Case Study - Conservation Effects

Type of Operation and Location: Cropland, Southwest Ohio

Resource Setting:	**Resource Problem(s):**	**Benchmark System:**
Moderately sloping Xenia and Russel-Miami soils (2-6% slope)	Gully erosion and wet soils	Conventional tillage for corn and soybeans, no grass waterways
Client Objective(s): Improve the soil drainage and stop gully erosion. Better manage nutrients and pesticides for yields and weed control.		**Planned Treatment System:** • Conservation Crop Rotation (add wheat); WASCOBs; Grassed Waterways; Nutrient management; Pest Management; Subsurface tile drainage Meets Resource Management System Criteria

Comparison of Effects of Benchmark and Treatment Option

Actions Before Treatment (Kinds, Amounts, Timing of the benchmark system)	**Effects Before Treatment** (Effects of continuing the benchmark system)	**Impacts After Treatment** (Change from the before treatment to the applied treatment)	**Decisionmaker Evaluation** (+) Feels Positive about the change (-) Feels a drawback about change
Corn: - 3 tillage operations prior to planting - Plant - Apply Pre-emerge herbicide - Rotary hoe - Delayed planting due to wet soils - Fertilize without soil tests Soybeans: - 3 tillage operations prior to planting - Plant 30" rows - Apply Pre-emerge herbicide - Rotary hoe - Delayed planting due to wet soils - Fertilize without soil tests	• Gully erosion averaging 50 tons per 1000 feet of gully per year. • Cannot cross the gully - need to farm the field in two parts. • Lower yields due to wet soils and delayed planting. • Applying more fertilizer than needed by crop. • Apply more herbicides than always needed.	• Gully erosion controlled - reduced to zero with grassed waterway. • WASCOB controlled erosion in one gully. • Farms the field as one field now. • Planting dates are 5-10 days sooner due to tile. • Yields increased by 30% • Nitrogen reduced by 15% • P & K reduced by 40% • With IPM - pesticide costs reduced by 15% • Wheat helped to reduce weed and disease pressures. • Wheat spread out workload - helped to reduce stress in the spring and fall	• (+) reduced erosion (-) lost 1.3 acre of cropland. • (+) reduced erosion and almost no loss of cropland. • (+) speeds planting/harvesting • (+) timely planting and healthier crops • (+) more net income • (+) reduced cost • (+) reduced cost • (+) reduced cost and better weed and insect control • (+) Increased corn yields • (+)