



## Niagara and Other Springs

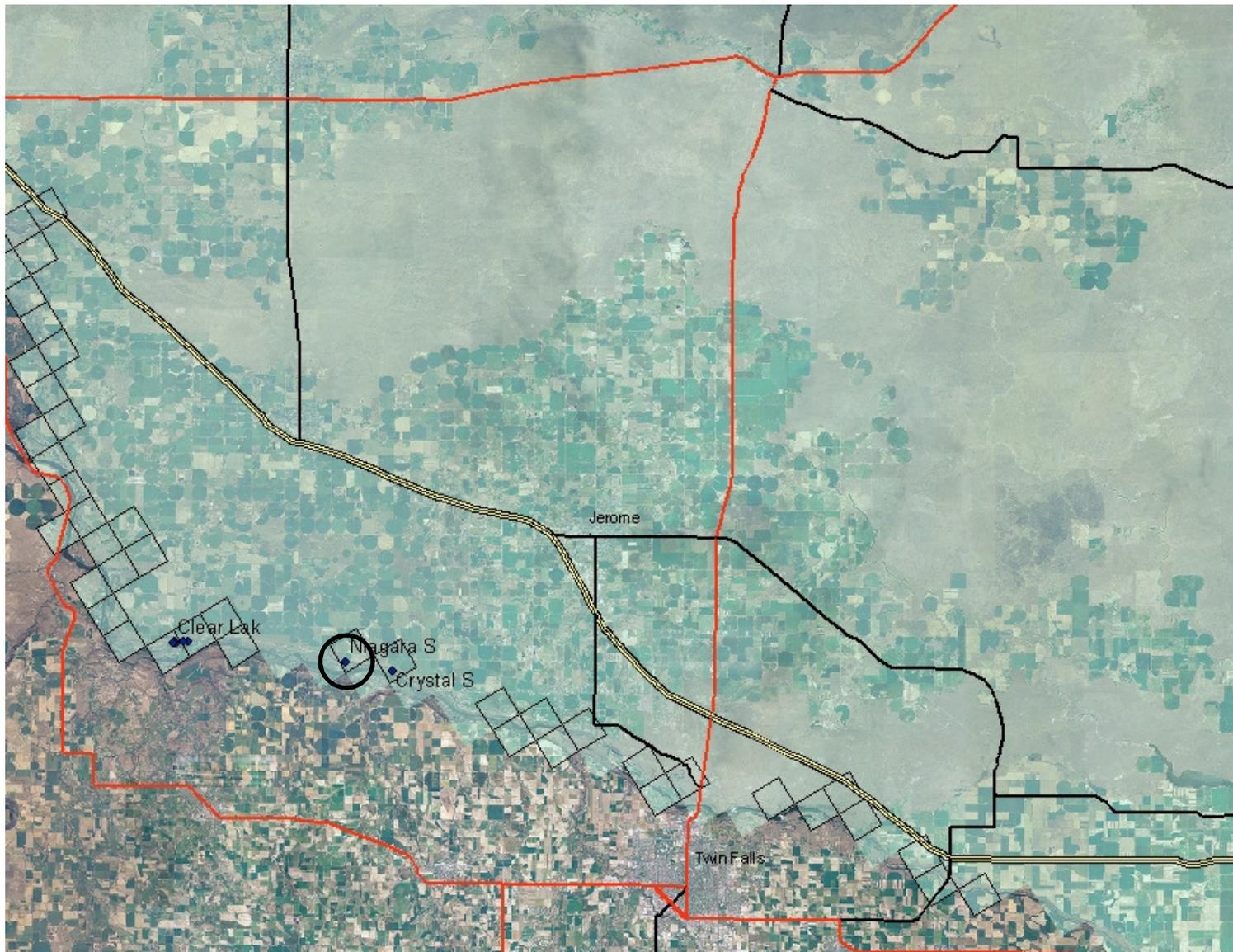
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Allan Wylie IDWR

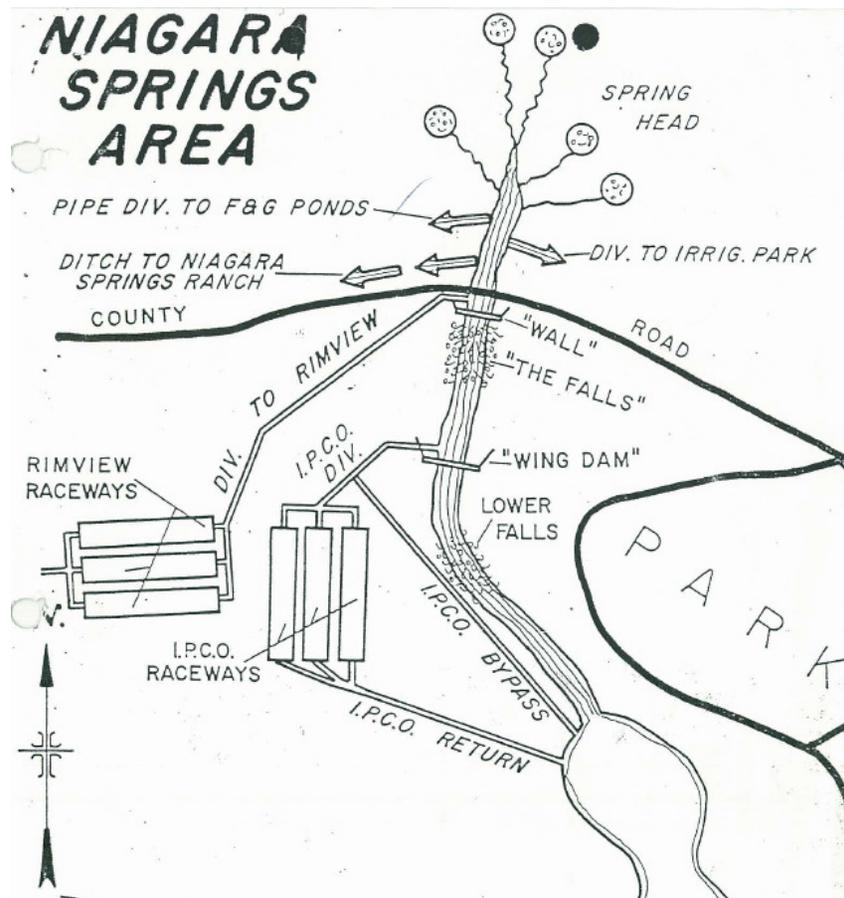


# Niagara Springs Data

- Outline
  - Diversions
  - Quantification of diversions and undiverted flow
  - Aggregation to obtain total flow
  - Proposal to ESHMC
  - Some other springs
  - Crystal Spring

