


Roza Dam



Roza fish trap



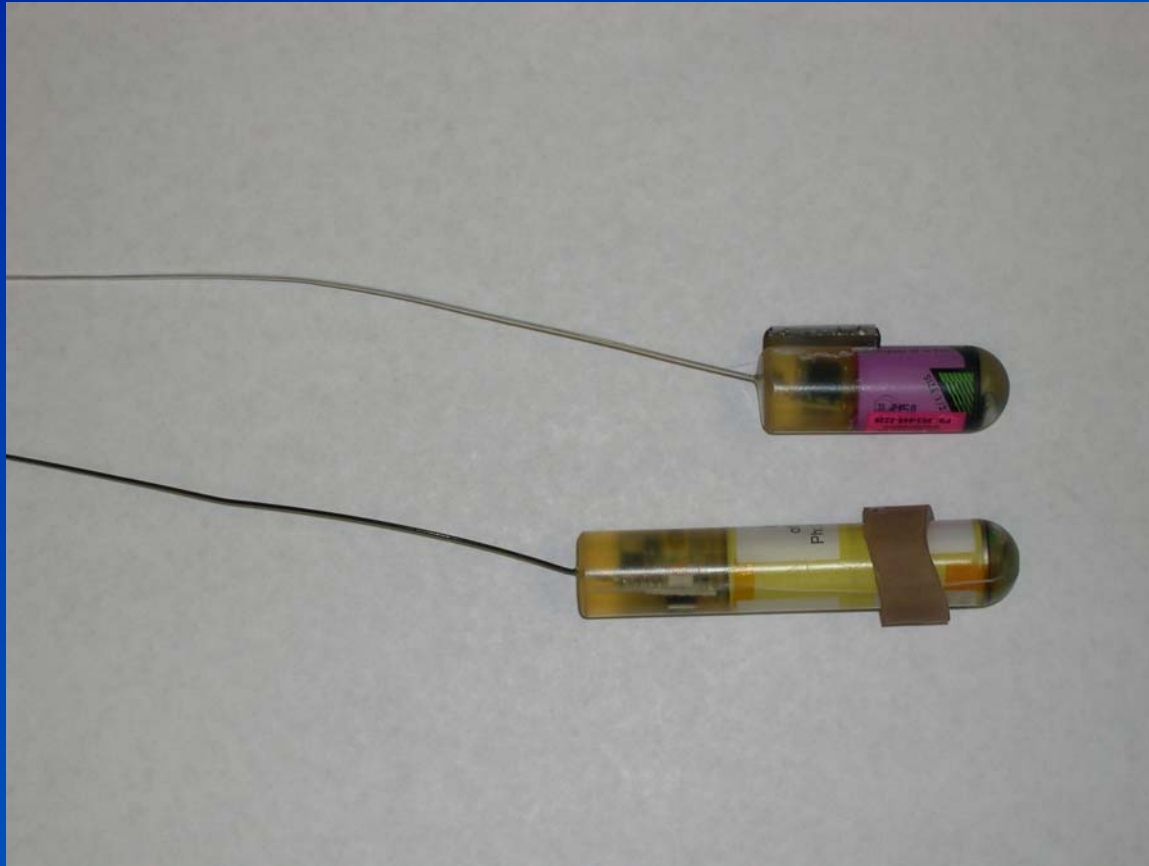


Fish data



Pit tag insertion

Radiotransmitters





Transmitter insertion



Roza Pool

Roza Dam telemetry station





Downstream antennas

Umtanum Creek



Taneum Creek, Bruton Diversion



Swauk Creek



