

Watershed Assessment

Introduction

A Rapid Watershed Assessment (RWA) resource assessment matrix has been developed to provide an estimate of conservation systems and practices which are commonly used to address the resource concerns identified in the RWA Resource Profile. The assessment also provides a method to compare current resource conditions with desired future conditions within the watershed.

The rapid assessment matrix summarizes, in tabular form, the projected level of conservation application and the related installation costs at the current rate of participation in NRCS conservation programs. The projected resource conditions and conservation implementation activities are those expected if NRCS programs and funding levels remain the same over the five year evaluation period.

Resource professionals provided an estimate by percent of the conservation systems or practices that are commonly applied in Progressive and RMS systems or on Baseline land units that address resource concerns identified in the resource profile. The estimates are based on long-term watershed trends for participation rates in the existing conservation programs using the Performance Results System (PRS) reports of planned and applied conservation practices for the watershed. This information was merged with estimated costs for practice installation and operation and maintenance to generate a cost estimate by individual practice for each conservation system projected to be applied.

Conservation systems are described in this assessment as a combination of conservation practices developed to address resource concerns on various land uses. The current condition of the soil, water, plant, animal, and human (SWAPA+H) resources for the watershed has been assessed for each land use. The current intensity of resource management was divided into three categories: Baseline, Progressive, or a Resource Management System (RMS).

Baseline –represents those landowners who typically are not participating in conservation programs. There may, however, be a few practices that have been commonly adopted by all landowners in a particular watershed. For example, most landowners follow a “conservation cropping system” that meets Natural Resources Conservation Service (NRCS) conservation practice standards and specifications.

Progressive Management System – progressive adoption of conservation systems which may lead to a full RMS. Landowners at this level are actively participating in conservation programs and have adopted several practices but have not satisfied all of the “Quality Criteria” in Section III of the Field Office Technical Guide (FOTG) for either North Dakota or South Dakota. Progressive conservation plans consist of one or more facilitative practices without any resource management.

RMS –system of conservation practices that address all the SWAPA+H resource concerns typically seen for this land use in this watershed.

The Progressive and RMS level for conservation systems have been defined and are shown in Section III of the Field Office Technical Guide (FOTG).

The systems that have been evaluated in the assessment are not meant to be comprehensive or address all resource concerns for each land unit in the watershed; rather, only the priority resource

concerns and the typical system of conservation practices that are currently applied for the identified resource concerns. Numerous alternatives and combinations of practices exist that are available to watershed landowners and producers in order to meet their desired level of treatment for any resource concern.

Specific resource concerns have been identified for each major land use at the state level. Local watershed residents provided further prioritization of these concerns, identifying the top 13 resource concerns for the watershed:

- ◆ Windbreaks and Shelterbelts
- ◆ Surface Water Quality – Sediment and Nutrients
- ◆ Agricultural Waste Management
- ◆ Riparian Area and Streambank Erosion
- ◆ Water Quantity for Livestock
- ◆ Soil Erosion
- ◆ Nutrient Management
- ◆ Loss of CRP Acres
- ◆ Weed and Pest Management
- ◆ Lack of Grazing Management
- ◆ Wetland and Wildlife Habitat Management
- ◆ Groundwater Quality
- ◆ Air Quality

The resource concerns specific to the watershed have been identified and evaluated by major land use in the watershed assessment.

ASSESSMENT SUMMARY TABLES

The assessment matrix is used to individually assess the identified resource concerns for each land use within the watershed. The land uses that have been assessed in this watershed are cropland, rangeland/pastureland, hayland, wildlife/CRP, and headquarters/farmstead. The acres in each land use category were obtained from the 1997 National Resources Inventory (NRI) Broad Land Use data. The tables in each land use section summarize the current and projected future conditions by conservation system along with the average present value cost per acre and the conservation practices at each treatment level (Baseline, Progressive, and RMS).

Cropland – A land cover/use category that includes areas used for the production of adapted crops for harvest. Cultivated cropland comprises land in row crops or close-grown crops and other cultivated cropland, for example, hayland or pastureland that is in rotation with row or close-grown crops. The cropland acres identified in the watershed are predominantly managed in a corn/soybean/small grain cropping rotation.

Hayland – Land managed for the production of forage crops that are machine harvested. These crops may be grasses, legumes, or a combination.

Rangeland/Pastureland/Grazed Forest – Rangeland is defined as undisturbed acres that still support a predominantly native population of grasses managed for livestock forage. Pastureland is defined as land managed primarily for the production of introduced forage plants for livestock grazing.



UPPER LAKE OAHÉ WATERSHED– 10130102 8-DIGIT HYDROLOGIC UNIT ASSESSMENT

USDA Natural Resources Conservation Service (NRCS)

September 2009

Pastureland cover may consist of a single species in a pure stand, a grass mixture, or a grass-legume mixture. Grazed Forest is a land cover/use that includes forest land that is being grazed by livestock and managed using range or pasture management principles and practices adapted to the forest ecosystem.

Wildlife/CRP Land – For the purposes of the watershed assessment Conservation Reserve Program (CRP) acres were evaluated with land cover/use categories that include areas that are not actively managed as part of any other land use.

Headquarters/Farmsteads – The headquarters or farmstead areas consist of land used for dwellings, outbuildings, barns, pens, corrals, and feedlots next to buildings, farmstead or feedlot windbreaks and family gardens associated with operating farms or ranches.

