

# Wisconsin P Trade Report – Webinar #4



SnapPlus 14.1 built on 2015-03-04 - AboveAverage

File Import/Export Tools View Help Save snapshot

Subfarm: Show all fields. Farm name: AboveAverageFarm baseline.snapDb  
 Group: Show all fields. Location: D:\Desktop\P Trade\P trade example\Above Average Farm 2015

Farm Fields Soil Tests Nutrients Cropping Daily Log Reports

**SnapPlus P Trade Report**

Reported For: AboveAverage  
 Prepared for: AboveAverage  
 54977

Printed: 2015-04-17  
 Plan Completion/Update Date: 2013-01-09  
 SnapPlus Version: 14.1 built on 2015-03-04

D:\Desktop\P Trade\P trade example\Above Average Farm  
 2015\AboveAverageFarm baseline.snapDb

The P Trade Report estimates the annual pounds of phosphorus (P) in surface runoff from cropland entering surface waters. These P loss calculations are based on a field's soil test P concentration, crops, tillage, nutrient management practices and estimates of average runoff and sheet and rill erosion for the predominant soil type. Losses from concentrated flow channel or gully erosion with a field are not included in these calculations. Field-specific P runoff losses are calculated for each year as **P TP**. Fields are only included if there are at least 2 years of crops before the selected start year. Before using this report as part of a Water Quality Trade activity, phosphorus losses (PTP) must be converted into 'P credits' according to DNR guidance.

For more information go to <http://dnr.wi.gov/> and type keyword: **Water Quality Trading**

*This report was developed for Wisconsin DNR Water Quality Trading and Adaptive Management purposes and cannot be used to demonstrate compliance with NR 151 or NRCS 590 NM plan requirements.*

Questions? Please contact DNR phosphorus@dnr.wisconsin.gov

P Trade Report					PTP							
Field Name	Soil Series	Soil Symbol	Acres	Strip Crop	2013	2014	2015	2016	2017	2018	2019	2020
80 1	MANISTEE	KhB	21		37	50	18	18	14	35	175	1
80 2	KEWAUNEE	KhB2	10		19	13	12	7	33	76	59	1
80 3	KEWAUNEE	KhB2	12		10	10	7	5	36	84	67	2
80 4	NAMUR	OnB	20		10	23	131	89	31	22	18	1

Andrew Craig and Kevin Kirsch  
 WQ Trading and AM statewide coordinators  
 DNR Bureau of Runoff Management and Water Quality  
 April 22, 2015



# WI P Trade Report

- What is the P Trade Report?
- How to create the report?
- How to use the report?
- DNR Guidance posted. Comment period open until May 11, 2015
  - **Appendix A - Agricultural Nonpoint Source Implementation Handbook for Adaptive Management and Water Quality Trading**
  - <http://dnr.wi.gov/news/input/guidance.html>
  - [DNRNPSProgram@Wisconsin.gov](mailto:DNRNPSProgram@Wisconsin.gov)



# What is the P Trade Report?

- Created using SNAP+ software - [www.snapplus.wisc.edu](http://www.snapplus.wisc.edu)
- Created for WQ Trading or Adaptive Management compliance strategy for point source discharge permits
- Shows annual pounds of phosphorus from a field or pasture entering surface waters – current farm practices
- Calculates phosphorus reduction – from additional or new farm practices
- Use report outputs with DNR Trade Ratio(s) to determine P credits for WO Trading



# WI P Trade Report Calculation Basics

## **Estimate phosphorus from a field delivered to stream:**

- From eroding sediment
- Released from soil, manure or fertilizer on the surface and dissolved in runoff

## **Practices to reduce phosphorus delivery to stream:**

- Reduce erosion and/or runoff (transport)
- Reduce phosphorus at the soil surface that is vulnerable to erosion and/or runoff (source)



# WI P Trade Report CAVEATS

- P Trade Report does not account for sediment-bound P lost in gully erosion on field
  - Field may not eligible for WQ Trading
- Report must include at least two prior years of farm data/practices and must be accurate
- Report uses field 'predominant' soil to calculate P loss to surface waters
  - More accurate estimate of field P loss compared to WI P Index = planning tool; dominant critical soil used to estimate field P loss
- All fields owned or operated by the 'farm' should be included in SNAP+ database
  - Prevents 'shifting' P losses to other fields



