

Steelhead Population Monitoring on Lower Yakima River Tributaries

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Yakama Nation Fisheries Management
Program

Toppenish, Washington

▶ Outmigration Studies (Smolt trap)

- Outmigration estimate
- Timing and survival through the Yakima and Columbia rivers

▶ Spawning ground surveys

- Index of spawning escapement

Smolt Trap

- ▶ 5-foot diameter rotary screw trap
- ▶ Located downstream from known spawning and rearing habitat on Satus, Toppenish, and Ahtanum Creek
- ▶ Operated continuously from November through early June at each tributary

Toppenish Creek Screw Trap





Toppenish Creek Screw Trap



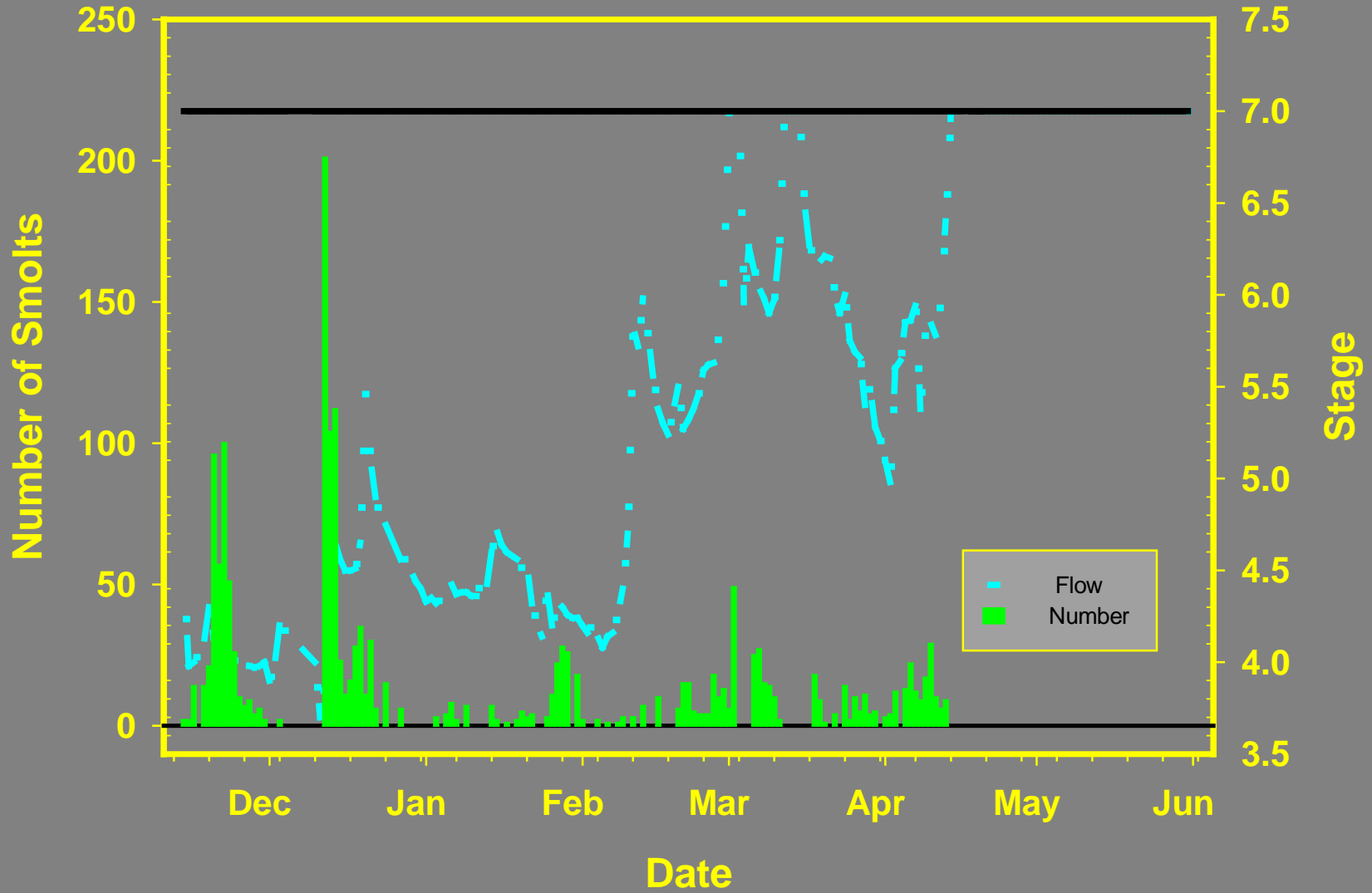
Smolt trap

- ▶ Captured smolts are measured and weighed
- ▶ We PIT tag a subsample of steelhead juveniles over 100 mm
- ▶ PIT tagged smolts are released above the trap once a week to estimate efficiency
- ▶ DNA samples
- ▶ Scale samples