Resource Assessment Summary

The following summaries are based on the Resource Assessment matrices that evaluate the projected conservation resource applications and investments expected to occur at current participation rates and program funding levels. Only the top four resource concerns were evaluated for each land use. The cost estimates are based on the typical conservation practices applied that treat these resource concerns.

Disclaimer: This assessment is a combination of North and South Dakota PRS and cost data. The costs and cost share will vary by state for individual practices and combination of practices.

Upper Lake Oahe - 10130102

Projected Conservation Program Participation & Costs*

Land Uses	Participation Rate	Installation Costs			
		Acres Treated	Federal		Private
		Total	Cost Share	Technical Assistance	
Cropland	10%	44,633	\$632,000	\$207,000	\$632,000
Grazingland	22%	267,100	\$2,375,000	\$556,000	\$2,375,000
Hayland	7%	2,618	\$1,000	\$4,000	\$1,000
HQ	17%	2,723	\$632,000	\$127,000	\$632,000
Wildlife/CRP	5%	5,263	\$199,000	\$44,000	\$199,000

*Estimate of federal and private investments in conservation activities over the next 5 year period. Assumes that past program participation and funding levels will continue over this period.

Resource Assessment by Landuse

Cropland

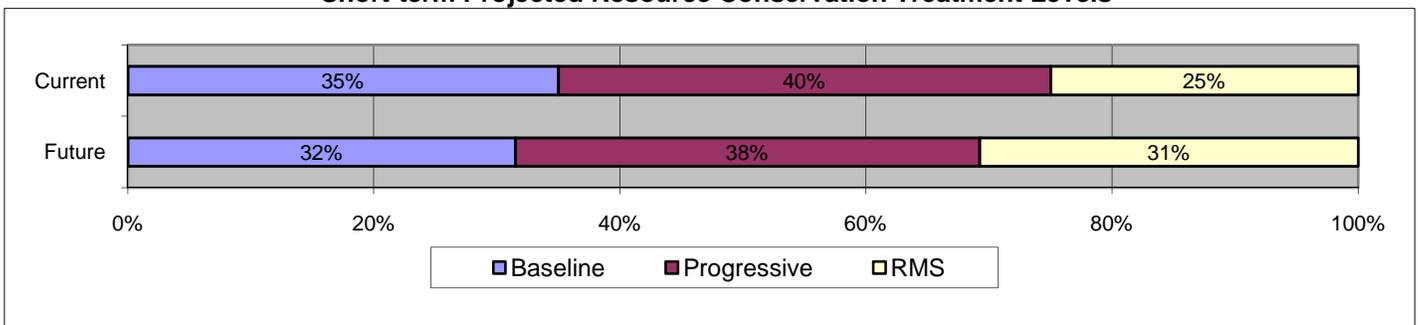
Resource Concerns:

- Soil Erosion – Sheet and Rill
- Soil Erosion – Wind
- Soil Erosion – Ephemeral Gully
- Water Quality – Excessive Nutrients and Organics in Surface Water

Conservation Practices Evaluated:

Conservation Cover; Conservation Crop Rotation; Cover Crop; Irrigation System, Sprinkler; Irrigation Water Conveyance, Pipeline; Irrigation Water Management; Mulching; Nutrient Management; Pest Management; Residue and Tillage Management, Mulch Till; Residue Management, No-Till/Strip Till/Direct Seed; Residue Management, Seasonal; Underground Outlet; Upland Wildlife Habitat Management; Windbreak/Shelterbreak Establishment.

Short-term Projected Resource Conservation Treatment Levels



Rangeland/ Pastureland

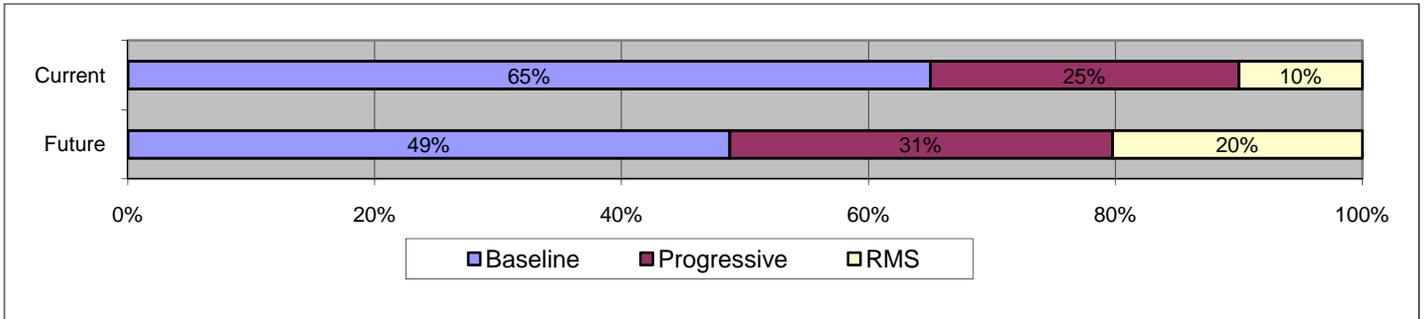
Resource Concerns:

- Soil Erosion – Sheet and Rill
- Plant Condition – Noxious and Invasive Plants
- Domestic Animals – Inadequate Quantities and Quality of Feed and Forage
- Domestic Animals – Inadequate Stock Water

Conservation Practices Evaluated:

- Access Control; Fence; Pasture & Hayland Planting; Pest Management; Pipeline; Pond; Prescribed Grazing; Pumping Plant; Range Planting; Stream Crossing; Water Well; Watering Facility.