# Gully Erosion Examples - Sediment P

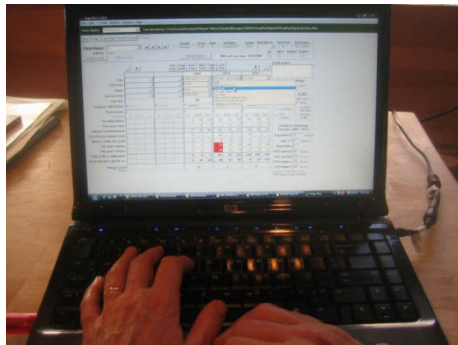


# How to create the report



# Step 1 – Complete Baseline Inventory

Required Information for P Trade report (lb P/yr):



- **Interview farmer/agronomist to find out crops and field management**
  - tillage, manure and fertilizer, soil erosion, filter strips, etc.
- **Soil sample fields - routine analysis for crop fields**
- **Use soil maps to identify soil type, slope, slope length**

You can use existing SnapPlus nutrient management plans that have been updated after each crop season to reflect what happened on a field





# Step 2 – Enter data into SnapPlus



Enter the farm's typical/  
current field management  
for all fields and for all  
years up to the end of the  
proposed trade contract  
period.

Use SnapPlus screen 'tabs' to enter data



# Step 2 – Enter data into SnapPlus

READ ONLY: AboveAverageFarm baseline.snapDb

Location: C:\Users\craigal\AppData\Local\Temp\Temp1\_P Trade for Andrew.zip\IP Trade for Andrew\Above Average Farm 2015

Farm Fields Soil Tests Nutrients Cropping Daily Log Reports

Farm: AboveAverage

FSA code:

Total Acres: 251 Field Count: 21



Contact name:

Phone:

Address:

Cell:

City:

eMail:

State: WI Zip: 54977

URL:

Manure/Nutrient Credits

WPDES permitted farm (CAFO)

- Do not use 2nd or 3rd year manure credits
- Use 2nd year manure credits
- Use 2nd and 3rd year manure credits

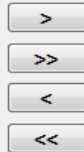
Add Default Crops

Select any crops you might grow for this operation

Unselected Crops

Selected Crops

Alfalfa (1st cut) to Corn grain  
Alfalfa (1st cut) to Corn silage to small grain cover  
Alfalfa (1st cut) to Snapbean  
Alfalfa (1st cut) to Sorghum-soybean forage (milage)  
Alfalfa (1st cut) to Soybean  
Alfalfa Seeding Fall  
Alfalfa, fall killed  
Alfalfa/Brome  
Alfalfa/Brome Seeding Fall  
Alfalfa/Brome Seeding Spring  
Alfalfa/Brome, fall killed  
Alfalfa/Grass  
Alfalfa/Grass Seeding Fall  
Alfalfa/Grass Seeding Spring  
Alfalfa/Grass, fall killed  
Apple  
Apple establishment  
Asparagus, established  
Asparagus, planting  
Asparagus, year 2  
Barlage to Direct Seeded Legume Forage  
Barlage to Sorghum-Soybean forage (milage)



Alfalfa  
Alfalfa (1st cut) to Corn silage  
Alfalfa (1st cut) to Sorghum-sudangrass  
Alfalfa (grassy, yr 3+)  
Alfalfa Seeding Spring  
Corn grain  
Corn silage  
Corn silage to Late Summer Direct Seeded Legume Forage  
Grass hay  
Oat-Pea Forage w/ Alfalfa Seeding Spring  
Oats  
Pasture, dry lot, exercise area  
Pasture, variable stocking, managed continuous  
Soybeans 15-20 inch row  
Winter rye  
Winter Rye (forage) to Corn silage, 18 inch row  
Winter wheat (grain+straw) to Small grain & legume silage

Plan Completion / Update Date

2013-01-09

Farm Narrative:

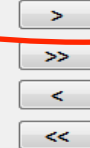
Concentrated flow channel protection:

Select counties for the field locations for this operation

Unselected Counties

Selected Counties

Adams  
Ashland  
Barron  
Bayfield  
Buffalo  
Burnett  
Calumet  
Chippewa  
Clark  
Columbia  
Crawford  
Dane  
Dodge  
Door



Brown



# Step 2 – Enter field data from online Soil Maps

<http://www.manureadvisorysystem.wi.gov>

WI 590 Nutrient Management Restrictions

Wisconsin Department of Agriculture, Trade and Consumer Protection ~ Serving Wisconsin Since 1839