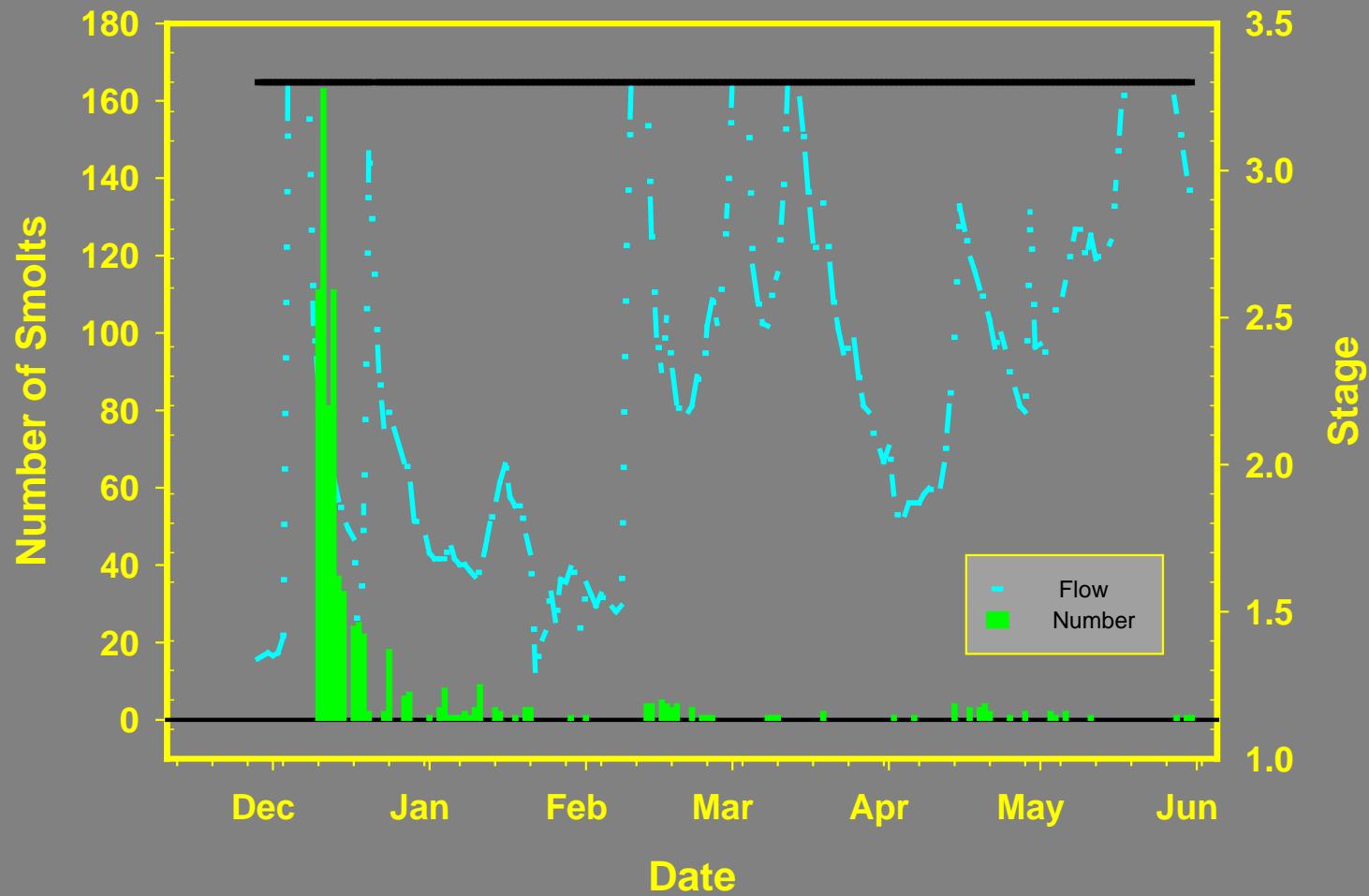
Smolt Traps

- ▶ Toppenish Creek – 1677 Steelhead smolts captured, 966 PIT tagged
- ▶ Satus Creek – 751 Steelhead smolts captured, 392 PIT tagged
- ▶ Ahtanum Creek – 56 Steelhead smolts captured, 50 PIT tagged

