

Agriculture and Natural Resources Extension
2009-2013 Plans of Work Update
160 Natural Resources and Stewardship

Statement of Issues:

Constraints of farm production systems and communities are prerequisite for sound environmental stewardship. Inappropriate management can lead to potential environmental degradation. To maintain economic viability of agricultural operations there will be an increased need to ensure environmental stewardship. Environmental consequences are especially pertinent to nitrogen, phosphorus, carbon, sulfur, and residue, with respect to land, water, and air. These consequences are especially important considering the emerging bioeconomy and new industry issues. With the emphasis on harvesting crop residue to provide feedstock for cellulosic ethanol, the potential for erosion and nutrient loss increases. Pollutant loadings, in general, are a primary concern at state and federal levels.

Uncertainties of health impacts and nuisance related to exposure to agricultural odors and emission of other gases are a prominent concern in rural parts of Iowa. Odor along with nitrogen (NH₃, NO_x, N₂O), methane, and hydrogen sulfide are most pertinent to air resources. Wildlife and fish conservation, energy utilization, and community water issues (quality and quantity) are part of our natural resources that merit protection. The potential increase of perennial crops could impact wild habitat in many ways. Development of strategies to address utilization and preservation of these natural resources and education on the issues surrounding adverse consequences will help Iowans better understand and practice environmental stewardship.

Performance Goals:

- Address air and water quality along with other environmental issues of Iowa through programming targeted at producers, citizens, public health officials, and regulators.
- Increase the adoption of conservation practices that control surface water runoff and associated soil erosion and phosphorus export.
- Increase the adoption of practices that reduce nitrate export from subsurface drainage.
- Increase the understanding of water quality issues and problems associated with poor stewardship practices.
- Increase the understanding of water quantity issues related to emerging industries in the bioeconomy.
- Increase the use of indices and diagnostic tools along with other performance measures to document progress toward improved nutrient management.
- Identify site-specific strategies and facilitate the implementation of these strategies to improve air quality and address related concerns.

- Increase the adoption of practices that reduce impacts to air resources.
- Understand and evaluate the economic impact of management of natural resources.
- Change the attitudes and practices of how lowans use and protect natural resources including woodlands, grasslands, wildlife, energy, and community resources.
- Increase the adoption of energy conservation practices by crop farmers, livestock producers, and homeowners.

Objectives:

1. 50% of producers who attend confinement site manure applicator training will implement the P-Index as a part of manure management planning
2. At least 10% of woodland owners who attend Forestry Field Days or Master Woodland Manager programs will adopt TSI practices on some of their woodland acreage
3. 10% of those producers attending Extension led conservation education programs will adopt practices or systems such as no-till or extended crop rotations to increase residue cover.
4. 60% of the livestock and poultry producers attending an air quality improvement program will increase their knowledge of air emission mitigation practices
5. 50% of those producers that are involved with locally-led watershed groups will have an increased understanding and knowledge of water quality in their watersheds

Outputs (number of activities, contacts, products):

161 – Adoption and implementation of conservation practices: Number of producers (target number of contacts is 1000) that participate in programming directly focused on increasing the adoption and implementation of conservation practices.

162 – Nitrate reduction from subsurface drainage: Number of producers (target number of contacts is 500) that participate in programming directly focused on adoption of practices that reduce nitrate export from subsurface drainage.

163 – Water quality: Number of landowners (target number of contacts is 1200) participating in programs to increase their understanding of water quality issues and related adverse consequences following poor stewardship practices.

164 – Utilization of nutrient management indices and tools: Number of producers (target number of contacts is 600) that participate in programming directly focused on utilization of indices (P-index) and diagnostic tools (late spring nitrate test, stalk nitrate test) along with other performance measures to document progress toward improved nutrient management.

165 – Air quality: Number of producers (target number of contacts is 400) that participate in programming directly focused on increasing the number of livestock production sites that adopt practices that reduce impacts to air resources.

166 – Woodland, grassland, wildlife, fisheries, and community resource conservation: Number of lowans (target number of contacts is 1000) that participate in programming directly focused on the adoption of practices that protect natural resources including woodlands, grasslands, wildlife, energy, and community resources.

167– Energy conservation: Number of lowans (target number of contacts is 500) that participate in programming directly focused on increasing the adoption of energy conservation practices.

168 – Water quantity: Number of lowans (target number of contacts is 200) that participate in programs focused on community water quantity issues.

Outcome Indicators:

1. 10% of producers attending Iowa Learning Farm events in 2008-2009 will increase adoption of conservation practices that increase residue cover
2. 50% of producers who attend confinement site manure applicator training will implement the P-index by August 2009
3. 30% of participants in Iowa Learning Farm educational program in 2008 will have an increased understanding of the impacts of conservation practices on water and soil quality
4. 60% of the livestock and poultry producers attending an air quality improvement program will increase their knowledge of air emission mitigation practices