Short-term Projected Resource Conservation Treatment Levels



Hayland

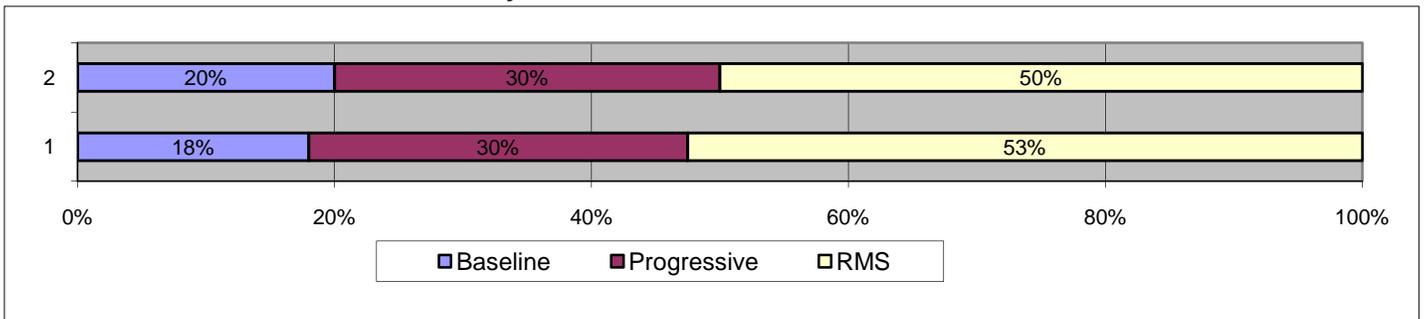
Resource Concerns:

- Soil Erosion – Sheet and Rill
- Plant Condition – Productivity, Health and Vigor
- Plant Condition – Noxious and Invasive Plants
- Plant Condition – Forage Quality and Palatability

Conservation Practices Evaluated:

- Forage Harvest Management; Nutrient Management; Pasture & Hayland Planting; Pest Management.

Short-term Projected Resource Conservation Treatment Levels



Headquarters

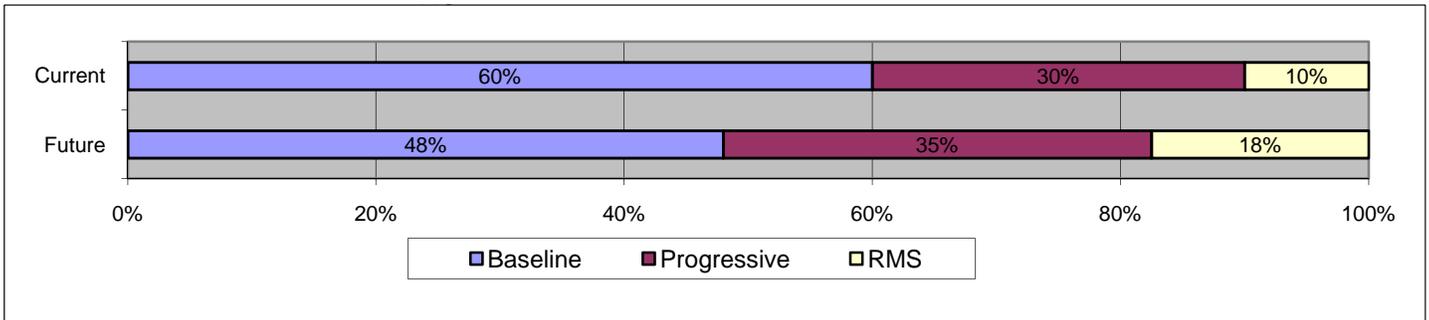
Resource Concerns:

- Water Quality – Excessive Nutrients and Organics in Groundwater
- Water Quality – Excessive Nutrients and Organics in Surface Water
- Water Quality – Excessive Suspended Sediment and Turbidity in Surface Water
- Air Quality – Objectionable Odors

Conservation Practices Evaluated:

- Critical Area Planting; Diversion; Heavy Use Area Protection; Mulching; Waste Storage Facility; Waste Utilization; Windbreak/Shelterbreak Establishment; Windbreak/Shelterbreak Renovation.

Short-term Projected Resource Conservation Treatment Levels



Wildlife/ CRP

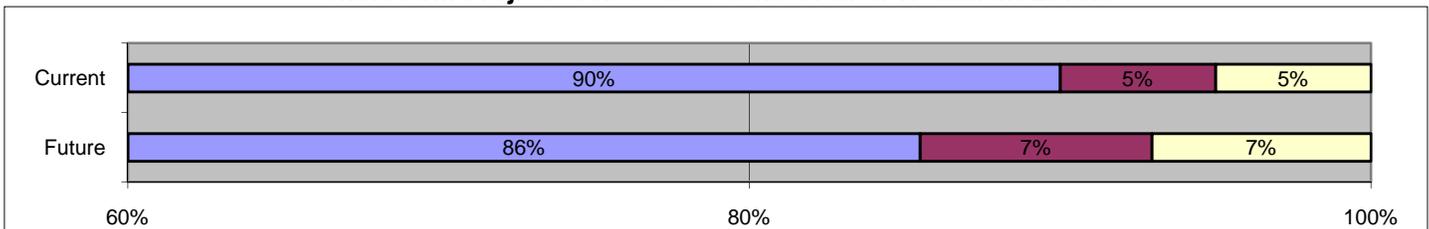
Resource Concerns:

- Plant Condition – Noxious and Invasive Plants
- Fish and Wildlife – Inadequate Cover/Shelter
- Fish and Wildlife – Habitat Fragmentation
- Fish and Wildlife – T & E Fish/Wildlife Species: Listed or Proposed under ESA

Conservation Practices Evaluated:

- Access Control; Conservation Cover; Filter Strip; Mulching; Pest Management; Restoration and Management of Declining Habitats; Riparian Forest Buffer; Riparian Herbaceous Cover; Upland Wildlife Habitat Management; Wetland Restoration; Wetland Wildlife Habitat Management; Windbreak/Shelterbreak Establishment.