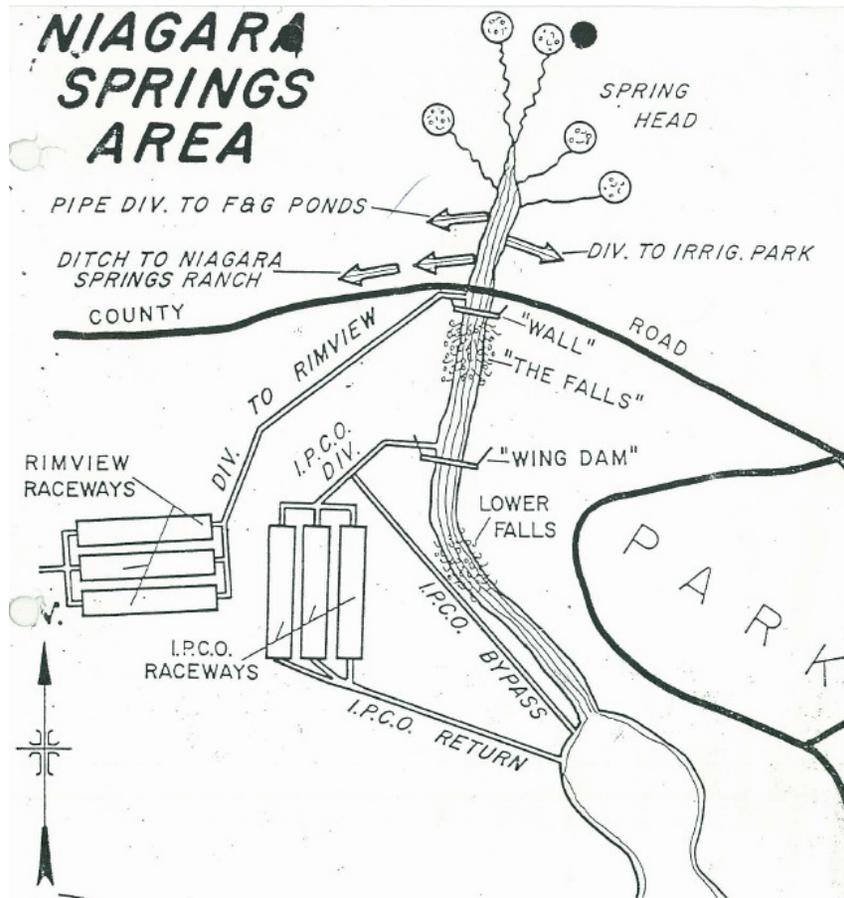


# Niagara Springs Data



- Idaho F&G Ponds
- Idaho Parks Irrigation
- Niagara Springs Ranch
- Undiverted Flow
- Rimview Trout
- IPCO Hatchery

# Compare Data To Map



	Warm Springs Ditch	Rimview Diversion	Rimview Bypass Diversion	IPCO Hatchery Diversion	Lower Falls "Undiverted" Flow	5 cfs Seepage Allowanc	Total B+(C-D)+E+F+G
					Yellow = estimated		
1/2/1997	5	137	0	90	5	5	242
6/3/1997	5	140	0	42	40	5	232
1/2/1998	5	139	0	89	5	5	243
6/9/1998	5	132	0	40	40	5	222
1/6/1999	5	137	0	102	5	5	254
6/2/1999	5	140	0	50	40	5	240
1/6/2000	5	140	0	102	5	5	257
1/2/2001	5	146	0	101	5	5	262
2/1/2002	5	146	35	96.4	5	5	222
3/1/2002	5	153.27	57	118.1	5	5	229
6/1/2002	5	154.1	0	0	14	5	178
7/1/2002	5	151.9	0	47.8	14	5	224
8/1/2002	5	153	0	48.5	14	5	226
9/1/2002	5	153	0	50.6	14	5	228
10/1/2002	5	155.2	0	60.4	14	5	240
11/1/2002	5	150.9	0	70.2	14	5	245
12/1/2002	5	154.1	21	70.6	14	5	228
1/1/2003	5	152	11	90.6	14	5	256
2/1/2003	5	151.2	28	104.7	14	5	252
3/1/2003	5	150	43	113.2	5	5	235
4/1/2003	5	151.8	55	116	14	5	237
5/1/2003	5	153	0	36.6	46	5	246
6/1/2003	5	152.4	0	0	15	5	177
7/1/2003	5	153	0	30	16	5	209
8/1/2003	5	150.4	0	37.7	66	5	264
9/1/2003	5	140.3	0	50.1	34	5	234

# Explanation

- John K has irrigation diversion data from Cindy Yenter
- 5 cfs seepage is assumed leakage through wing dam
- Rim View bypass = diversion water from IPCO hatchery, and already measured
- Warm Springs Ditch (spreadsheet) and the Niagara Springs Ranch (map) are the Wildlife Management Area (WMA) ditch, should not be fixed 5 cfs. John K has data

- **Method to Calculate Flow from Diversion Data**

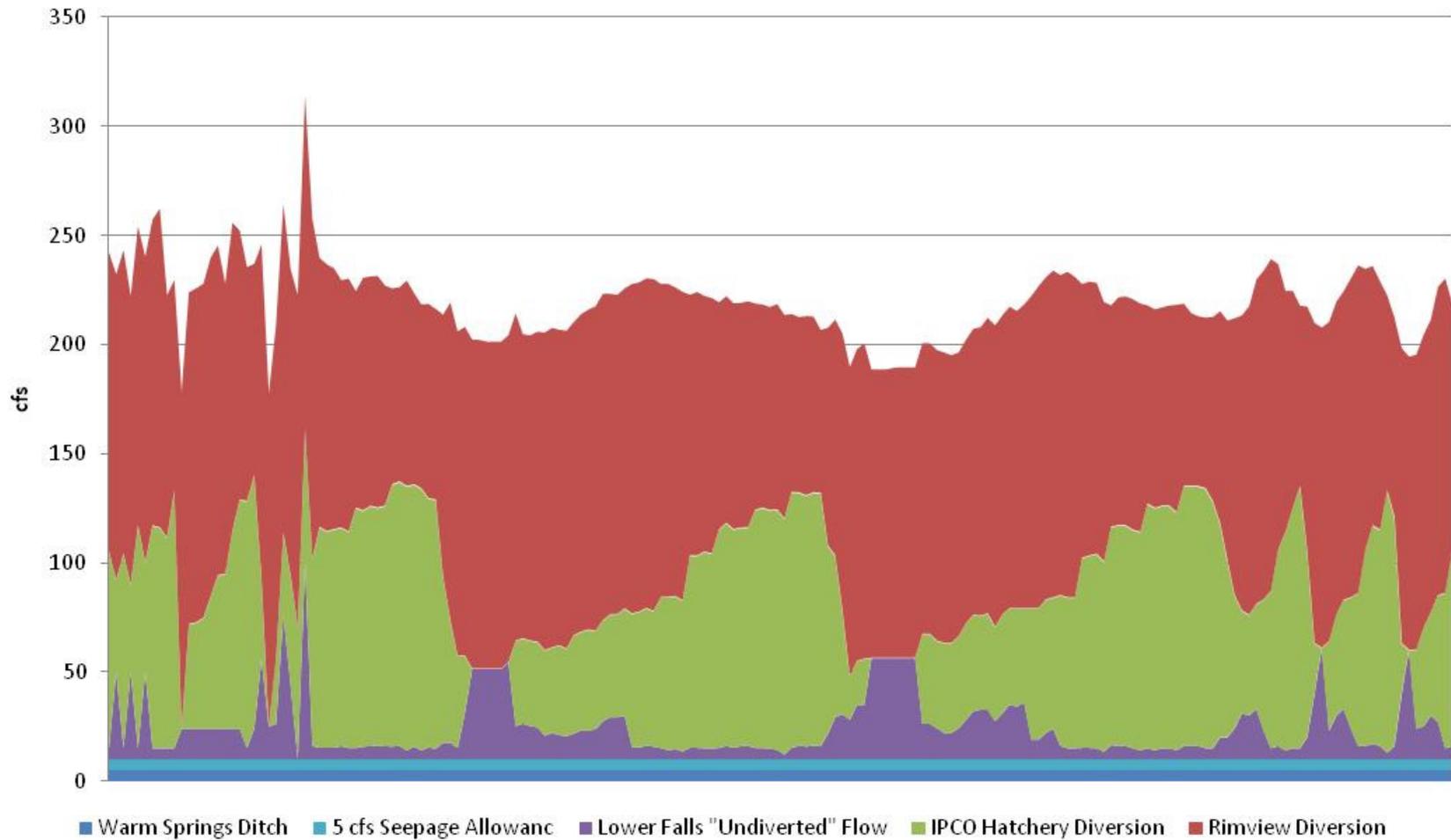
*(Source: Cindy Yenter, WD 130 Watermaster)*

