



## 2009 Trinity River Flow Release Recommendations

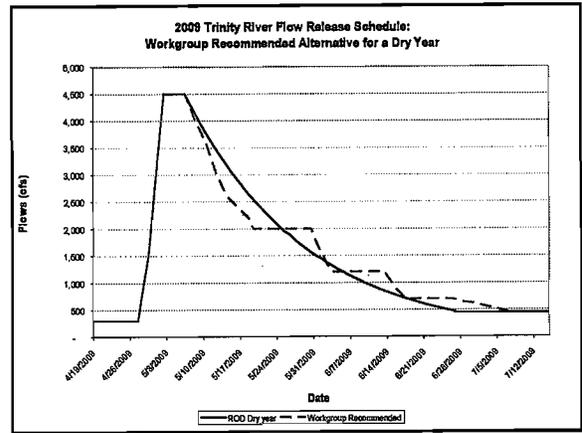
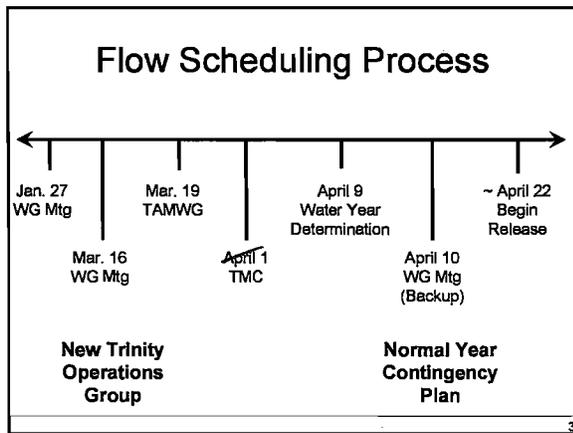
TAMWG Meeting  
March 19, 2009



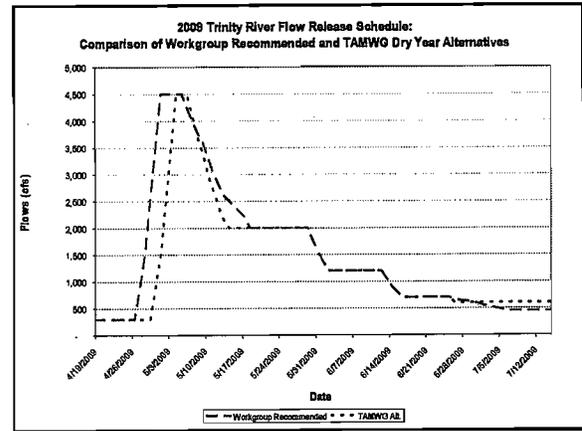
### March 2009 Water Forecast (TAF)

Type	Crit. Dry	Dry	Normal	Wet	Ext. Wet
Water Yield (TAF)	< 650	650 to 1,025	1,025 to 1,350	1,350 to 2,000	> 2,000
Probability	12%	28%	20%	28%	12%
Water Volume (TAF)	369	453	647	701	815

90% = 643    ↑    ↑    ↑    10% = 1301  
**50% = 866**



- ### Description of Workgroup Alternative
- Facilitates habitat monitoring
    - Current habitat evaluation strategy means long term implementation of flow benches.
  - No impacts anticipated on smolt outmigration
    - Full outmigration timing analysis will be included in 2009 annual report.
  - Temperature benefits slightly better than ROD
  - No impacts to frogs, riparian, or sediment

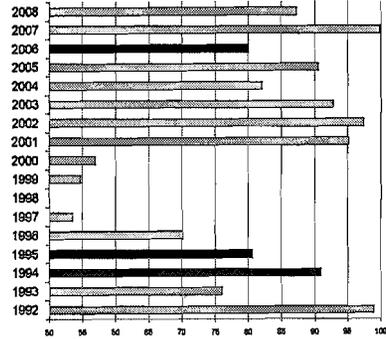


## Description of TAMWG Flow Alt.

- Includes habitat monitoring benches
- Shortens 4,500 peak release by 2 days.
- Uses water to increase summer base flow to 600 cfs through Sept. 30
- Base flow will drop to 450 cfs on Oct 1 unless WY2010 water was made available.
- Proposed on 3/17/09 flow workgroup meeting
  - Impacts not yet analyzed

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### % of Natural Chinook Run at Willow Creek on July 9 (end of bench)



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## SNTEMP Model Results

from Paul Zedonis on 3/17/09

- Weekly average temperatures
- Assumes Lewiston Releases are 10 °C
- Considered "Normal" and "Ext. warm" meteorological conditions
- High uncertainty in meteorological conditions
  - Modeling useful for relative comparisons

