

Agricultural Nutrient Management Program

Who Needs a Nutrient Management Plan?

- producers with a gross annual income of \$2500 or more **OR**
- livestock operations with 8 or more animals units (1 animal = 1,000 pounds of live animal weight)



Photo credit: Edwin Remsberg, AGNR



Photo credit: Heather Hutchinson, AGNR



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What Does the Planning Process Involve?

Record:

1. field histories (past crop & organic nutrient applications)
2. tillage practices
3. preferred organic nutrient application techniques, timing of application and time until incorporation

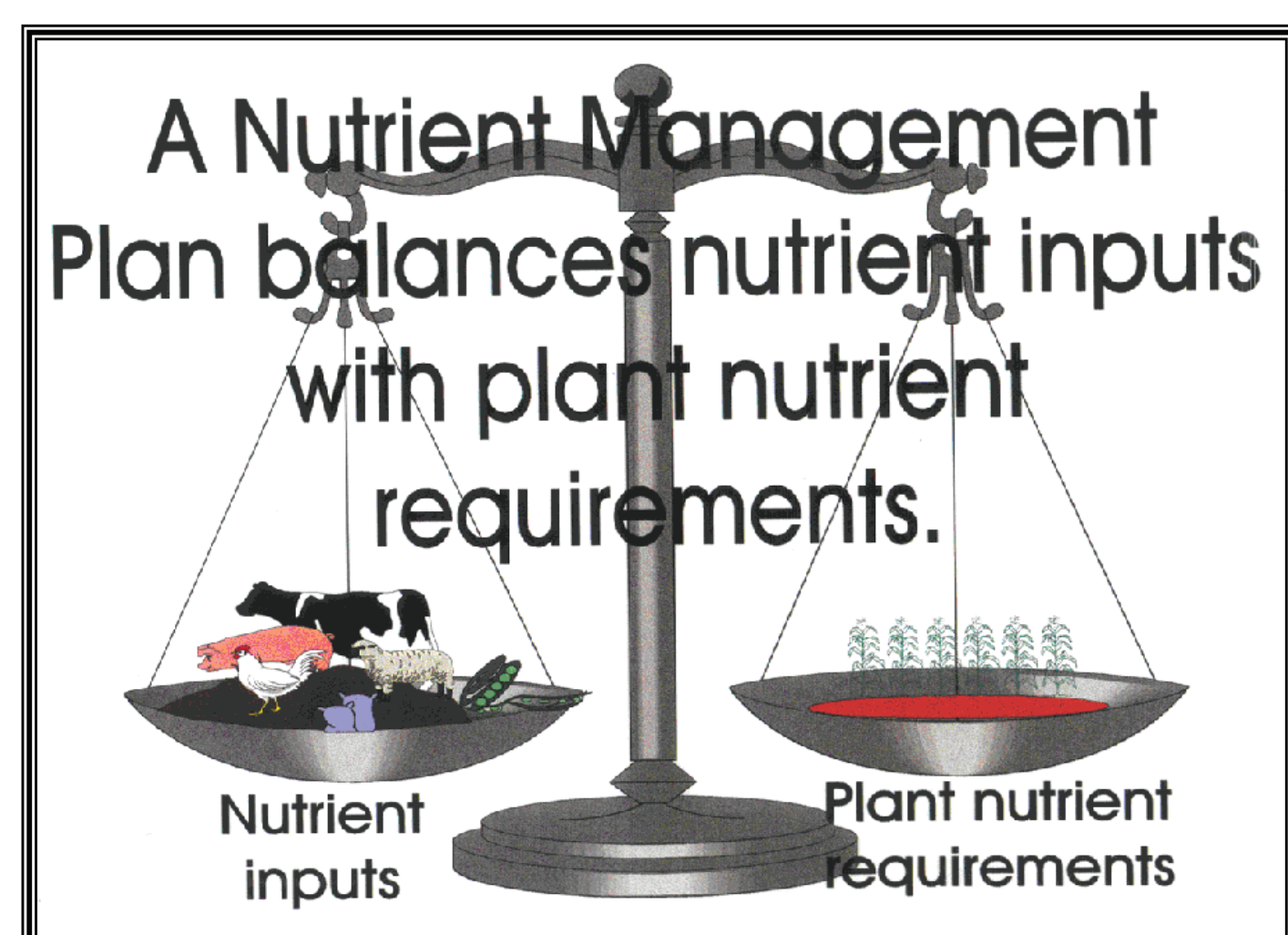
Sample & analyze:

1. soil (every 3 years)
2. manure (annually)
3. tissue (every 3 years if growing perennial fruit)

Estimate residual nitrogen from leguminous crops & organic nutrient sources

Identify realistic yield goals

Calculate University of Maryland Phosphorus Management Tool (UM-PMT), if applicable



Who Develops a Plan?