- **Total Niagara Springs Flow** = Rim View diversion – Rim View bypass diversion (water from IPCO hatchery) + IPCO hatchery diversion + WMA Ditch + seasonal irrigation diversions + Lower Falls flow + 5 cfs seepage allowance.

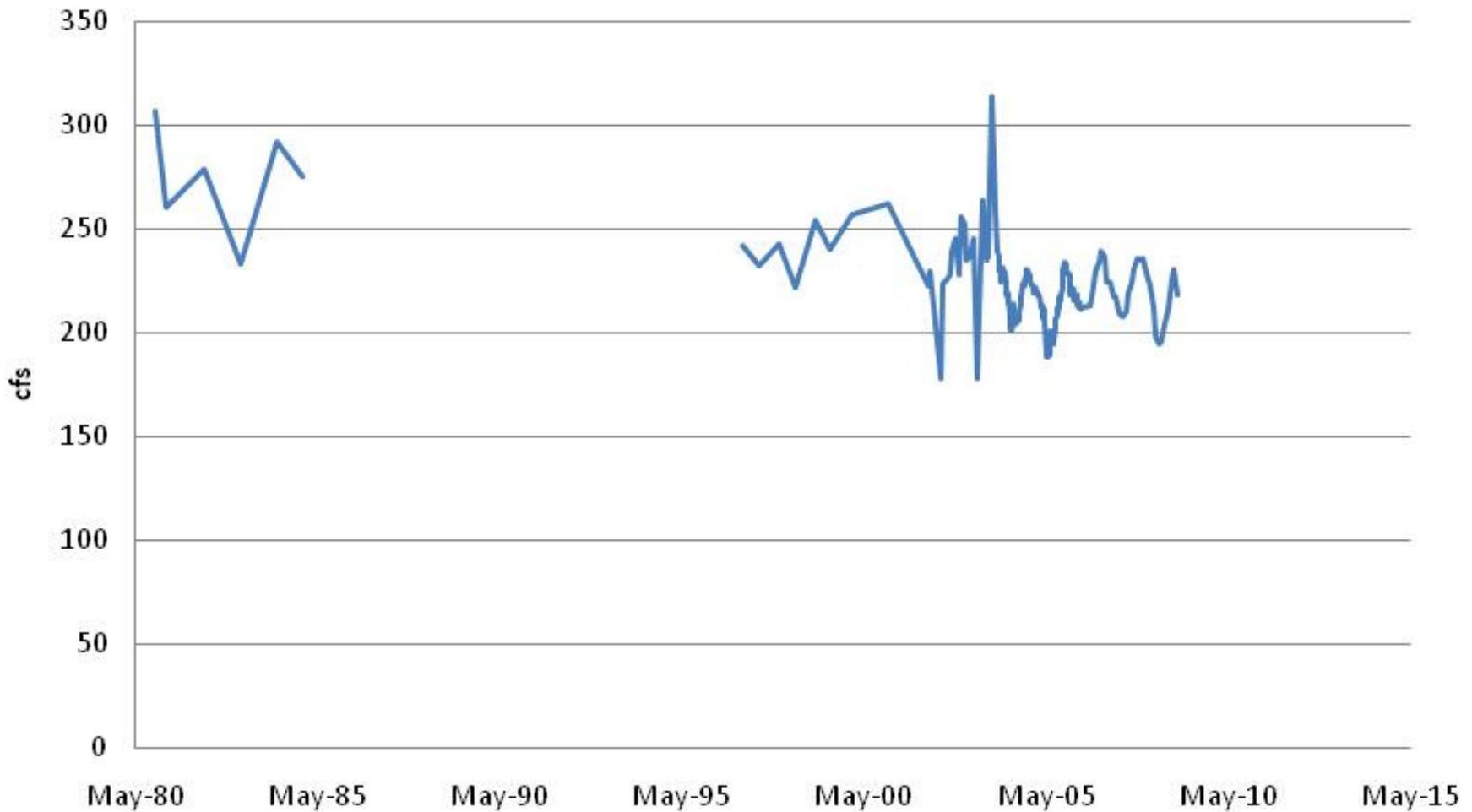
- **Data Sources**

- **Total Niagara Spring** flow data prior to 1984 from USGS
- **Individual diversion** data from 1997 to 2009 for all components, except undiverted flow from 1997 to 2003.
  - Undiverted flow can be estimated from years when data is available because administration has been constant. Usually about 5 cfs in winter and 30 to 50 cfs during summer (estimated 40 cfs on average)