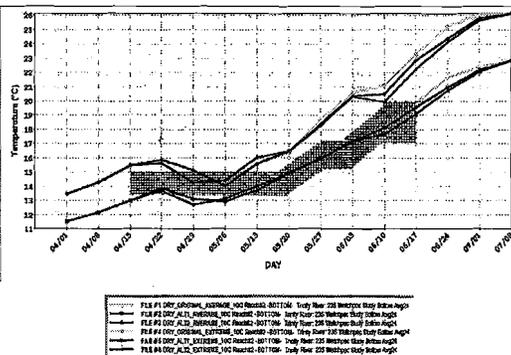
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## Forecasting: Synthetic Years

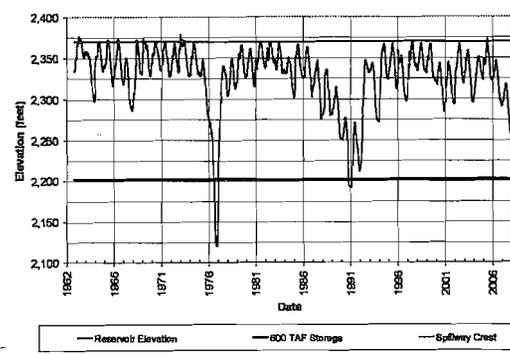
System Parameter & Condition	Synthetic Year Type			
	Normal	Warm/Wet	Ext. Warm/Dry	Extreme Warm and Dry
Avg. Flow	Avg. of all records	10% Prob of Exceed	10% Prob of Exceed	Maximum of all records
Peak Flow	Avg. of all records	10% Prob of Exceed	10% Prob of Exceed	Maximum of all records
Minimum Flow	Avg. of all records			
Peak to Peak Flow	Avg. of all records	10% Prob of Exceed	10% Prob of Exceed	Maximum of all records
Annual Peak to Peak Flow	Avg. of all records			
Annual Peak to Peak Flow	Avg. of all records	10% Prob of Exceed	10% Prob of Exceed	Minimum of all records

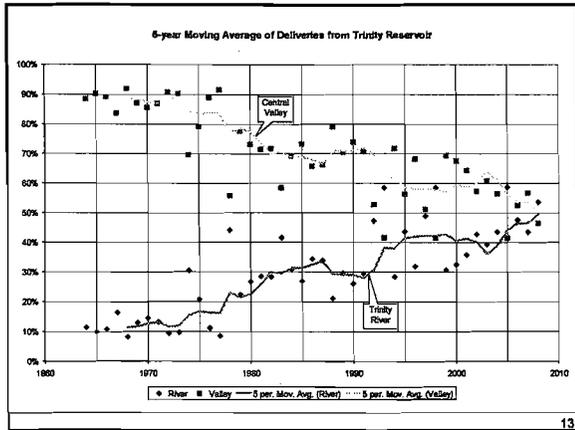
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## SNTEMP Model Result at Weitchpec



## Trinity Reservoir Elevations



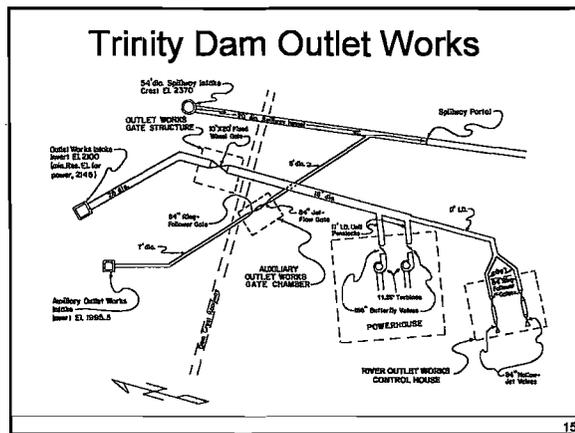


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## Minimum Pools: ROD (pg. C5)

- 7.a - Be prepared to make use of the auxiliary bypass outlets on Trinity Dam as needed, and pursuant to reinitiation of ESA Section 7 consultation regarding Sacramento River Winter-run chinook salmon, to protect water quality standards; associated actions may include modification of the export schedule of Trinity Basin diversions to the Sacramento River.
- 7.b - In years that Reclamation has reinitiated consultation pursuant to criteria established in the Winter-run chinook salmon CVP-OCAP BO, evaluate drawdowns of Trinity Reservoir below the 600 TAF minimum end-of-water year carryover level to the extent needed to avoid significant temperature-related loss of the early life stages of winter-run chinook salmon (>10% as predicted by Reclamation's Salmon Mortality Model). Implementation of drawdowns below the 600 TAF minimum end-of-year carryover level in Trinity Reservoir shall be determined by Reclamation, USFWS, and NMFS on a case-by-case basis in dry and critically dry water years.