Getting Around Markup Data Measurements and Coordinates

Scale: 1: 5,954

Map Layers

Map Theme: 590 - Layers Active

Operational Layers

- Intermittent Streams
- Perennial Streams
- Waterbodies
- Soil Map Unit
- SWQMA 300 Feet
- SWQMA 1,000 Feet
- Fall N Restriction
- No Winter App. Slope > 12%
- Winter Restriction if Slope > 9%
- DNR Wetland Inventory
  - Wetland Inventory
- Base Layers
  - Administrative Boundaries
    - County
    - Township-Range
    - Section
    - City-Village
  - Transportation

KhB2 = Kewaunee silt loam, 2 – 6% slopes, eroded

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Farm Fields Soil Tests Nutrients Cropping Daily Log Reports

Fields Subfarms Groups

Right-click on column headers for single or multi-cell editing of selected cells.

**P Index** **P Trade Rpt** 590 Restriction Maps  GDD Override ?  
Restriction definitions What is Tiled?

Total Acres: 251 Field Count: 21

Field Name	Active	Sub Farm	Fsa Tract #	Fsa Field #	Size (acres)	County	Soil Map Symbol (critical)	Soil Series Name (critical)	Soil Map Symbol (pre-dominant)	Soil Series Name (pre-dominant)	Field Slope (%)	Field Slope Length (ft)	Below Field Slope to Water (%)	Distance to Perennial Water (ft)	Restriction Features	Tiled?	Field notes
80 1	<input checked="" type="checkbox"/>	80			21.00	Brown	MeC2	MANISTEE	KhB	KEWAU...	10	150	0 - 2	301 - ...	yes	<input type="checkbox"/>	
80 2	<input checked="" type="checkbox"/>	80			10.00	Brown	KhB2	KEWAU...	KhB2	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
80 3	<input checked="" type="checkbox"/>	80			12.00	Brown	KhB2	KEWAU...	KhB2	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
80 4	<input checked="" type="checkbox"/>	80			20.00	Brown	NaD	NAMUR	OnB	OSHKOSH	13	98	0 - 2	1001 ...	yes	<input type="checkbox"/>	
80 6	<input checked="" type="checkbox"/>	80			12.00	Brown	KfC2	KEWAU...	KfC2	KEWAU...	9	151	0 - 2	1001 ...		<input type="checkbox"/>	
HOME 1	<input checked="" type="checkbox"/>	H...			22.00	Brown	KhB	KEWAU...	KhB	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
HOME 2	<input checked="" type="checkbox"/>	H...			12.00	Brown	SeD	SHAWANO	ShB	SISSON	21	79	0 - 2	1001 ...	yes	<input type="checkbox"/>	
HOME 3	<input checked="" type="checkbox"/>	H...			10.00	Brown	KIB2	MANA...	MaA	MANAWA	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
HOME 4	<input checked="" type="checkbox"/>	H...			9.00	Brown	KhC2	KEWAU...	KhC2	KEWAU...	9	151	0 - 2	1001 ...		<input type="checkbox"/>	
HOME 5	<input checked="" type="checkbox"/>	H...			7.00	Brown	KhB2	KEWAU...	KhB2	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
MART 1	<input checked="" type="checkbox"/>	M...			2.00	Brown	HoC2	HOCHHEIM	KgB	KEWAU...	9	151	0 - 2	0 - 300	yes	<input type="checkbox"/>	SWQMA
MART 2	<input checked="" type="checkbox"/>	M...			23.00	Brown	KhB2	KEWAU...	MaA	MANAWA	4	200	0 - 2	0 - 300	yes	<input type="checkbox"/>	SWQMA
MART 3	<input checked="" type="checkbox"/>	M...			4.00	Brown	KhC2	KEWAU...	KhC2	KEWAU...	9	151	0 - 2	0 - 300	yes	<input type="checkbox"/>	SWQMA
PASTURE East	<input checked="" type="checkbox"/>	H...			3.00	Brown	KhC2	KEWAU...	KhB2	KEWAU...	9	151	0 - 2	1001 ...		<input type="checkbox"/>	
PASTURE West	<input checked="" type="checkbox"/>	H...			13.00	Brown	KhD2	KEWAU...	KhB2	KEWAU...	16	98	0 - 2	1001 ...	yes	<input type="checkbox"/>	
TILLIES 1	<input checked="" type="checkbox"/>	Til...			13.00	Brown	KhC2	KEWAU...	KhC2	KEWAU...	9	151	0 - 2	1001 ...		<input type="checkbox"/>	
TILLIES 2	<input checked="" type="checkbox"/>	Til...			11.00	Brown	KhB2	KEWAU...	KhB2	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
TILLIES 3	<input checked="" type="checkbox"/>	Til...			10.00	Brown	KhB2	KEWAU...	KhB2	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
TILLIES 4	<input checked="" type="checkbox"/>	Til...			16.00	Brown	KhB2	KEWAU...	KhB2	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
TILLIES 5	<input checked="" type="checkbox"/>	Til...			11.00	Brown	KhB2	KEWAU...	KhB2	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	
TILLIES 6	<input checked="" type="checkbox"/>	Til...			10.00	Brown	KIB2	KEW...	KhB2	KEWAU...	4	200	0 - 2	1001 ...		<input type="checkbox"/>	