### Niagara Springs



### Niagara Springs X-Y Plot

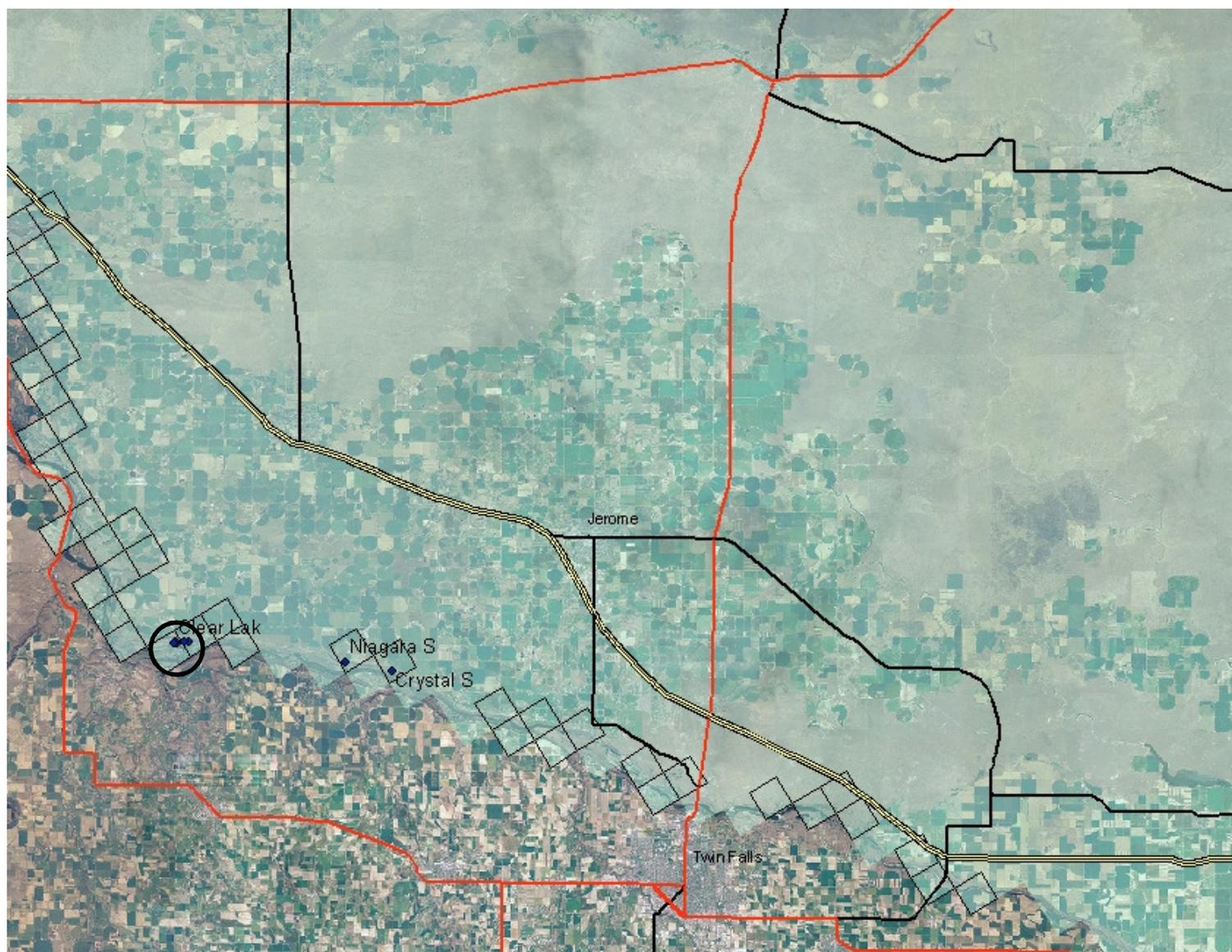


# Proposals

- Incorporate and fix as time allows
  - Keep ESHMC appraised of updates
- Keep as Group C spring until ESHMC can evaluate updated data

# Other Springs

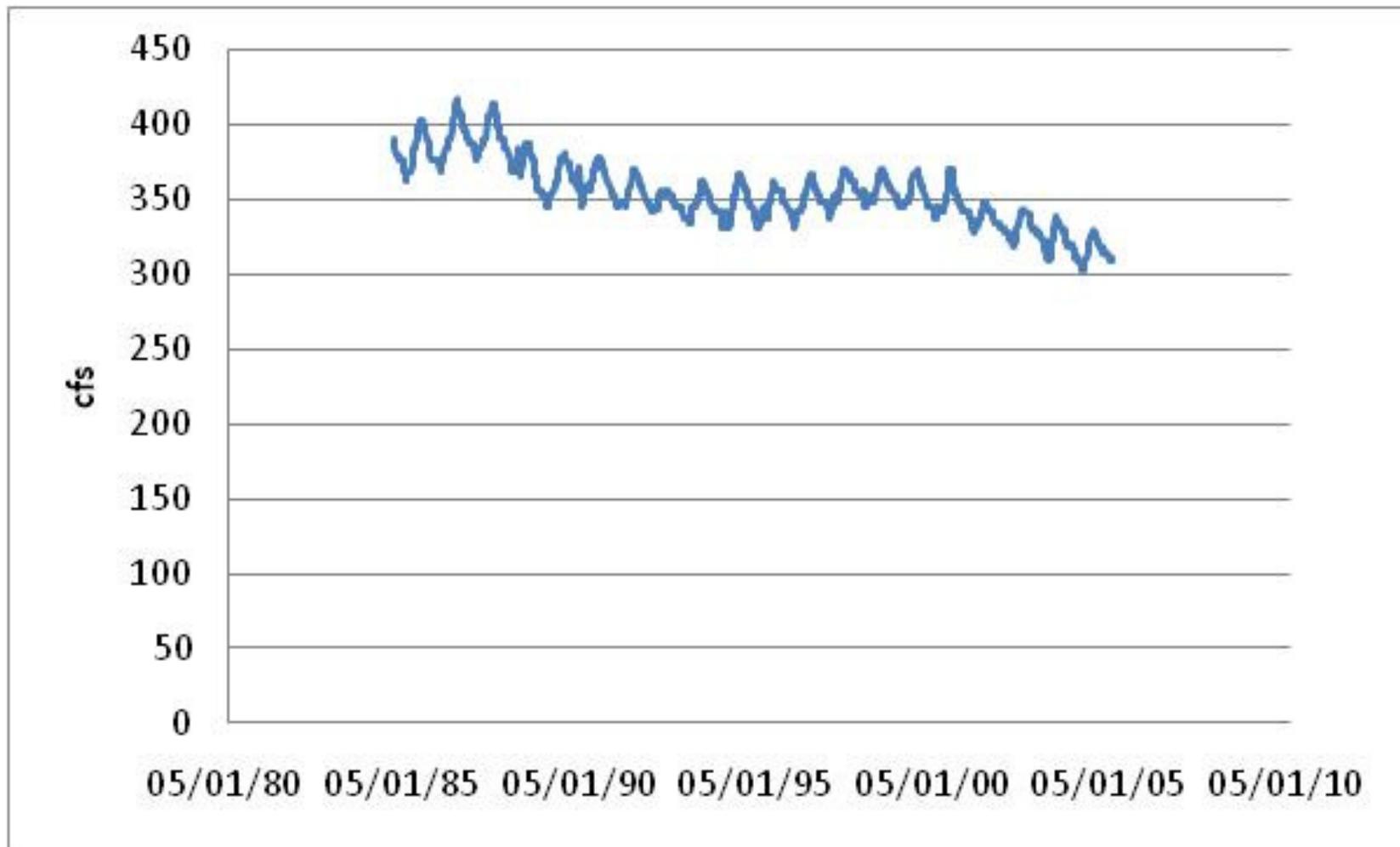
- Updated to include data between 2002 and 2008 using Water Master records or USGS data
- Requested updated data for Thousand Springs and Malad from IPCo
- Also asked IPCo for an estimate for Clear Lakes
  - Compare with Water Master data
- Crystal has issues
  - Added Magic Valley Hatchery which diverts from the same complex as Crystal Springs Hatchery