Juveniles Caught at Toppenish Creek Screw Trap



Juveniles Caught at Satus Creek Screw Trap





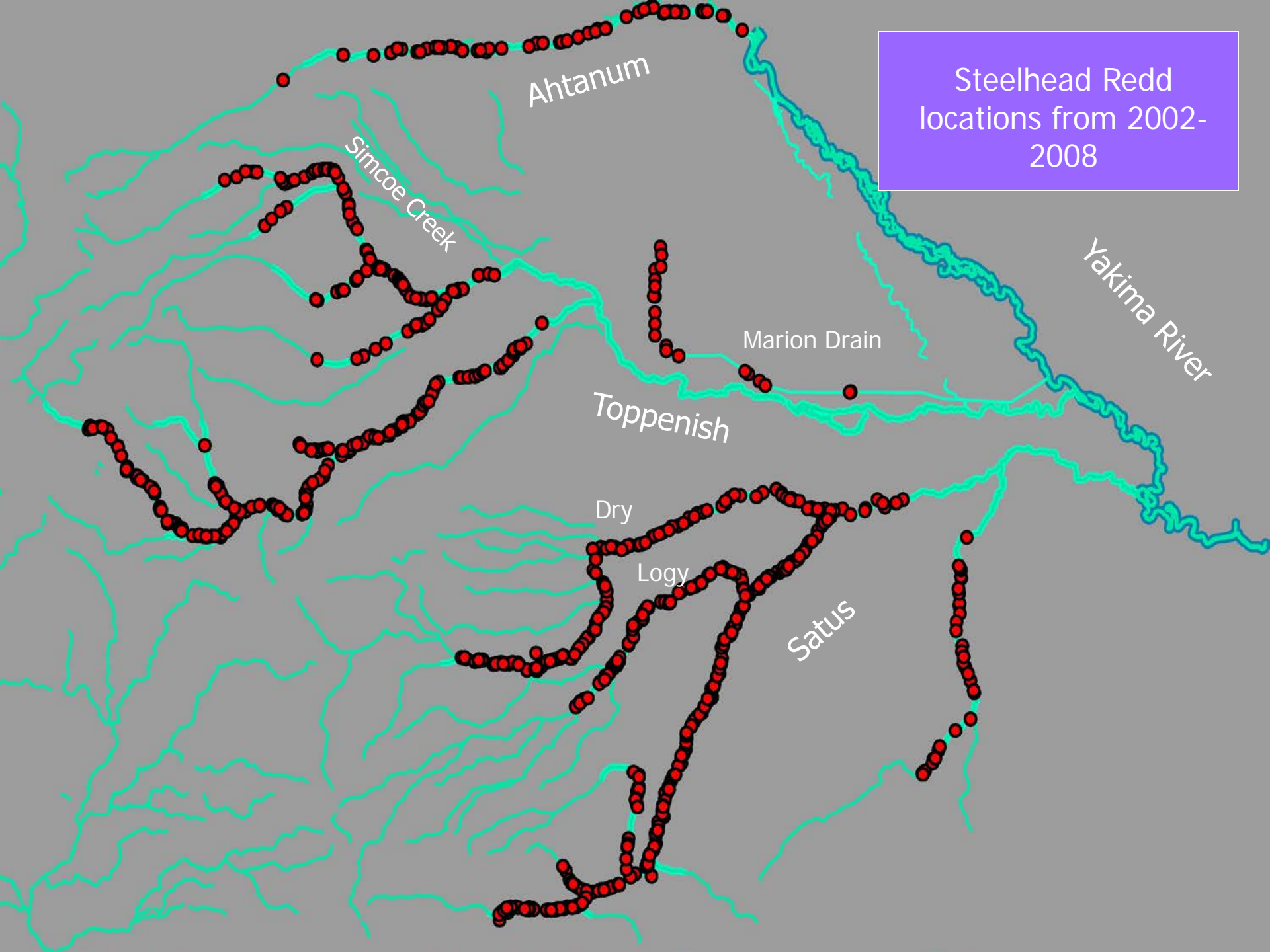
Steelhead
Spawning Ground
Surveys

Spawning Ground Surveys

- ▶ Three pass surveys conducted between mid-March through the end of May
- ▶ 32 Miles in the Ahtanum watershed, 78 Miles in the Toppenish watershed, and 93 Miles in the Satus watershed.



