

SEONGGYU PARK



PROJECTS

Current
|
Apr. 2020

- **Assessment of Water, Salt, Fire and Land Management in the Colorado River Basin (CRB) using APEX**
Texas A&M AgriLife Research, Bureau of Land Management
 - Assess Spatio-Temporal Patterns of Groundwater - Surface Water Interactions and Solute Transports in the Animas River Watershed Using a Coupled APEX-MODFLOW Model
 - Assess Water, Salt, Fire and Land Management in the Colorado River Basin using APEX
 - Tool Development: [APEXMOD](https://github.com/spark-brc/APEXMOD) <https://github.com/spark-brc/APEXMOD>

Current
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Apr. 2020

- **SWAT-MODFLOW modeling to support resilient development and return on investment analyses in the Cubango-Okavango River Basin (CORB)**
Texas A&M AgriLife Research, The Nature Conservancy
 - Couple the existing SWAT (Soil and Water Assessment Tool) model with USGS MODFLOW to more accurately model sub-surface hydrology.
 - Optimize SWAT-MODFLOW using Parameter ESTimation Tool (PEST)
 - Info: [Okavango River Basin](#)

Mar. 2020
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Nov. 2018

- **Conservation Effects and Assessment Project (CEAP) - National SWAT+ model assessments**
Texas A&M AgriLife Research, U.S. Department of Agriculture Agricultural Research Service
 - Provided technical supports by developing database, framework, and analysis tools for the Real-Time Conservation Effects and Assessment Project (CEAP)
 - Interactive web-based dashboard: <https://github.com/spark-brc/NM-viz>
Tutorial Video: <https://www.youtube.com/watch?v=9OLHAShhEek>



PUBLICATIONS

2020

- [Quantifying the streamflow response to groundwater abstractions for irrigation or drinking water at catchment scale using SWAT and SWAT-MODFLOW](#)
Environmental Sciences Europe, 2020, 32(1), pp.1-25.
 - Liu, W., Park, S., Bailey, R.T., Molina-Navarro, E., Andersen, H.E., Thodsen, H., Nielsen, A., Jeppesen, E., Jensen, J.S., Jensen, J.B. and Trolle, D

2020

- [Quantifying the effects of climate change on hydrological regime and stream biota in a groundwater-dominated catchment: A modelling approach combining SWAT-MODFLOW with flow-biota empirical models](#)
Science of The Total Environment, 2020, 745, p.140933.
 - Liu, W., Bailey, R.T., Andersen, H.E., Jeppesen, E., Nielsen, A., Peng, K., Molina-Navarro, E., Park, S., Thodsen, H. and Trolle, D.

2020

- [Enhancing SWAT+ simulation of groundwater flow and groundwater-surface water interactions using MODFLOW routines](#)
Environmental Modelling & Software, 2020, 126, p.104660.
 - Bailey, R.T., Park, S., Bieger, K., Arnold, J.G. and Allen, P.M.

- 2020 ● **Assessing the impacts of groundwater abstractions on flow regime and stream biota: Combining SWAT-MODFLOW with flow-biota empirical models**
Science of the Total Environment, 2020, 706, p.135702.
 • Liu, W., Bailey, R.T., Andersen, H.E., Jeppesen, E., Park, S., Thodsen, H., Nielsen, A., Molina-Navarro, E. and Trolle, D.
- 2019 ● **Modelling potential groundwater recharge in the Limpopo River Basin with SWAT-MODFLOW**
Groundwater for Sustainable Development, 2019, 9, p.100260.
 • Mosase, E., Ahiablame, L., Park, S. and Bailey, R.
- 2019 ● **IPEAT+: a Built-in optimization and automatic calibration tool of SWAT+**
Water, 2019, 11(8), p.1681.
 • Yen, H., Park, S., Arnold, J.G., Srinivasan, R., Chawanda, C.J., Wang, R., Feng, Q., Wu, J., Miao, C., Bieger, K. and Daggupati, P.
- 2019 ● **Comparing SWAT with SWAT-MODFLOW hydrological simulations when assessing the impacts of groundwater abstractions for irrigation and drinking water**
Hydrol. Earth Syst. Sci. Discuss, 2019, pp.1-51.
 • Liu, W., Park, S., Bailey, R.T., Molina-Navarro, E., Andersen, H.E., Thodsen, H., Nielsen, A., Jeppesen, E., Jensen, J.S., Jensen, J.B. and Trolle, D.
- 2019 ● **Comparison of abstraction scenarios simulated by SWAT and SWAT-MODFLOW**
Hydrological Sciences Journal, 2019, 64(4), pp.434-454.
 • Molina-Navarro, E., Bailey, R.T., Andersen, H.E., Thodsen, H., Nielsen, A., Park, S., Jensen, J.S., Jensen, J.B. and Trolle, D.
- 2019 ● **A QGIS-based graphical user interface for application and evaluation of SWAT-MODFLOW models**
Environmental Modelling & Software, 2019, 111, pp.493-497.
 • Park, S., Nielsen, A., Bailey, R.T., Trolle, D. and Bieger, K.

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