

Summary of Information Gathered for Jordan Lake Accounting

Provided by Orange SWCD – Todd Roberts/Kenny Ray

- Cropland totals for 1997-2001 baseline and 2010 gathered from N.C. Agricultural Statistics.
- Percentages of crops in the Haw River and Upper New Hope Basins were derived from using Orange County GIS and FSA crop fields data from 1994. 31.3% of the County's total cropland, pasture land and hay land is in the Haw River Basin and 9.4% in the Upper New Hope Basin.
- Cropland to development information was gathered from Orange County Tax Office and included fertilized open land (i.e.: cropland, hay land & pasture land) taken out of ag use value assessment excluding forestry from 2002-2010.
- Cropland, hay land & pasture nitrogen rates were provided by conducting interviews with 13 of the major farmers in the Jordan Lake Watershed.
- Buffers were calculated using the County's 2010 and 1998 aerial photography, hydrology from U.S. Geological Survey National Hydrography Dataset and Farm Service Agency common land unit for cropland 2007.
- No tobacco grown in Upper New Hope Watershed during baseline years or in 2010. All tobacco acres reported were in the Haw River Watershed during baseline years and 2010.
- Idle/Fallow cropland data and CRP data provided by FSA Office.
- Corn silage acreage during baseline was calculated based on the SWCD knowledge of dairies in the Upper New Hope and Haw River Basins.
- For 2010, 33% of the Agriculture statistics total corn grain acreage was considered as corn silage because there still are 8 dairy operations in the county. 70.5% of the total corn silage is grown in the Jordan Lake Watershed based on the total number of dairy cows in the Jordan Lake Basin. Of the remaining dairy operations, 24.4% that grow silage are in the Upper New Hope Basin and 46.1% are in the Haw River Basin.

Jordan Lake Nutrient Sensitive Water Management Strategy

Haw River Annual Report for CY 2010

Date: July 2012

County: Orange

Cropland Acreage and Fertilization Rate

Crops, Hay, Pasture	Baseline (ac)	N Rate (lbs/ac)	2010 (ac)	N Rate (lbs/ac)
Bahiagrass (Hay)				
Barley (Grain)	127	89		
Broccoli				
Cabbage				
Caucasion/Old World Bluestem (Hay)				
Common Bermudagrass (Hay)				
Corn (Grain)	316	144	25	140
Corn (Grain) - no-till	79	144	482	140
Corn (Silage)	997	152	18	150
Corn (Silage) - no till	249	152	342	150
Cotton				
Cucumber				
Cucumber (Plasticulture)				
Dallisgrass (Hay)				
Eggplant				
Eggplant (Plasticulture)				
Fescue (Hay)	4113	83	5196	65
Hybrid Bermudagrass (Hay)				
Hybrid Bermudagrass O/S with Rescuegrass (Hay)				
Irish Potatoes				
Leafy Greens				
Lettuce (Head)				
Lettuce (Leaf)				
Lima Bean				
Melons				
Mixed Cool Season Grass (Hay)				
Oats (Grain)	90	89		
Okra				
Onion				
Orchardgrass (Hay)				
Peanuts*				
Pearl Millet (Hay)				
Peppers				
Peppers (Plasticulture)				
Pumpkins				
Rescuegrass (Hay)				
Rutabaga/Turnip				
Rye (Grain)				
Small Grain (Silage)				
Snap Bean				
Sorghum (Grain)				
Sorghum (Silage)				
Sorghum Sudan (Hay)				
Southern Peas				
Soybeans (Double Cropped - Manured)				
Soybeans (Double Cropped)				
Soybeans (Full Season - Manured)				
Soybeans (Full Season)	794	18	970	17
Squash (Summer)				
Squash (Winter)				
Sweat Potatoes (Jewel)				
Sweet Corn				
Sweet Potatoes				
Timothy Grass (Hay)				
Tobacco (Burley)				
Tobacco (Flue Cured)	570	92	244	81
Tomatoes				
Tomatoes (Plasticulture)				
Triticale (Grain)				
Tropical Corn (Silage)				
Watermelons				
Watermelons (Seeded - Plasticulture)				
Watermelons (Seedless - Plasticulture)				
Wheat (Grain)	720	95	407	92
Total crop acreage (acres)	8,055		7,684	

