



Nutrient Management What's New?

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Consumer Protection**

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What are WI's NM Rules & Programs?

EQIP - USDA NRCS cost share program

NR 243 – WPDES permit federal CAFO regs June 2007

NR 151 - Water quality performance standards 2002
open again to add Total Maximum Daily Load provisions for nutrients

ATCP 50 - Add N&P-based 590 std. June 2007

ATCP 51 – Sets livestock siting standards May 2006

ATCP 40 – Requires bulk fertilizer sellers to ask purchasers if they have a NM plan for tracking NM progress (1,050,454 acres in 2007 ↑ 3% from 2006). Exempts distributors of manipulated manure from fertilizer tonnage fee if applied to fields practicing NM.

Nutrient Management - What's New?

- One 590 standard for Livestock Siting, EQIP, County manure storage ordinances, and NM Perf. Stds.
- More state funding \$6.5 million annually for NM
- 1 million acres NM plans reported in 2007
- Snap Plus 1.122.4 (Nov. 19)
 - Estimates sheet and rill soil erosion rates
 - Gives a record keeping system for past and present applications
 - Calculates risks with the Wis. P Index and P & K crop input/removal balances

Why would a farmer want a NM plan?

- Helps track crops, nutrient needs, and nutrient applications by field which helps *maximize* profitability
- Reduce runoff risks and *minimize* groundwater and surface water degradation while protecting the soil from erosion
- Reduce liability A farmer is presumed to comply with the NM law if the farmer complies with their NM plan that is prepared or approved by a qualified NM planner other than the farmer
- Qualified planners are CCA's, CPAg, SSSA, CPCC, farmer planners

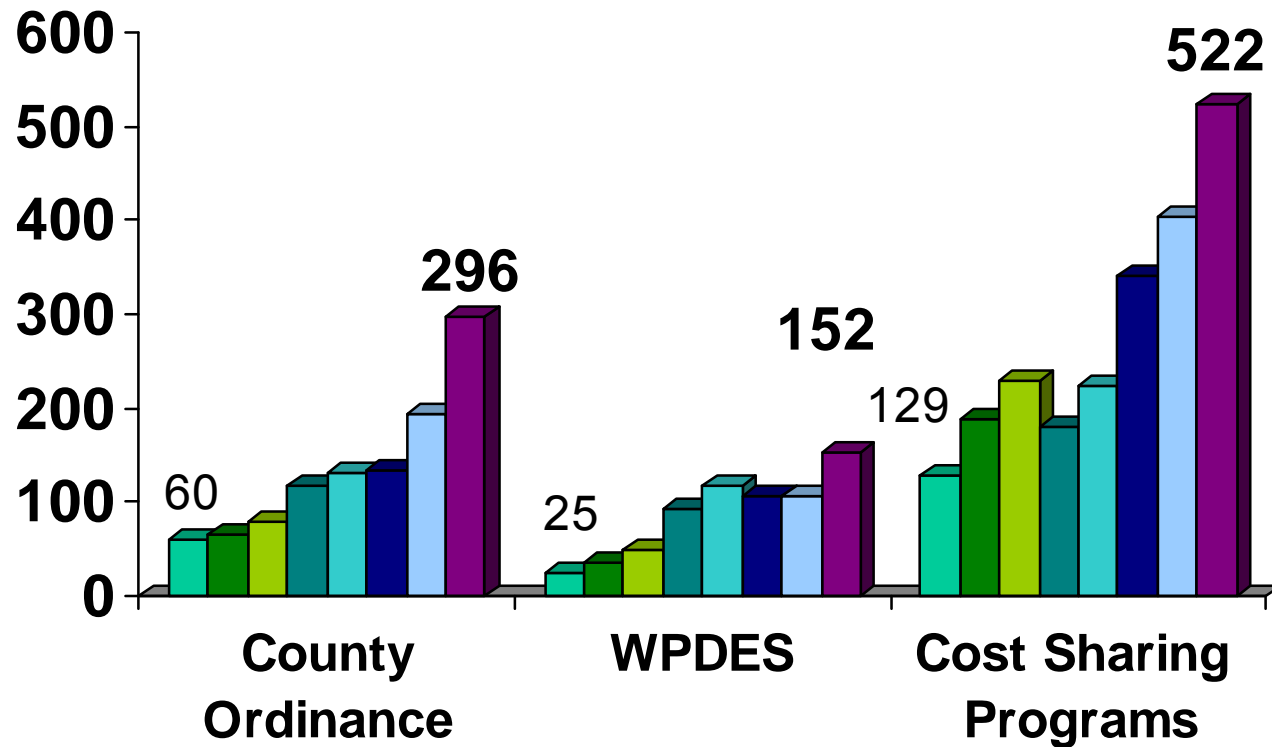
When Are Producers Required to Have a Nutrient Management Plan?

