

Nutrient Management Planning in Georgia:

**An overview of regulations, education, tools, and
research needs.**

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Soil Testing

- Conducted by UGA AES Labs
- \$6 for homeowners or farmers
 - pH, P, K, Ca, Mg, Zn, Mn
- ~100,000 samples per year
- 30 % fields below optimum pH
- 16 % fields above optimum pH
- 50 % fields > very high P



Waste Analysis

- Conducted by UGA AES Lab
- Free for poultry, \$36 for other species
- Total N and minerals
- ~2,400 samples per year
 - 2,100 poultry
 - 300 other
- Liquid waste
 - Sample analyzed twice a year for NPDES



Crop Production/Fertility

- Fertilizer and Lime Rules- Consumer Protection
- 2 faculty research
 - P and N availability
 - pH/Lime rec.
 - Vegetable fertility
- Land App Program
- 2 ugrad courses
- Little traditional fertility research



Nutrient Management Regulations

- 1970-99: Require Land Application permits on very large farms
- 1978: Biosolids/Ind Waste
- 1999: Swine Rules
- 2000: Non-swine rules
- 2003: Both rules updated to meet new EPA standards
 - Dry litter systems (poultry) added



“Wet System” Rules

- Large Operations, 1000 AU require NPDES permit
- Medium Operations, 300-1000, require State Land Application Permit
- Both require CNMP and Certified Operator
- All CNMP's submitted after October, 2002 must include phosphorus risk assessment



“Wet System” Rules

- “Mega Farm” (3000 AU+)
 - Swine – Individual NPDES permit + many additional requirements
 - Non-swine – Individual or general permit + additional public notification requirements



“Dry System” Rules

- Large Farms (1000+ AU) permitted (NPDES)
 - Require CNMP and permit application by October, 2005
 - Full implementation by October, 2006
 - No requirement for Certified Planner or Operator
 - Plans not turned in for review unless requested
- Medium Farms not required to permit at this time.
 - Poultry companies requiring all farms to have NMP
- “Dry” Swine farms not recognized at this time



Georgia Implementation

- GA DNR-EPD administers federal NPDES permits for large farms as well as state LAS permits for medium farms
- GDA is involved in the NMP process and facility inspections through a MOU with EPD
- UGA and NRCS provide education and technical assistance in plan development



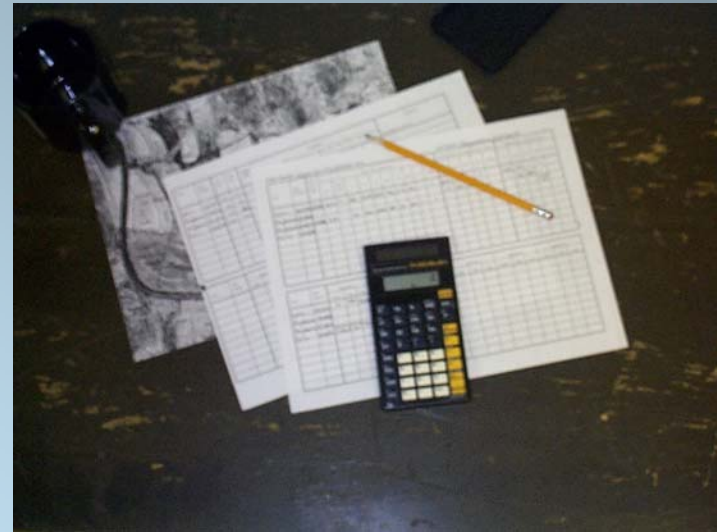
Permitting Status

- Most permits for wet systems are virtually complete.
 - Approx. 180 medium (state) permits
 - Approx. 70 federal permits
 - Dairy, swine, and a few layer
- Dry System Plans Needed
 - Approx. 500 federal permits by 2005
 - 2,000+ Smaller poultry plans required by industry, not EPDh



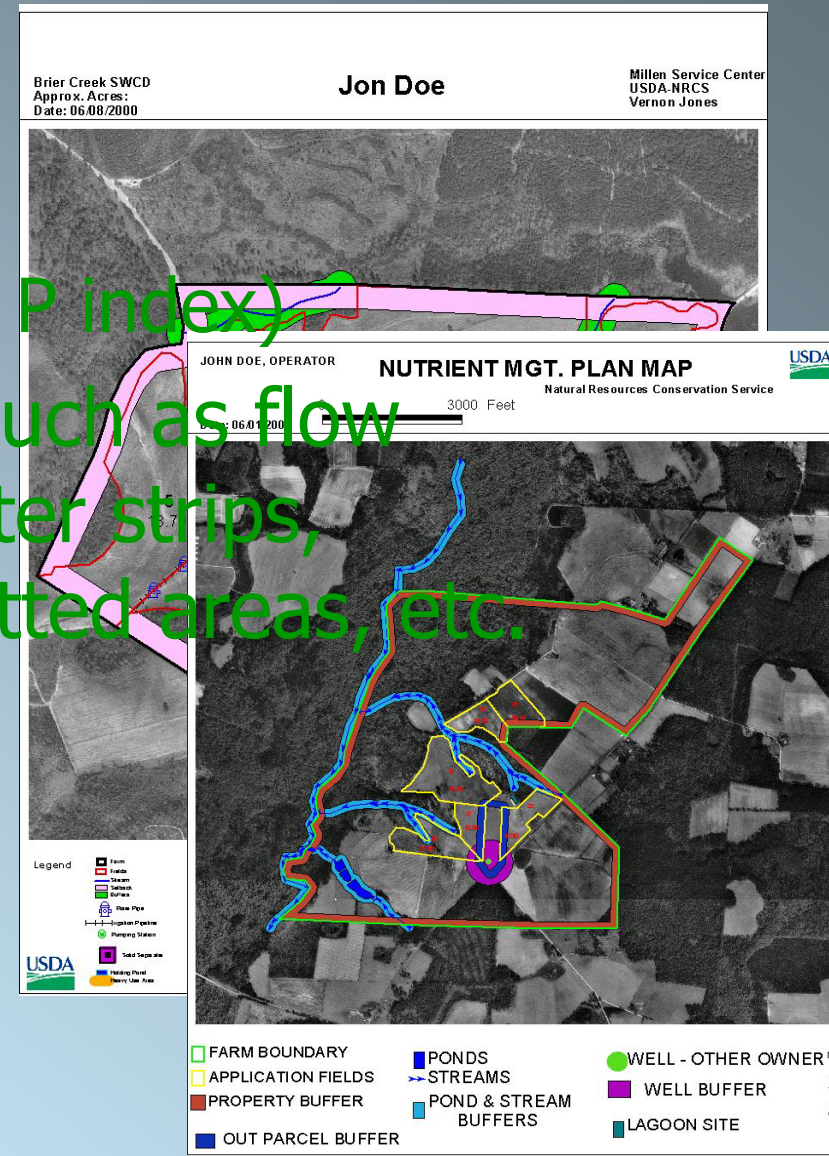
What is a NMP?