# Clear Lakes



# Clear Lakes



# Clear Lake

- Have data from various diversions at Clear Lake
- Requested estimated flow from IPCo based on power generation data

# Crystal Springs



- **Method to Calculate Flow from Diversion Data**

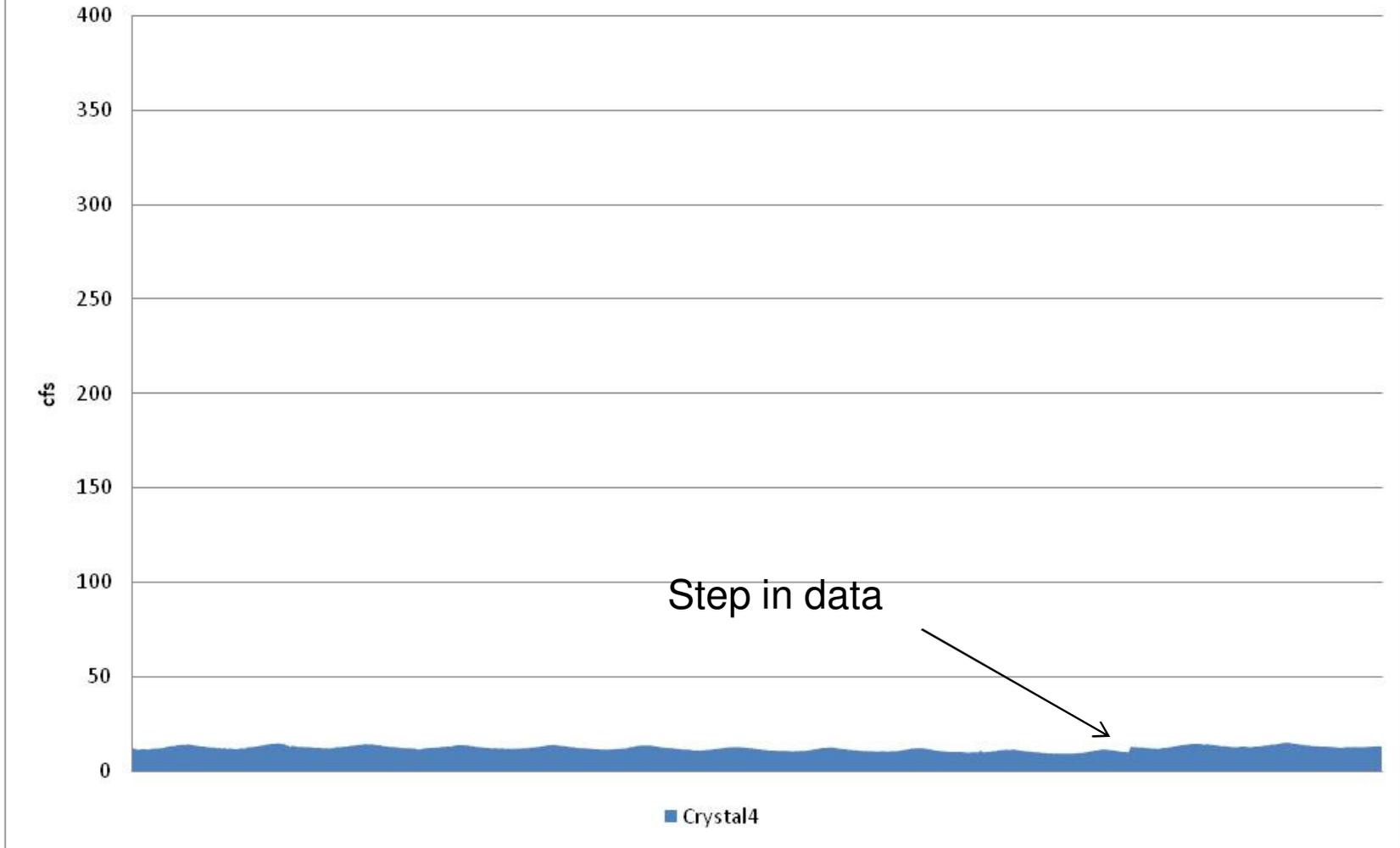
*(Source: Cindy Yenter, WD 130 Watermaster)*

- **Total Crystal Springs Flow** = Crystal 4 + Crystal 3 + Crystal 2  
+ Crystal Main + Magic Valley + Undiverted flow.