# Step 2 – Enter data into SnapPlus

Subfarm: Show all fields. \*

Field: 80 1

READ ONLY: AboveAverageFarm baseline.snapDb

Location: C:\Users\craigal\AppData\Local\Temp\Temp1\_P Trade for Andrew.zip\Trade for Andrew\Above Average Farm 2015

Group: Show all fields.



Farm Fields **Soil Tests** Nutrients Cropping Daily Log Reports

Soil test history for field: 80 1

County  
Brown

Acres  
21

Slope  
10.0 %

Field Soils:  
Critical:  
Predominant:

Soil Name  
Manistee  
Kewaunee

Soil Symbol  
MeC2  
KhB

Subsoil  
Fertility  
E  
C

Soil Texture  
Loamy Sand  
Silt Loam



Import Soil Test

Test Date	Soil Test Lab	Lab Number	Plow Depth (inches)	Avg pH	Avg OM (%)	Avg P (ppm)	Avg K (ppm)	Avg Ca (ppm)	Avg Mg (ppm)	Avg B (ppm)	Avg Mn (ppm)	Avg Zn (ppm)	Avg S (ppm)	Avg CEC
2013-11-12	State approved lab	130000	7	6.4	2.0	53	70	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009-06-16	ROCK RIVER LAB	118674	7	6.4	2.0	49	70	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Individual soil test samples for test date: 2013-11-12



Sample Count: 5

Sample ID	pH	OM (%)	P (ppm)	K (ppm)	BpH	Ca (ppm)	Mg (ppm)	B (ppm)	Mn (ppm)	Zn (ppm)	S (ppm)	CEC	Notes
44	6.4	2.2	65	70	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
45	6.5	2.1	49	50	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
46	6.6	1.8	55	76	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
47	6.3	2.0	52	70	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
88	6.2	1.9	44	84	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	



# Step 2 – Enter data into SnapPlus

READ ONLY: AboveAverageFarm baseline.snapDb

Location: C:\Users\craigal\AppData\Local\Temp\Temp1\_P Trade for Andrew.zip\Trade for Andrew\Above Average Farm 2015

Farm Fields Soil Test **Nutrients** Cropping Daily Log Reports

Crop Year: 2015 [Navigation icons]

Copy Sources/Fertilizers/Herds

Edit Shared Fertilizers

**Nutrient sources** Manure production estimator Animal units calculator Grazing herd setup Manure Analysis

### Manure/Bio Source Data

N, P2O5, K2O & S values are for first year available nutrients in lbs/unit solid or lbs/1000 gallons

Value of nutrients in: 2015 based on commercial fertilizer costs.

Source Name	Nutrient Type	N surface	N incorp	N inject	P2O5	K2O	S	Dry matter %	Analysis Date	Known Annual Volume	Volume Units	Unit Value (Incorp)	Total Value (incorp)
Dairy Dry Lots	Dairy, grazing	3.0	0.0	0.0	3.0	6.0	1.0	13		218	Tons	\$0.00	\$0
Dry Cow Pasture ...	Dairy, grazing	3.0	0.0	0.0	3.0	7.0	0.9	12		392	Tons	\$0.00	\$0
Pit Manure Dairy s...	Dairy, slurry	7.0	10.0	12.0	6.0	17.0	1.0	6		1,600,000	Gallo...	\$0.00	\$0
Solid	Dairy, solid	2.0	3.0	3.0	3.0	6.0	1.0	33		311	Tons	\$0.00	\$0

