Water Availability

ISF recommendation is available. It is met or exceeded at the Uravan gage more than 50% of the time for all ISF periods:

- Sep1 – Feb 29 (80 cfs) = **64.5%** of the time
- Mar 1 – Apr 14 (115 cfs) = **67.0%** of the time
- Apr 15 – Jun 14 (325 cfs) = **89.4%** of the time
- Jun 15 – Jul 31 (170 cfs) = **76.8%** of the time
- Aug 1 – Aug 31 (115 cfs) = **55.5%** of the time

Upper Terminus Water Availability

Bikis Report Findings

- River gains 10.2 cfs (Sep – Feb) from Naturita to Uravan gages
- Gains from shallow, evenly distributed groundwater inflows
- Proposed lowering ISF

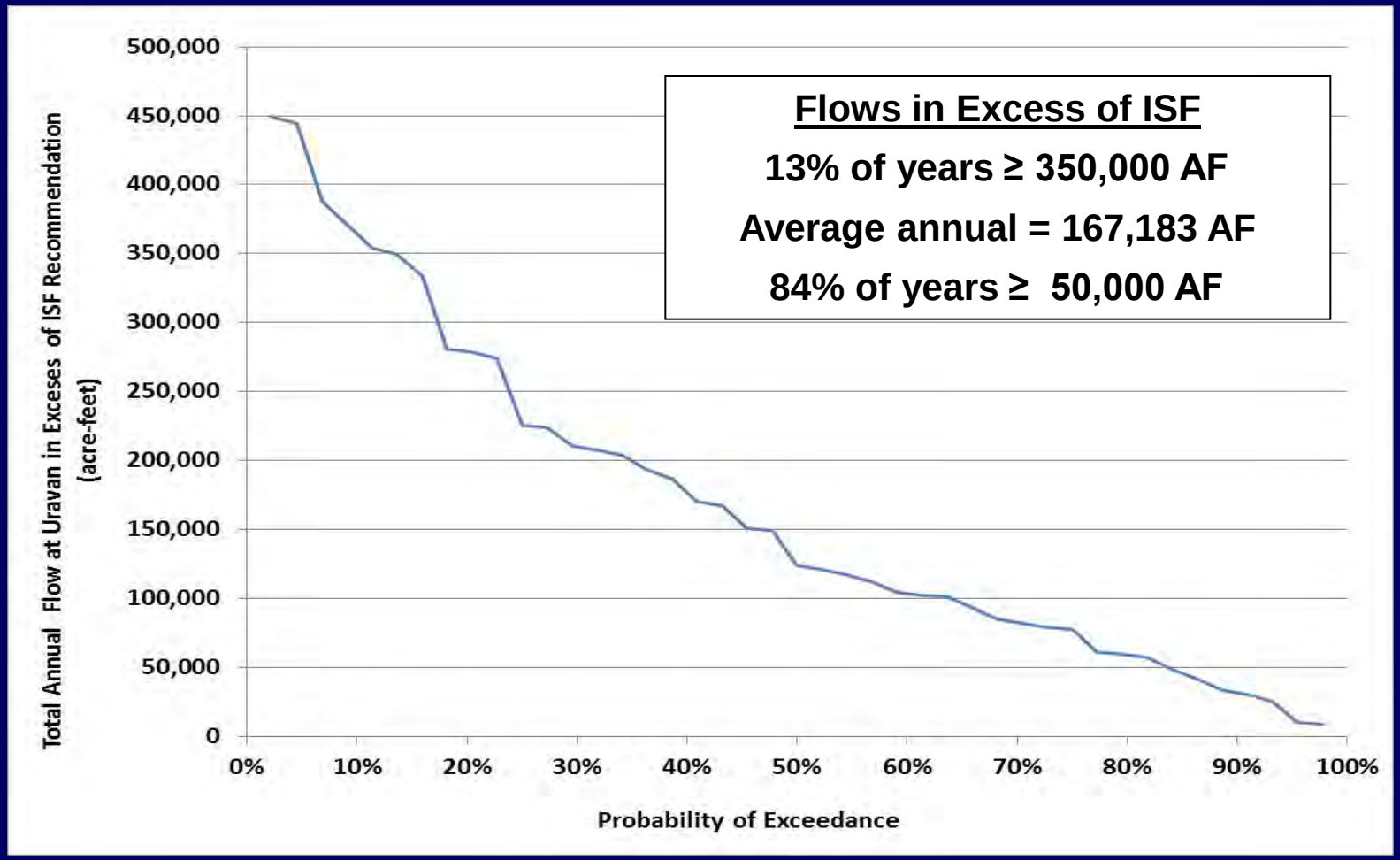
Insufficient data used to determine reach gains from groundwater