Plans are developed by:

- University of Maryland Extension nutrient management advisors
- private sector nutrient management consultants
- certified farmers

Support Services

In addition to writing nutrient management plans, nutrient management advisors can provide instruction & assistance on:

- yield checks
- soil sampling
- manure spreader calibrations
- soil nitrate testing
 - Pre-sidedress Nitrate Test (PSNT)
 - Fall Soil Nitrate Test (FSNT)



Photo credit: Heather Hutchinson, AGNR

Do You Apply Nitrogen in the Fall?

A FSNT measures the concentration of soil nitrate to determine whether a fall nitrogen application is needed at the time of planting:

- test is conducted for wheat and barley grown for grain
- starting fall 2013, this test is required

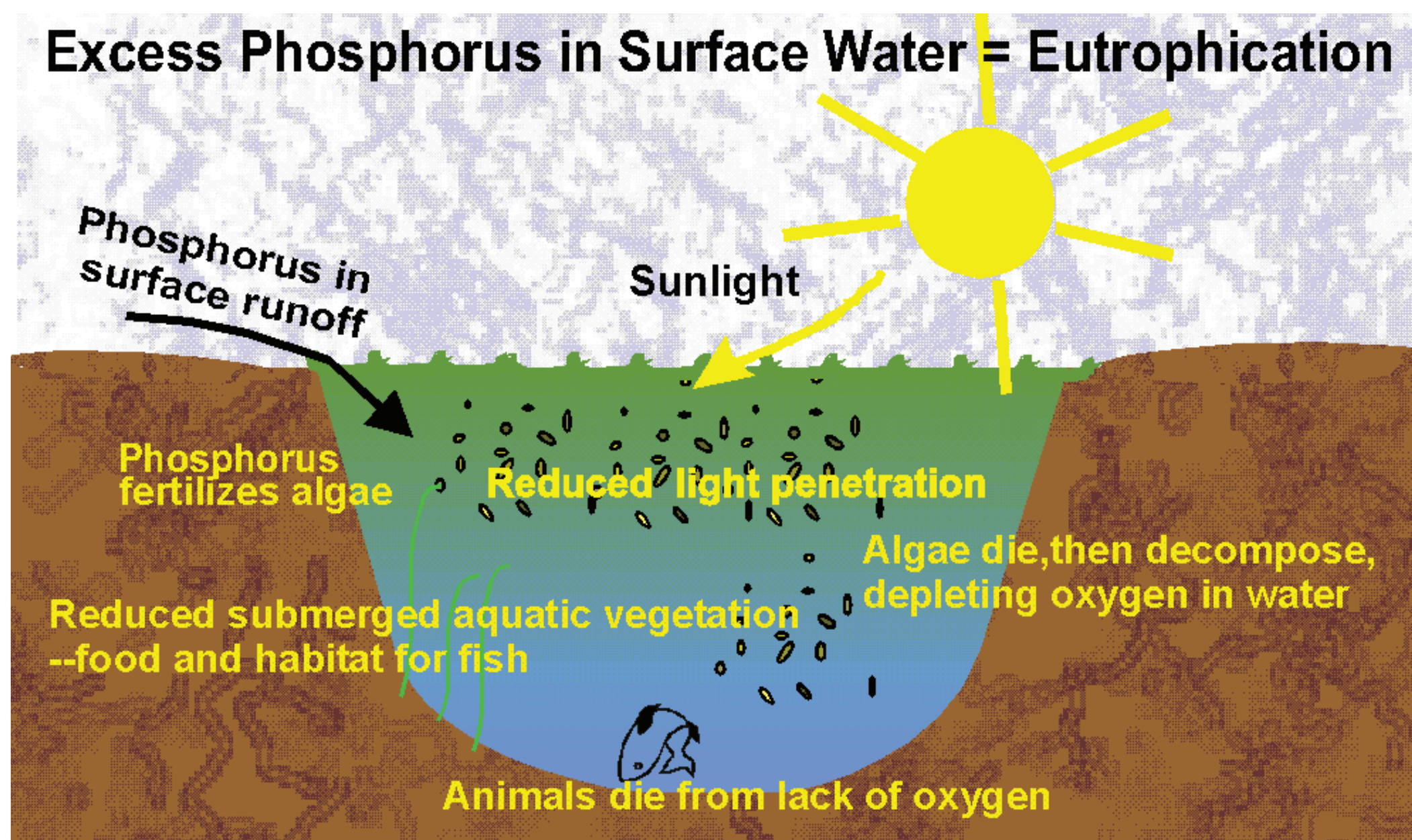
Do You Use Manure on Your Corn Crop?