Teanaway River



Teanaway tributaries



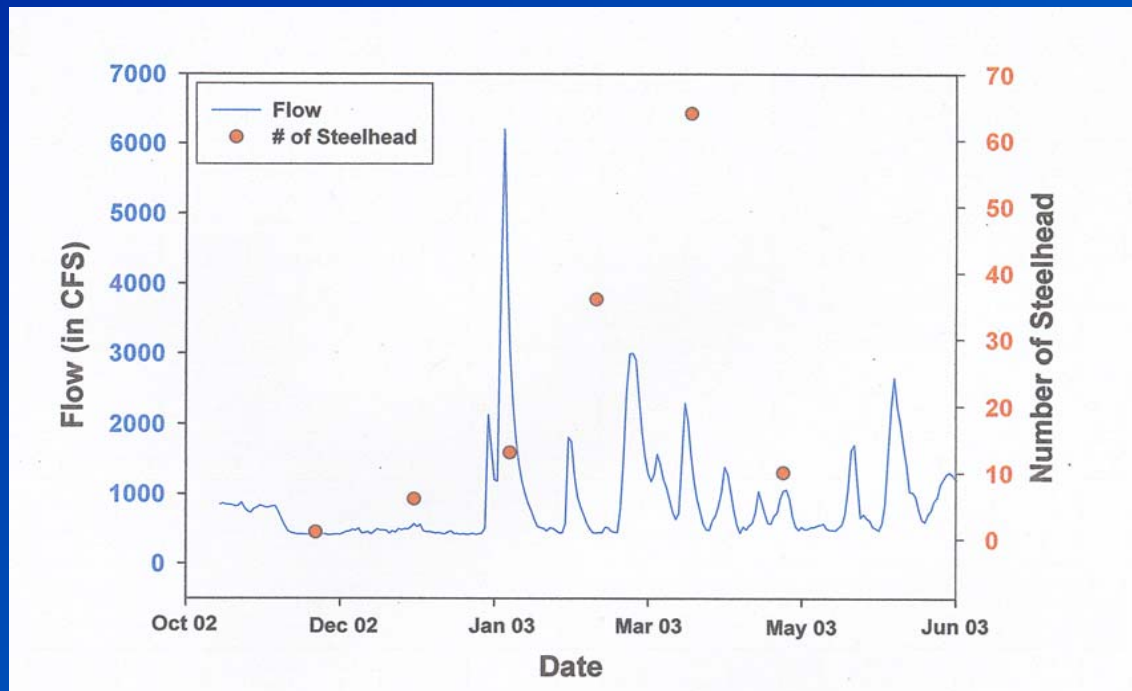


Yakima River-Cle Elum telemetry site

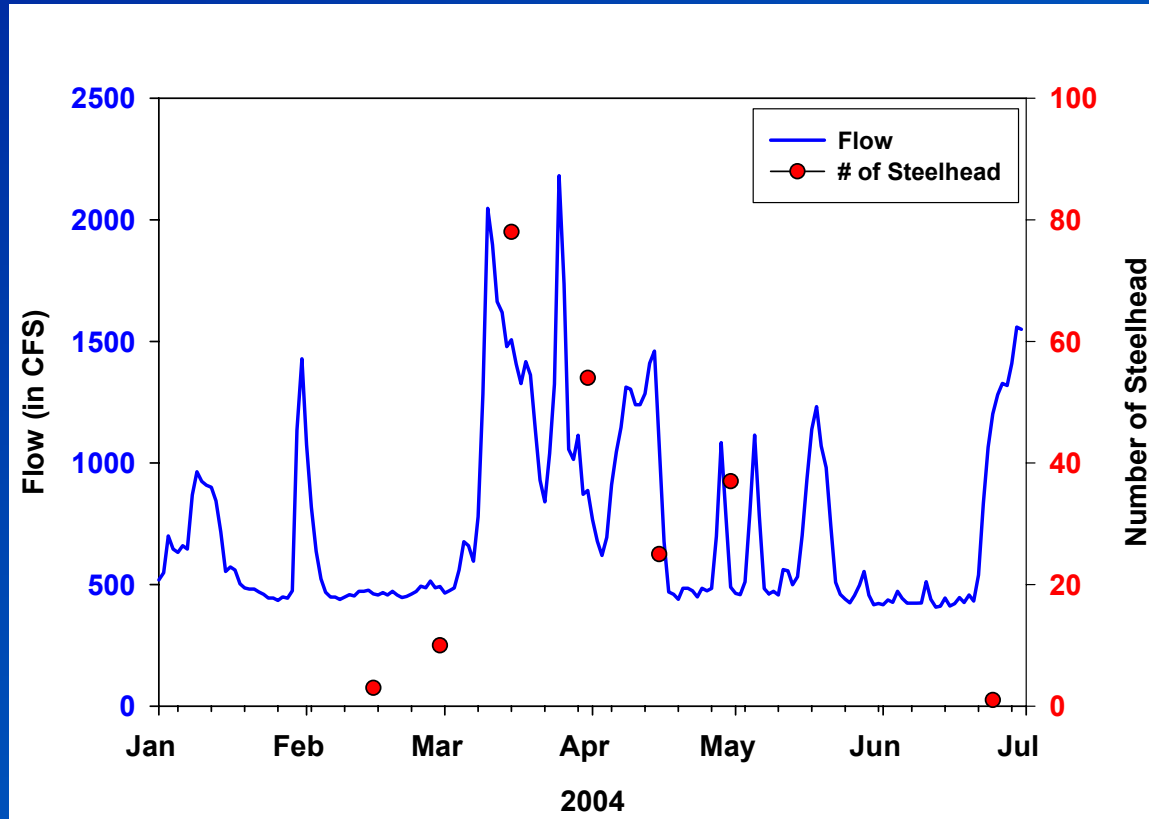


Easton Dam telemetry station - 2002/03

Relationship between timing of flows and #'s of steelhead ascending Roza Dam, 2003