- Consider irrigation return flows above/at upper terminus
- Refine temporal and spatial analysis
- Consider tributary inflows
- Two existing studies found river was losing at study sites
- per CWCB staff, if reach gains "…*it would be most unusual; most streams in arid and semi-arid settings are influent (losing)"*

CDPW & BLM analysis → ISF recommendation historically available at upstream Naturita gage

Excess Flows

Calculated flows at Uravan above or "in excess" of ISF and probability of meeting or exceeding in any year



Excess Flows

Deere & Ault

- Median excess of 123,469 AF a better metric
- Monthly analysis shows most during peak flow months
- Peak flow month volumes and rates difficult to capture and store

Water is Available for Other Water Users

- Both average and median excess flows are a lot of water
- Hydrology is typical for Colorado rivers
- Colorado water users are well accustomed to capturing and storing peak flows for later use
- Excess flows are available in other months:
    - Range: 946 AF in Sept to 14,868 AF in July
    - March excesses are 5,987 AF

Significant volume of water available in excess of the ISF recommendation

Conclusion

Data show that water is available for the ISF appropriation (throughout the reach) and other area water users.

WESTERN RESOURCE
ADVOCATES

Testimony Notes

John Woodling

Species of concern in San Miguel River

- Bluehead sucker
- Flannelmouth sucker
- Roundtail chub

What fish need

- Fish need water.
- Flannelmouth sucker and bluehead sucker are riverine fish
- Bluehead select deep water riffles
- Flannelmouth sucker tend toward deeper run type
- Optimum depth = one meter = 3.3 feet.

- A depth of one foot is marginally suitable for the bluehead sucker.

What fish need

- When water depths are low fish must move into less preferred habitats.
- Bluehead sucker will move from riffles.
- Both species can be forced from preferred habitat to the deepest water available if flows are too low.
- When western Colorado Rivers are too low reproductive barriers break down and hybridization is an issue.

What fish need

- This hearing is thus about water depth.
- Minimum flows are needed that provide “reasonable” protection of the species in question.
- The discussion centers around what is reasonable.
- Remember that a depth of one foot is “marginally” acceptable for bluehead suckers
- Bluehead suckers will require the highest flows.

What fish need

- Flows are different for different times of the year.
- Maximum flows needed in spring for spawning.
- Flows for remainder of year need to protect the 1 foot depth as much as possible (reasonable).
- My flow recommendations are
  - 500 cfs for April 15 – June 14
  - 170 cfs for June 15 – July 31
  - 115 cfs for August 1 – April 14