- When offered [70%] **cost-share** for NM
- When accepting **manure storage cost-share**
- When participating in **farmland preservation** program
- When regulated under a **county ordinance** for manure storage or livestock siting
- When regulated under a DNR **WPDES** permit
- Are required to prevent or **mitigate imminent harm** to waters of the state as an emergency or interim response to a grossly negligent pollution discharge

**NM planning can be required everywhere in WI
after January 1, 2008**

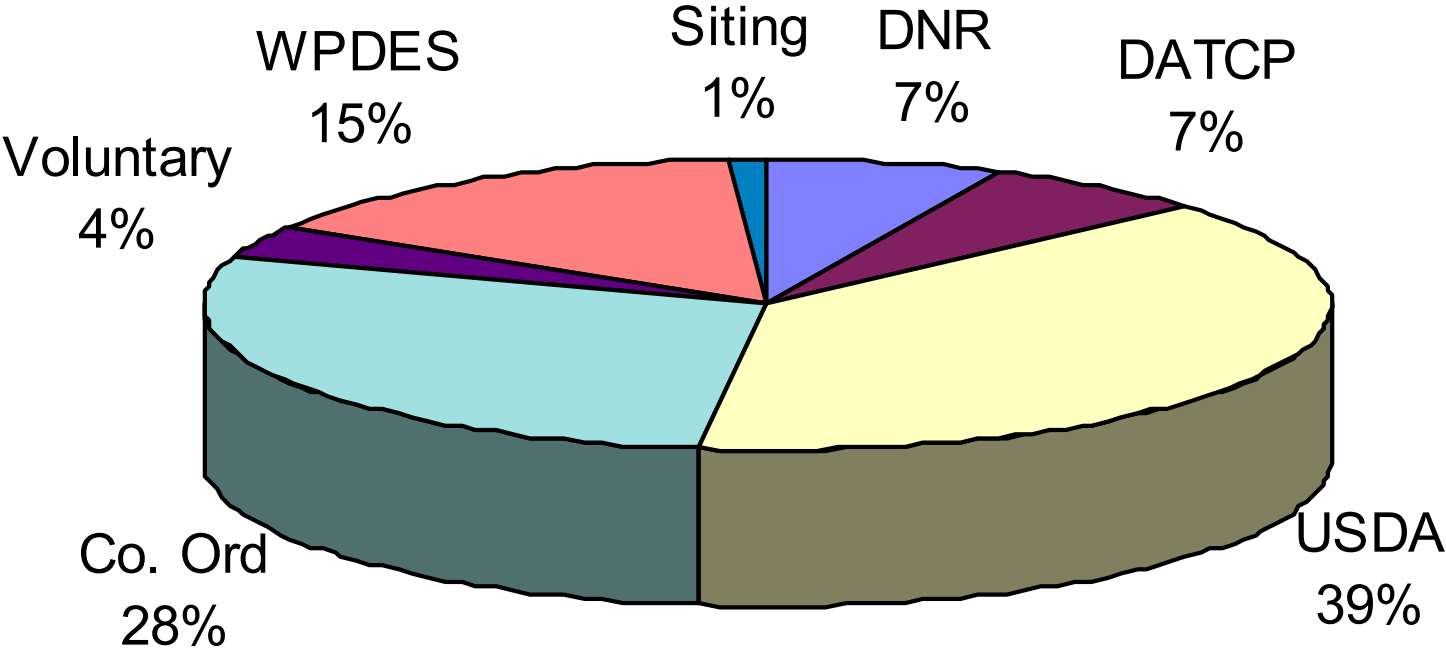
2000-2007 Nutrient Management Acres

Thousands of Acres



2000 2001 2002 2003 2004 2005 2006 2007

2007 Nutrient Management Plan Acres by Program

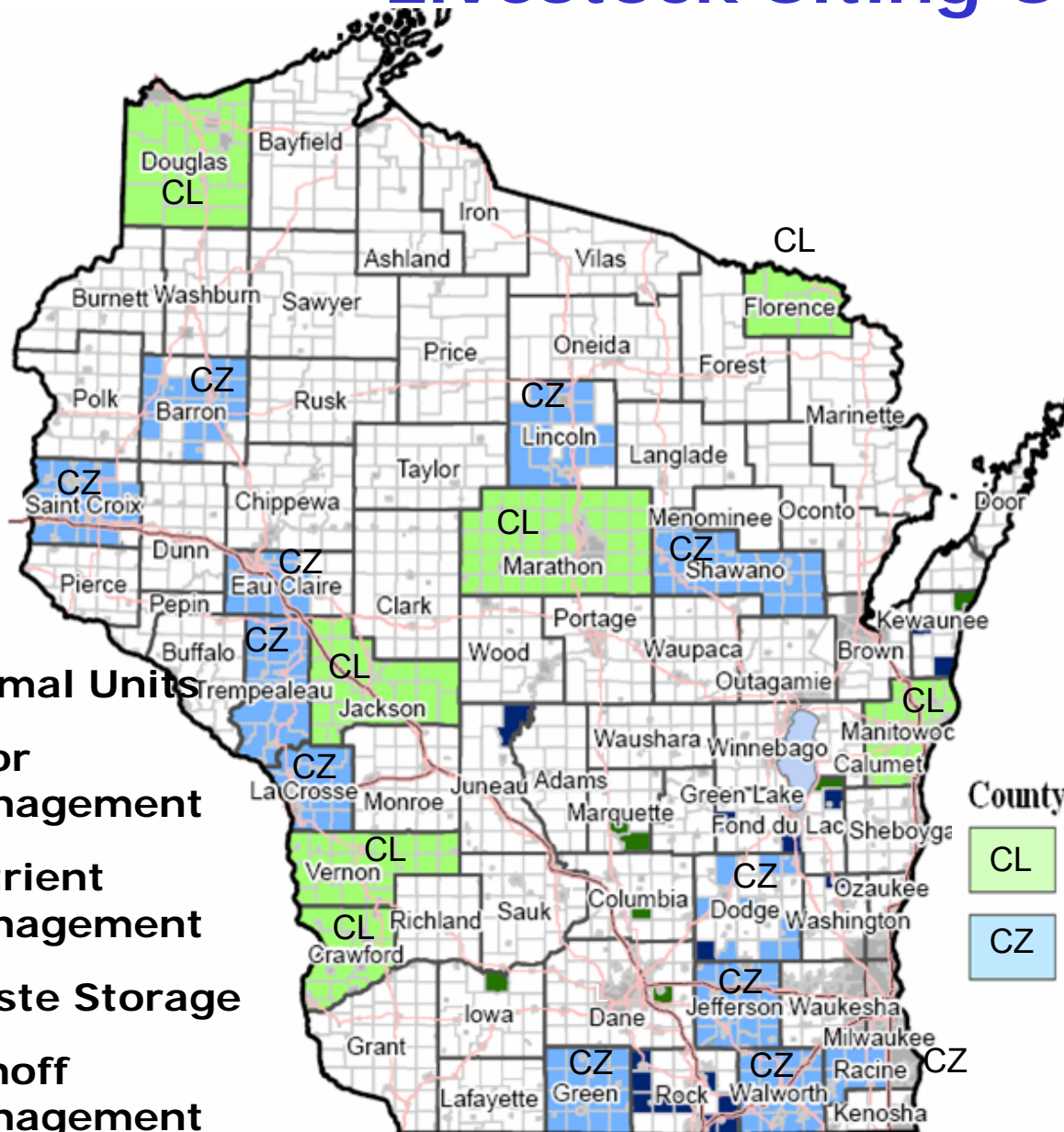


		DNR	DATCP	USDA	Co. Ord	Voluntary	WPDES	Siting
Total Acres	1,006,242	66,741	67,288	388,372	285,590	36,324	151,682	10,346