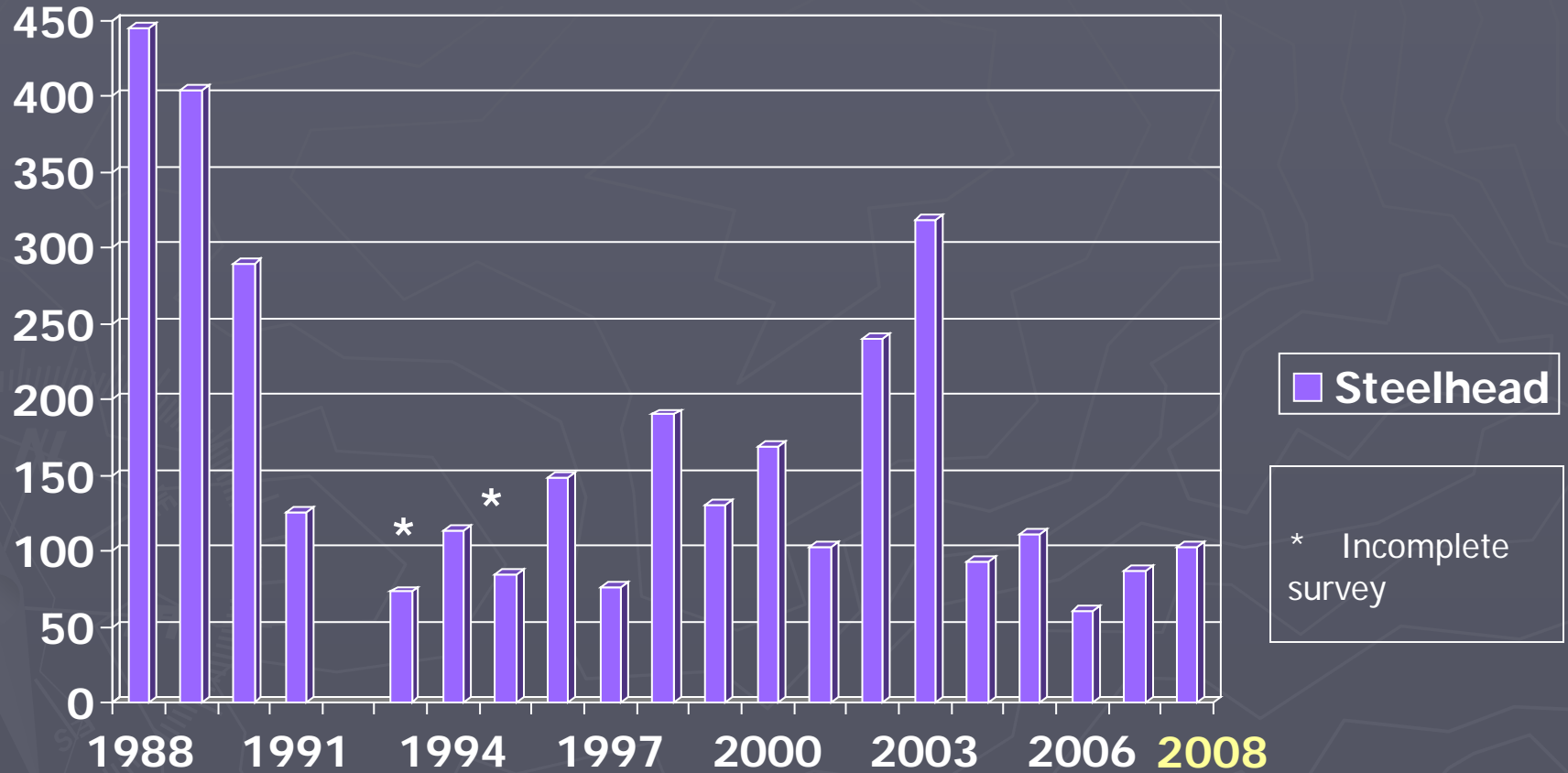
Steelhead Redd locations from 2002-2008



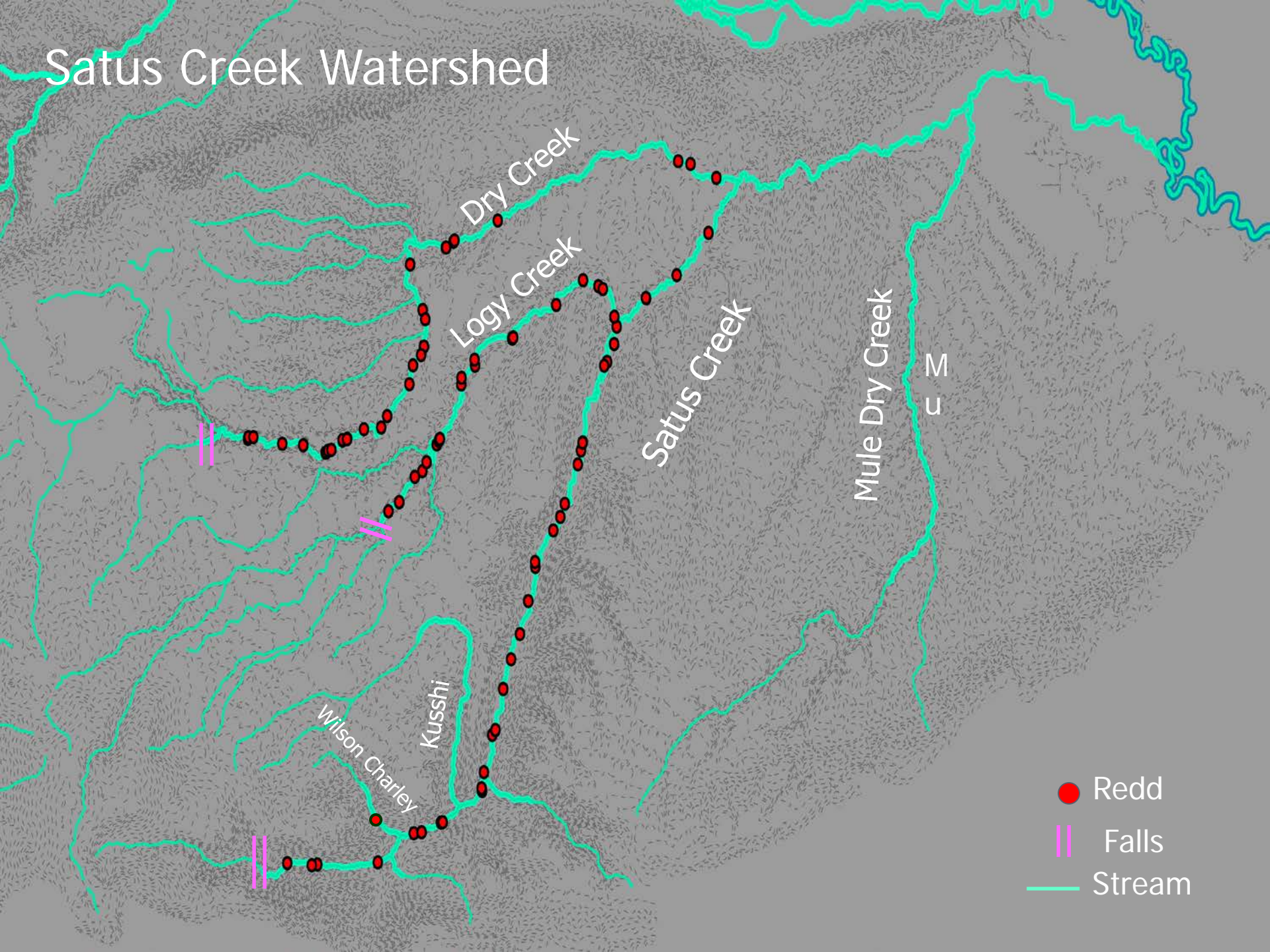
2008 Satus Creek Spawning Survey

- ▶ As of June 12th 2008 two complete passes and a third incomplete pass (excluding upper Satus Creek and Logy).
- ▶ 104 Redds have been identified
- ▶ High flow has influenced count more this year than previous years