Figure 1 from Conklin August 2011 Rebuttal

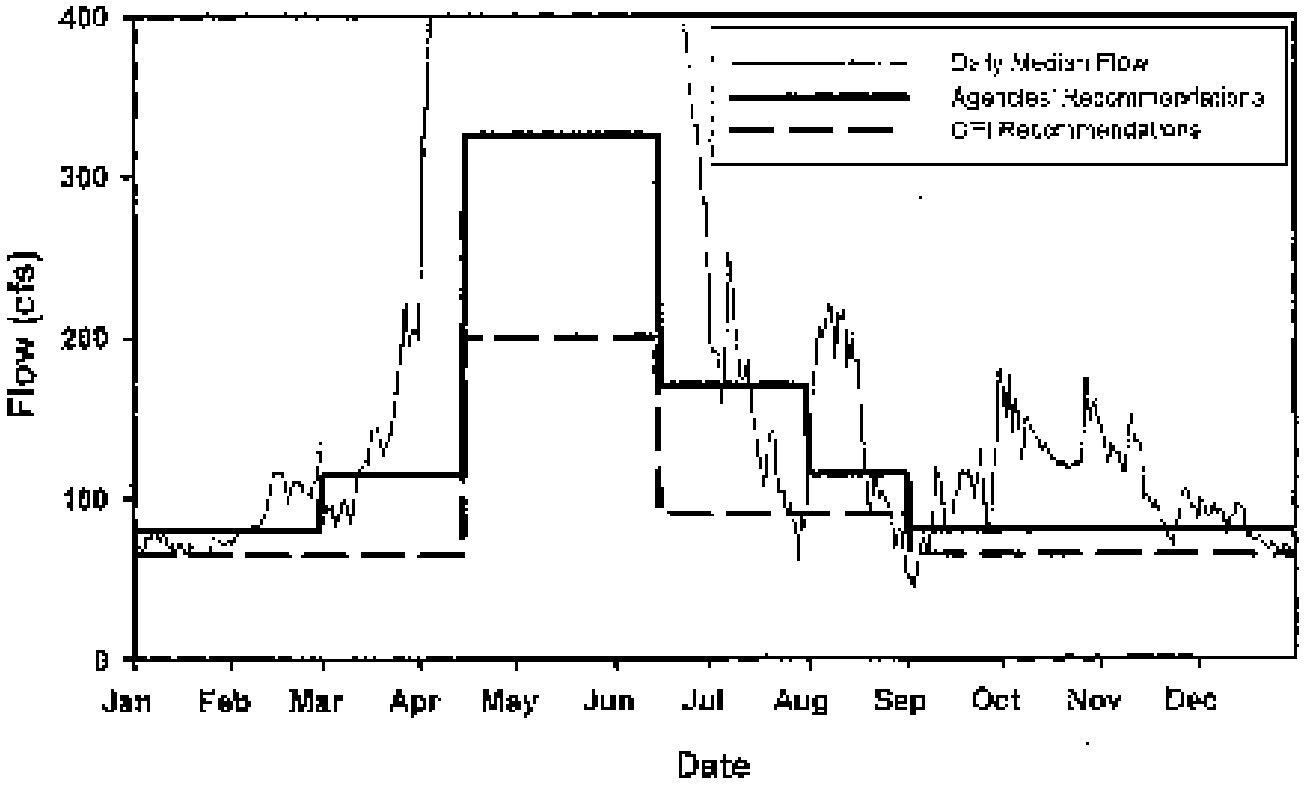


Figure 1 **Median daily flow from January, 2001 through July 2008 at the Uravan gage on the San Miguel River compared to minimum flow recommendations by the agencies and GEI.**

Conklin proposal

- Need a connection, a nexus between proposal and biology of the fish.