Livestock Siting Ordinances ATCP 51

Local governments who choose to regulate livestock siting after May 2006 must require state standards and incorporate them in ordinance

- **Animal Units**
- **Odor Management**
- **Nutrient Management**
- **Waste Storage**
- **Runoff Management**



County

CL	Licensing
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CZ	Zoning
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City/Town/Village

 Licensing

 Zoning☐ No Ordinance
on Record

1 Aug. 2007

Farmland Preservation Program

(ATCP 50)

- About 19,000 farmers
- Tax relief claims of about \$12 million/yr
- Average credit \$650/yr
- Contracts after 2004 or Exclusive Ag Zoning participants **MUST** follow performance standards, including NM



Water Quality Performance Standards

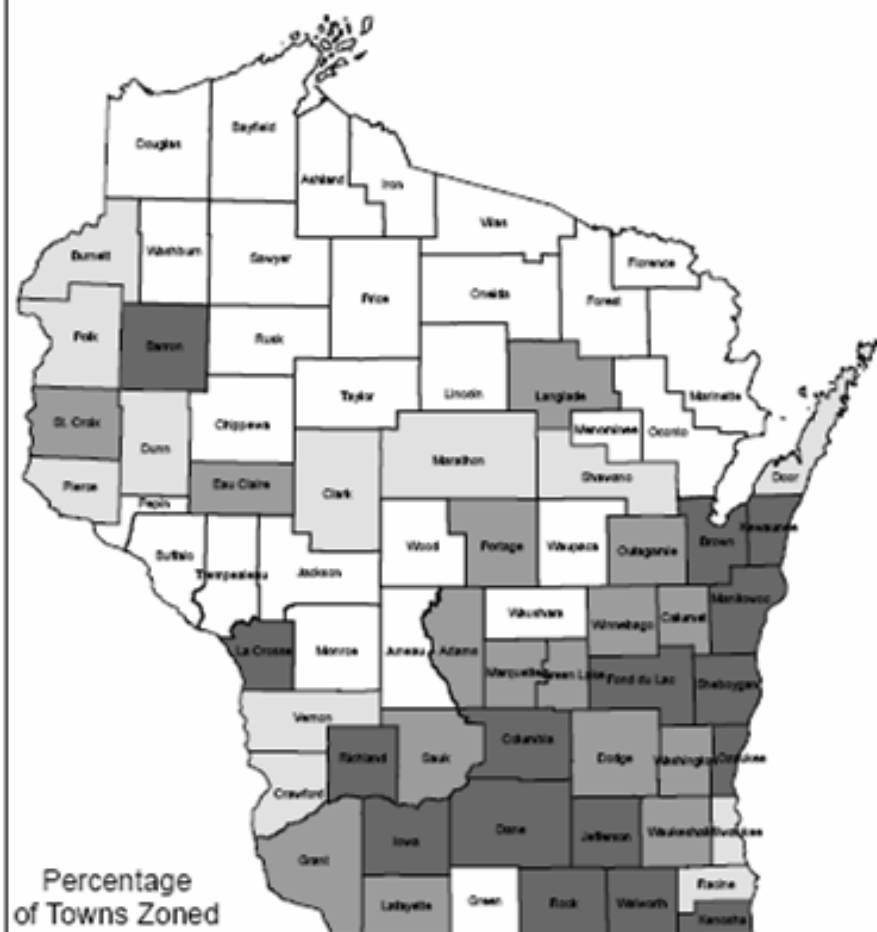
(NR151 & ATCP 50)

