

Watershed Regression Analysis

- (step 1) find WQ and flow data that use common USGS gauge
 - * TN, TP data
- (step 2) find base flow dominant flow WQ sample
 - * WHAT (for BF separation), LDC (for combining WQ and flow data)
- (step 3) calculate average annual flow
 - * total flow, base flow, bd flow, bd flow days
- (step 4) NLCD ratio for regression
 - * from land use map
 - * reclassify; water 11, 12, 90, 95; urban (ULC) 21, 22, 23, 24, 31;
forest (FLC) 41, 42, 43; agricultural (ALC) 82; grass (GLC) 52, 71, 81
- (step 5) CN ratio for regression coefficient
 - * from land use + soil combination with CN lookup table
- (step 6) find baseflow and baseflow dominated flow's flow coefficients
 - * regression with CN ratio and $qb(FLC) \leq 450$ mm/yr
- (step 7) calculate average annual loads [most time consumed]
 - * total flow loads, bd flow loads (used as baseflow)
- (step 8) find baseflow dominated flow's EMC (TN & TP)
 - * regression with WQ constraints
 - * it can be used for base flow's EMC as well (assumed)
- (step 9) find direct flow's flow coefficients
 - * regression with inversed CN ratio
- (step 10) verify total flow with estimated flow coefficients
- (step 11) find direct flow's EMC (TN & TP)
 - * regression with total flow loads