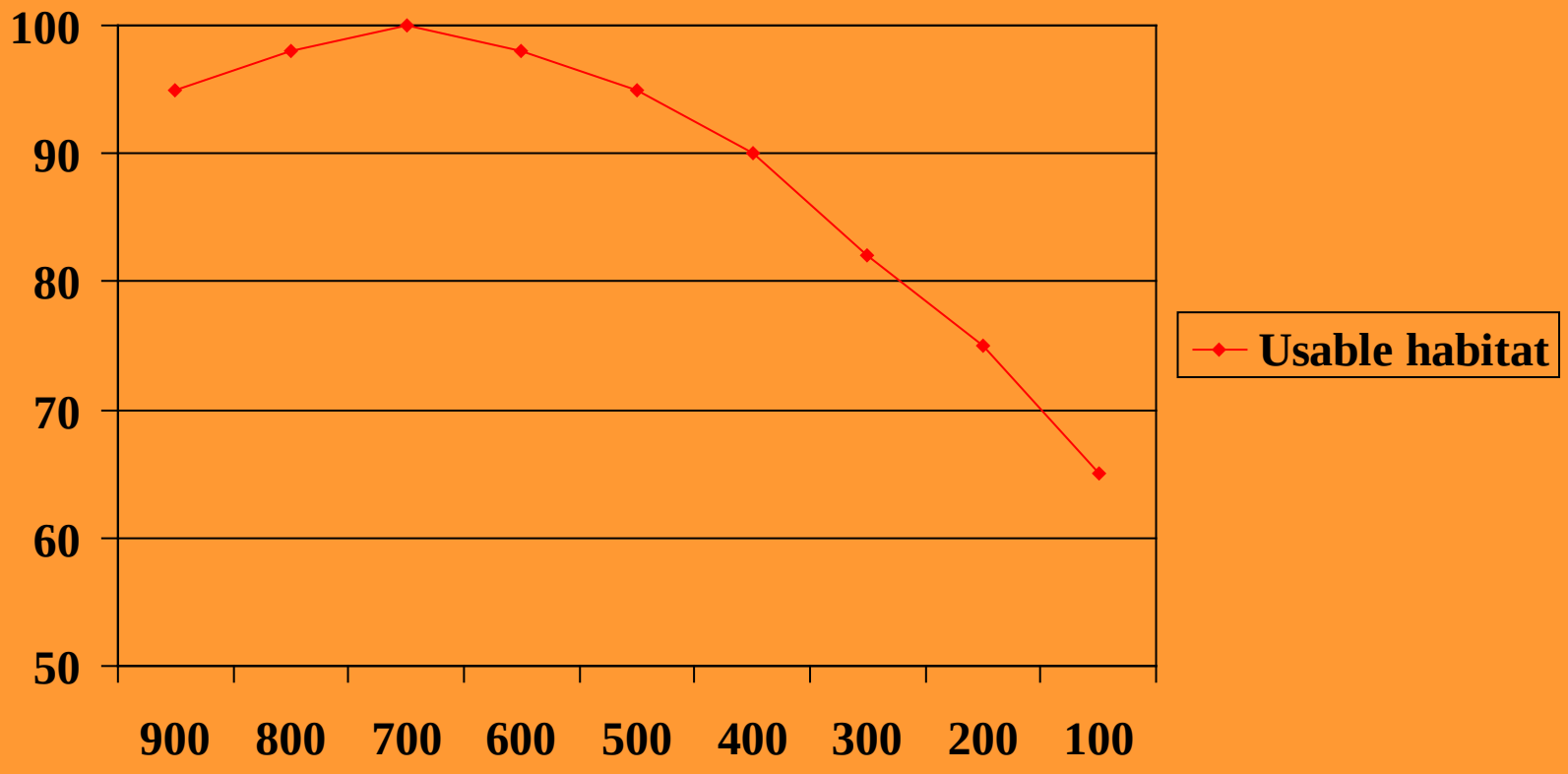
Conklin proposal

- Based on four species including longnose dace and white sucker.
- longnose dace is surrogate for speckled dace which is native to San Miguel.
- Longnose dace is most abundant in riffles less than 4 inches deep. Not appropriate.
  - Speckled dace not at risk.
- White sucker not native and not appropriate

Conklin proposal

- Based on 8 years of flow data
- Both flannelmouth and bluehead very long lived fish species. Can get to more than 20 years of age.
- Some of the fish present in San Miguel River right now were alive before 2011 so data record not long enough.
- Fish respond to the totality of the flow regime not just low flows, or high flows

Schematic of flow compared to useable habitat



Conklin compared to my flow recommendations

- Both of us agree that “Fish populations in the river at present are being preserved with the historical flow regime that has occurred over the years without designated minimum flows.
- We disagree as to how to protect
  - Conklin bases projections on the lowest flows available
  - My ideas are based on water depth.