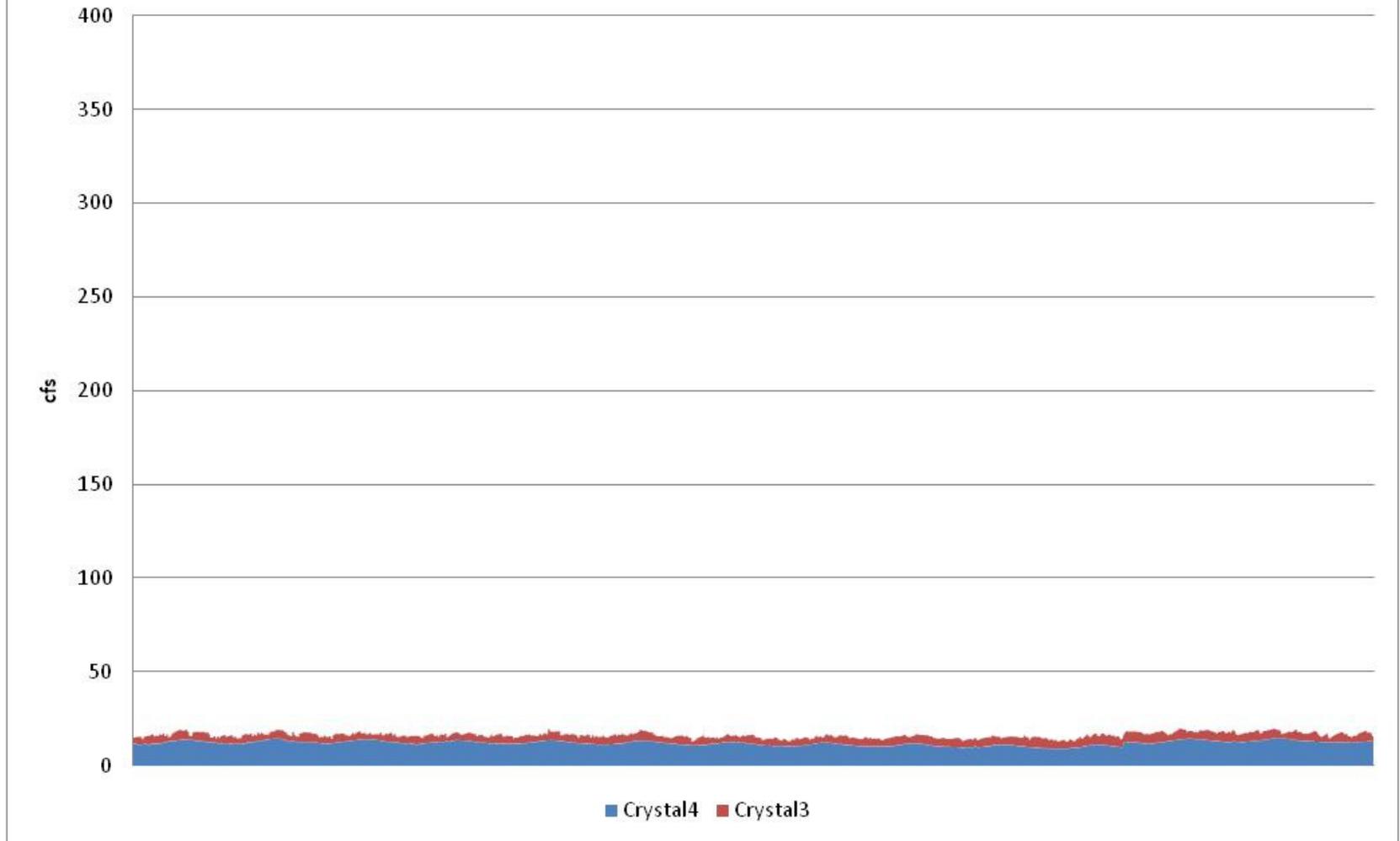
- **Data Sources**

- **WD 130 Watermaster records**

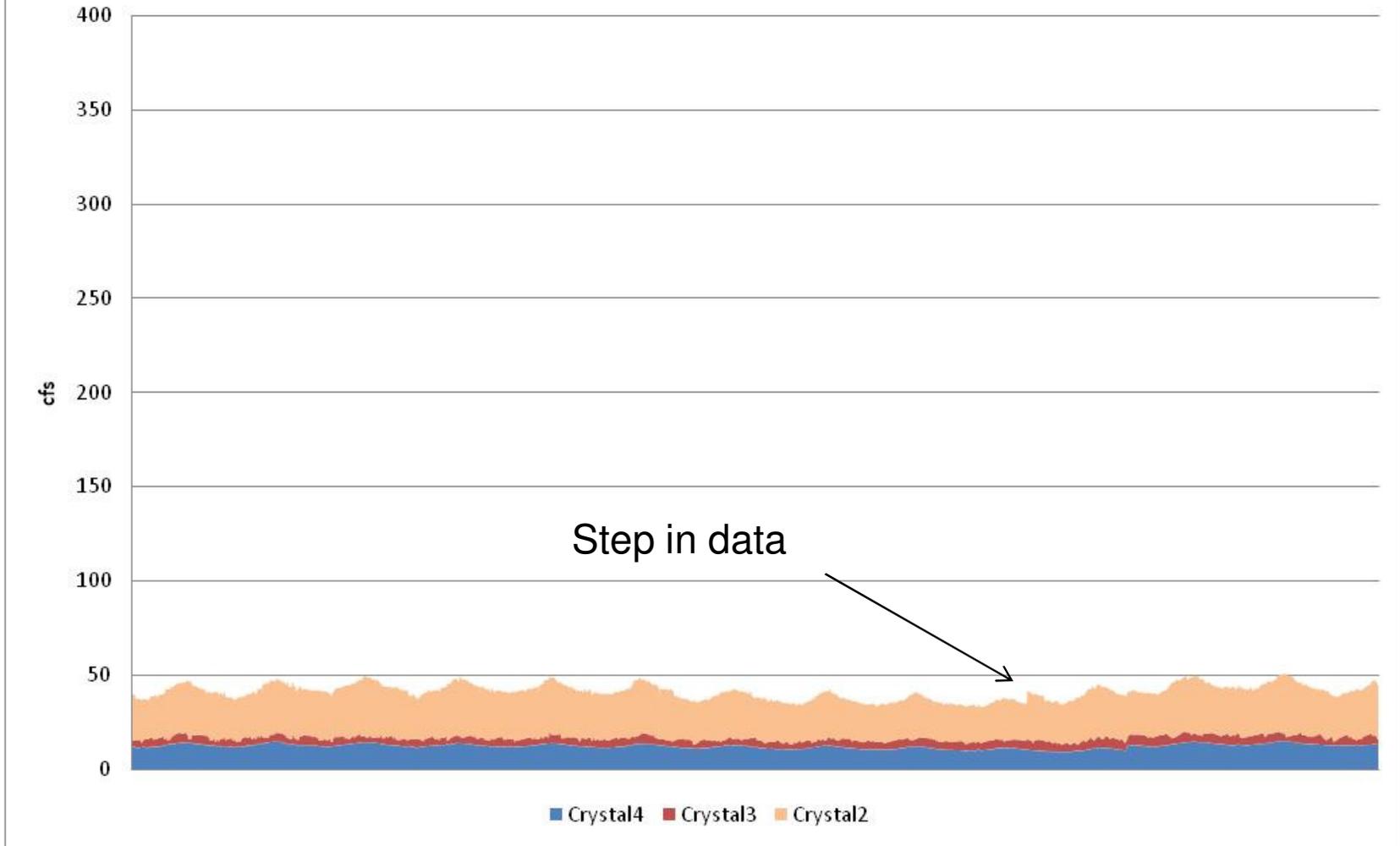
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