Texas Water Development Board (TWDB), Austin, TX

Title: Estimation of Volumetric Evaporative Water Loss from Unmonitored Reservoirs in Texas

Current Progress and Future Steps

1. TWDB has sent a full list of unmonitored major reservoirs to Dr. Prof. Faisal Hossain's University of Washington group for digitizing a polygon shapefile used to mask/retrieve the SWOT L2 lake products.

2. Preparations are underway for the 2022 SWOT-EA Hackathon to learn more new skills in managing simulator and future SWOT data products. This may include the tool to process 'sample' Lake data product (L2_HR_LakeAvg, L2_HR_Raster) provided by the SWOT Project. Eventually, the tool will enable TWDB to retrieve the lake surface area data from the PO.DAAC cloud when SWOT data is publicly available after launch.

3. We are upgrading our lake evaporation rate dataset from legacy 1-degree longitude by 1-degree latitude gridded monthly lake evaporation rate dataset derived from Class A Pan evaporation, to 4km by 4km gridded daily lake evaporation rate dataset derived from more accurate computational methods (aerodynamic, energy budget and mass balance) through climatic and lake monitoring. In this effort, we have a close collaboration with Texas A&M University, Desert Research Institute, U S Bureau Reclamation, U S Army Corps of Engineers, and Lower Colorado River Authority. The improved lake evaporation rate dataset will lead to more accurate estimate to volumetric evaporation loss from reservoirs, because it is part of equation in computation (area multiplying evaporation rate).

4. Close collaboration with University of Washington and support Dr. Prof. Hossain group has been key for developing a comprehensive reservoir assessment tool for water quantity and water quality (RAT-WQ2). This project will eventually launch a website for Texas territories to address TWDB's needs on monitoring water quality with water quantity for rivers and reservoirs.