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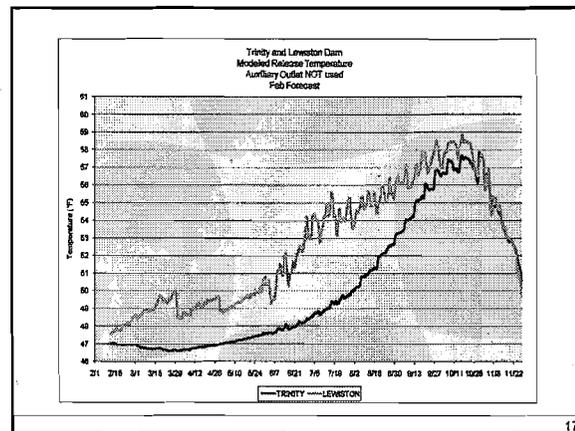


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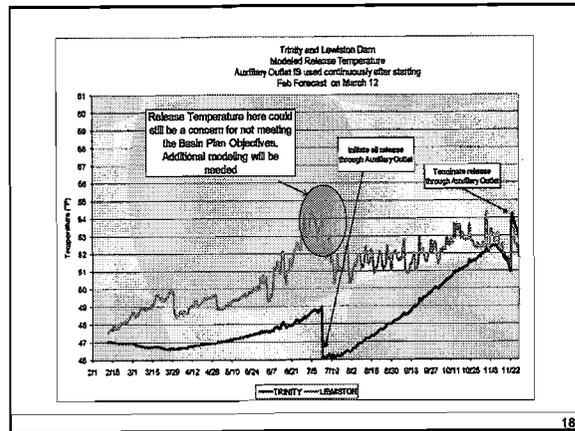
## Reservoir Temperature Analysis Process

- DWR provides updated inflow forecast
- CVO updates allocation plan (90%)
  - Includes Carr diversions and Trinity River releases
- TRRP provides flow schedule alternatives (50%)
- CVO models Trinity & Lewiston reservoir temperatures
- TRRP models Trinity River temperatures

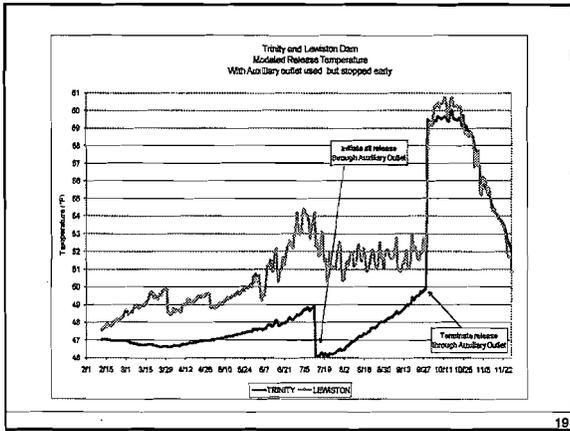
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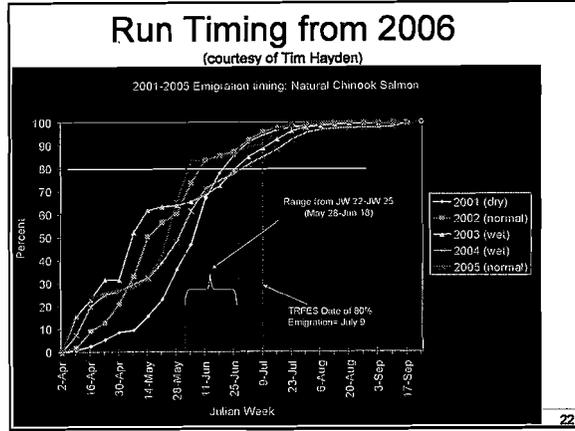
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Back-up Slides