N  \$/lb  
 P2O5  \$/lb  
 K2O  \$/lb  
 Sulfur  \$/lb

The unit value is \$/ton or \$/1000 gals **Total: \$0**

### Dry fertilizer sources

### Liquid fertilizer sources

Fertilizer name	% N	% P2O5	% K2O	% S	% Mg	% Ca	Cost \$ per ton
Anhydrous ammonia	82	0	0	0.0	0.0	0.0	0.00
Diammonium phosphate...	18	46	0	0.0	0.0	0.0	0.00
Potassium chloride	0	0	61	0.0	0.0	0.0	0.00

Fertilizer name	% N	% P2O5	% K2O	% S	% Mg	% Ca	Density lbs/gal	Cost \$ per ton



# Step 2 – Enter data into SnapPlus

Ensure all WQ trade project years have all manure generated on the farm distributed in planned applications

**In 2016, almost half of the manure generated on farm has not been applied**

Nutrient Applications by Season

Start crop year: 2016    No. of years: 1    Refresh after changing any applications.

Crop Year	Nutrient Type	Source Name	Fall	Winter	Spring	Summer	Grazing	Available	Applications	Remaining
2016	Manure	Pit Manure Dairy slurry	840,000	0	0	0	0	1,600,000	840,000	760,000
2016	Manure	Solid	0	150	0	0	0	311	150	161

Display options:  Manure     Grazing     Biosolids     Fertilizer

Need to go back and distribute all of the manure



# Step 2 - All Fields Need All Management for All Project Years

Enter crop rotation with current typical tillage and manure/fertilizer applications

Rotation Editor

Rotation name: CS-CS-CS-poa-a-a-a-a

Rotation years: + -

Share Crop Abbreviations

Year	Crop	Yield goal	Tillage	Irrigated
1	Corn silage	15.1-20	Fall Chisel, disked	<input type="checkbox"/>
2	Corn silage	15.1-20	Fall Chisel, disked	<input type="checkbox"/>
3	Corn silage	15.1-20	Fall Chisel, disked	<input type="checkbox"/>
4	Oat-Pea Forage w/ Alfalfa ...	2.0-3.5	Fall Chisel, disked	<input type="checkbox"/>
5	Alfalfa	3.6-4.5	None	<input type="checkbox"/>
6	Alfalfa	3.6-4.5	None	<input type="checkbox"/>
7	Alfalfa	3.6-4.5	None	<input type="checkbox"/>

1st rotation year nutrient applications for: Corn silage

+ - Add new sources Grazing

Nutrient class	Source name	Season	Spread method	Rate	Units
Manure/Biosolid	Pit Manure ...	Fall	Incorporated	15000	gals/acre





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Farm | Fields | Soil Tests | Nutrients | **Cropping** | Daily Log | Reports

Fast Facts

Year	Soil Test	pH	OM	P	K	County	Acres	Pred. Soil	Symbol	Group	Texture	Field Rest.
2015	2013-11-12	6.4	2.0	53	70	Brown	21.0	Kewaunee	KhB	L	Silt Loam	yes

Rotation Wizard      Calculate all years      Add/Delete Years      Explain

Crop Year (Fall to Fall):

	2014	2015	2016	2017	2018
Crop:	Oat-Pea Forage w/ Alfalf	Alfalfa	Alfalfa	Alfalfa	Corn silage
Yield Goal:	2.0-3.5	4.6-5.5	3.6-4.5	3.6-4.5	15.1-20
Tillage:	Spring Chisel, disked	None	None	None	Spring Chisel, disked
Soil Test Date:	2013-11-12	2013-11-12	2013-11-12	2013-11-12	2013-11-12
Lime Rec:	NOT MET	NOT MET	NOT MET	NOT MET	NA
Irrigation / MRTN info:	<input type="checkbox"/> Irrigated	<input type="checkbox"/> Irrigated	<input type="checkbox"/> Irrigated	<input type="checkbox"/> Irrigated	<input type="checkbox"/> Irrigated 0.05/MRTN
Season notes:					
(lbs/acre)					
UW Recommendation:	N: 10, P2O5: 0, K2O: 150	N: 0, P2O5: 0, K2O: 355	N: 0, P2O5: 0, K2O: 295	N: 0, P2O5: 0, K2O: 295	N: 190, P2O5: 0, K2O: 200
Prior years' extra:	-, 0, 0	-, 60, 20	-, 60, 0	-, 60, 0	-, 60, 0
Adjusted UW recommendation:	10, 0, 150	0, 0, 335	0, 0, 295	0, 0, 295	190, 0, 200
1st & 2nd year legume credit:	0, -, -	0, -, -	0, -, -	0, -, -	120, -, -
2nd & 3rd year manure credit:	0, -, -	0, -, -	0, -, -	0, -, -	0, -, -
This year's manure:	70, 60, 170	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0
This year's fertilizer:	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0
Total credits & applications:	70, 60, 170	0, 0, 0	0, 0, 0	0, 0, 0	120, 0, 0
Over(+)/Under(-) adj UW rec:	60, 60, 20	0, 0, -335	0, 0, -295	0, 0, -295	-70, 0, -200
Annual Total PI:	NA	NA	0	0	1
Particulate PI:	NA	NA	0.2	0.1	0.7
Soluble PI:	NA	NA	0.2	0.2	0.2