- AWARE Task force
- Focus on EPA/EPD needs
 - 10 minimum standards
- Focus on operator and implementation
- May need modification for NRCS funding
- UGA bulletin outlines req.



Maps

- Maps needed for CNMP
 - Farm map
 - Soils map (optional until P index)
- Includes many features such as flow directions, buffers and filter strips, diversions, set-backs, wetted areas, etc.
- NRCS has great toolkit
- Biggest need for agents



Manure Storage and Treatment

- Structure Description, Capacity, Designer, Installation date.
- Diversions, Monitoring
- Inspections and Records
- Operating Levels



Nutrients Produced

- Teach a number of methods to calculate based on maximum animal numbers
- Account for Storage and Handling Losses
- N, P, and K available for Land Application
- Program developed to account for feeding programs



Land Application and Balance

- Spreadsheet and application rate for each field
- BMP's on each field
- Application timing and methods
- Include P index



Balance and off-farm transport

- Plan must be developed for excess N or P.
- Records kept to document use.



Other components

- Mortality: amount
practice, permits
- Records kept
- Emergency
Response Plan
- Closure Plan



Plan Development and Technical Assistance: Initial Process

- About 90% of completed Georgia plans done by Extension with farmer input and assistance by NRCS on maps and storage structure design info
- Submit to GDA for review and usually returned.
- GDA forwards to EPD for final approval
- Little cost to farmer



P-index

- Developed by multi agency committee
- Inputs: Mehlich 1 soil test P, organic and inorganic P rates, methods, and timing, Curve number, RUSLE erosion, ground water level, and buffer information
- Output: Must be below high risk value.
- Available as spreadsheet and in computer programs

Education and Certification:

- Training and certification program for operators on nutrient management and environmental stewardship
 - Dry Litter Poultry Exception: Voluntary education program
- Companion program for planners on NMP development
 - Dry Litter Poultry Exception: similar training for TSPs, does not require or carry certification
- Both 2 days with test



Education

- Approximately 400 Operators have been through training/ 230 have been certified
- 190 Planners have been certified by GDA program plus NRCS has some certified planners
- About 4,000 poultry growers have been through voluntary 3 hour course.



Continuing Education

- Operator and Planner certifications require CEU's
- Courses must be approved by GDA for Operators
- Many Opportunities could qualify...
 - Commodity association meetings
 - Local Extension programs
 - Limited independent study opportunities
- Need assistance in providing Operators with new and diverse opportunities for CEU's



Tools available

- LPES curriculum, notebooks
- NMP Generator Software
 - Dairy - available
 - Swine – in development
 - Poultry (dry litter and liquid) – beta versions currently in field trials





The University of Georgia

College of Agricultural & Environmental Sciences

AWARE: Animal Waste Awareness in Research & Extension

- Newsletter
 - 200 people plus agents
- Web page
 - www.agp2.org/aware
- Listserv
 - listserv@listserv.uga.edu
 - subscribe aware



What Regional Extension Activities are needed?

- Improved Fertility Recommendations
- Computer tools for NMP development
- On-line continuing education/certification modules
- User friendly methods to obtain erosion
- Off-site utilization information
- BMP effectiveness data
- Calibration methods



Regional Research needs

- *Need field data for validation of P-index and NMP effectiveness*
- *N and P soil test/yield correlation for new crops improved varieties and under conservation tillage*
- *N loss to atmosphere and availability*
- *Crop toxicity from excess metals*
- *Health impacts/odor from organic wastes*



Questions and Discussion?

Acknowledgements:

- **UGA College of Agricultural and Environmental Sciences**
 - Ag Econ
 - Animal Science
 - Bio and Ag Engineering
 - Crop and Soil Science
 - Poultry Science
 - Soil Test Laboratory
- **GA's Commodity Representation**
 - GA Farm Bureau
 - GA Milk Producers
 - GA Pork Producers
 - GA Poultry Federation
- **Government Agencies**
 - GA Dept. of Agriculture
 - GA DNR-P²AD
 - GA DNR-EPD
 - GA SWCC
 - USDA-NRCS
- **Georgia's Farmers**