County LWRM Plans

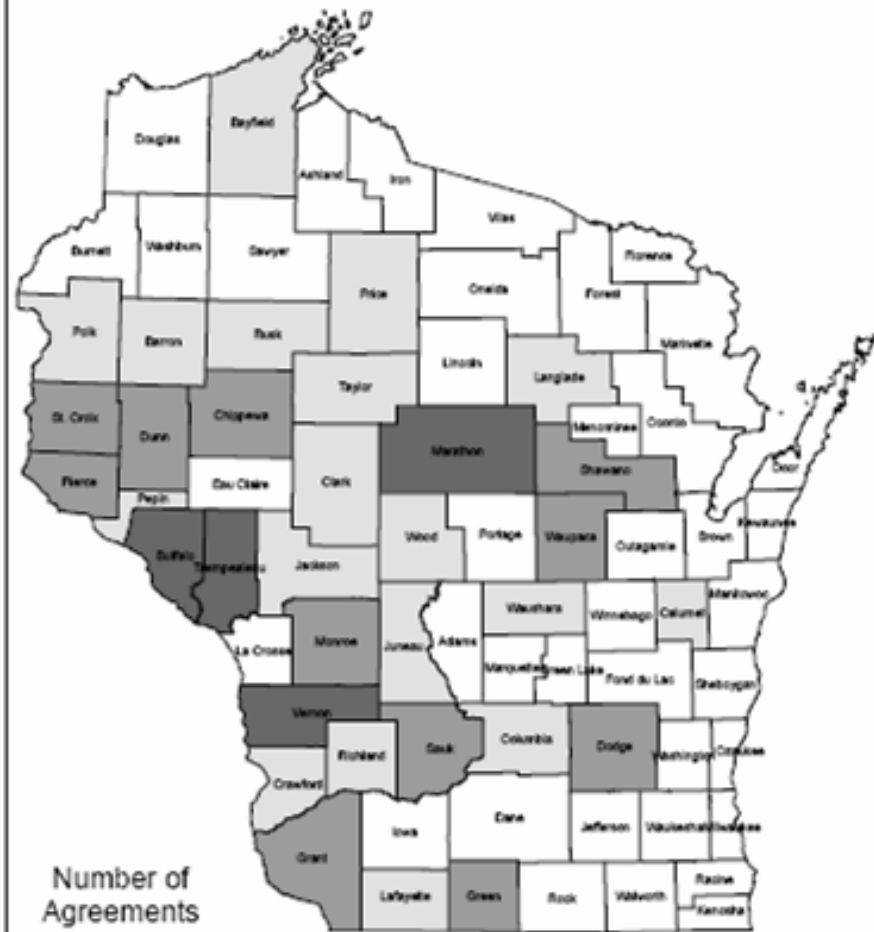
Voluntary -- Cross Compliance -- Enforcement

- Close to water divert clean water around feedlots
- Close to water no unconfined manure piles
- Construct manure storage facilities to standards
- No overflowing manure storage facilities
- No direct feedlot runoff
- Restrict livestock to maintain cover near water
- Control erosion to meet tolerable soil loss (T)
- Apply nutrients to crop needs limiting nutrient delivery potential