Dominant critical soil details:  
 Name: Manistee  
 Symbol: MeC2      Slope: 10.0  
 Texture: Loamy Sand

Rotation Settings  
 Start: 2016      Years: 7  
 Contouring:  None      Filter Area:  None  
 On contour       Designed, field edge  
 Strip crop       Designed, in field

Summary 2016 to 2022  
 Avg soil loss: 1.2 t/ac/yr  
 Field "T": 4 t/ac/yr  
 Avg P Index: 2      SCI: 0.3  
 P2O5      K2O  
 Removal: 375      1K lb/ac  
 Balance: -129      -603 lb/ac

Soil test P is greater than 50 ppm; P2O5 balance should be less than zero lb/acre

# Agronomists Can Help with P Trade



**Confused? Need Help?**

**Consulting Agronomists**

who are certified to do management planning have the skills to use SnapPlus and generate P Trade

Report

DATCP offers classes to learn how to use SNAP+

County Land and Water staff may also help



# Current Practices in all Project Years?

## Now you can run the Baseline P Trade Report

Group: Show all fields. Location: D:\Desktop\PT Trade\PT trade example\Above Average Farm 2015

Farm Fields Soil Tests Nutrients Cropping Daily Log **Reports**

PDF Excel Save Folder

### SnapPlus P Trade Report

<b>Reported For</b>	AboveAverage	<b>Prepared for:</b> AboveAverage 54977
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Experimental

- Charts
  - Soil Test P By Field Acres - Pie C
  - Soil Test P By Field Acres - Colu
- DrillDown Reports
  - DrillDownSoilTestSummarySamp
  - EZSpreadingReport

Water Quality P Trade

Question DNRph

# Step 3 – Run Baseline P Trade Report

Field	Acres	History			Trade period with current farm management				
		PTP 2013	PTP 2014	PTP 2015	PTP 2016	PTP 2017	PTP 2018	PTP 2019	PTP 2020
80 1	21.0	37	50	18	18	14	35	175	170
80 2	10.0	19	13	12	7	33	58	59	19
80 3	12.0	10	10	7	5	36	59	66	19
80 4	20.0	10	23	131	89	31	22	18	14
80 6	12.0	20	13	9	7	45	99	78	23
HOME 1	22.0	156	158	41	20	19	14	34	168
HOME 2	12.0	7	19	68	67	25	16	13	10
HOME 3	10.0	29	49	6	26	35	8	6	4
HOME 4	9.0	14	9	43	147	161	44	17	16
HOME 5	7.0	8	20	66	75	23	13	13	10
MART 1	2.0	6	9	3	3	3	2	3	11
MART 2	23.0	26	15	18	14	22	44	80	20
MART 3	4.0	1	1	1	1	1	1	1	1
PASTURE East	3.0	44	45	46	46	47	47	48	48
PASTURE West	13.0	16	16	14	16	21	21	21	21
TILLIES 1	13.0	146	215	51	16	15	10	39	183
TILLIES 2	11.0	7	5	18	66	94	21	10	9
TILLIES 3	10.0	53	81	16	13	14	5	14	76
TILLIES 4	16.0	33	16	15	17	36	114	141	33
TILLIES 5	11.0	17	17	86	92	18	11	8	5
TILLIES 6	10.0	7	5	3	13	48	82	16	7
<b>Total</b>	<b>251</b>	<b>667</b>	<b>788</b>	<b>671</b>	<b>757</b>	<b>741</b>	<b>726</b>	<b>859</b>	<b>867</b>