A PSNT can determine if sidedress nitrogen is needed and at what rate:

- test is conducted when corn is 6 - 12 inches tall
- contact a nutrient management advisor for sampling instructions and to schedule testing **before corn reaches 6 inches**

Phosphorus - Too Much of a Good Thing?

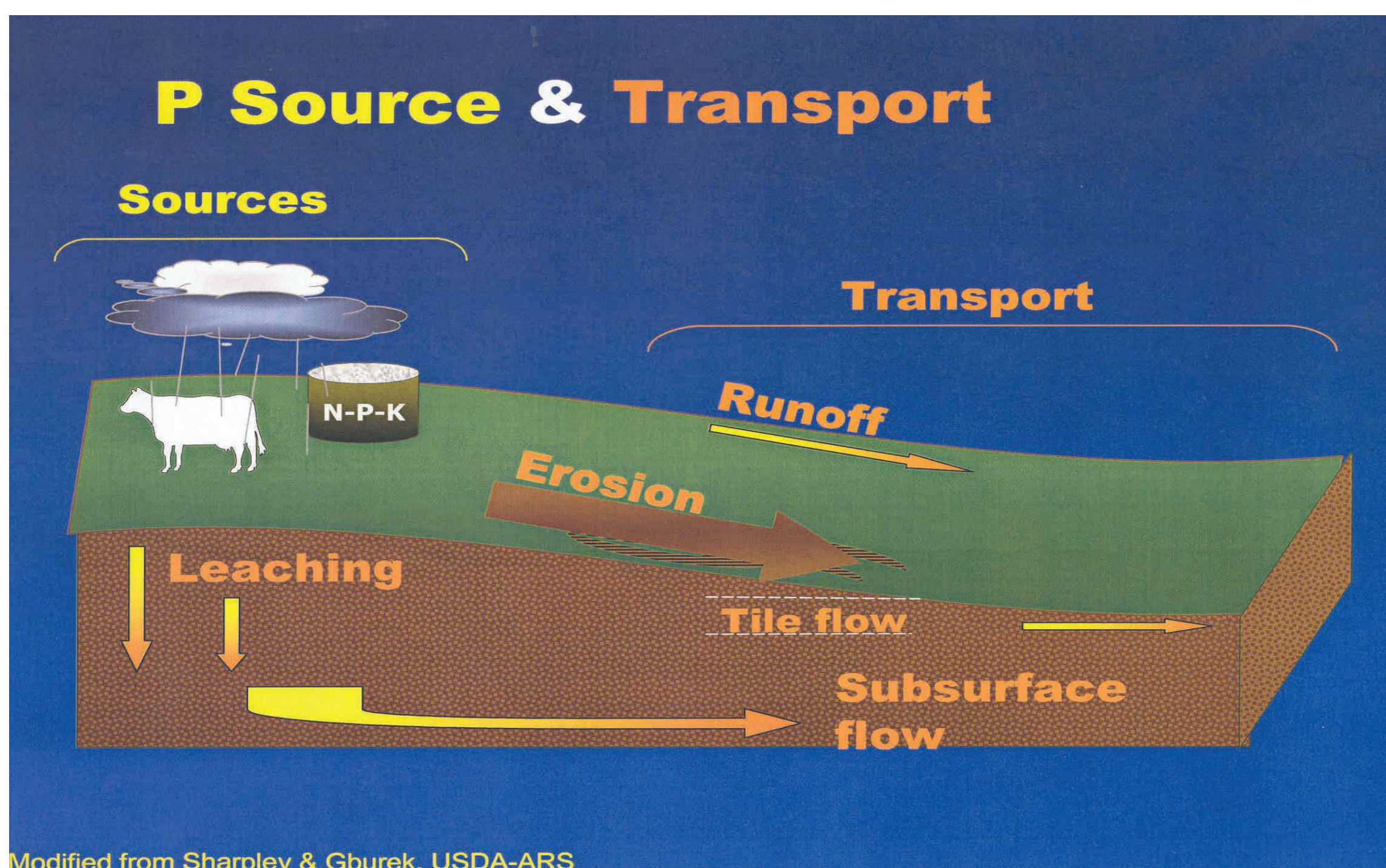
Excess Phosphorus in Surface Water = Eutrophication



- phosphorus is essential for all life forms
- too much phosphorus in fresh surface water upsets the balance
- phosphorus enrichment of surface water causes eutrophication

How Does Phosphorus From Agricultural Fields Get Into Surface Water?

- fields can lose particulate phosphorus through erosion
- water flowing over phosphorus enriched soils can dissolve the phosphorus and transport it to surface water in runoff
- phosphorus in surface runoff, erosion & subsurface flow can lead to eutrophication



Modified from Sharpley & Gburek, USDA-ARS

What is the UM-PMT?

