Customizing and Validating the P Index in Whole Farm Plans for Soils of the Northeast

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Project Description

Reducing off-site phosphorus (P) loss from agriculture by developing and improving P Index assessment tools which are used in whole farm nutrient management planning.

Unique Approaches

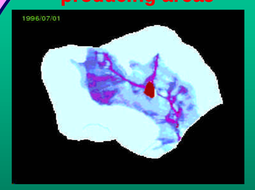
- *Developing and validating a quantitative and qualitative risk based approach*
- *Assessment of particulate and dissolved P to better target dominant transport processes and remedial management options*

Integrated Activities

Multi-agency and Group Collaboration

Research/Modeling

Modeling runoff producing areas

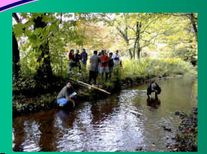


Measuring P in runoff vs. soil P test levels

Rain simulation and P leaching studies in the lab

Tile drain sampling

Teaching Student Projects



Water measurement laboratory class

Sampling a vegetated filter strip

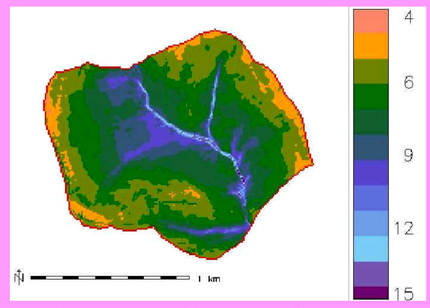
Sampling a riparian buffer

Extension Planner/Farmer Interaction

On-farm research

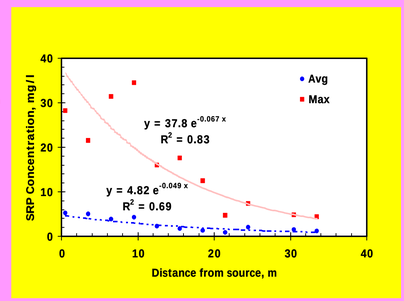
Training workshops and field walks

Program Accomplishments

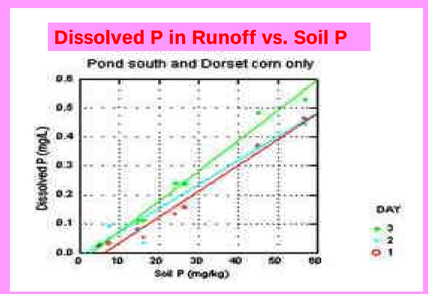


Developing a Geographic Index (The higher number is an area with higher probability for transport)

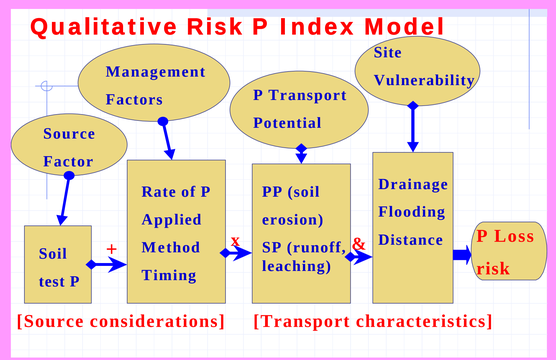
The reduction in soluble reactive P from a high P source as a function of buffer (travel) distance through the soil



Dissolved P in Runoff vs. Soil P



Qualitative Risk P Index Model



Lessons/Difficulties

Erosion control practices help reduce particulate P but a buffer setback is needed to reduce dissolved P losses

Landowners will resist a 'No P' recommendation because of the importance of P to plant establishment

Planners need training and improved tools to better assess high risk P loss areas

A new paradigm needs to be developed that P is mobile from high risk areas and that off-site losses may impair water quality