Note year-to-year variations in estimated P loss

# How to use the report

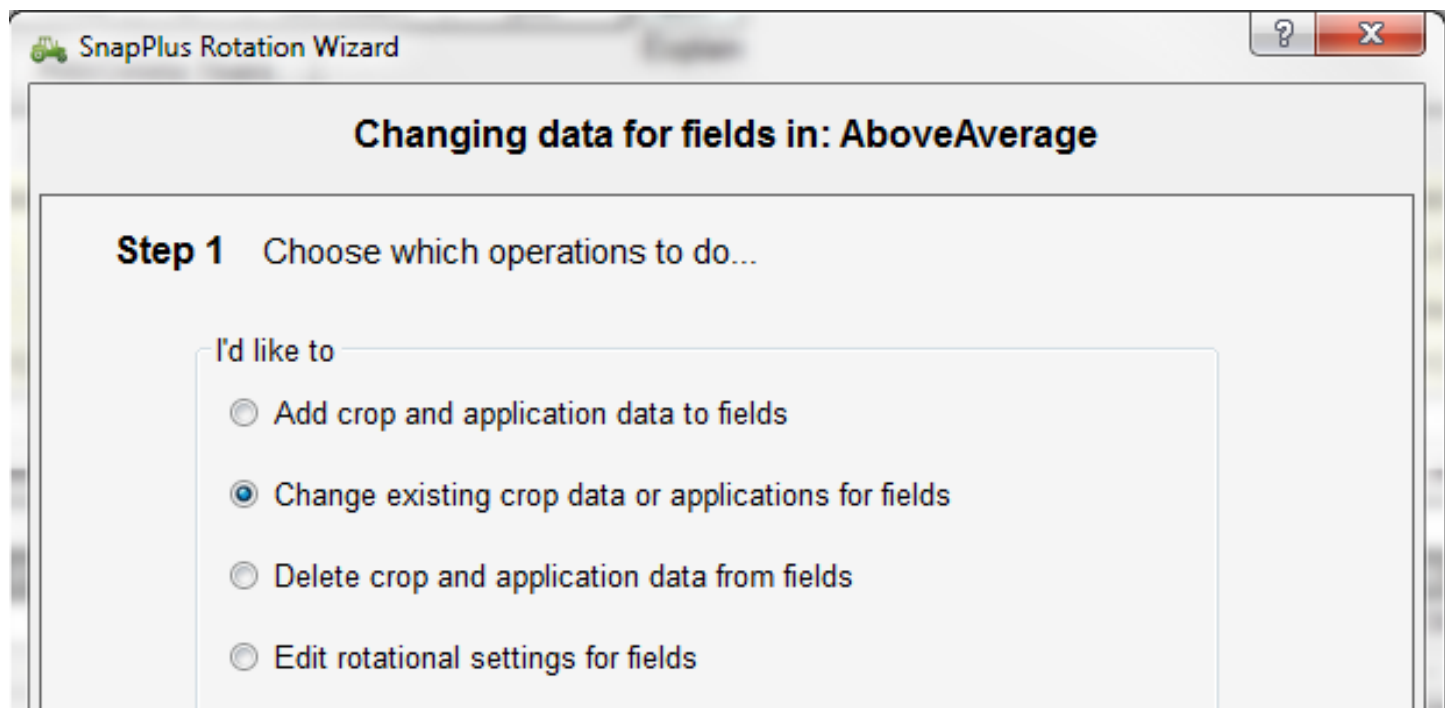


# Step 4 - Reduce P runoff from fields with new or additional practices

Copy SnapPlus database & rename the copy

Identify practices on fields or pastures to reduce P in runoff – *requires farm operator input*

Enter changes into new database



The screenshot shows a window titled "SnapPlus Rotation Wizard" with a subtitle "Changing data for fields in: AboveAverage". The window is at "Step 1 Choose which operations to do...". Below this, there is a text input field containing "I'd like to" and a list of four radio button options:

- Add crop and application data to fields
- Change existing crop data or applications for fields
- Delete crop and application data from fields
- Edit rotational settings for fields

In the bottom right corner of the slide, there is a logo for the Wisconsin Department of Natural Resources, featuring a stylized 'W' and 'DNR' text.