Exclusive Agricultural Zoning 2006

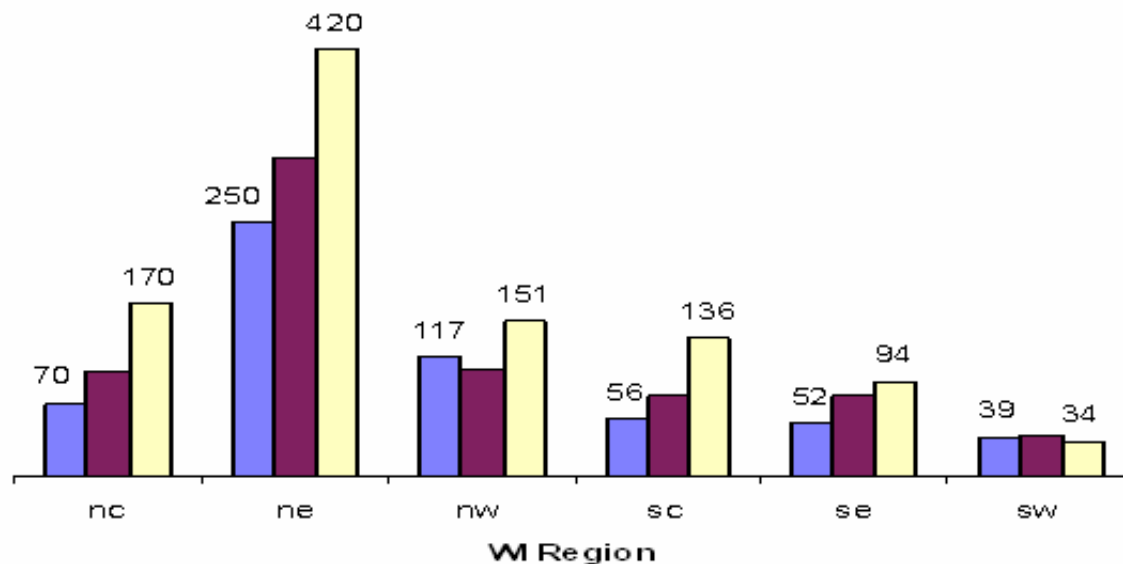


Farmland Preservation Agreements 2006



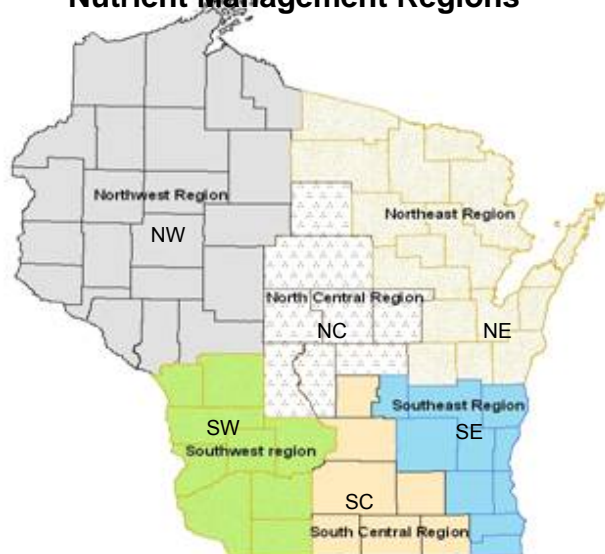
NM Plan Acres by Region 2005-2007

Acres in Thousands



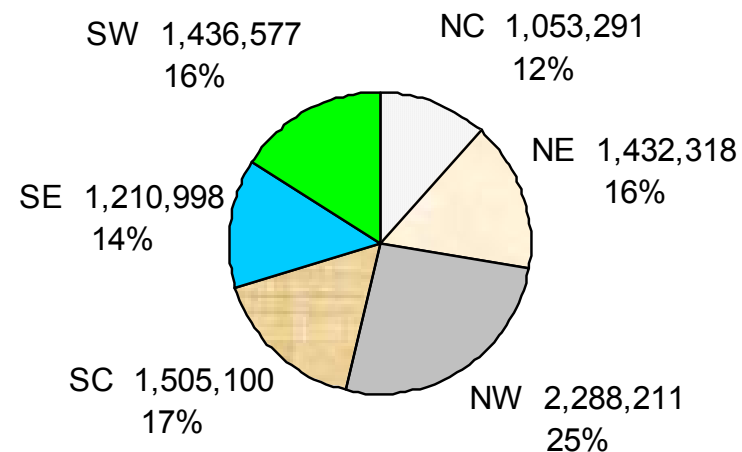
■ 2005 acres ■ 2006 acres ■ 2007 acres

Nutrient Management Regions

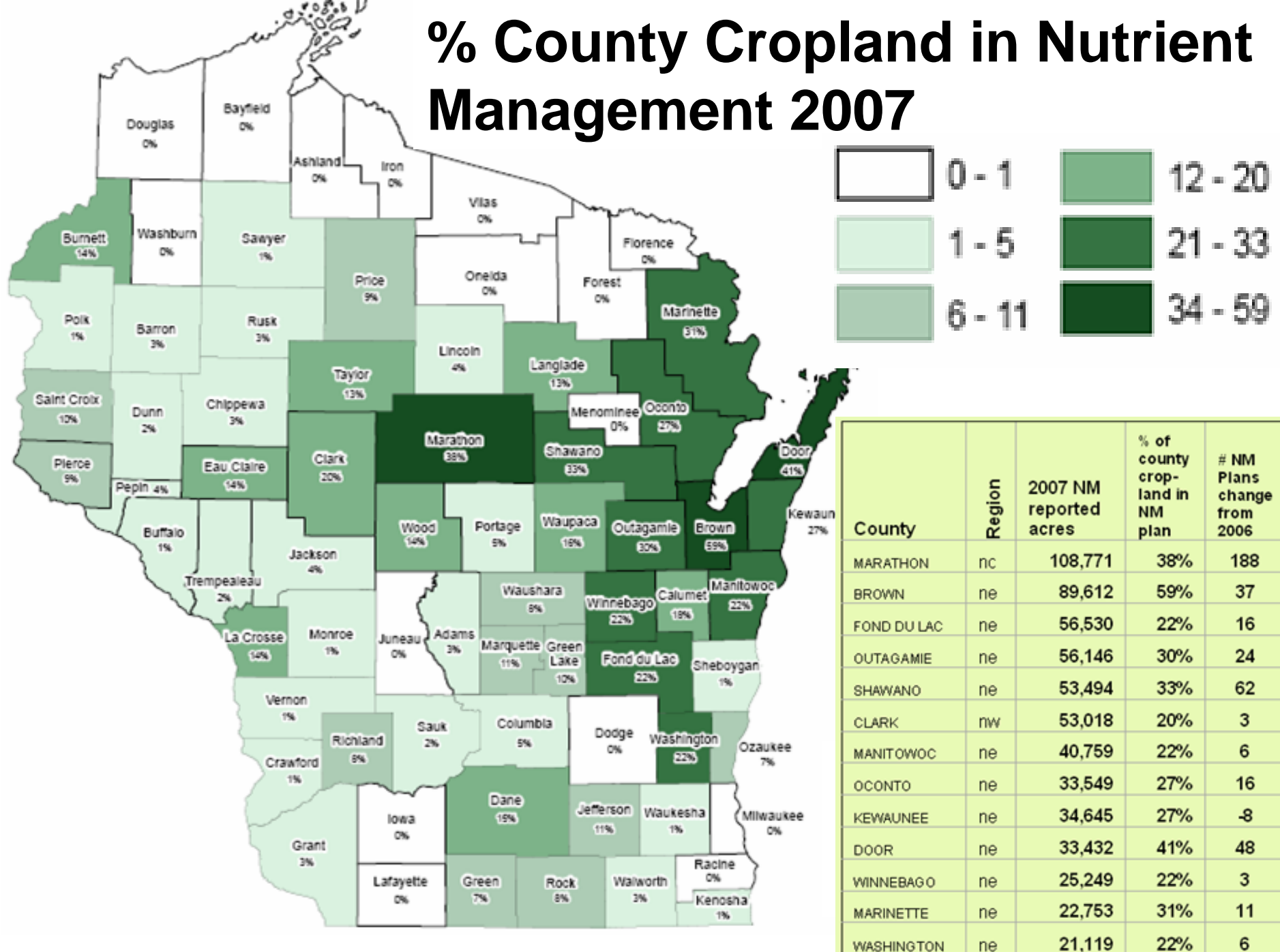


Region	2006-2007 NM Acre Change	% Change
nc	65,593	39%
ne	108,396	26%
nw	44,960	30%
sc	56,344	41%
se	15,682	17%
sw	-4,974	-14%

