Resource Concerns Associated with Irrigation

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Objectives

- Identify potential resource concerns associated with irrigation
- Describe planning considerations for irrigation
- Identify conservation practices that will address identified resource concerns

DVD, “Water Management”

- What Resource Concerns (environmental issues) are associated with irrigation?
- Go through Checklist of Resource Concerns
- What are your experiences with irrigation systems and irrigation water management?

Surface Water Quality concerns

- Slope, drainage patterns
- Proximity to Water (drains, wetlands, streams, etc.)
- Soil type (texture, drainage)
- Soil compaction?
- Residue levels

Ground Water Quality Concerns

- Soils (sandy?)
- Water-holding capacity
- Infiltration rates
- Geologic conditions – risk to aquifers (drinking water)

Water Quantity?

- Presence/quantity of surface waters
- Presence/quantity of ground water
- Pumping rates

Nutrient Management (590)

- Nitrogen management
  - Leaching Index (LI) does not account for irrigation but rates leaching potential of soils by hydrologic group.
  - Nitrogen Management Practices

- Nutrient Losses with Runoff
- Nutrients in irrigation water – 'dirty water',
- Fertigation?

Pest Management (595)

- Win-PST does not account for irrigation
- Pest Management under irrigation
  - Pesticide loss with runoff/leaching?

- Chemigation?

Wind Erosion?

What field conditions to consider?

Wind Erosion?

- Low-residue crops
- Type of irrigation system (overhead)
- Soil type, wind erodibility
- Presence/Absence of landscape features (hedgerows, windbreaks, etc.)

Site conditions needed for overhead irrigation may be conducive to wind erosion.

Irrigation-Induced Erosion

- Soil texture
- Slope
- Irrigation system capacity
- Application volume
- Wetted Diameter
- Pressure
- Soil Compaction

(DVD presentation, “Runoff”…)