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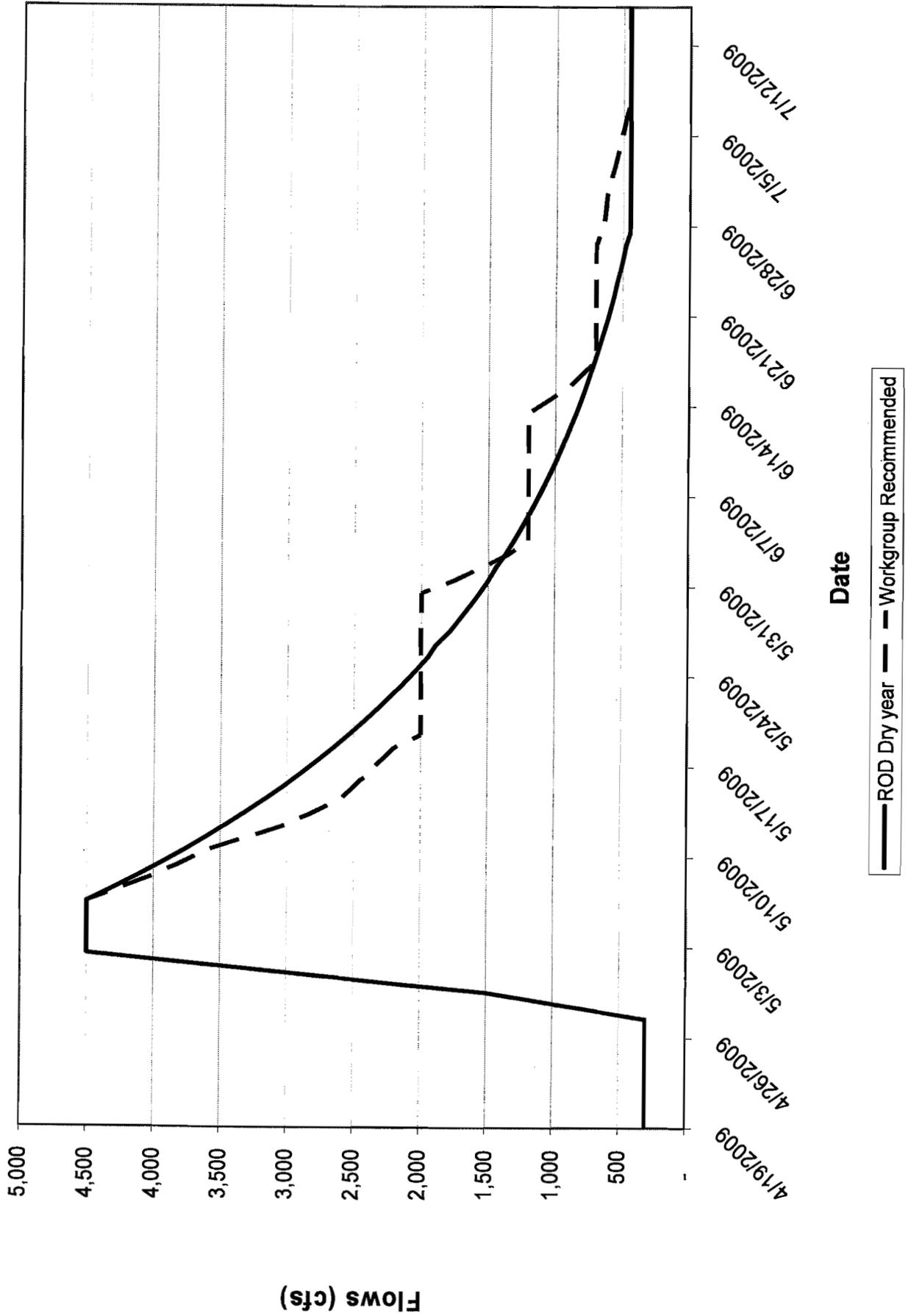
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Trinity River Temperature Objectives

Source	Target Reach	Dates	Temperature Objective	
Basin Plan for the North Coast Region (Regional Water Quality Control Board, 1994)	<ul style="list-style-type: none"> <li>Lewiston to Douglas City</li> <li>Lewiston to Douglas City</li> <li>Lewiston to North Fork Trinity River</li> </ul>	All Years		
		<ul style="list-style-type: none"> <li>July 1 to September 15</li> <li>September 15 - 30</li> </ul>	<ul style="list-style-type: none"> <li>≤ 60° F</li> <li>≤ 56° F</li> </ul>	
		<ul style="list-style-type: none"> <li>October 1 to December 31</li> </ul>	<ul style="list-style-type: none"> <li>≤ 56° F</li> </ul>	
Spring-Time Objectives of the Record of Decision for the Trinity River EIS/EIR (USFWS et al., 2000)	Lewiston to Weitchpec	Normal & Wetter Water Years	<ul style="list-style-type: none"> <li>April 15 to May 22</li> <li>May 23 to June 4</li> <li>June 5 to July 9</li> </ul>	<ul style="list-style-type: none"> <li>≤ 55° F</li> <li>≤ 59° F</li> <li>≤ 62.5° F</li> </ul>
		Dry and Critically Dry Water Years	<ul style="list-style-type: none"> <li>April 15 to May 22</li> <li>May 23 to June 4</li> <li>June 5 to June 15</li> </ul>	<ul style="list-style-type: none"> <li>≤ 59° F</li> <li>≤ 62.5° F</li> <li>≤ 68° F</li> </ul>

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## 2009 Trinity River Flow Release Schedule: Workgroup Recommended Alternative for a Dry Year



## 2009 Trinity River Flow Release Schedule: Comparison of Workgroup Recommended and TAMWG Dry Year Alternatives