Satus Creek Redd Counts 20 Year Record



Satus Creek Watershed



Dry Creek

Logy Creek

Satus Creek

Mule Dry Creek

Kusshi

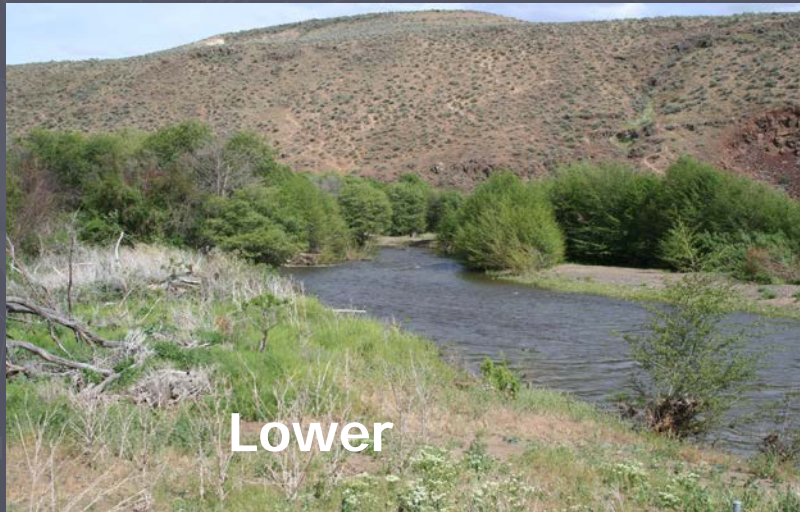
Wilson Charley

- Redd
- || Falls
- Stream

Satus Watershed Barriers

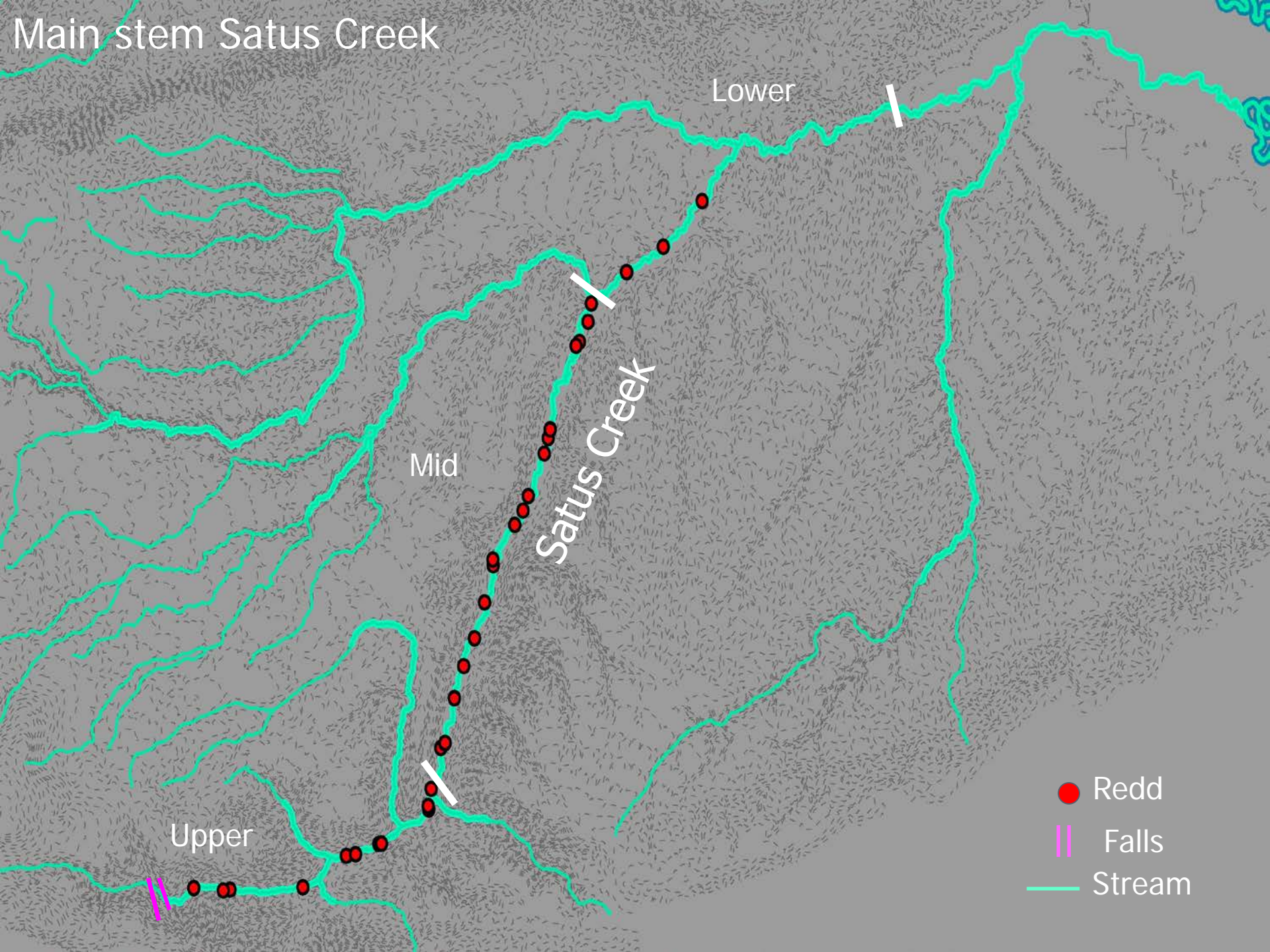


Satus Creek



Main Stem Satus Creek

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Upper	25	61	27	36	17	16	9	11	11
Mid	48	57	86	76	36	33	16	23	31
Lower	4	32	12	29	8	34	3	5	4
Total	77	150	125	141	61	83	28	39	46