Short-term Projected Resource Conservation Treatment Levels



Enter Watershed Variables Below

Watershed Name	<input type="text" value="Upper Lake Oahe"/>	Watershed Code	<input type="text" value="10130102"/>	<input type="button" value="Help"/>	
Landuse Type	<input type="text" value="Cropland"/>	Landuse Acres	<input type="text" value="595,100"/>	Interest Rate	<input type="text" value="6%"/>
Typical Unit Size (ac)	<input type="text" value="80"/>	Percent TA of FA	<input type="text" value="20%"/>	Cost-Share Rate	<input type="text" value="50%"/>
Estimated Time Frame = 5 years	Participation Rate (Based on Watershed Profile)	<input type="text" value="10%"/>	COMPARE	<input type="text" value="10%"/>	Calculated Participation Rate (Based on Projected Future Conditions)
					<input type="button" value="Next"/>

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
Baseline	35%	208,285	Baseline	90%	187,457	Baseline	32%	187,457	187,457	0
			Progressive	5%	10,414					
			RMS	5%	10,414					
			<i>Must Total 100%</i>		<i>100%</i>					
Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
Progressive	40%	238,040	Progressive	90%	214,236	Progressive	38%	224,650	214,236	10,414
			RMS	10%	23,804					
			<i>Must Total 100%</i>		<i>100%</i>					
Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
RMS	25%	148,775	RMS	100%	148,775	RMS	31%	182,993	148,775	34,218
			<i>Must Total 100%</i>		<i>100%</i>					
Grand Totals	100%	595,100					100%	595,100	550,468	44,633

DOCUMENTATION SECTION

PRACTICE FACTOR SHEET

Only shaded practices are in this analysis.

Modify the formula for each Base, Prog, RMS to enter feet, no. or acres for each practice factor.

Please enter appropriate factor for each level of treatment (Baseline, Progressive, & RMS)



Code	BASE	PROG	RMS	SHORT NOTE <i>TU = Typical Unit Size</i>	Practice Name	Help
327	x 5.0%	x 10.0%	x 20.0%	PERCENT of TU	Conservation Cover (ac.) 327	
328	x 40.0%	x 75.0%	x 100.0%	PERCENT of TU	Conservation Crop Rotation (ac.) 328	
329	0.0%	x 10.0%	x 25.0%	PERCENT of TU	Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329	
340	0.0%	0.0%	x 2.0%	PERCENT of TU	Cover Crop (ac.) 340	
344	x 40.0%	x 60.0%	x 50.0%	PERCENT of TU	Residue Management, Seasonal (ac.) 344	
345	0.0%	x 2.0%	x 5.0%	PERCENT of TU	Residue and Tillage Management, Mulch Till (ac.) 345	
380	0	x 200	x 300	FEET per TU	Windbreak/Shelterbreak Establishment (ft.) 380	
430	0	0	x 15	FEET per TU	Irrigation Water Conveyance, Pipeline (ft.) 430	
442	0.0%	0.0%	x 3.0%	PERCENT of TU	Irrigation System, Sprinkler (ac.) 442	
449	0.0%	0.0%	x 1.5%	PERCENT of TU	Irrigation Water Management (ac.) 449	
484	0.0%	x 0.2%	x 0.5%	PERCENT of TU	Mulching (ac.) 484	
590	0.0%	x 10.0%	x 40.0%	PERCENT of TU	Nutrient Management (ac.) 590	
595	0.0%	x 5.0%	x 30.0%	PERCENT of TU	Pest Management (ac.) 595	
620	0	0	x 1	FEET per TU	Underground Outlet (ft.) 620	
645	0.0%	x 10.0%	x 50.0%	PERCENT of TU	Upland Wildlife Habitat Management (ac.) 645	
600	0	0	5	FEET per TU	Terrace (ft.) 600	
412	0.0%	0.1%	0.1%	PERCENT of TU	Grassed Waterway (ac.) 412	
585	0.0%	5.0%	10.0%	PERCENT of TU	Stripcropping (ac.) 585	
633	0.0%	0.0%	0.0%	PERCENT of TU	Waste Utilization (ac.) 633	
378	1	0	0	NUMBER per TU	Pond (no.) 378	
382	1,000	2,500	7,500	FEET per TU	Fence (ft.) 382	
512	0.0%	10.0%	0.0%	PERCENT of TU	Pasture & Hayland Planting (ac.) 512	
516	0	5,000	10,000	FEET per TU	Pipeline (ft.) 516	
528	25.0%	50.0%	100.0%	PERCENT of TU	Prescribed Grazing (ac.) 528	
533	0	1	1	NUMBER per TU	Pumping Plant (no.) 533	
550	0.0%	0.0%	10.0%	PERCENT of TU	Range Planting (ac.) 550	
574	1	1	1	NUMBER per TU	Spring Development (no.) 574	
614	1	3	5	NUMBER per TU	Watering Facility (no.) 614	
642	0	1	1	NUMBER per TU	Water Well (no.) 642	
314	10.0%	20.0%	40.0%	PERCENT of TU	Brush Management (ac.) 314	