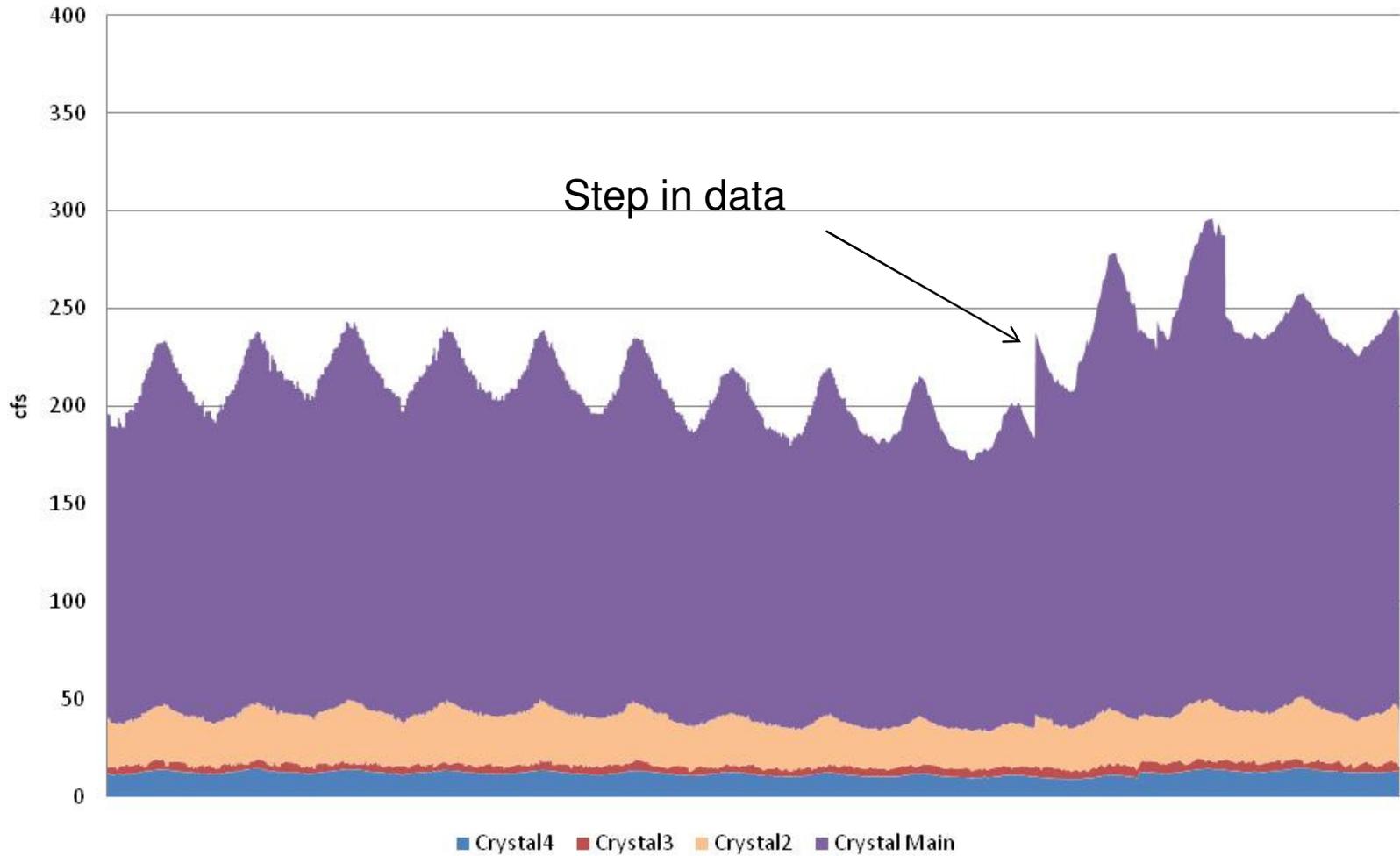
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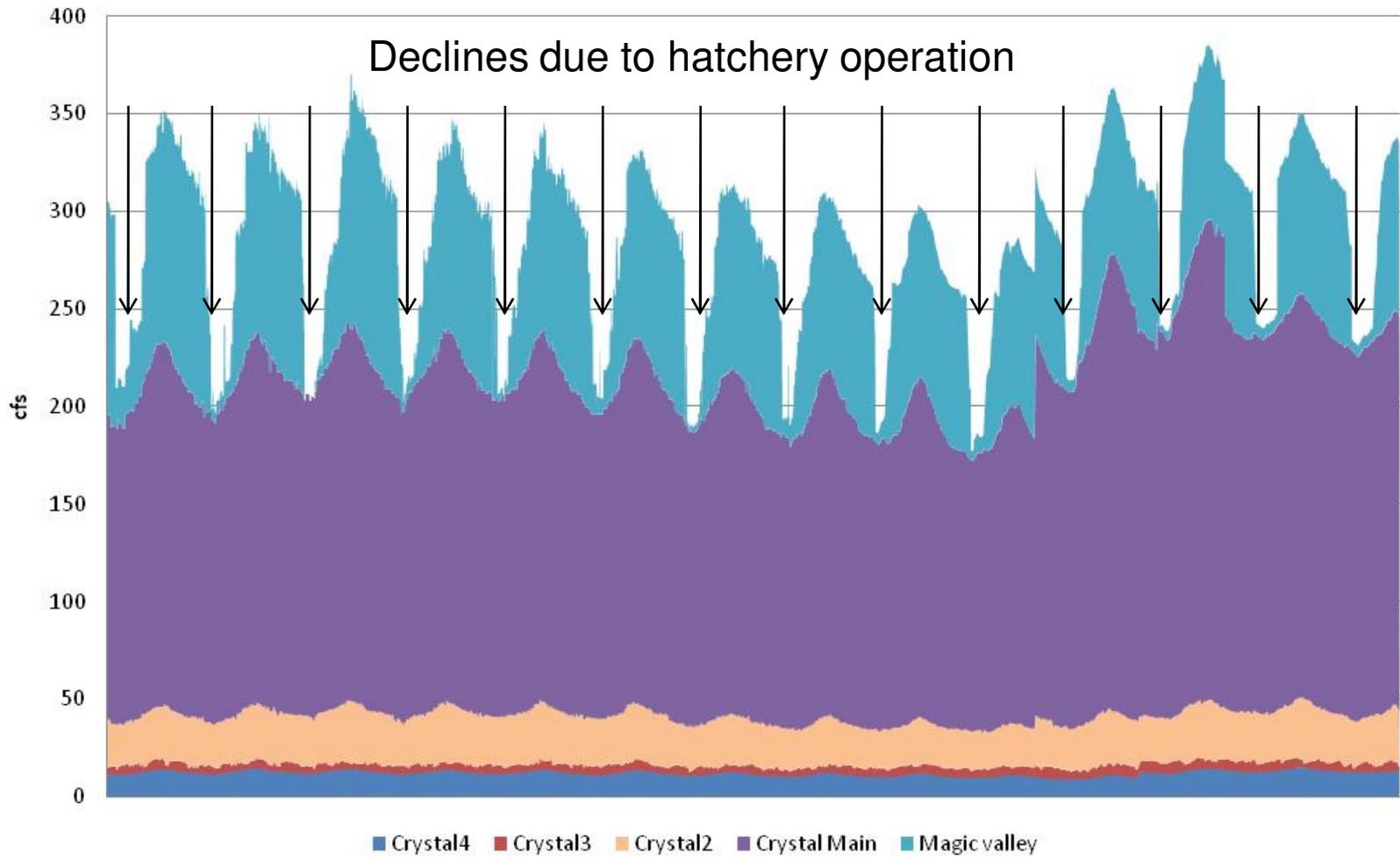
### Crystal Springs



