Placement of Side Branch Inflow in CE-QUAL-W2 Temperature Modeling

Yujia Cai
Watercourse Engineering, Inc.
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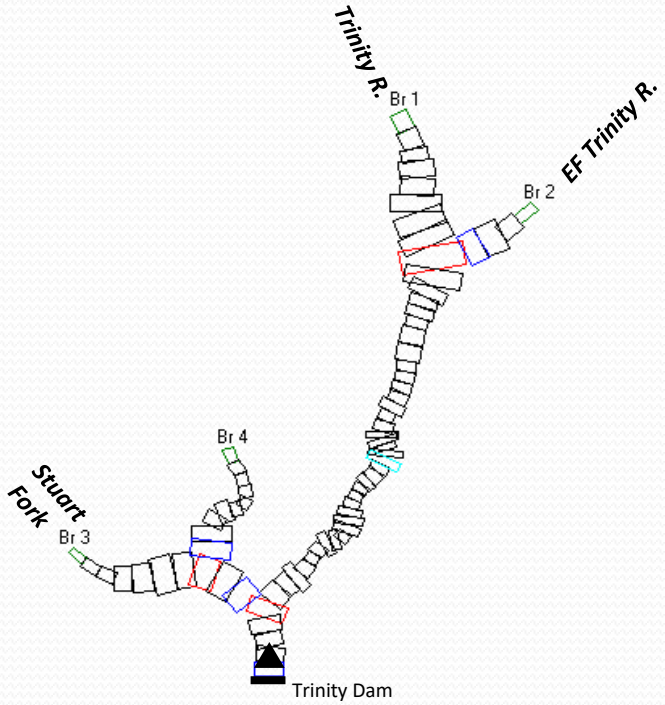
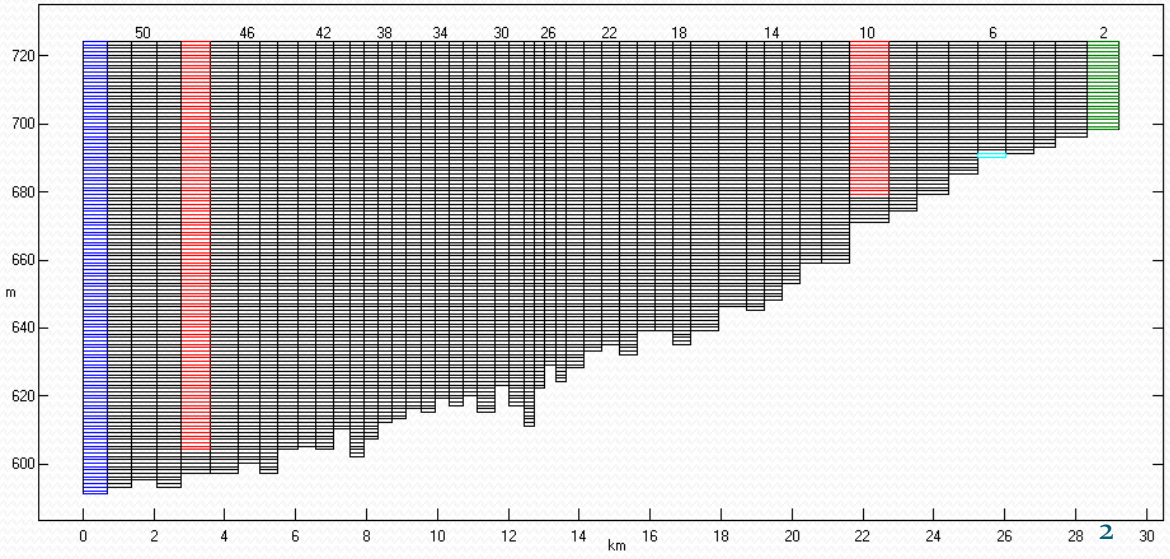
CE-QUAL-W2 Model Grids

- CE-QUAL-W2: 2-D, laterally averaged model
- Model Grids:
  - Tributaries are represented as branches
  - Branches >- Segments >- Layers