WATERSHED NAME & CODE		UPPER LAKE OAHÉ - 10130102			LANDUSE ACRES		595,100		
LANDUSE TYPE		CROPLAND			TYPICAL UNIT SIZE ACRES		80		
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		10%		
		Benchmark Conditions	Future Conditions		RESOURCE CONCERNS				
Conservation Systems by Treatment Level		Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Soil Erosion – Sheet and Rill	Soil Erosion – Wind	Soil Erosion – Ephemeral Gully	Water Quality – Excessive Nutrients and Organics in Surface Water
Baseline		System Rating ->			4	4	4	2	
Conservation Cover (ac.) 327		10,414	9,373	0	9,373	5	5	5	3
Conservation Crop Rotation (ac.) 328		83,314	74,983	0	74,983	3	3	3	2
Residue Management, Seasonal (ac.) 344		83,314	74,983	0	74,983	0	2	2	1
Total Acreage at Baseline		208,285	187,457	0	187,457				
Progressive		System Rating ->			5	5	5	5	
Conservation Cover (ac.) 327		23,804	21,944	521	22,465	5	5	5	3
Conservation Crop Rotation (ac.) 328		178,530	164,843	3,645	168,488	3	3	3	2
Mulching (ac.) 484		476	428	21	449	4	4	4	4
Nutrient Management (ac.) 590		23,804	21,424	1,041	22,465	0	0	0	5
Pest Management (ac.) 595		11,902	10,712	521	11,233	1	1	1	5
Residue and Tillage Management, Mulch Till (ac.) 345		4,761	4,285	208	4,493	4	4	4	2
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		23,804	21,424	1,041	22,465	5	5	4	4
Residue Management, Seasonal (ac.) 344		142,824	132,707	2,083	134,790	0	2	2	1
Upland Wildlife Habitat Management (ac.) 645		23,804	21,424	1,041	22,465	3	3	3	3
Windbreak/Shelterbreak Establishment (ft.) 380		595,100	535,590	26,036	561,626	0	5	0	1
Total Acreage at Progressive Level		238,040	214,236	10,414	224,650				
RMS		System Rating ->			5	5	5	5	
Conservation Cover (ac.) 327		29,755	32,656	3,943	36,599	5	5	5	3
Conservation Crop Rotation (ac.) 328		148,775	170,794	12,200	182,993	3	3	3	2
Cover Crop (ac.) 340		2,976	2,976	684	3,660	4	4	3	2
Irrigation System, Sprinkler (ac.) 442		4,463	4,463	1,027	5,490	0	3	0	1
Irrigation Water Conveyance, Pipeline (ft.) 430		27,895	27,895	6,416	34,311	0	0	0	3
Irrigation Water Management (ac.) 449		2,232	2,232	513	2,745	0	3	0	4
Mulching (ac.) 484		744	791	123	915	4	4	4	4
Nutrient Management (ac.) 590		59,510	61,890	11,307	73,197	0	0	0	5
Pest Management (ac.) 595		44,633	45,823	9,075	54,898	1	1	1	5
Residue and Tillage Management, Mulch Till (ac.) 345		7,439	7,915	1,235	9,150	4	4	4	2
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329		37,194	39,574	6,174	45,748	5	5	4	4
Residue Management, Seasonal (ac.) 344		74,388	90,455	1,041	91,497	0	2	2	1
Underground Outlet (ft.) 620		1,860	1,860	428	2,287	1	0	4	-1
Upland Wildlife Habitat Management (ac.) 645		74,388	76,768	14,729	91,497	3	3	3	3
Windbreak/Shelterbreak Establishment (ft.) 380		557,906	617,416	68,808	686,225	0	5	0	1
Total Acreage at RMS Level		148,775	148,775	34,218	182,993				

WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102				LANDUSE ACRES		595,100	
LANDUSE TYPE		CROPLAND				TYPICAL UNIT SIZE ACRES		80	
CONSERVATION COST TABLE						CALCULATED PARTICIPATION		10%	
Conservation Systems by Treatment Level	FUTURE	FEDERAL				PRIVATE			
	New Treatment Units	Installation Cost 50%	Management Cost - 3 yrs 100%	Technical Assistance 20%	Total Present Value Cost	Installation Cost 50%	Annual O & M + Mgt Costs 100%	Total Present Value Cost	
Progressive									
Conservation Cover (ac.) 327	521	\$19,527	\$0	\$3,905	\$23,432	\$19,527	\$1,172	\$24,462	
Conservation Crop Rotation (ac.) 328	3,645	\$0	\$0	\$3,645	\$3,645	\$0	\$18,225	\$28,055	
Mulching (ac.) 484	21	\$11,456	\$0	\$2,291	\$13,747	\$11,456	\$0	\$11,456	
Nutrient Management (ac.) 590	1,041	\$0	\$0	\$1,041	\$1,041	\$0	\$5,207	\$8,016	
Pest Management (ac.) 595	521	\$0	\$0	\$521	\$521	\$0	\$2,604	\$4,008	
Residue and Tillage Management, Mulch Till (ac.) 345	208	\$0	\$0	\$417	\$417	\$0	\$2,083	\$3,206	
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329	1,041	\$0	\$0	\$3,124	\$3,124	\$0	\$15,621	\$24,047	
Residue Management, Seasonal (ac.) 344	2,083	\$0	\$0	\$2,083	\$2,083	\$0	\$10,414	\$16,031	
Upland Wildlife Habitat Management (ac.) 645	1,041	\$0	\$0	\$1,041	\$1,041	\$0	\$5,207	\$8,016	
Windbreak/Shelterbreak Establishment (ft.) 380	26,036	\$16,272	\$0	\$3,254	\$19,527	\$16,272	\$325	\$17,643	
Subtotal	10,414	\$47,255	\$0	\$21,323	\$68,578	\$47,255	\$60,858	\$144,939	
RMS									
Conservation Cover (ac.) 327	3,943	\$147,845	\$0	\$29,569	\$177,414	\$147,845	\$8,871	\$185,212	
Conservation Crop Rotation (ac.) 328	12,200	\$0	\$0	\$12,200	\$12,200	\$0	\$60,998	\$93,897	
Cover Crop (ac.) 340	684	\$0	\$0	\$10,265	\$10,265	\$0	\$51,327	\$79,011	
Irrigation System, Sprinkler (ac.) 442	1,027	\$359,292	\$0	\$71,858	\$431,150	\$359,292	\$14,372	\$419,830	
Irrigation Water Conveyance, Pipeline (ft.) 430	6,416	\$12,832	\$0	\$2,566	\$15,398	\$12,832	\$513	\$14,994	
Irrigation Water Management (ac.) 449	513	\$0	\$0	\$513	\$513	\$0	\$2,566	\$3,951	
Mulching (ac.) 484	123	\$67,916	\$0	\$13,583	\$81,499	\$67,916	\$0	\$67,916	
Nutrient Management (ac.) 590	11,307	\$0	\$0	\$11,307	\$11,307	\$0	\$56,535	\$87,026	
Pest Management (ac.) 595	9,075	\$0	\$0	\$9,075	\$9,075	\$0	\$45,376	\$69,850	
Residue and Tillage Management, Mulch Till (ac.) 345	1,235	\$0	\$0	\$2,470	\$2,470	\$0	\$12,348	\$19,008	
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329	6,174	\$0	\$0	\$18,522	\$18,522	\$0	\$92,612	\$142,563	
Residue Management, Seasonal (ac.) 344	1,041	\$0	\$0	\$1,041	\$1,041	\$0	\$5,207	\$8,016	
Underground Outlet (ft.) 620	428	\$1,283	\$0	\$257	\$1,540	\$1,283	\$26	\$1,391	
Upland Wildlife Habitat Management (ac.) 645	14,729	\$0	\$0	\$14,729	\$14,729	\$0	\$73,644	\$113,363	
Windbreak/Shelterbreak Establishment (ft.) 380	68,808	\$43,005	\$0	\$8,601	\$51,606	\$43,005	\$860	\$46,628	
Subtotal	34,218	\$632,173	\$0	\$206,557	\$838,730	\$632,173	\$425,255	\$1,352,657	
Grand Total	44,633	\$679,428	\$0	\$227,881	\$907,308	\$679,428	\$486,114	\$1,497,596	

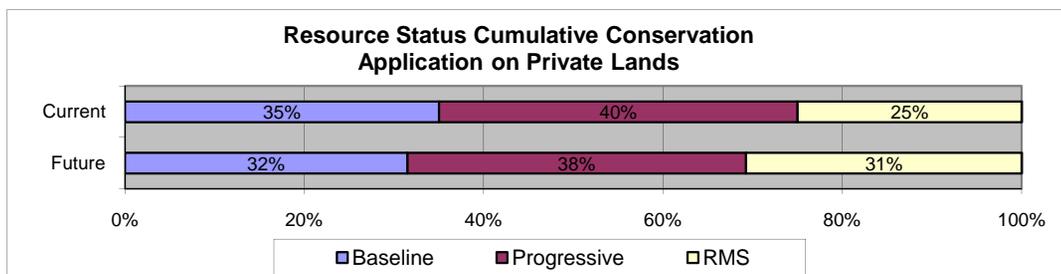


Chart Refers To	
Landuse Type	CROPLAND
Calculated Participation Rate	10%

Average PV Costs per Ac		
System	Federal	Private
Prog	\$6.58	\$13.92
RMS	\$24.51	\$39.53

WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102				LANDUSE ACRES			595,100	
LANDUSE TYPE		CROPLAND				LOCAL UNIT SIZE ACRES			80	
POSSIBLE SOURCES OF FUNDING						MATCHED PARTICIPATION			10%	
Conservation Systems by Treatment Level		FUTURE	FARM BILL				OTHERS			NOTES/COMMENTS
		New Treatment Units	CTA	EQIP	WRP	WHIP	Fed	State	Local	
Progressive										
Conservation Cover (ac.) 327	521	X								
Conservation Crop Rotation (ac.) 328	3,645	X								
Mulching (ac.) 484	21	X	X		X					
Nutrient Management (ac.) 590	1,041	X								
Pest Management (ac.) 595	521	X	X	X	X					
Residue and Tillage Management, Mulch Till (ac.) 345	208	X								
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329	1,041	X								
Residue Management, Seasonal (ac.) 344	2,083	X								
Upland Wildlife Habitat Management (ac.) 645	1,041	X	X		X					
Windbreak/Shelterbreak Establishment (ft.) 380	26,036	X	X		X					
New Treatment Acreage	10,414									
RMS										
Conservation Cover (ac.) 327	3,943	X								
Conservation Crop Rotation (ac.) 328	12,200	X								
Cover Crop (ac.) 340	684	X								
Irrigation System, Sprinkler (ac.) 442	1,027	X	X							
Irrigation Water Conveyance, Pipeline (ft.) 430	6,416	X	X							
Irrigation Water Management (ac.) 449	513	X	X							
Mulching (ac.) 484	123	X	X		X					
Nutrient Management (ac.) 590	11,307	X								
Pest Management (ac.) 595	9,075	X	X	X	X					
Residue and Tillage Management, Mulch Till (ac.) 345	1,235	X								
Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329	6,174	X								
Residue Management, Seasonal (ac.) 344	1,041	X								
Underground Outlet (ft.) 620	428	X	X		X					
Upland Wildlife Habitat Management (ac.) 645	14,729	X	X		X					
Windbreak/Shelterbreak Establishment (ft.) 380	68,808	X	X		X					