- a tool for assessing potential for phosphorus loss from fields as eroded soil, surface runoff, and subsurface drainage

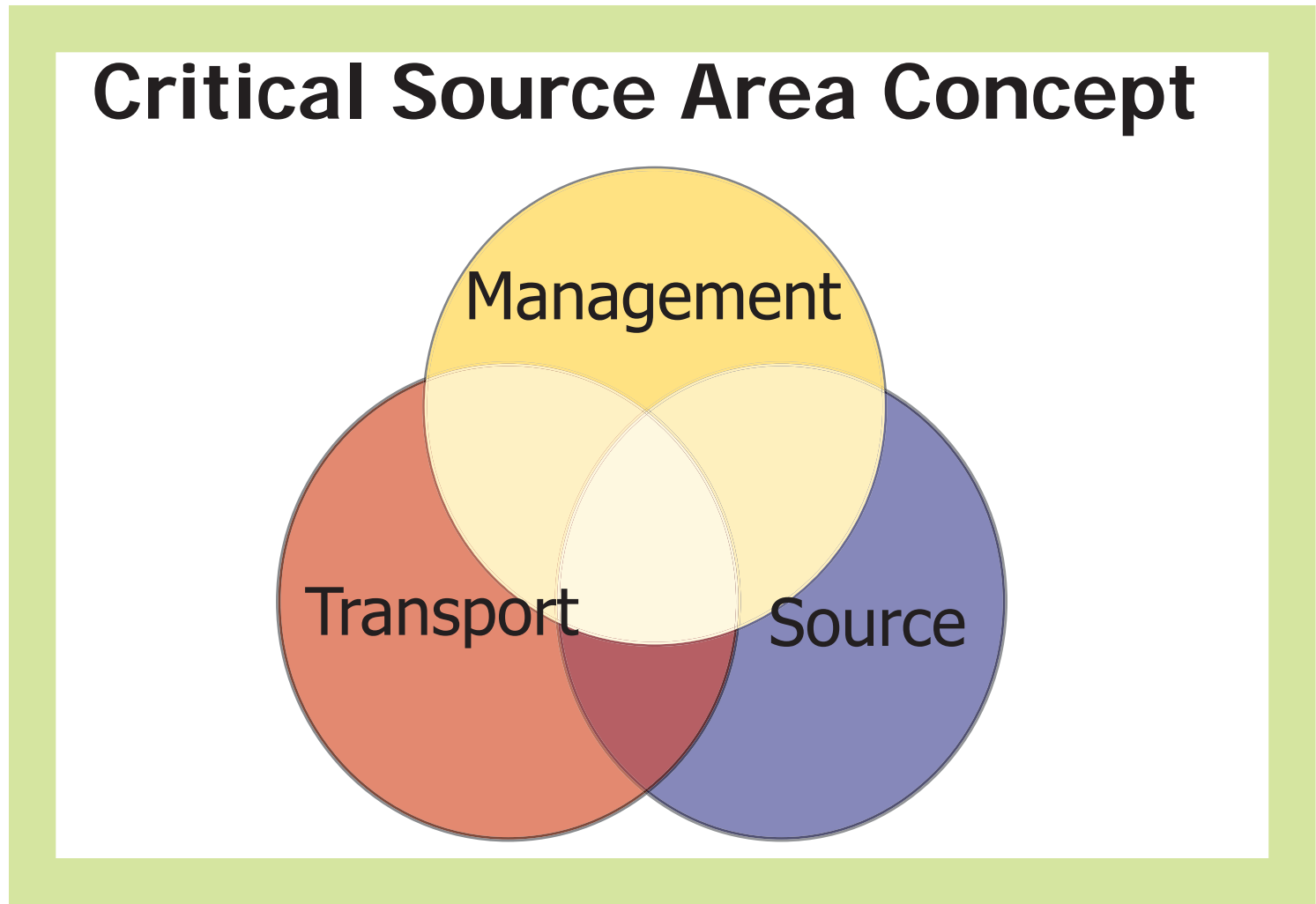
When is it needed?

- each field with a soil test Fertility Index Value for phosphorus (FIV-P) of 150 or above will need a UM-PMT evaluation if phosphorus in any form will be applied

What information is needed for UM-PMT determination?

- crop rotation and tillage practices
- rate, method and timing for intended phosphorus fertilizer application and intended organic nutrient application

The outcome of the UM-PMT can be influenced by management.



Interpretative Categories in the UM-PMT

Potential for Phosphorus Loss	Interpretation
LOW	• Phosphorus applications to crops grown in a three-year period shall not exceed the amount of phosphorus removed by the crops over the three-year period.
MEDIUM	• Phosphorus application shall be limited to the expected amount removed from the field by crop harvested in the year of application or the amount indicated by soil testing.
HIGH	• No phosphorus should be applied to this site.

You can find more information about nutrient management at the Agricultural Nutrient Management Program's website:

