

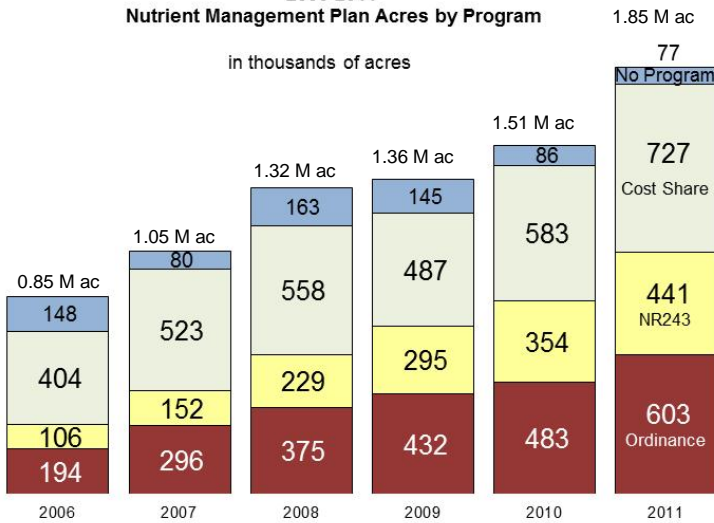
# Wisconsin Nutrient Management Update

Prepared by the WI Department of Agriculture, Trade and Consumer Protection

& Quality Assurance Team Review of 2011's Nutrient Management Plans

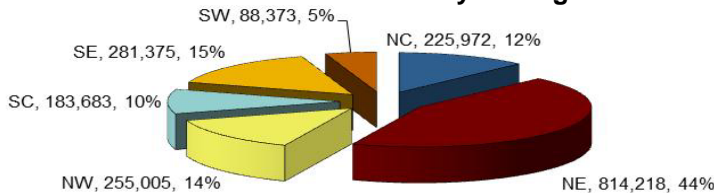
November 2011

2006-2011  
Nutrient Management Plan Acres by Program



Percent of total acres planned in 2011 are from: County manure storage (28%) and livestock siting (5%) ordinances; DNR permitted farms under NR243 (24%); DATCP (25%), DNR (2%), and USDA (12%) cost share.

2011 NM Plan Acres by WI Region



Comparing 2011 to 2010, NM planning has increased in every region of WI by the following amounts: 27% in the south west; 24% in the north east; 19% in the south east; 18% in the south central; 13% in the north west; and 2% in the north central WI.

## Who wrote plans in 2011?

933 farmers wrote their own plans on 266,242 acres. Farmers produced plans for 14% of total acres, 26% of the total plans.

- Farmer planning increased with 238 more farmers and 61,572 (30%) more acres than in 2010.

300 agronomists were hired by farmers to assist them with NM planning. Agronomists reported 2,624 plans covering 1,582,383 acres. Agronomists produced 86% of total acres, 74% of the total plans.

- Agronomist planning increased with 22 more agronomists and 280,443 (22%) more acres than in 2010.

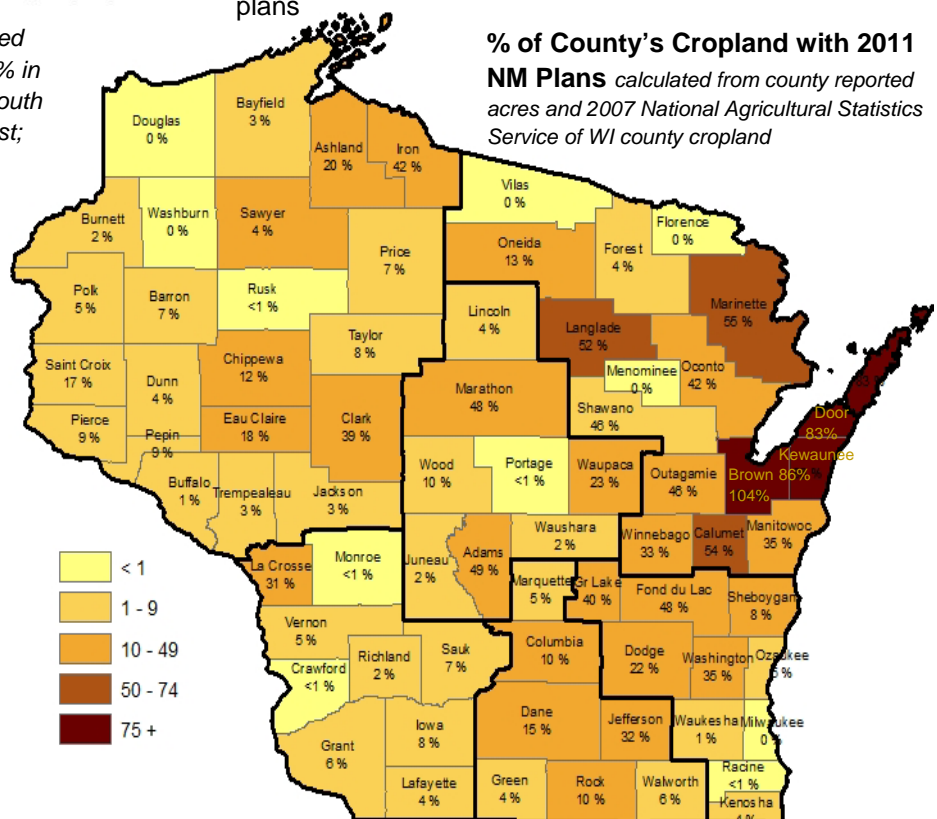
Wisconsin's Dept. of Agriculture, Trade and Consumer Protection tracks nutrient management (NM) planning progress through NM Plan Checklist forms submitted by farmers, agronomists, and public agency staff. In 2011, **3,557 NM plans covering 1,848,626 acres** show a 23% increase from last year and cover **21% of WI's 9 million cropland acres**.

Farmers that implement an annually updated nutrient management plan use one of the best practices for reducing water quality problems like algae in lakes and nitrate in groundwater. These farmers reduce excess nutrient losses by controlling soil erosion, following the 590 NM standard, and applying nutrients to UW crop recommendations, while becoming more profitable and better stewards of our soil and water.

## 66 of 72 WI Counties Reporting NM plans in 2011

- Largest acreage under NM plans: Counties of Brown 158,728, Marathon 141,272, Fond du Lac 122,555, Kewaunee 112,683, Clark 101,974, Outagamie 87,715, and Shawano 79,336
- 6 counties have 50% or more of their cropland under NM plans: Brown (104%), Kewaunee (86%), Door (83%), Marinette (55%), Calumet (54%), Langlade (52%)
- \* Acreage could exceed 100% because some farms may be in multiple counties but only reported in one.
- 25 counties have 10% to 50% of their cropland with NM plans
- 41 have less than 10% of their cropland acres with NM plans

% of County's Cropland with 2011 NM Plans calculated from county reported acres and 2007 National Agricultural Statistics Service of WI county cropland



# 2011 Quality Assurance Team (QAT) NM Plan Review Summary

For the last 16 years, the Quality Assurance Team (QAT), comprised of agency conservationists and private sector agronomists, has conducted quality assurance reviews of NM plans. The 2011 QAT assessed 65 plans covering 50,310 acres with the goal of improving planning and stewardship of our soil and water resources. The QAT found the most improvements in soil testing and properly allocating manure across the crop rotation. These were the big problems last year. **This year, the most problematic issue is protecting and documenting that “concentrated flow areas” have perennial vegetation controlling soil erosion.**

Every NM plan should be updated annually with crops, yields, tillage, nutrient application timing, and nutrient rates. Every spring county conservation departments across WI ask agronomists and farmers to submit a *NM Plan Checklist* that represents the 590 plan. The *Checklist* is meant to remind the planner about items that need to be included in the 590 NM plan. If the item does not comply with the standard, the planner, ethically, should not be saying that it does. Rather, planners should explain in the narrative that they know about the compliance issue and when it will be resolved.

**We are lucky in WI to have many agronomists that are continually improving and a great team at the UW helping them.** In the 2011, the QAT review of 65 plans found 56 (86%) were written with Snap Plus software, 5% more than last year. Farmers developed 12 of these NM plans and 8 of those used Snap Plus. Snap Plus NM software is available free of charge from <http://www.snapplus.net/>.

## Review Questions

### Does the NM plan have concentrated flow areas protected with perennial vegetation?

Result: 38% (25 of 65) of plans mentioned concentrated flow channels were protected from erosion, about the same as last year.

**Tip:** Established concentrated flow channels are not to have nutrients applied in them. Planners should note in the farm narrative which fields have or will have waterways installed to control erosion and when installation will occur. Showing these areas on the field maps will also help to keep manure applications out of these conduits to surface water.

In Snap Plus, protections to these channels are recorded in the Farm Screen. The **Narrative and Crops Report** shows the narrative, planned crops, and yields for the rotation.

### Does the NM plan have a manure spreader calibration and corresponding applications?

Result: 55% (36 of 65) of the plans used calibrated manure applications, a 20% increase from 2010.

**Tip:** It is important to know how much manure is being applied. The plan should use the calibrated rate so nutrients are properly credited. Contact your UWEX or conservation office for assistance with spreader calibration.

Use manure production book values when establishing the NM plan. Subsequent plans should track all manure applied by counting loads or storage volume.

In Snap Plus, the **Manure Tracking Report** shows annual manure production and use by source, livestock numbers, storage capacity, and spreader calibrations.

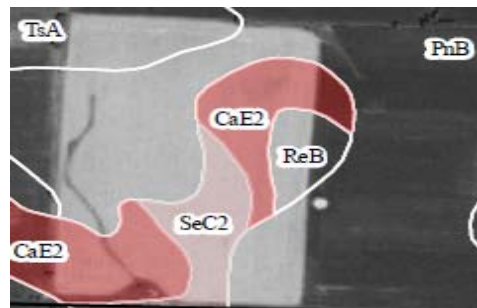
### Does the NM plan have the correct soil type?

Result: 65% (42 of 65) of the plans used proper soil map symbols, a 32% and largest increase from last year.

**Tip:** The Field Screen is where planners select the field's soil type and any spreading restrictions found in that field or on the map. To correctly calculate soil erosion, pick the soil type from the hill that covers 10% or more of the field.

The 3rd capital letter of the soil map unit designates % slope. The A slopes are the flattest and F slopes very steep and rarely farmed. In the example below, even though much of the field is a PnB 2-6% slope, the “Dominant Critical Soil” (hill) that covers 10% or more of the field is CaE2 12-30%.

In Snap Plus, the Field Screen has a link to the 590 Standard's application restriction maps at <http://www.manureadvisorysystem.wi.gov/>.



### Does the NM plan have properly tested soil?

Result: 42% (27 of 65) of the plans strictly followed the 5 acre per soil sample every 4 years soil testing requirement on every field, a 23% and 2nd largest increase from last year.

**Tip:** In Snap Plus, test values for each soil sample, not just the average, are needed to provide the correct lime recommendations. Ask your DATCP certified soil testing laboratory to email you the soil test results in Snap Plus format. Import the file into Snap Plus to save time and to reduce entry errors.



## Does the NM plan maintain tolerable soil loss “T” on every field across the crop rotation?

Result: 66% (43 of 65) of the plans had every field meeting tolerable soil loss (T) for sheet and rill erosion, a 12% increase from 2010.

**Tip:** Soil conservation planning starts with selecting the “Dominant Critical Soil”, the crop rotations, nutrient application methods, and tillage for each field to calculate soil erosion rates.

In Snap Plus, farmers and planners are able to change their crop management and nutrient applications as long as the annual soil loss stays at or below “T” and applications do not exceed the 590 standard.