WI Cropland Acres by Region



% County Cropland in Nutrient Management 2007



Plan Review

What's in a NM plan?



- UW Soil test Crop need –
nutrient credits = fertilizer to
apply
- Accounts for **all** N-P-K nutrients
for the crop rotation
- Based on UW soil test
recommendations (Pub.A2809)
with sampling every 4 yrs (UW
Pub. A2100, certified lab)
- Update annually to NRCS 590
NM Std. to feed crops and
protect water

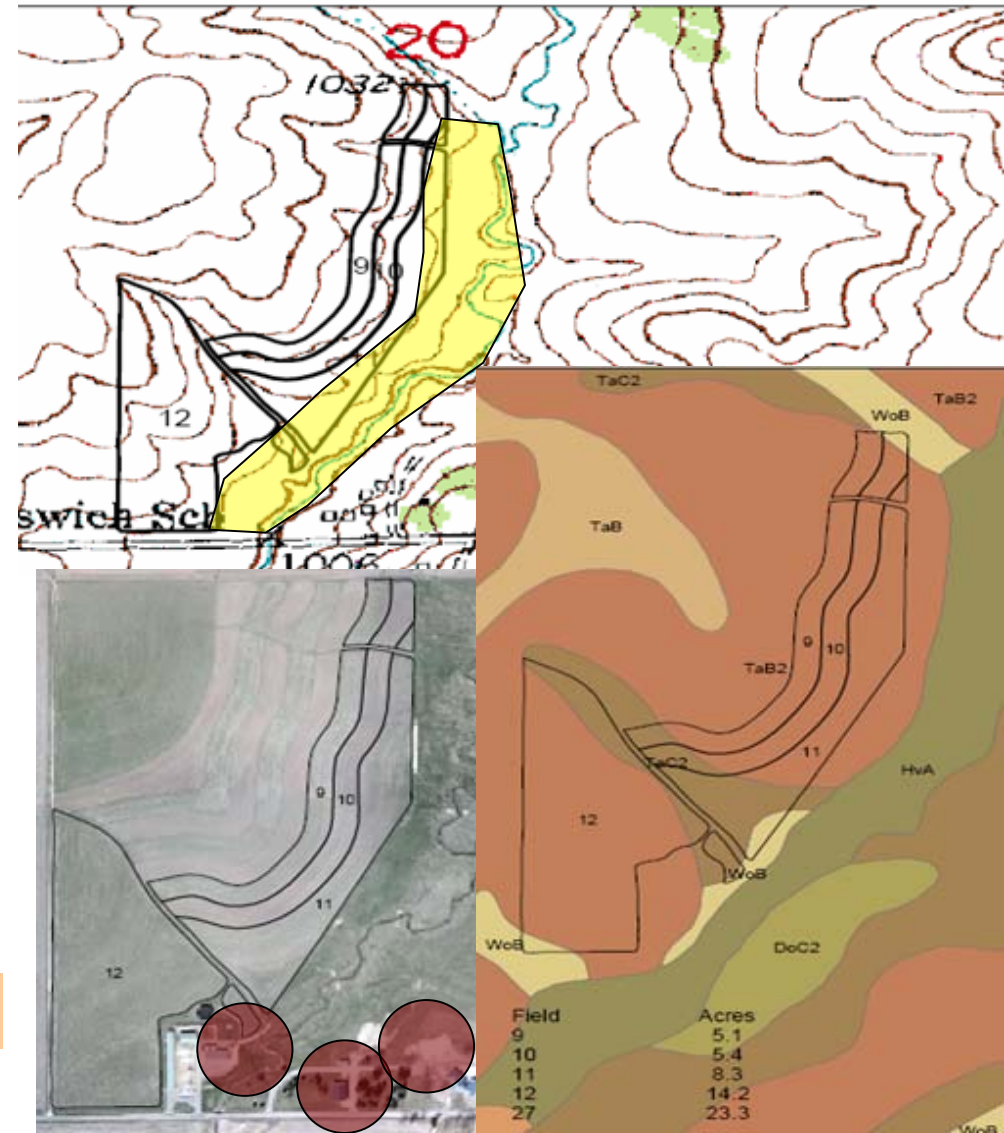
Do NM plan maps show ?