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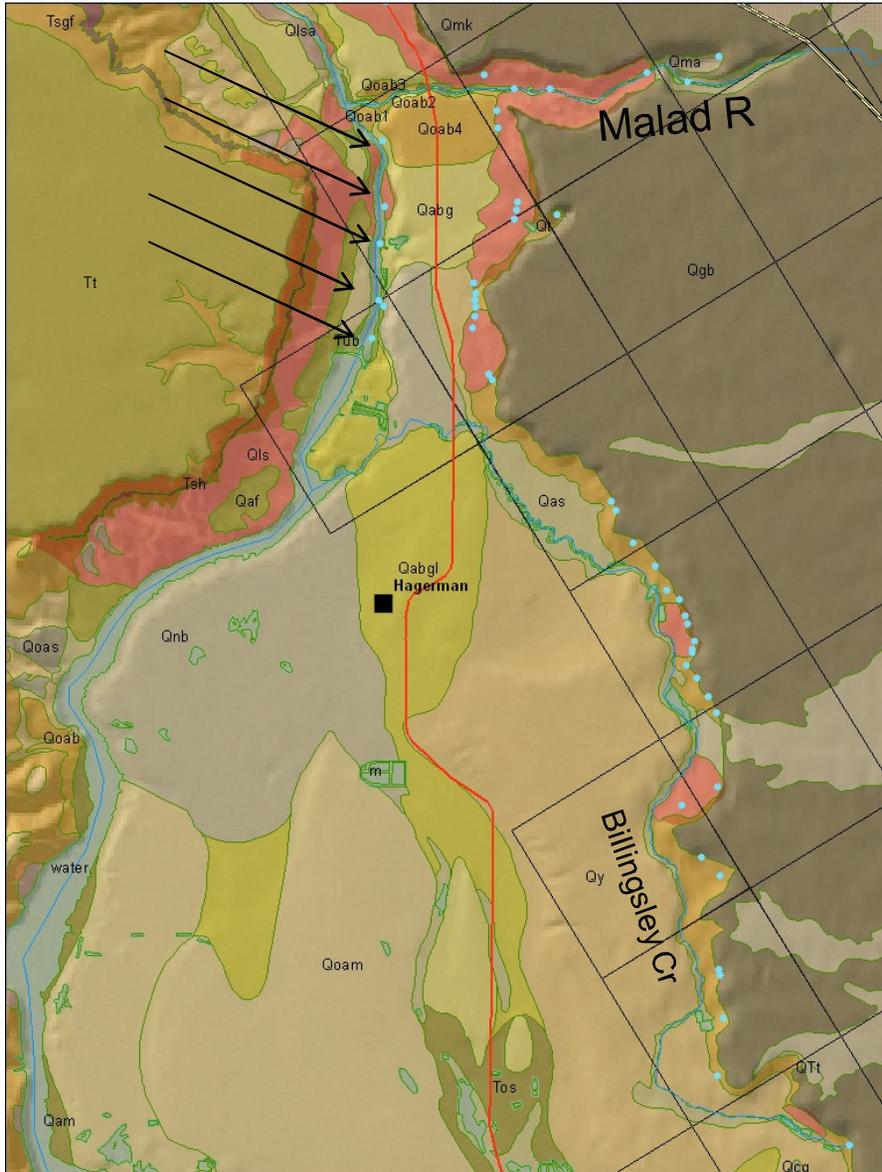


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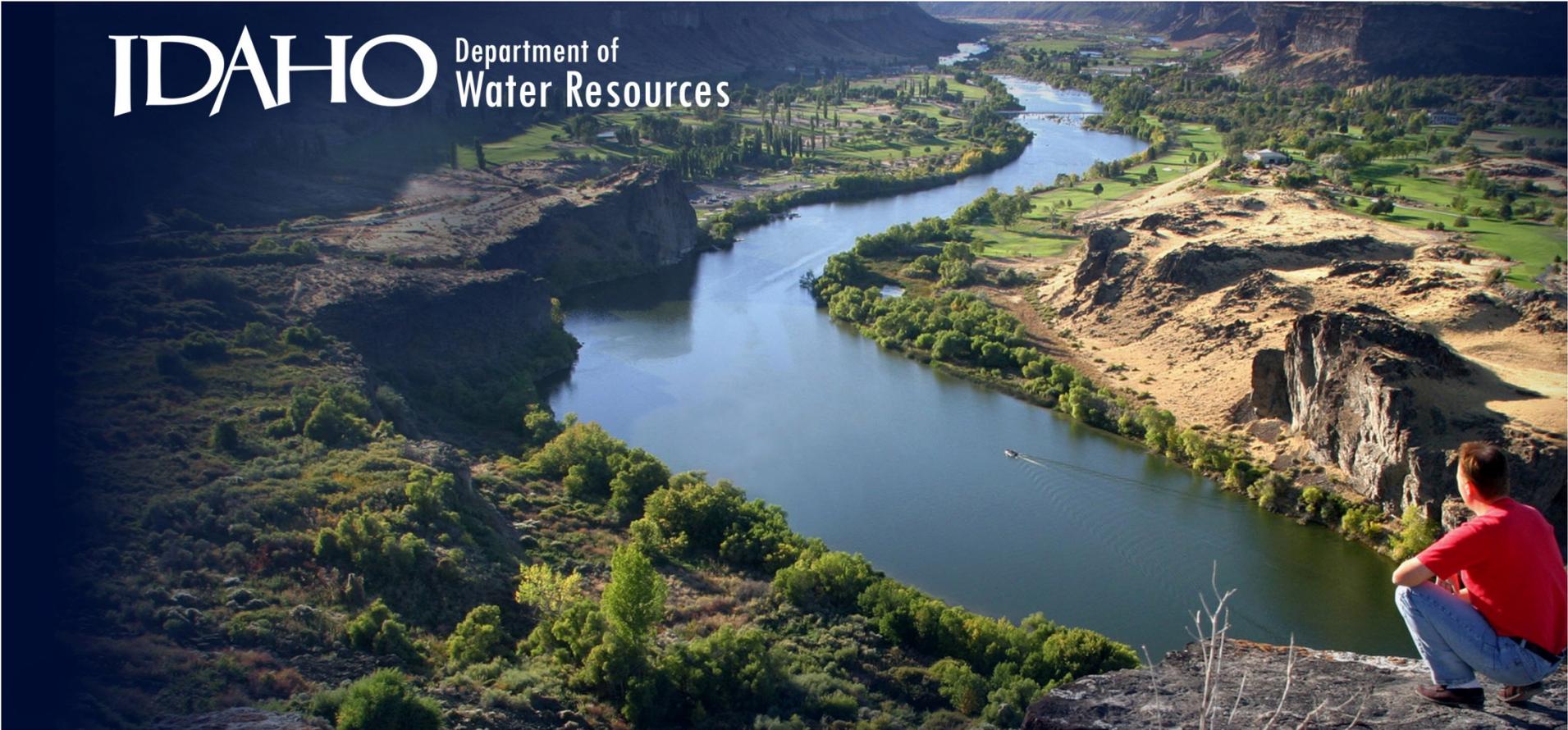


# Proposals

- Magic Valley annual declines are due to operation of anadromous fish hatchery
  - Represents non-diversion and there is no record
- Jumps in Crystal data appear to represent changes in rating curve
  - Watermaster records only contain diversions, not stage-discharge
  - If steps can be fixed
    - Weight Magic Valley off season data zero
  - If steps can not be fixed
    - Only use partial dataset and weight Magic Valley off season zero
    - Move to Group C spring



- If we removed Hagerman Valley, should we remove these springs?



END

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