

North Central Texas Water Quality Project

Watershed Modeling: SWAT (Soil and Water Assessment Tool)

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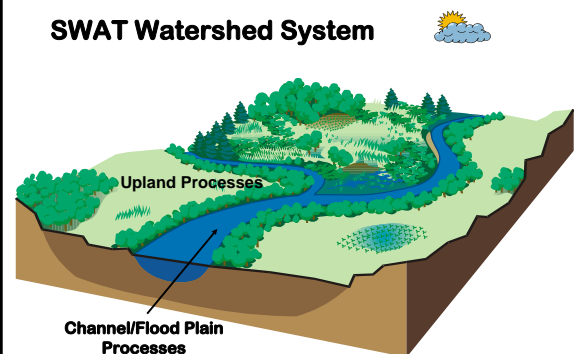
- **SWAT**
- Use readily available input
- Physically based
- Comprehensive – Process Interactions
- Continuous Time
 - Daily Time Step
- Simulate current Management and alternative management scenarios

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SWAT: Contributing Factors

- Rainfall/ runoff
- Erosion and Sediment Transport
- Pollutant Loading
- Stream Transport
- Landuse
- Management Practices

SWAT Watershed System



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Eagle Mountain Watershed

- Size: 860 mile² (2,230 Km²)
- Annual Average Rainfall: 35.2 in (894mm)
- Bridgeport watershed



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Data Sources

- DEM: 30m (NRCS)
- Landuse: USGS (NLCD 2001)
- Soil: SSURGO (NRCS)
- Weather: 1969 ~ 2004 (36 Years)
 - Precip. & Temperature: NCDC + Nexrad
 - WGEN: Wind Speed, Solar Radiation...

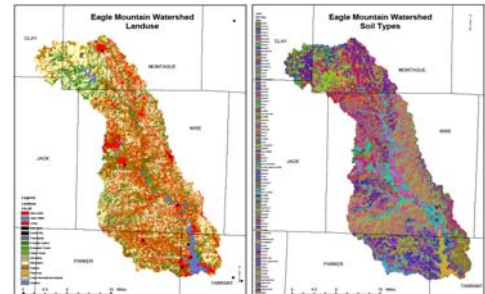
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Data Sources

- Flow data: USGS Gage Station (1971 ~ 2004)
 - 08043950: Big Sandy Creek near Chico, TX
 - 08044500: W Fk Trinity River near Boyd, TX
 - Input from Lake Bridgeport
- Sediment data
- Nutrient observation: Monitoring sites and grab-sampling
- WWTP

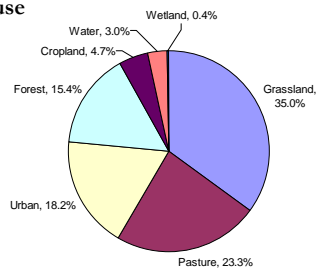
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Landuse and Soil

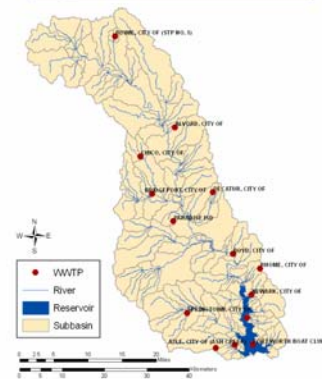


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Landuse



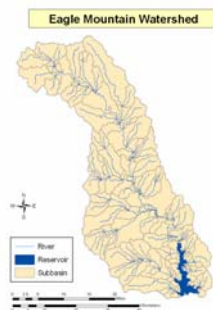
Eagle Mountain Watershed WWTPs



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Eagle Mountain Sub-Watershed

- Delineated by SWAT
- Total 150 Sub-basins
- Local base monitoring and analyses
- Local parameter adjustment



Sediment Yields from Hillslope