Relationship between timing of flows and #'s of steelhead ascending Roza Dam, 2004



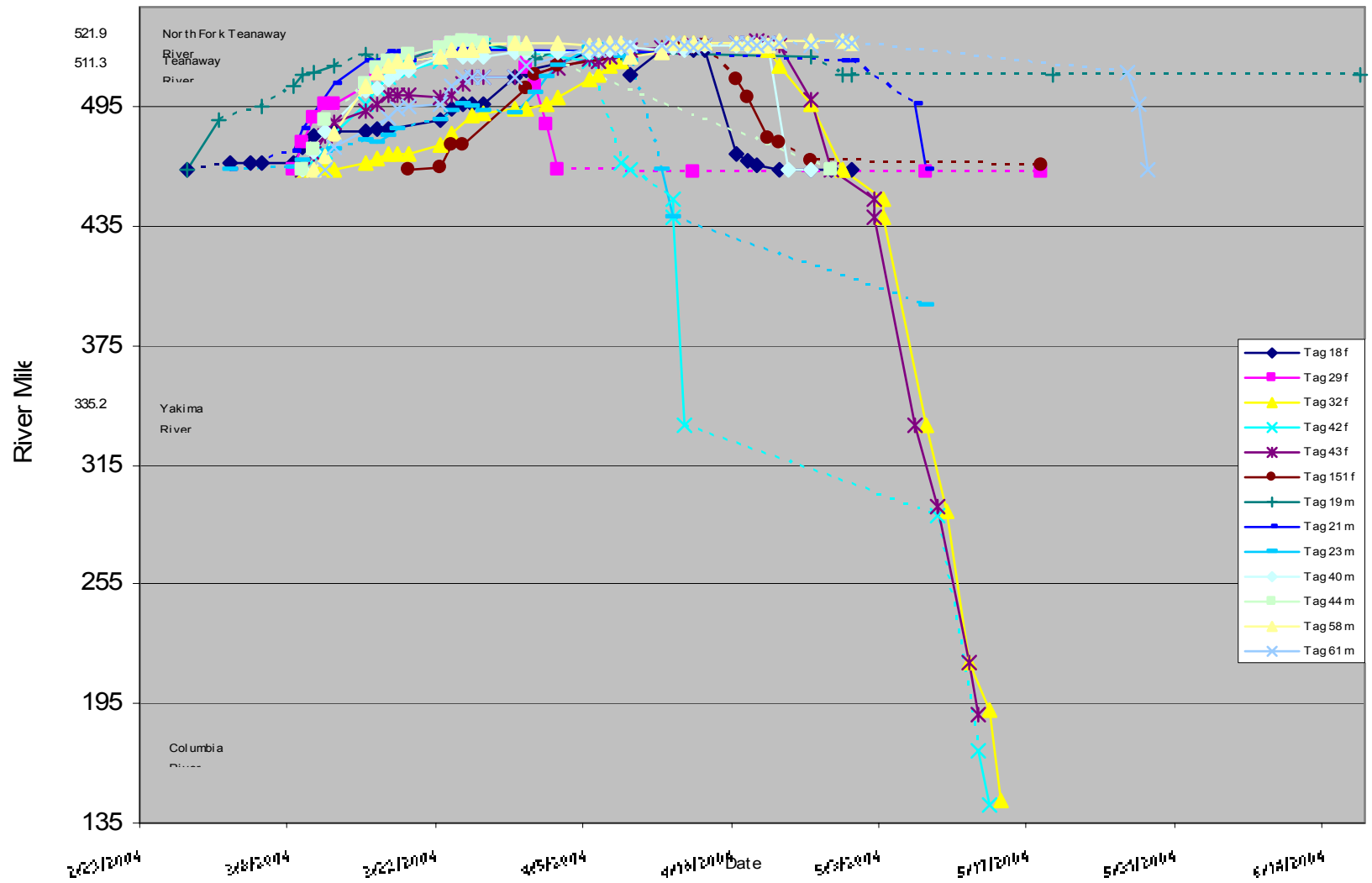
Length, Weight, and Age of Roza Wild Steelhead 2002-2004

- 2002-03 (126, mostly 4 year old)
 - wild females (109, 57 cm POL, 3.4 kg)
 - wild males (17, 58 cm POL, 3.7 kg)
- 2003-04 (208 fish, mostly 3 year old)
 - wild females (184, 50 cm POL, 2.3 kg)
 - wild males (53, 50 cm POL, 2.3 kg)