The current Snap Plus version 1.132.8 has improvements to make meeting the 590 standard easier. To review plans we compare the field’s soil types and restriction features on the application restriction map to those selected in the NM plan.

We enter each restriction in Snap Plus using the Field Screen’s **Restriction Features** column. The **Compliance Check Report** will check the nutrient applications to ensure compliance.

The Cropping Screen and the NM Plan Reports will show compliance problems if the crop rotation, soil loss rates, tillage, phosphorus (P), or nitrogen (N) exceed UW recommendations or the 590 NM standard.

## Does the NM plan have properly planned applications on fields with 590 restricted areas?

Result: 89% (58 of 65) of plans highlighted **surface waters**.

Result: 82% (53 of 65) of the plans correctly addressed **N soil restrictions** helping to reduce nitrate losses to groundwater. The 590 standard prohibits fall commercial N in most cases and limits fall manure applications to 120 pounds of N/acre or the crop’s N need, whichever is less when soil temperatures are lower than 50° F. The remaining N need is applied in the spring.

Result: 75% (49 of 65) of plans planned winter nutrient applications according to **winter spreading restrictions** on steep slopes and areas near surface waters. Unrestricted areas can have winter applications, but liquid applications are limited to 7,000 gallons/ac and cannot exceed the next year’s crop P removal, which Snap calculates.

Result: 62% (40 of 65) of the plans had **wells** identified, helping to incorporate applications 200’ up slope of these conduits to groundwater.

**Tip:** The application restriction map’s from <http://www.manureadvisorysystem.wi.gov/> show:

**Yellow dots** where soils have fall N restrictions;

**Red** where slopes are too steep for winter manure applications; and

**Blue cross-hatch** in Surface Water Quality Management Areas (SWQMA) where mechanical nutrient applications are prohibited in the winter. SWQMAs are the parts of the field draining to lakes and ponds within 1,000’, or within 300’ draining to perennial rivers.

Applications on unfrozen ground in SWQMAs require application incorporation, 30% plant cover, cover crops, or filter strips.

Unincorporated liquid applications also have rate limits, which Snap can calculate.

## Does the NM plan have complete phosphorus (P) management?

Result: 48% (31 of 65) of plans properly managed all the manure produced annually and allocated additional P fertilizer for each year of the rotation.

**Tip:** Planners should identify safe places to go with manure in the winter and summer that will not exceed restrictions.

New in Snap Plus are orange **flags for excess fertilizer P2O5** that show when a field has applied more than the entire P2O5 recommendation for rotation.

Snap Plus tracks soil-banked P & K in the years between soil tests on the Cropping Screen so farmers do not apply more than they need.

Be sure to indicate if the farm is using the Soil Test P management option or the P Index for any fields receiving manure over the rotation. Snap Plus reports will show compliance for both or either method.

The **NR 151.04 performance standard requires an average rotational P Index of 6 and a PI of 12 in any single year** for DNR nonpoint source programs now. This may be required for DATCP programs if adopted in ATCP 50 Wis. Admin. Code.

## Does the NM plan have nitrogen (N) applications within the allowances of the 590 standard and UW recommendations?

Result: 69% (45 of 65) of plans had N recommendations that complied with the 590 standard for every field.

**Tip:** N applications are for a single year and cannot exceed UW recommendations (UWEX Pub. A2809). Snap Plus will flag excess applications by turning the application red in the Cropping Screen. To learn more about compliance flags, go to the Help menu from the F1 key and search for “restriction flags.”