# Step 4 – Example Practices to reduce P runoff

- ❑ Less tillage
  - Reduces erosion of P-containing sediment
- ❑ Revegetated an over-used cattle lot
  - Reduces erosion and runoff from a high P area
- ❑ Added an edge of field grass filter to 3 fields with high P runoff losses
  - Captures P-containing sediment in runoff below field



# Step 5 - Run P Trade Report with Changes

Field	Acres	History			Trade period with new or additional practices				
		PTP 2013	PTP 2014	PTP 2015	PTP 2016	PTP 2017	PTP 2018	PTP 2019	PTP 2020
80 1	21.0	37	50	18	18	14	24	154	145
80 2	10.0	19	13	12	7	31	71	57	19
80 3	12.0	10	10	7	5	33	87	64	20
80 4	20.0	10	23	131	89	31	22	18	14
80 6	12.0	20	13	9	7	42	106	76	23
HOME 1	22.0	156	158	41	20	19	14	24	148
HOME 2	12.0	7	19	68	61	24	12	12	10
HOME 3	10.0	29	49	6	25	34	4	4	3
HOME 4	9.0	14	9	43	129	139	42	17	16
HOME 5	7.0	8	20	66	69	23	13	13	10
MART 1	2.0	2	3	2	2	2	2	2	5
MART 2	23.0	18	13	14	12	16	27	54	14
MART 3	4.0	1	1	1	1	1	1	1	1
PASTURE East	3.0	44	45	46	26	23	23	23	23
PASTURE West	13.0	16	16	17	21	21	21	22	22
TILLIES 1	13.0	146	215	51	16	15	10	24	151
TILLIES 2	11.0	7	5	18	60	82	20	10	9
TILLIES 3	10.0	53	81	16	13	14	5	9	65
TILLIES 4	16.0	33	16	15	17	26	90	122	31
TILLIES 5	11.0	17	17	86	84	18	11	8	5
TILLIES 6	10.0	7	5	3	9	40	71	15	7
<b>Total</b>	<b>251</b>	<b>655</b>	<b>780</b>	<b>669</b>	<b>691</b>	<b>649</b>	<b>679</b>	<b>729</b>	<b>741</b>





# Step 6 – Compare P Trade Reports to determine P reduction (lbs../P/year)

## Project Period

	PTP 2016	PTP 2017	PTP 2018	PTP 2019	PTP 2020
Baseline	757	741	726	859	867
Changed	691	649	679	729	741
P Reduction	66	93	47	129	126



# Step 7 – Apply DNR Trade Ratio to determine P credits

- DNR Trade Ratios discussed in prior webinars and in DNR guidance
- Multiply farm wide lbs/P/year savings by DNR Trade Ratio to determine P CREDIT.
- Example: P Trade reports show 126 lbs/P/year farm wide savings x 2:1 Trade Ratio = 63 lbs. P/year CREDIT



# TMDL Watersheds

- DNR WQ Trading Guidance written before the P Trade Report was created
- DNR Guidance recommends using WI P Index for:
  - Trade thresholds in TMDL approved watersheds
  - Calculating Interim and Long-term credits
- P Trade report does not follow the WI P Index when estimating annual field P losses
- **DNR is seeking public comment for using P Trade report within TMDL watersheds**



# Summary



# P Trade Report Summary

- Use SNAP+ to enter current P management practices over time period (2013-2020) and run P trade report
  - Report gives annual pounds/P/year lost from each field and over entire farm
  - Provides a baseline for comparison
  - Gully erosion on field = sediment bound P not accounted for; field may not be eligible for WQ Trading
- Make copy of SNAP+ database, select practices to reduce P losses in future years on same fields for same time period and run P Trade Report
  - Reduce P inputs and/or tillage
  - Establish perennial crops vs. annual crops; increase residue; cover crops
  - Buffers, contour farming
  - Stop ag practices and establish permanent vegetation over some or all of field
- Compare P trade reports to calculate P reductions (using excel or some other tool)
  - BEFORE / AFTER analysis
  - Whole farm P reductions (annual pounds/P/year) can be determined



# P Trade Report Summary

- Apply DNR Trade Ratio to calculated P reduction mass
  - Multiply total lbs/P/year by DNR delivery factor (typically 2:1 or 3:1) to determine P savings
  - Example: 800 lbs/P/year farm wide savings x 2:1 delivery factor = 400 lbs. P/year CREDIT
  - This is the mass of P prevented from reaching the receiving water.
- Include P Trade reports and P savings calculations within the Point Source's compliance plan
  - WQ Trading
  - Adaptive Management
- Point Source submits plan to DNR for review and approval. If approved, plan is incorporated into Point Source permit conditions. EPA review of permit also required.



# P Trade Report Summary

- This is only a summary
- DNR guidance will provide more detail and examples for using SNAP+ P Trade reports and calculating P credits using DNR trade ratios



Questions or Comments?