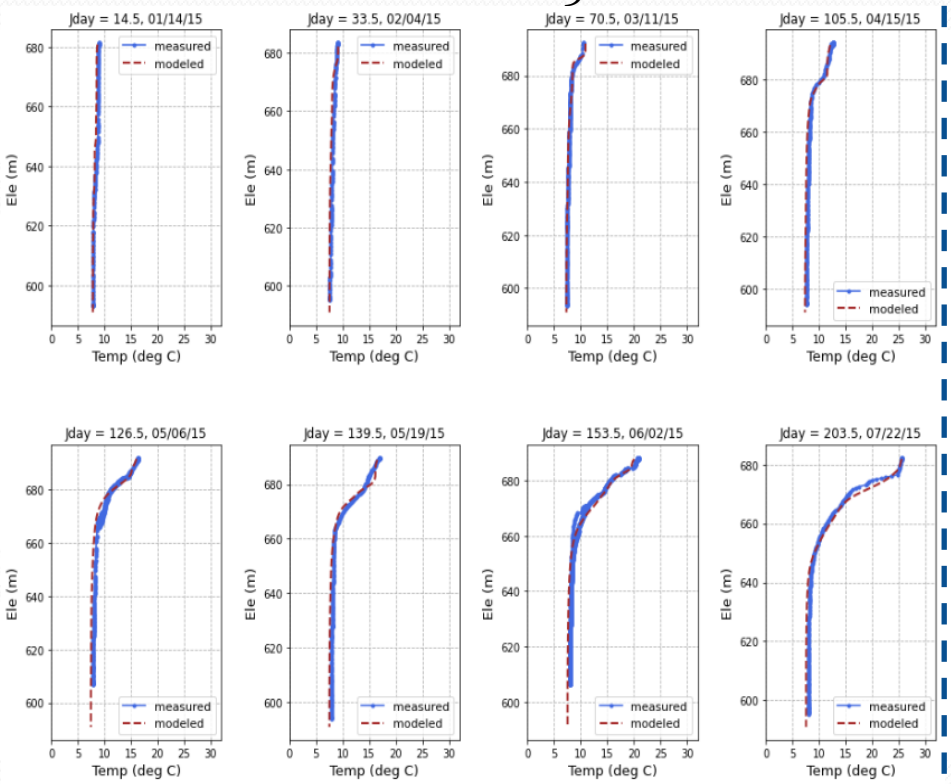




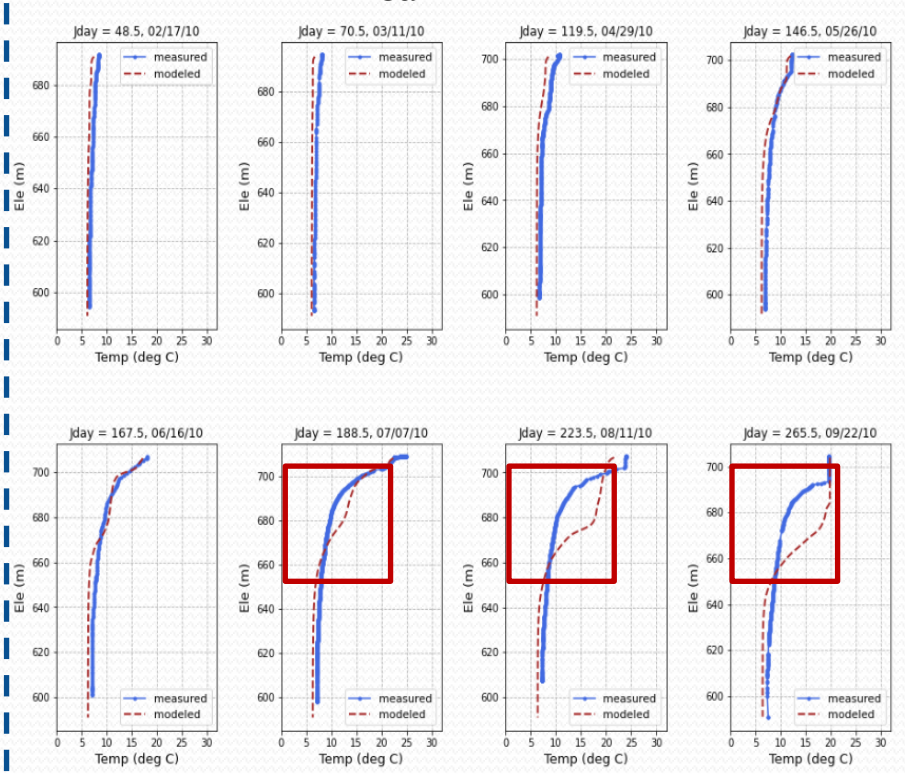
Trinity Lake

- Good model performance from year 2005 – 2021
- Exception: 2010

Year 2015

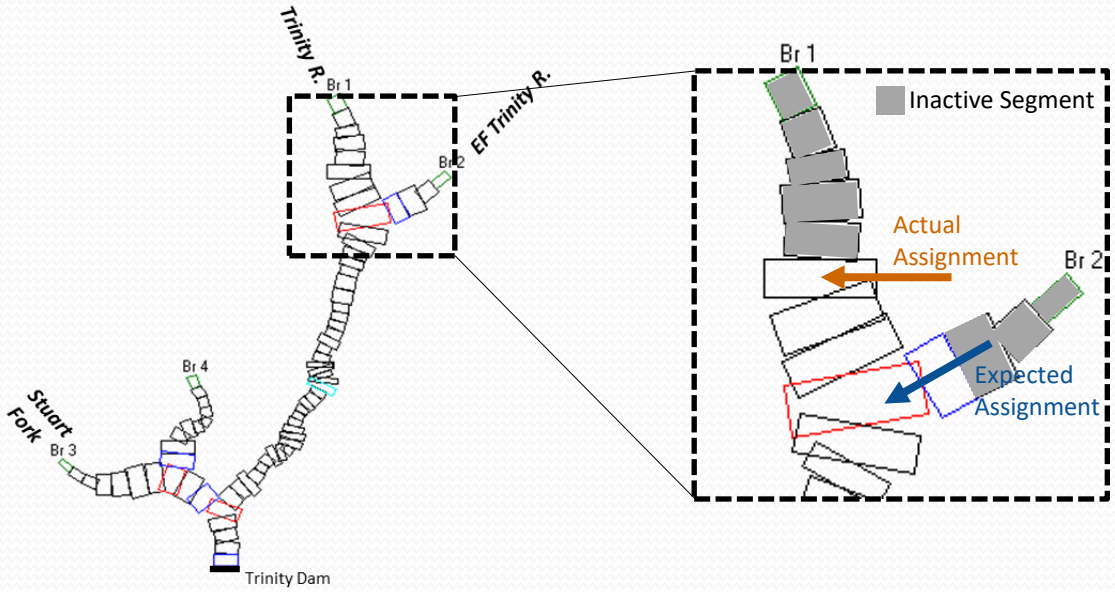


Year 2010



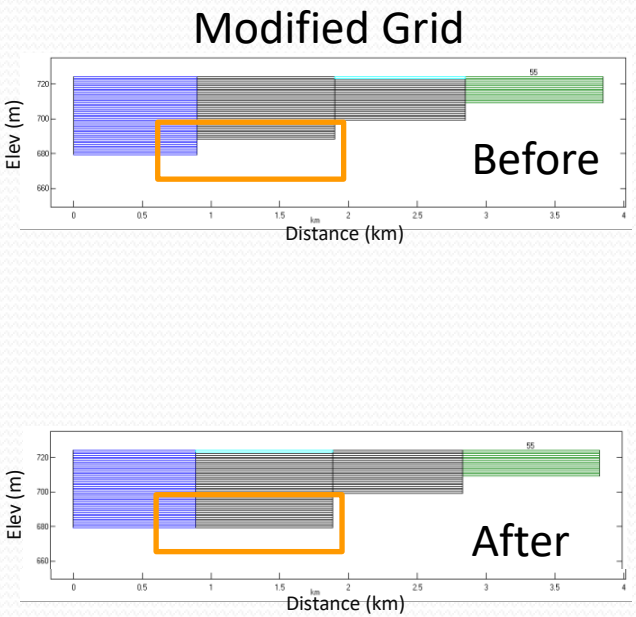
Trinity Lake Year 2010 Issue

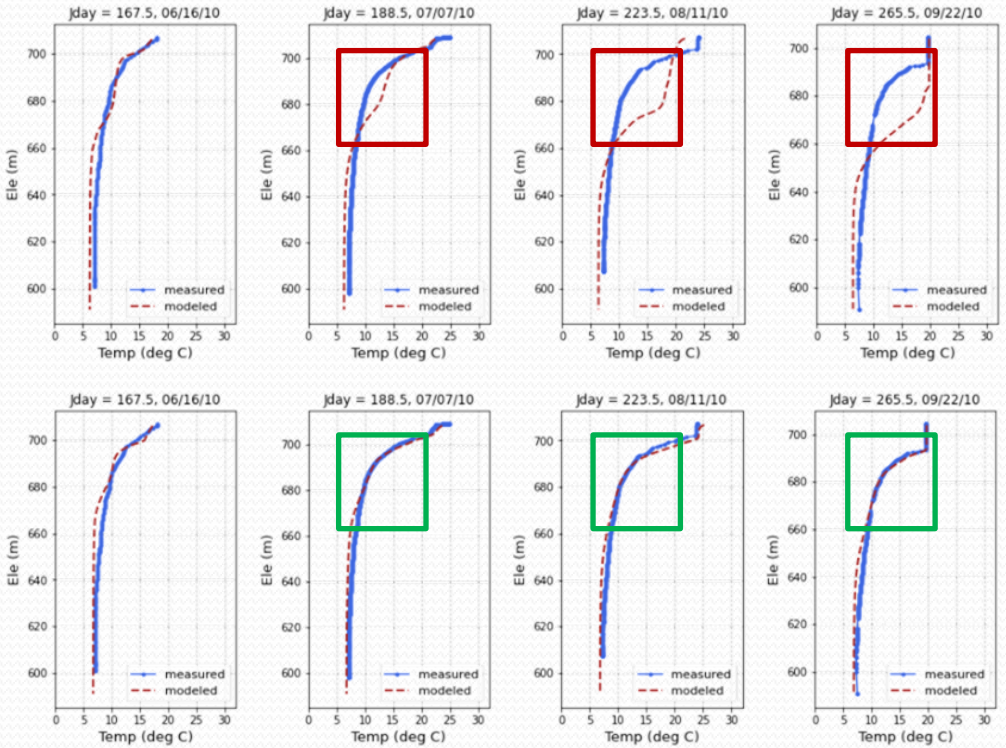
- Lake stage range 2000-2022: up to 115 ft (35m)
- 2010 January 1 stage: approximately 1,000,000 AF
- Condition: EF Trinity River branch was largely inactive (last segment)
- Outcome:
  - Branch 2 assignment to Branch 1 (main branch)
  - Inflow placement was impacted due to assignment of Branch 2 inflows to Branch 1



Trinity Lake 2010 Resolution

- Add more layers to segments in branch 2 to make it “active” to receive inflow

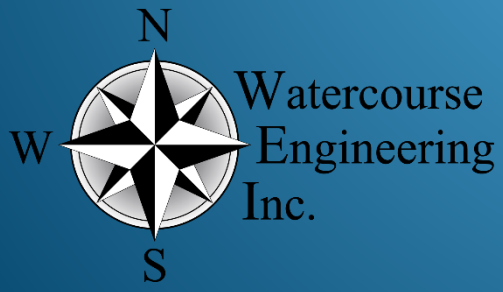




Summary

- Exercise care with branches entering W2 grid near headwaters (Similar occurrence in New Melones Lake with SF Stanislaus River branch)
- Often manifests itself at low stage, but not necessarily
- Ensure branch geometry maintains multiple active segments

Thanks for your attention!
Any questions?



Email: Yujia.Cai@watercourseinc.com
Watercourse Engineering, Inc.