Summary of Wild Steelhead Movements, 2002-2004 (of 171 active radiotagged fish)

| Location of Presumed Spawning | # Radiotagged Steelhead |
|--|-------------------------|
| Mainstem Yakima River (between Roza and Easton Dams) | 74 (43.3%) |
| Teanaway Drainage | 62 (36.3%) |
| Swauk Creek | 18 (10.5) |
| Taneum Creek | 8 (4.7) |
| Cle Elum River | 3 |
| Lower Naches River, Umtanum, Cherry, and Wilson Creek | 6 |
| Total tributary | 97 (56.7%) |

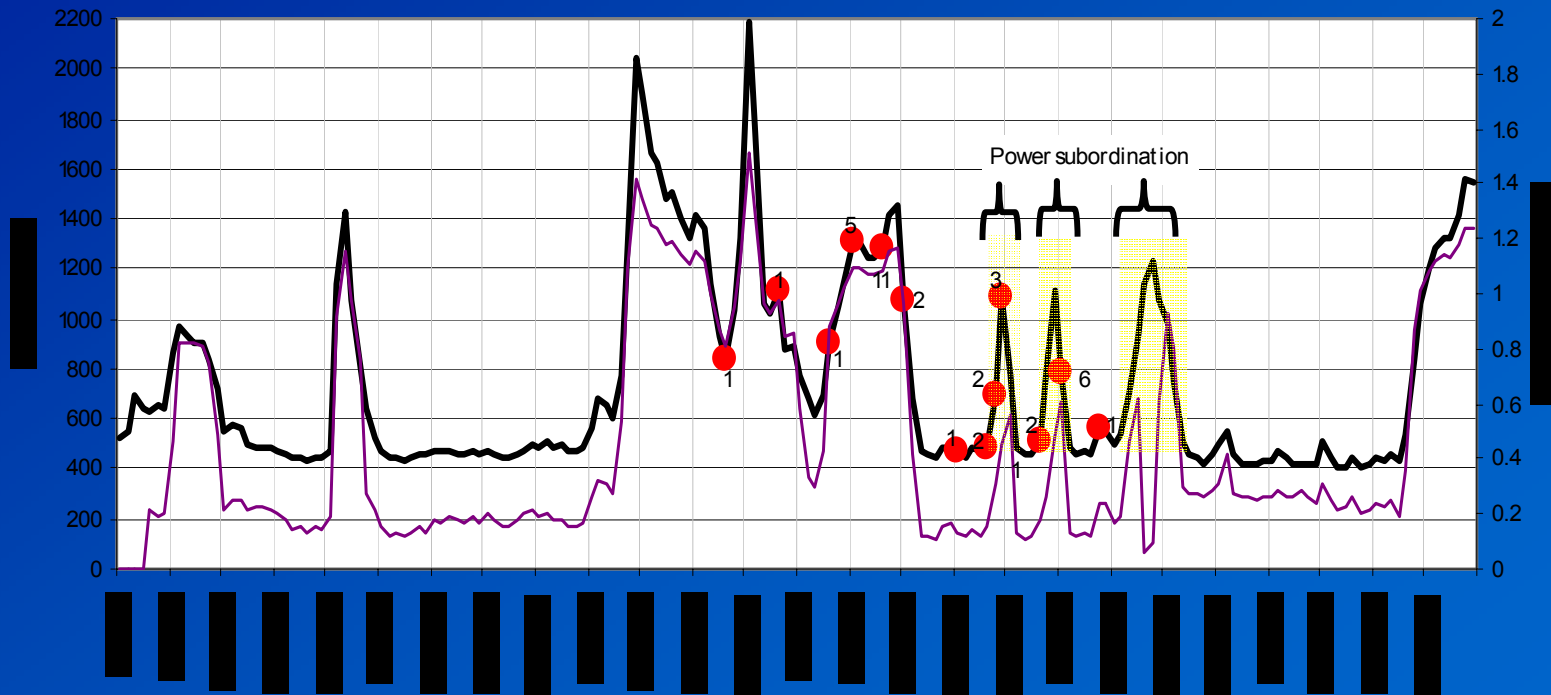
Movements of 13 wild steelhead in the North Fork Teanaway River, 2004



Upper Yakima Steelhead Spawning Fidelity

- About 20 wild male-female pairings located, all in tributaries (Taneum, Swauk, Teanaway)
- Females exhibit fidelity to a spawning reach (ex. Swauk female; 9 kelts)
- Males tend to roam within a drainage (ex. Teanaway males)

Flows, power subordination and downstream steelhead passage at Roza Dam



Present Plans

- focus on spawning reach identification, 24 hr etc behavior once in spawning tributary, increase spawning observations
- Improve understanding of Roza flows and adult outmigration at Roza Dam