**A Wisconsin nutrient management (NM) plan is an annually updated record** that follows WI's USDA Natural Resources Conservation Service's 590 Nutrient Management Standard. A NM plan accounts for all N-P-K nutrients applied, and planned to be applied, to each field over the crop rotation. Soils need to be tested by a DATCP certified laboratory every 4 years, with each field sampled every 5 acres. Farms can be required to implement nutrient management with a \$28/ac cost share offer or if:

1. *required by local manure storage or livestock siting ordinances;*
2. *participating in the Farm-land Preservation Program;*
3. *regulated by a WPDES permit;*
4. *accepting cost share for manure storage; or*
5. *causing a discharge.*

**Nutrient management information and forms** can be found at: [http://datcp.wi.gov/Farms/Nutrient\\_Management/Planning/index.aspx](http://datcp.wi.gov/Farms/Nutrient_Management/Planning/index.aspx)

For more information about the content of this newsletter, contact: Sue Porter (608) 224-4605 [sue.porter@wi.gov](mailto:sue.porter@wi.gov)

### NM Plans Then and Now

**2002** NR 151 and ATCP 50 passed requiring NM planning

**2005** 590 Std. updated with P management

**2008** Crop year when P management could be required

**2009** Farmland Preservation Program updated with \$7.50/ac/yr for EX-Ag zoning, made restriction maps available for all of WI

**2010** QAT tests new Snap Plus application restriction features and new reports to help planners meet 590 standard

**2011** 1st crop year with Snap Plus version 1.132. restriction flagging and new interactive web restriction maps

### Wisconsin Qualified Planners:

1. American Society of Agronomy *Certified Crop Advisors* and *Professional Agronomists* and Soil Science Society of America *Soil Scientists* see <https://www.soils.org/certifications/>;
2. National Association of Independent Crop Consultants *Certified Professional Crop Consultants* see the following website <http://www.naicc.org/Dir/bystate.cfm?c=wi> ;
3. *Farmers developing their own NM plans* and submitting a NM Checklist form to DATCP.

### A Wisconsin nutrient management (NM) plan must include soil tests analyzed from a DATCP Certified Soil Testing Lab

These laboratories can help NM planners by providing your soil tests to you electronically and in Snap Plus format.

[UW Soil & Plant Analysis Laboratory](#)  
Verona, WI (608) 262-4364

[UW Soil & Forage Lab](#)  
Marshfield, WI (715) 387-2523

[A & L Great Lakes Laboratories, Inc.](#)  
Fort Wayne, IN (260) 483-4759

[AgSource Cooperative Services](#)  
Bonduel, WI (715) 758-2178

[Dairyland Laboratories](#)  
Arcadia, WI (608) 323-2123

[Rock River Laboratory](#)  
Watertown, WI (920) 261-0446

[SGS Mowers Soil Testing Plus, Inc.](#)  
Toulon, IL (309) 286-2761

**Tip:** *When updating your soil test in Snap Plus, planners can use the **Soil Test - Sample Log** from the Farm Management Reports to list the field names and the samples required to meet 590 requirements. If this is sent to the lab with the soil samples, you will easily be able to bring into Snap the new samples for your existing fields.*



2011 QAT Members		
Chris Baxter—UW Platteville	Todd Morris—Green Lake County Land Conservation	Matt Zoschke—Clark County Land Conservation
Ed Ruff—SWTC	Terence Kelly— NRCS, Madison	Janet Wojcik—Clark County Land Conservation
Kim Meyer—Frontier FS	Dirk Herr Hoyman—UW Madison, Soil Science	Roger Geisking— Premier Cooperative
Andrew Craig—WI DNR, Madison	Paul Kivlin—UW NPM	Laura Ward Good—UW Madison, Soil Science
Nikki Wagner—Frontier FS	Matt Ruark—UW Madison Soil Science	Dave West—West Agronomics
Kevin Flyte—Dairyland NM Services LLC	Greg Leonard—Eau Claire County Land Conservation	Alan Rustad—Ag Ventures
Kevin Giese—Agri-Tech	Joe Wolter—UW Madison, Soil Science	Stephanie Schneider—DATCP, Eau Claire
Steve Prouty—Pro Ag	Ben Wohan—Vernon County Land Conservation	Mark Jenks—DATCP, Waukesha
	Joe Speich—Landmark Agronomy Evansville	Sue Porter—DATCP, Madison