

USEPA/SAB/INC

Environmental Systems Working Group

Members: Beth Boyer, Russ Dickerson, Don Hey,
Bill Mitsch & Arvin Mosier

WG Charge: *Address how N_r moves through the Environmental Systems (atmospheric, terrestrial, aquatic):*

- ❖ Fluxes—N flow through systems and how well do we know them (uncertainties)
- ❖ Storage (residence time)
- ❖ Control points (where can systems be managed)

Discussion Points: Relationship between emissions and deposition; put numbers on burdens and fluxes; transfer rates between ES; recycling of N

ES Committee Discussions: Conference calls, March 16 and April 27

ES Committee Contacts:

Terrestrial Systems N—Daryl Lund & Jeff Goebel,
USDA/NRCS/National Resource Inventory

To determine if information on N storage in terrestrial ecosystems is available—It will be in a few years!
Suggested that the inventories for C conducted by Keith Paustian (Colo. St. Univ.) for soils and Linda Heath (USDA/Forest Service) for forests are best sources of information.

Turfgrass N—Martin Petrovic, Cornell University
See 2 page report

Major Control Points for N

❖ Nitrogen Use Efficiency in cereal crop production

- ~8 Tg fertilizer N applied to Corn & Wheat in the U.S. annually
- Current Use Efficiency ~40%
- Improvements in NUE expected through improved agronomic management, plant breeding, genetic engineering

❖ Swine and Poultry Waste

- ~4 Tg N excreted annually (cattle excrete ~5.6 Tg N)
- 15-80% volatilized during handling & storage

❖ Wetland Buffers for Aquatic Systems

❖ Urban Turfgrass

- 31-40 million acres
- ~1.1 Tg fertilizer N applied annually