NM Checklist Part C. 1.

USGS 24K Topographic Map

- a) Field boundary and ID?
- b) Areas where nutrient applications are prohibited?
fields eroding above tolerable T rates,
grassed ww, unfarmed areas
- c) Areas within 50 feet of drinking wells where mechanical manure applications are prohibited?
 - grazing OK, incorporated fertilizer OK

12/19 plans missed wells



Do NM plan maps show ?

NM Checklist Part C. 1.

d) 590 & local winter spreading restrictions? No additional local winter restrictions for livestock siting unless ordinance requires to protect public health & safety

6/19 plans missed winter restrictions
1 spreading on 16% slope

Do not apply nutrients:

- To fields greater than 9% slope, 12% if contoured
- Within 1000' of lakes, ponds, or 300' of perennial streams
- At rates greater than P removal of the next crop and liquid manure rates can not exceed 7000 gallons per acre
- BE CAUTIOUS on fields with concentrated flow in 1/3 of the area





On Web Soil Survey

Do NM plan maps show ?

NM Checklist Part C. 1.

e) Wells, sinkhole, surface bedrock, tile inlet...

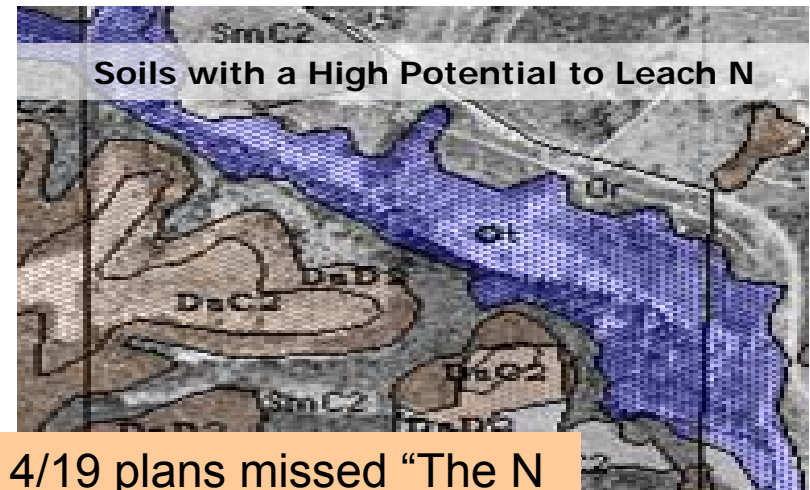
- Do not apply nutrients unless incorporated within 200 feet upslope of direct conduits to groundwater in 72 hrs



Home well and surface application of manure

f) Limit nutrients to mainly spring for soils likely to leach nitrate (close to bedrock, water table, highly permeable, and within 1,000 feet of municipal wells)

- soils listed in Appendix 1 of the Conservation Planning Technical Note **UPDATED 4-20-07**



4/19 plans missed "The N soils"

NM Checklist Part C. 2.



Are soil erosion controls implemented so the crop rotation will not exceed T according to the conservation plan or Snap Plus?

- See your conservation office
- <http://www.snapplus.net/>

3/19 plans exceeded T

NM Checklist Part C. 3.

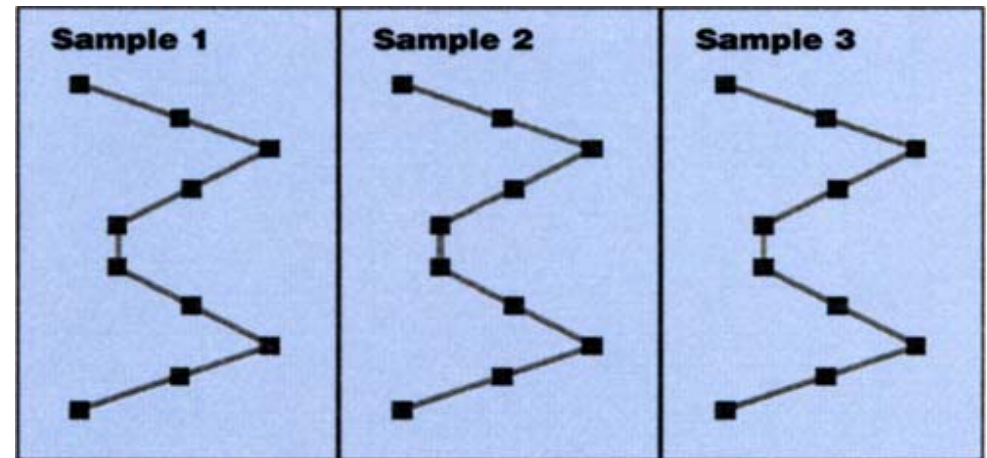
Are soil samples collected according to *Sampling Soil for Testing* UW Pub.

A2100 and analyzed by a DATCP certified laboratory within the last 4 years?

At a cost of about \$.50/ac/year soil sampling is an important item to determine if nutrients are needed.

Fertilizer could cost \$100/ac/yr.

Sampling Pattern for a 15 Acre Field



Each sample should be composed of at least 10 soil cores.

5/19 plans did not have adequate # of soil samples

NM Checklist Part C. 4.