Main stem Satus Creek

Lower

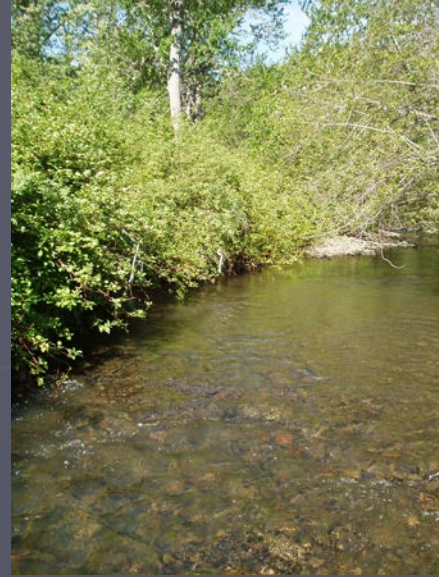
Mid

Satus Creek

Upper

- Redd
- || Falls
- Stream

Dry Creek



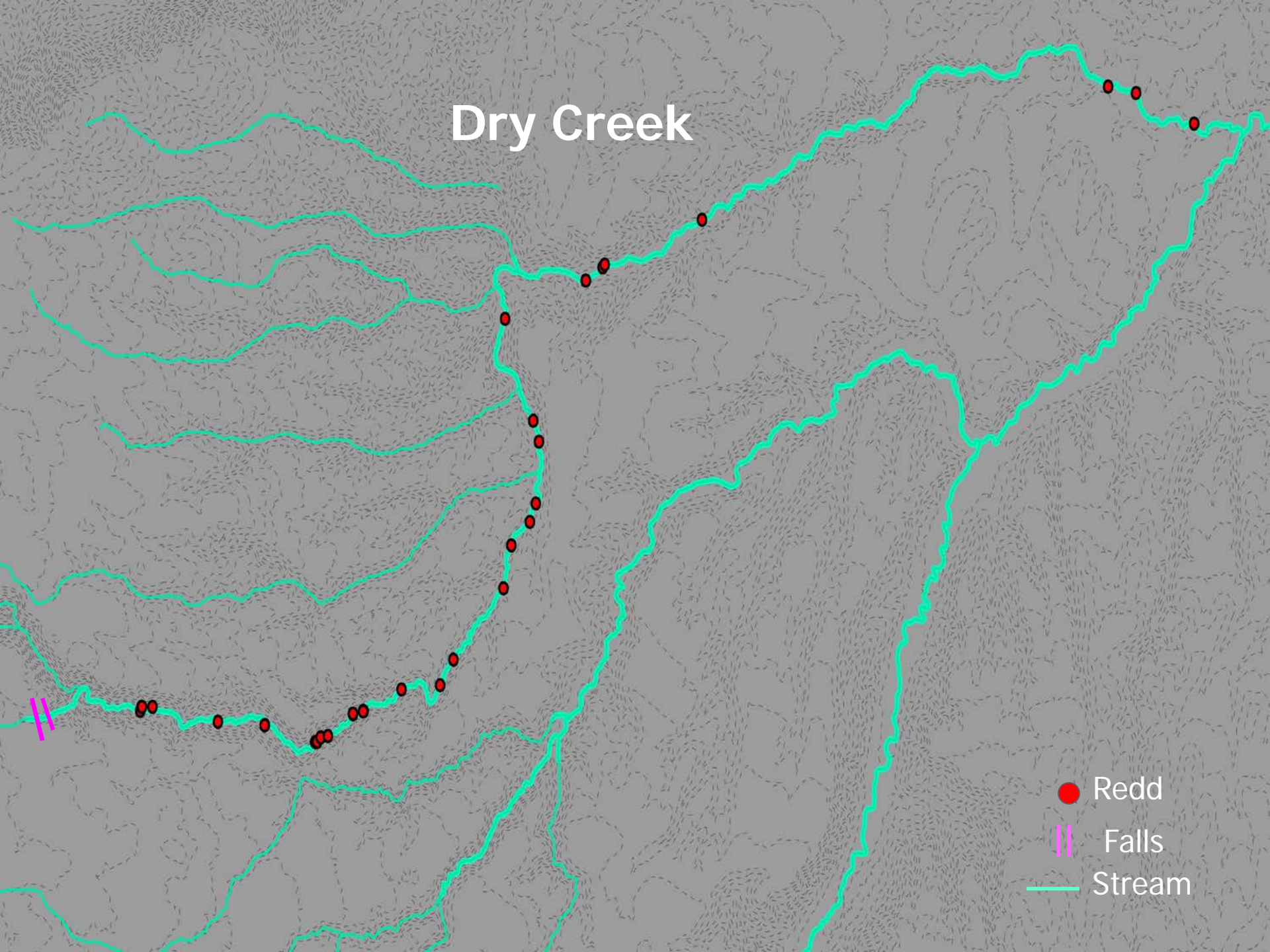
Logy Creek



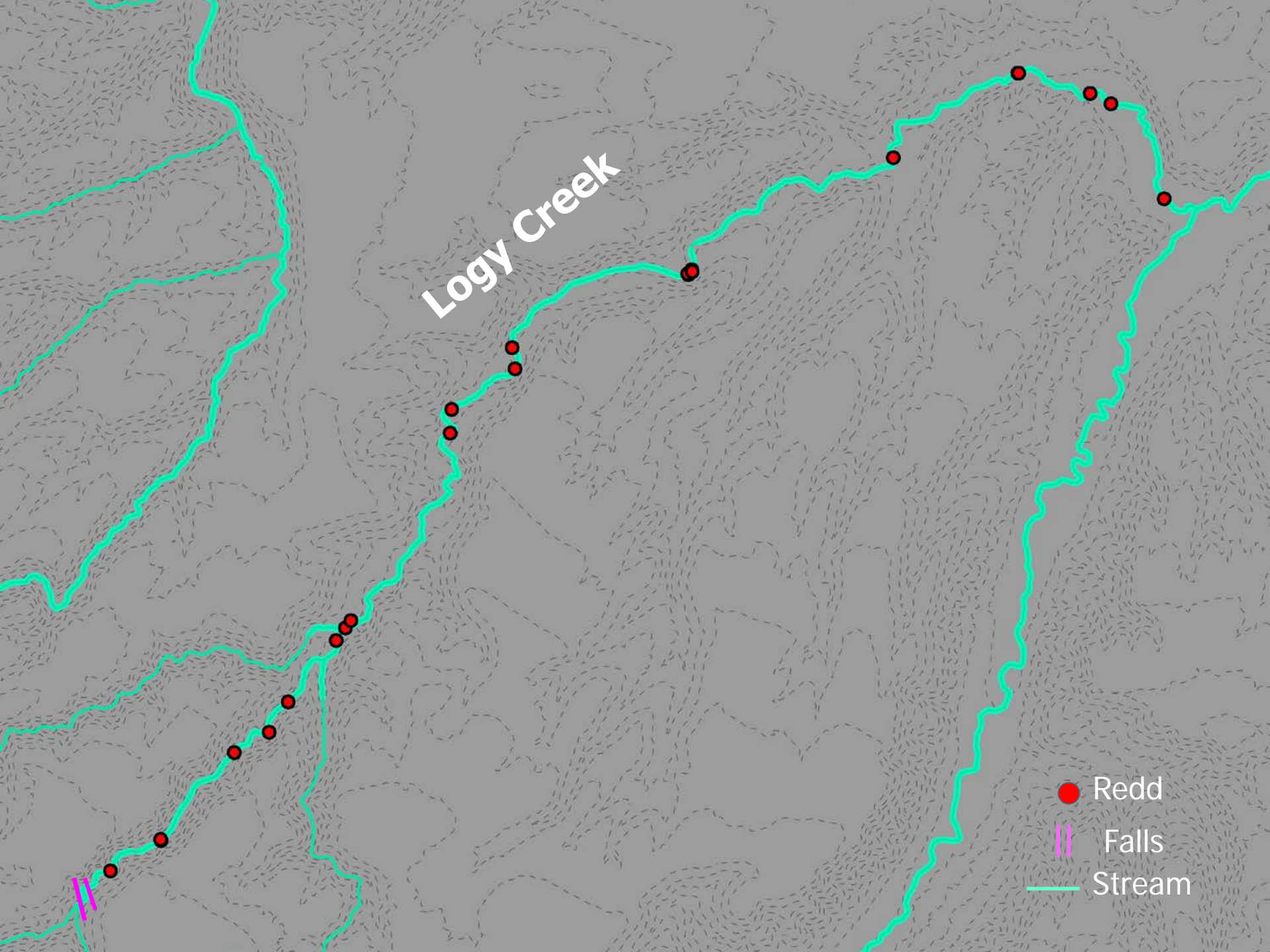
Dry and Logy Creek

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Dry	37	37	61	104	8	6	15	24	36
Logy	20	57	57	46	24	19	11	20	19

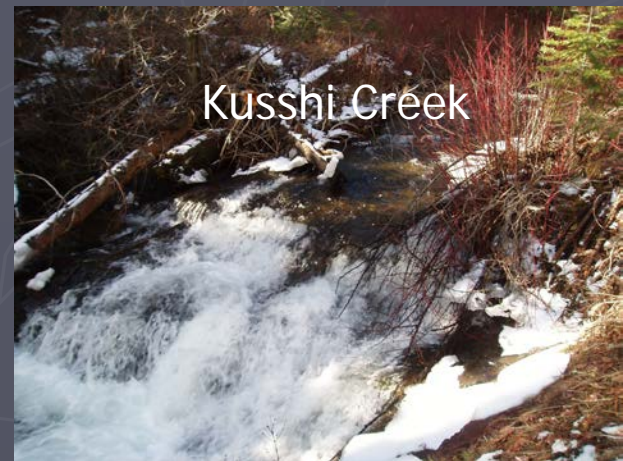
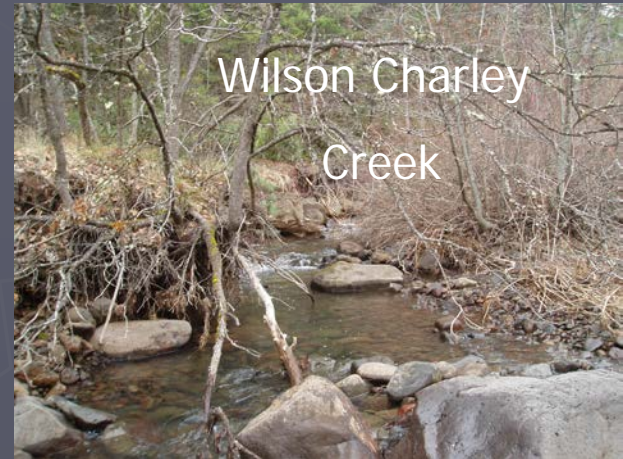
Dry Creek



- Redd
- || Falls
- Stream



Small Satus Creek Tributaries



Small Tributaries

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Kusshi	5	5	21	7	4	0	1	3	0
Wilson Charley	5	3	6	5	4	0	2	1	1
Mule Dry	25	0	27	16	4	0	3	0	0

Toppenish Creek



Toppenish Creek

- ▶ 1 pass completed of Toppenish mainstem, Simcoe Creek, and tributaries in late March and early April.
- ▶ 68 Redds identified

Ahtanum Creek



- ▶ 1 Complete pass on March 20 to March 21
- ▶ 8 Redds identified



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