Reduction Progress

	Baseline	2010
lbs	230,908	134,953
Reduction (%)		41.56%

Changes in Cropland Acreage from Baseline

	Baseline	2010
Cropland Acreage	8,055	7,684
Change		-371
% Change		4.61%

Agricultural Landuse Changes from Baseline (cumulative)

	Baseline	2010	Change
Cropland & Hayland			0
Pasture			0
Idle/Fallow Cropland**		106	106
Cropland Conversion to grass or trees		215	215
Cropland to Development		933	933

Best Management Practices Installed (cumulative)

	Baseline	2010	Change
Scavenger Crop (acres)			
Wheat			0
Oats			0
Rye	63	160	97
Triticale			0
Barley			0
No-till Corn Piedmont*			0
Nutrient Management (acres)			0
Buffers (acres)			
Buffer:min. 20ft	708	699	-9
Buffer:min. 30ft	1,052	1,040	-12
Buffer:min. 50ft	1,717	1,697	-20
Buffer:min. 100ft	3,267	3,226	-41
Exclusion fencing (feet)			0

* Conservation tillage for corn and silage corn in the Piedmont is calculated within the cropland portion of NLEW and not as a distinct BMP. It shows up as No-till corn and No-Till silage corn only for counties with a predominance of Piedmont soils. No-till corn is 15% more efficient in nitrogen use efficiency so the reduced N loss is calculated directly with the crop.

Table 7. Phosphorus Loss Risk

	Units	Baseline	2010	P Loss Risk Plus or Minus
Total Agricultural Land	acres	8,055	7,684	-371
Total agricultural land converted to grass or trees	acres	0	9	9
Conservation Reserve Program and WRP/Restored Wetland Acres	acres	0	215	215
Conservation Tillage	acres	328	824	496
Buffers	acres affected	6,744	6,662	-82
Scavenger Crop (not reportable in NLEW)	acres			0
Tobacco	acres	570	244	-326

Jordan Lake Nutrient Sensitive Water Management Strategy

Upper New Hope Annual Report for CY 2010

Date: July 2012

County: Orange

Cropland Acreage and Fertilization Rate

Crops, Hay, Pasture	Baseline (ac)	N Rate (lbs/ac)	2010 (ac)	N Rate (lbs/ac)
Bahiagrass (Hay)				
Barley (Grain)	38	89		
Broccoli				
Cabbage				
Caucasion/Old World Bluestem (Hay)				
Common Bermudagrass (Hay)				
Corn (Grain)	94	145	8	140
Corn (Grain) - no-till	24	145	144	140
Corn (Silage)	332	152	9	150
Corn (Silage) - no till	83	152	181	150
Cotton				
Cucumber				
Cucumber (Plasticulture)				
Dallisgrass (Hay)				
Eggplant				
Eggplant (Plasticulture)				
Fescue (Hay)	1235	83	1560	65
Hybrid Bermudagrass (Hay)				
Hybrid Bermudagrass O/S with Rescuegrass (Hay)				
Irish Potatoes				
Leafy Greens				
Lettuce (Head)				
Lettuce (Leaf)				
Lima Bean				
Melons				
Mixed Cool Season Grass (Hay)				
Oats (Grain)	27	89		
Okra				
Onion				
Orchardgrass (Hay)				
Peanuts*				
Pearl Millet (Hay)				
Peppers				
Peppers (Plasticulture)				
Pumpkins				
Rescuegrass (Hay)				
Rutabaga/Turnip				
Rye (Grain)				
Small Grain (Silage)				
Snap Bean				
Sorghum (Grain)				
Sorghum (Silage)				
Sorghum Sudan (Hay)				
Southern Peas				
Soybeans (Double Cropped - Manured)				
Soybeans (Double Cropped)				
Soybeans (Full Season - Manured)				
Soybeans (Full Season)	239	19	291	17
Squash (Summer)				
Squash (Winter)				
Sweat Potatoes (Jewel)				
Sweet Corn				
Sweet Potatoes				
Timothy Grass (Hay)				
Tobacco (Burley)				
Tobacco (Flue Cured)				
Tomatoes				
Tomatoes (Plasticulture)				
Triticale (Grain)				
Tropical Corn (Silage)				
Watermelons				
Watermelons (Seeded - Plasticulture)				
Watermelons (Seedless - Plasticulture)				
Wheat (Grain)	216	95	122	92
Total crop acreage (acres)	2,288		2,315	

Reduction Progress

	Baseline	2010
lbs	68,632	45,447
Reduction (%)		33.78%

Changes in Cropland Acreage from Baseline

	Baseline	2010
Cropland Acreage	2,288	2,315
Change		27
% Change		-1.18%

Agricultural Landuse Changes from Baseline (cumulative)

	Baseline	2010	Change
Cropland & Hayland	2,288	2,315	27
Pasture			0
Idle/Fallow Cropland**		32	32
Cropland Conversion to grass or trees		0	0
Cropland to Development		502	502

Best Management Practices Installed (cumulative)

	Baseline	2010	Change
Scavenger Crop (acres)			
Wheat			0
Oats			0
Rye			0
Triticale			0
Barley			0
No-till Corn Piedmont*			0
Nutrient Management (acres)			0
Buffers (acres)			
Buffer:min. 20ft	177	168	-9
Buffer:min. 30ft	263	250	-13
Buffer:min. 50ft	432	410	-22
Buffer:min. 100ft	848	806	-42
Exclusion fencing (feet)			0

* Conservation tillage for corn and silage corn in the Piedmont is calculated within the cropland portion of NLEW and not as a distinct BMP. It shows up as No-till corn and No-Till silage corn only for counties with a predominance of Piedmont soils. No-till corn is 15% more efficient in nitrogen use efficiency so the reduced N loss is calculated directly with the crop.

Table 7. Phosphorus Loss Risk

	Units	Baseline	2010	P Loss Risk Plus or Minus
Total Agricultural Land	acres	2,288	2,315	27
Total agricultural land converted to grass or trees	acres	0		0
Conservation Reserve Program and WRP/Restored Wetland Acres	acres	0	0	0
Conservation Tillage	acres	107	325	218
Buffers	acres affected	1,720	1,634	-86
Scavenger Crop (not reportable in NLEW)	acres			0
Tobacco	acres			0

Haw River 2010 No till / Conventional

INPUTS

SMG	SMGAcres	Crops	CropAcres	CropNRate	% of Total
SMG20	1	Corn (Grain): Conventional	25	140	0
SMG102	212	Corn (Grain): No-Till	482	140	6
SMG103	586	Corn (Silage): Conventional	18	150	0
SMG105	40	Corn (Silage): No-Till	342	150	4
SMG107	133	Fescue (Hay)	5,196	65	68
SMG109	101	Soybeans (Full Season)	970	17	13
SMG110	488	Tobacco (Flue Cured)	244	81	3
SMG111	1,262	Wheat (Grain)	407	92	5
SMG112	53				
SMG113	4,723				
SMG117	85				
Tot_SMGs	7,684	Tot_Crops	7,684		

CoverCrops	Acres
Rye	160

BMP	Acres
Buffer: Minimum 20 ft	699
Buffer: Minimum 30 ft	1,040
Buffer: Minimum 50 ft	1,697
Buffer: Minimum 100 ft	3,226

OUTPUTS

Total N Needed	=	1,261,752 lbs
Total N (APPLIED)	=	536,418 lbs
Excess N	=	0 lbs
Surface N (Excess)	=	0 lbs
SubSurface N (Excess)	=	0 lbs
SubSurface After Crop	=	184,450 lbs
Total SubSurface	=	184,450 lbs
SubSurface Intercepted By BMP	=	49,497 lbs
SubSurface Loss	=	134,953 lbs

**** TOTAL NITROGEN LOST = 134,953 lbs**

** The Total Nitrogen Lost value is for comparative purposes only. It may not represent actual loss from the Soil Management Unit.

Haw River - 97-2001

No till / conventional

INPUTS

SMG	SMGAcre	Crops	CropAcre	CropNRate	% of Total
SMG20	1	Barley (Grain)	127	89	2
SMG102	222	Corn (Grain): Conventional	316	144	4
SMG103	615	Corn (Grain): No-Till	79	144	1
SMG105	42	Corn (Silage): Conventional	997	152	12
SMG107	139	Corn (Silage): No-Till	249	152	3
SMG109	106	Fescue (Hay)	4,113	83	51
SMG110	512	Oats (Grain)	90	89	1
SMG111	1,323	Soybeans (Full Season)	794	18	10
SMG112	55	Tobacco (Flue Cured)	570	92	7
SMG113	4,950	Wheat (Grain)	720	95	9
SMG117	90				
Tot_SMGs	8,055	Tot_Crops	8,055		

CoverCrops	Acres
Rye	63

BMP	Acres
Buffer: Minimum 20 ft	708
Buffer: Minimum 30 ft	1,052
Buffer: Minimum 50 ft	1,717
Buffer: Minimum 100 ft	3,267

OUTPUTS

Total N Needed	=	1,317,084 lbs
Total N (APPLIED)	=	742,096 lbs
Excess N	=	0 lbs
Surface N (Excess)	=	0 lbs
SubSurface N (Excess)	=	0 lbs
SubSurface After Crop	=	310,906 lbs
Total SubSurface	=	310,906 lbs
SubSurface Intercepted By BMP	=	79,998 lbs
SubSurface Loss	=	230,908 lbs

**** TOTAL NITROGEN LOST = 230,908 lbs**

** The Total Nitrogen Lost value is for comparative purposes only. It may not represent actual loss from the Soil Management Unit.

Upper New Hope - 97-2001 No till / Conventional

INPUTS

SMG	SMGAcres	Crops	CropAcres	CropNRate	% of Total
SMG20	0	Barley (Grain)	38	89	2
SMG102	63	Corn (Grain): Conventional	94	145	4
SMG103	175	Corn (Grain): No-Till	24	145	1
SMG105	12	Corn (Silage): Conventional	332	152	15
SMG107	40	Corn (Silage): No-Till	83	152	4
SMG109	30	Fescue (Hay)	1,235	83	54
SMG110	145	Oats (Grain)	27	89	1
SMG111	376	Soybeans (Full Season)	239	19	10
SMG112	16	Wheat (Grain)	216	95	9
SMG113	1,406				
SMG117	25				
Tot_SMGs		Tot_Crops	2,288		

BMP	Acres
Buffer: Minimum 20 ft	177
Buffer: Minimum 30 ft	263
Buffer: Minimum 50 ft	432
Buffer: Minimum 100 ft	848

OUTPUTS

Total N Needed	=	391,677 lbs
Total N (APPLIED)	=	213,541 lbs
Excess N	=	0 lbs
Surface N (Excess)	=	0 lbs
SubSurface N (Excess)	=	0 lbs
SubSurface After Crop	=	89,199 lbs
Total SubSurface	=	89,199 lbs
SubSurface Intercepted By BMP	=	20,567 lbs
SubSurface Loss	=	68,632 lbs
** TOTAL NITROGEN LOST		= 68,632 lbs

** The Total Nitrogen Lost value is for comparative purposes only. It may not represent actual loss from the Soil Management Unit.

Upper New Hope - No till / Conventional 2010

INPUTS

SMG	SMGAcres	Crops	CropAcres	CropNRate	% of Total
SMG20	0	Corn (Grain): Conventional	8	140	0
SMG102	64	Corn (Grain): No-Till	144	140	6
SMG103	177	Corn (Silage): Conventional	9	150	0
SMG105	12	Corn (Silage): No-Till	181	150	8
SMG107	40	Fescue (Hay)	1,560	65	67
SMG109	31	Soybeans (Full Season)	291	17	13
SMG110	147	Wheat (Grain)	122	92	5
SMG111	380				
SMG112	16				
SMG113	1,422				
SMG117	26				
<hr/>					
Tot_SMGs	2,315	Tot_Crops	2,315		

BMP	Acres
Buffer: Minimum 20 ft	168
Buffer: Minimum 30 ft	250
Buffer: Minimum 50 ft	410
Buffer: Minimum 100 ft	806

OUTPUTS

Total N Needed	=	392,172 lbs
Total N (APPLIED)	=	167,351 lbs
Excess N	=	0 lbs
Surface N (Excess)	=	0 lbs
SubSurface N (Excess)	=	0 lbs
SubSurface After Crop	=	58,005 lbs
Total SubSurface	=	58,005 lbs
SubSurface Intercepted By BMP	=	12,558 lbs
SubSurface Loss	=	45,447 lbs
<hr/>		
** TOTAL NITROGEN LOST	=	45,447 lbs

** The Total Nitrogen Lost value is for comparative purposes only. It may not represent actual loss from the Soil Management Unit.

County: Orange

	Upper New Hope	Haw
Crop Data		
Row Crop Acres: (Source)	NC Agr. Statistics and SWCD Staff	NC Agr. Statistics and SWCD Staff
Row Crop N-rates: (Source)	Local Farmers in the Jordan Lake Basin	Local Farmers in the Jordan Lake Basin
Vegetable Crop Acres: (Source)		
Vegetable Crop N-Rates: (Source)		
Grass Acres: (Source)	Hayland/ NC Agr. Statistics	Hayland/ NC Agr. Statistics
Grass N-Rates: (Source)	Local Farmers in the Jordan Lake Basin	Local Farmers in the Jordan Lake Basin
Special Acreage considerations: (double crop soybeans)		
NLEW Data		
Computer & Office: actual computer where NLEW is loaded	Orange SWCD	Orange SWCD
Runs Saved: (please list drive & folder)	Jordan Lake/ My Documents	Jordan Lake/ My Documents
Past Data Saved: (computer drive & folder)	Jordan Lake/ My Documents	Jordan Lake/ My Documents
Other NLEW Considerations:		
Other Electronic Data		
Agricultural Landuse Changes from Baseline		
Cropland Acreage Data: (Source)	NC Agr. Statistics and SWCD staff	NC Agr. Statistics and SWCD staff
Hayland Acreage Data: (Source)	NC Agr. Statistics and SWCD staff	NC Agr. Statistics and SWCD staff
Pasture Acreage Data: (Source)	Division Soil and Water	Division Soil and Water
Idle/Fallow Cropland Data: (Source)	FSA	FSA
Cropland Conversion Data: (Source)	NCACSP	NCACSP
Cropland to Development: (Source)	Orange County Tax Office	Orange County Tax Office
When do you consider land converted? Sold, Built out?	Tax Office Agr. Land Use Classification Change	Tax Office Agr. Land Use Classif. Change
Contact People & Method	Tax Office	Tax Office
Other		
Other Data:		
Best Management Practices Installed		
Scavenger crop data: (Source)	Orange SWCD Staff	Orange SWCD Staff
No-Till Crop Data: (Source)	Orange SWCD Staff and NCACSP	Orange SWCD Staff and NCACSP
Nutrient Management Data: (Source)		
Buffer Data: (Source)	Orange Co. GIS and NCDA&CS	Orange Co. GIS and NCDA&CS
Exclusion Fencing: (Source)	Division Soil and Water	Division of Soil and Water
Assumptions?		
How do you consider expired contracts?		

Do you consider BMPs not installed using programs?		
BMPs installed that are NOT considered in NLEW		
BMP Data: (Source)	Division of Soil and Water	Division of Soil and Water
Assumptions?		
Other Comments:		