Are planned nutrient applications consistent with UW Pub. A-2809 *Soil Test Recommendations for Field, Vegetable and Fruit Crops*, and the 2005 NRCS 590 NM standard?



5/19 plans had excess N ranging from 36 to 200 lbs./ac

- Credit all nutrients applied towards soil test recommendation for crops to be grown

NM Checklist Part C. 5.

Do manure production estimates correspond to acreage needed in the plan?

6/19 plans did not include amount of manure (produced, collected, or how and when applied).

Incomplete plans could **leave planners open for liability** issues because plans were not specific as to how nutrient needs will be met.



NM Checklist Part C. 6.

Is a single P strategy uniformly applied to all fields within a tract?

BIGGEST PROBLEM 14/19 plans did not address all P applications for the rotation (up to 8 yrs)

P and K applications can be combined into a single app. to supply the crop rotation's needs if it does not exceed 590

- Follow **annual** UW soil test N recs of non-legume crop include N from all sources
- Follow UW soil test P recs for the fields receiving only commercial **fertilizer**
- Follow the P Index target of 6 or less **or** use the soil test P for fields receiving **manure** during the crop rotation
 - < 50 PPM, N needs
 - 50-100 PPM P, balance
 - > 100 PPM P, 25% less than crop rotation's removal

Farm Name: WI Potatoes Farm data directory: C:\Program Files\SnapPlus\MySnapPlusData\potato farmTable

Farm Field Soil Tests Nutrient Sources Cropping

Field Name: field 1 County: WI-Barron Acres: 20 Slope: 4 Soil Name: CHETEK Symbol: CkB II Restriction: ? Subsoil Fertility: E Soil Texture: SANDY_LOAM
 Subfarm: Rotation Wizard Calculate all years Soil Test Date: 3/31/2003 pH: 6.0 OM %: 1.5 P (ppm): 250 K (ppm): 100

	First Year			Prev Year			Next Year			Last Year					
	2005			2006			2007			2008			2009		
Crop:	Corn grain			Potatoes, late harvest			Soybeans 7-10 inch rc			Corn grain			Corn grain		
Yield Goal:	131-150			351-450			46-55			131-150			131-150		
Tillage:	No Till			Fall Chisel			No Till			No Till			No Till		
Soil Test Date:	3/31/2003			3/31/2003			3/31/2003			3/31/2003			3/31/2003		
Irrigation / MRTN info:	<input type="checkbox"/> Irrigated			<input type="checkbox"/> Irrigated			<input type="checkbox"/> Irrigated			<input type="checkbox"/> Irrigated 0.05/MRTN			<input type="checkbox"/> Irrigated 0.05/MRTN		
Season notes:															
(lbs/acre)	N	P205	K20	N	P205	K20	N	P205	K20	N	P205	K20	N	P205	K20
Recommendation:	120	0	20	180	30	240	0	0	35	120	0	20	120	0	20
Prior year carryover:		0	0		0	6		0	5		0	1		0	6
Prior years legume credit:	0			0			0			0			0		
Prior years manure credit:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plan manure applications:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plan fertilizer applications:	119	0	31	184	26	244	0	0	31	151	0	31	148	0	31
Total plant-available:	119	0	31	184	26	244	0	0	31	151	0	31	148	0	31
Over(+)/Under(-) UW Rec:	-1	0	11	4	-4	4	0	0	-4	31	0	11	28	0	11
Annual Total PI	0.9			2.5			3.5			2.9			1.4		
<input type="checkbox"/> Details															

Field notes:

Rotation Settings

5 year crop rotation starting in

2005

☐ Contoured

Rotation Summary Results 2005 - 2009

Avg soil loss 1.6 t/acre/yr

Field "T" 3 t/acre/yr

Avg P Index 2.3

P205 balance -259 lb/acre

K20 balance -52 lb/acre

Soil test P is greater than 100 ppm
 so your P205 balance should be
 less than -71 lb/acre.

Farms with only fertilizer and no manure can not exceed P&K soil test recommendation but can combine applications into a single application

NM Checklist Part C. 7.

Are areas of concentrated flow, resulting in reoccurring gullies, planned to be protected with perennial vegetative cover?

3/19 plans did not show / mention waterway protection



NM Checklist Part C. 8.

Will nutrient applications on non-frozen (**within 300' perennial streams, 1000' from lakes & ponds SWQMA**) use 1 or more of the following to reduce acute runoff?

4/19 plans did not identify these spreading restrictions



In addition, if unincorporated liquid manure is applied, limit rates & wait 7 days or use Table 1 description. **DO NOT APPLY** on saturated soils. **DO NOT ALLOW** manure runoff.

Table 1 Surface Texture Class and Proper Moisture Description	Max Application Rate <i>gal/acre</i>	
	< 30%	≥ 30%
Fine clay, silty clay, silty clay loam, clay loam Apply when soil ribbons between fingers	3000	5000
Medium sandy clay, sandy clay loam, loam, silt loam, silt Apply when soil is pliable and forms ball	5000	7500
Coarse loamy sand, sandy loam, sand, peat, and muck Apply when soil forms ball and breaks easily	7000	10000

How Can WI Increase NM Implementation?

1. Promote compliance through cost-sharing - technical assistance - education
2. Monitor plans periodically for the Farmland Preservation Program participants and county ordinances
3. Continue communications with agronomists for plan development and annual updates
4. Continue farmer training programs for plan development and annual updates