

Agricultural Conservation

Indiana has more than 15,000,000 acres of agricultural land that produce an abundant supply of low-cost, nutritious food and other products. Based on 1990 land use data, approximately 35 percent of Lake Michigan's coastal region is identified as agricultural land. Noted worldwide for its high productivity, quality, and efficiency in delivering goods to the consumer, Indiana's agriculture has increased its conservation farming practices by more than 80 percent since 1990.

Throughout the United States, land managers observed, that when improperly managed, agricultural land can greatly affect water quality. Improperly managed agricultural activities that cause nonpoint source (NPS) pollution include confined animal facilities, grazing, irrigation, plowing, planting, pesticide spraying, fertilizing, and harvesting. The major agricultural NPS pollutants that result from these activities are sediment, nutrients, pesticides, and pathogens.

Managing Sediment: Sedimentation occurs when soil particles from an area, such as a plowed farm field, are carried through wind or water runoff to a water body, such as a stream or lake. Excessive sedimentation clouds the water, reducing sunlight penetration to aquatic plants; covers fish spawning areas and food supplies; and clogs the gills of fish. Too often, other pollutants like phosphorus, pathogens, and heavy metals are attached to the soil particles washing into the State's lakes, streams and rivers.

Agricultural landusers can reduce erosion and sedimentation by 20 to 90 percent through the application of conservation tillage measures, buffer strips, and nutrient management to control the volume and flow rate of runoff water, keeping the soil in place, and reducing soil transport.

Managing Nutrients: To enhance production of agricultural crops, nutrients such as phosphorus, nitrogen, and potassium are applied. When applied in excess of the crop's needs, unused nutrients are washed into streams, rivers, and lakes, causing excessive plant growth; creating foul tasting and smelling drinking water; and killing fish.

Agricultural landusers can reduce the overload of nutrients in runoff through the implementation of nutrient management plans. In turn, these plans help the agricultural landuser maintain high yields while sustaining low fertilizer expenditures.

Managing Confined Animal Facilities: Although by confining animals to areas or lots, farmers can efficiently feed and maintain livestock; these confined animal facilities become major sources of animal waste. Runoff from poorly managed facilities can contaminate streams, rivers, and lakes, as well as ground water sources. With the installation of appropriate waste management systems, livestock managers can limit discharge by storing and managing facility wastewater and runoff.

Managing Irrigation: Irrigation water is applied to supplement natural precipitation or to protect crops from freezing or wilting. Inefficient irrigation can cause water quality problems. Agricultural landusers can reduce NPS pollution from irrigation by improving water use efficiency through the measurement of actual crop needs.

Managing Pesticides: Pesticides, herbicides, and fungicides are used to kill pests and control weed and fungus growth. To reduce NPS contamination from these chemicals, agricultural land users can apply Integrated Pest Management (IPM) techniques based on the specific soils, climate, pest history, and crop for a particular field. IPM helps limit pesticide use and manages necessary applications to minimize pesticide movement from the field.

Managing Livestock Grazing: Overgrazing exposes soils, increases erosion, encourages invasion by undesirable plants, destroys fish habitat, and reduces the filtration of sediment necessary for building streambanks and floodplains. To reduce the impacts of grazing on water quality, livestock managers can adjust grazing intensity, keep livestock out of sensitive areas, provide alternative water and shade sources, and revegetate rangeland and pastureland.

