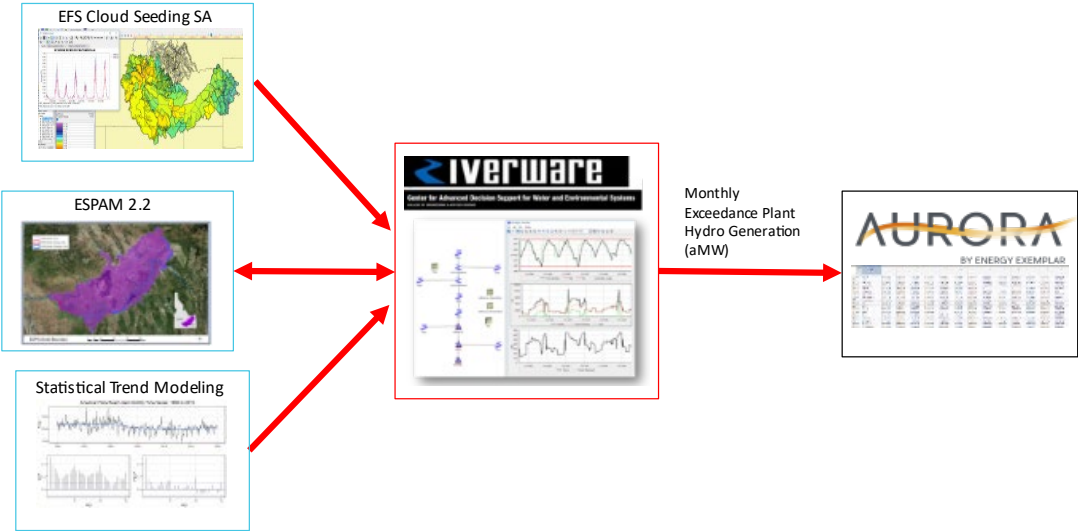




Summary

- This educational video describes the technical process of how hydro resources are modeled in Idaho Power’s Integrated Resource Plan (IRP).
- The presentation walks viewers through each component that leads to the hydro generation results that are fed into the Aurora computer model to better understand how the model responds to the inputs provided.
- A diagram of the modeling can be seen below:

Modeling Process



RiverWare

- The purpose of this modeling is to understand the probability distribution of hydro power for each year of the IRP over the next 20 years.
- RiverWare is the software used as a dynamic representation of reservoir systems by using an object-oriented, multiple-objective decision support framework.
- Because the software allows for dynamic representation of the water management, it is uniquely fit for evaluating changes in management or supply and their cascading effects throughout the reservoir system.

Baseline RiverWare Models

- The RiverWare planning models provide the foundation of the modeling with the other modeling feeding inputs into the RiverWare models.
- Three different models represent different sections of river.
 - Malad River Basin
 - Snake River above Brownlee
 - Hells Canyon Complex
- The models use a baseline hydrology of the years 1981–2018.
 - The purpose of shortening this record from prior IRP’s is to align with more complete quality data coverage and continue to use years more representative of current climate signals.
- Models are “present conditioned.”



Hydrology Part III

Hydro Resource Modeling

- Water management updated to reflect current operating logic
- Irrigation demands patterned to reflect recent years
- Irrigation return fractions updated to current estimates
- Spring discharge represents 2018 levels

Inputs Influencing Future Conditions

- Modeling changes from cloud seeding and anticipated future program.
- Reach gain trends in statistically significant reaches.
- Models reflect current and anticipated conjunctive water management changes. These influence surface water and groundwater conditions throughout the basin.

Additional Resources

- <https://idwr.idaho.gov/legal-actions/settlements/SWC-IGWA/>
- <https://idwr.idaho.gov/water-data/projects/espam/>
- <https://iwrbrecharge-idwr.hub.arcgis.com/>
- <https://www.riverware.org/>