Enter Watershed Variables Below

Watershed Name	<input type="text" value="Upper Lake Oahe"/>	Watershed Code	<input type="text" value="10130102"/>	<input type="button" value="Help"/>	
Landuse Type	<input type="text" value="Rangeland and Pasture"/>	Landuse Acres	<input type="text" value="1,335,500"/>	Interest Rate	<input type="text" value="6%"/>
Typical Unit Size (ac)	<input type="text" value="100"/>	Percent TA of FA	<input type="text" value="20%"/>	Cost-Share Rate	<input type="text" value="50%"/>
<i>Estimated Time Frame = 5 years</i>	Participation Rate <small>(Based on Watershed Profile)</small>	<input type="text" value="22%"/>	COMPARE	<input type="text" value="22%"/>	Calculated Participation Rate <small>(Based on Projected Future Conditions)</small>
					<input type="button" value="Next"/>

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
Baseline	65%	868,075	Baseline	75%	651,056	Baseline	49%	651,056	651,056	0
			Progressive	15%	130,211					
			RMS	10%	86,808					

Must Total 100% 100%

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
Progressive	25%	333,875	Progressive	85%	283,794	Progressive	31%	414,005	283,794	130,211
			RMS	15%	50,081					

Must Total 100% 100%

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
RMS	10%	133,550	RMS	100%	133,550	RMS	20%	270,439	133,550	136,889

Grand Totals	100%	1,335,500					100%	1,335,500	1,068,400	267,100
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DOCUMENTATION SECTION

PRACTICE FACTOR SHEET

Only shaded practices are in this analysis.

Modify the formula for each Base, Prog, RMS to enter feet, no. or acres for each practice factor.

Please enter appropriate factor for each level of treatment (Baseline, Progressive, & RMS)



Code	BASE	PROG	RMS	SHORT NOTE <i>TU = Typical Unit Size</i>	Practice Name
378	x 1	x 1	0	NUMBER per TU	Pond (no.) 378
382	0	x 200	x 375	FEET per TU	Fence (ft.) 382
472	0.0%	0.0%	x 1.0%	PERCENT of TU	Use Exclusion (ac.) 472
512	0.0%	x 1.5%	x 2.5%	PERCENT of TU	Pasture & Hayland Planting (ac.) 512
516	100	x 250	x 550	FEET per TU	Pipeline (ft.) 516
528	0.0%	x 10.0%	x 40.0%	PERCENT of TU	Prescribed Grazing (ac.) 528
533	0	x 0	x 0	NUMBER per TU	Pumping Plant (no.) 533
550	0.0%	x 0.0%	x 0.2%	PERCENT of TU	Range Planting (ac.) 550
578	0	1	x 3	FEET per TU	Stream Crossing 578
595	x 10.0%	x 15.0%	x 20.0%	PERCENT of TU	Pest Management (ac.) 595
614	0	x 0	x 0	NUMBER per TU	Watering Facility (no.) 614
642	0	x 0	x 0	NUMBER per TU	Water Well (no.) 642
314	0.0%	0.0%	5.0%	PERCENT of TU	Brush Management (ac.) 314
574	0	0	0	NUMBER per TU	Spring Development (no.) 574
511	0.0%	0.0%	0.1%	PERCENT of TU	Forage Harvest Management (ac.) 511
548	0.0%	0.0%	10.0%	PERCENT of TU	Grazing Land Mechanical Treatment (ac.) 548
410	0	0	1	NUMBER per TU	Grade Stabilization Structure (no.) 410
561	0.0%	0.0%	5.0%	PERCENT of TU	Heavy Use Area Protection (ac.) 561
575	5.0%	5.0%	5.0%	PERCENT of TU	Animal Trails and Walkways (ac.) 575
328	100.0%	100.0%	100.0%	PERCENT of TU	Conservation Crop Rotation (ac.) 328
353	1	1	1	NUMBER per TU	Monitoring Well (no.) 353
412	5.0%	5.0%	5.0%	PERCENT of TU	Grassed Waterway (ac.) 412
442	100.0%	100.0%	100.0%	PERCENT of TU	Irrigation System, Sprinkler (ac.) 442
560	500	500	500	FEET per TU	Access Road (ft.) 560
702	1	1	1	NUMBER per TU	Agrichemical Handling Facility (no.) 702
311	30.0%	30.0%	30.0%	PERCENT of TU	Alley Cropping (ac.) 311
591	1	1	1	NUMBER per TU	Amendments for the Treatment of Agricultural Waste (no.) 591
365	1	1	1	NUMBER per TU	Anaerobic Digester, Ambient Temperature (no.) 365
366	1	1	1	NUMBER per TU	Anaerobic Digester, Controlled Temperature (no.) 366
316	1	1	1	NUMBER per TU	Animal Mortality Facility (no.) 316



WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102			LANDUSE ACRES		1,335,500	
LANDUSE TYPE		RANGELAND AND PASTURE			TYPICAL UNIT SIZE ACRES		100	
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		22%	
Conservation Systems by Treatment Level	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Soil Erosion – Sheet and Rill	Plant Condition – Noxious and Invasive Plants	Domestic Animals – Inadequate Quantities and Quality of Feed and Forage	Domestic Animals – Inadequate Stock Water
Baseline	System Rating ->				0	3	2	3
Pest Management (ac.) 595	86,808	65,106	0	65,106	1	5	4	0
Pond (no.) 378	7,379	5,534	0	5,534	0	-1	0	5
Total Acreage at Baseline	868,075	651,056	0	651,056				
Progressive	System Rating ->				4	4	5	5
Fence (ft.) 382	667,750	567,588	260,423	828,010	0	0	3	0
Pasture & Hayland Planting (ac.) 512	5,008	4,257	1,953	6,210	4	2	5	0
Pest Management (ac.) 595	50,081	55,590	6,511	62,101	1	5	4	0
Pipeline (ft.) 516	834,688	709,484	325,528	1,035,013	0	0	0	5
Pond (no.) 378	2,871	3,547	13	3,560	0	-1	0	5
Prescribed Grazing (ac.) 528	33,388	28,379	13,021	41,401	4	4	5	1
Pumping Plant (no.) 533	17	14	7	21	0	0	0	5
Range Planting (ac.) 550	0	0	0	0	4	4	5	0
Water Well (no.) 642	67	57	26	83	0	0	2	5
Watering Facility (no.) 614	300	255	117	373	1	0	3	5
Total Acreage at Progressive Level	333,875	283,794	130,211	414,005				
RMS	System Rating ->				4	5	5	5
Access Control (ac.) 472	1,336	1,336	1,369	2,704	2	4	4	0
Fence (ft.) 382	500,813	600,975	413,170	1,014,145	0	0	3	0
Pasture & Hayland Planting (ac.) 512	3,339	4,090	2,671	6,761	4	2	5	0
Pest Management (ac.) 595	26,710	42,903	11,185	54,088	1	5	4	0
Pipeline (ft.) 516	734,525	859,728	627,685	1,487,413	0	0	0	5
Prescribed Grazing (ac.) 528	53,420	58,428	49,747	108,176	4	4	5	1
Pumping Plant (no.) 533	23	26	21	47	0	0	0	5
Range Planting (ac.) 550	267	267	274	541	4	4	5	0
Stream Crossing (ft.) 578	4,007	4,007	4,107	8,113	0	0	3	3
Water Well (no.) 642	53	63	45	108	0	0	2	5
Watering Facility (no.) 614	234	279	194	473	1	0	3	5
Total Acreage at RMS Level	133,550	133,550	136,889	270,439				

WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102				LANDUSE ACRES		1,335,500	
LANDUSE TYPE		RANGELAND AND PASTURE				TYPICAL UNIT SIZE ACRES		100	
CONSERVATION COST TABLE						CALCULATED PARTICIPATION		22%	
Conservation Systems by Treatment Level	FUTURE	FEDERAL				PRIVATE			
	New Treatment Units	Installation Cost 50%	Management Cost - 3 yrs 100%	Technical Assistance 20%	Total Present Value Cost	Installation Cost 50%	Annual O & M + Mgt Costs 100%	Total Present Value Cost	
Progressive									
Fence (ft.) 382	260,423	\$130,211	\$0	\$26,042	\$156,254	\$130,211	\$5,208	\$152,151	
Pasture & Hayland Planting (ac.) 512	1,953	\$58,595	\$0	\$11,719	\$70,314	\$58,595	\$1,172	\$63,532	
Pest Management (ac.) 595	6,511	\$0	\$0	\$6,511	\$6,511	\$0	\$32,553	\$50,110	
Pipeline (ft.) 516	325,528	\$325,528	\$0	\$65,106	\$390,634	\$325,528	\$13,021	\$380,378	
Pond (no.) 378	13	\$39,063	\$0	\$7,813	\$46,876	\$39,063	\$3,906	\$55,518	
Prescribed Grazing (ac.) 528	13,021	\$0	\$0	\$13,021	\$13,021	\$0	\$65,106	\$100,220	
Pumping Plant (no.) 533	7	\$11,393	\$0	\$2,279	\$13,672	\$11,393	\$456	\$13,313	
Range Planting (ac.) 550	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Water Well (no.) 642	26	\$195,317	\$0	\$39,063	\$234,380	\$195,317	\$3,906	\$211,772	
Watering Facility (no.) 614	117	\$99,612	\$0	\$19,922	\$119,534	\$99,612	\$5,977	\$124,788	
Subtotal	130,211	\$859,720	\$0	\$191,476	\$1,051,195	\$859,720	\$131,305	\$1,151,782	
RMS									
Access Control (ac.) 472	1,369	\$8,213	\$0	\$1,643	\$9,856	\$8,213	\$493	\$10,289	
Fence (ft.) 382	413,170	\$206,585	\$0	\$41,317	\$247,902	\$206,585	\$8,263	\$241,394	
Pasture & Hayland Planting (ac.) 512	2,671	\$80,130	\$0	\$16,026	\$96,156	\$80,130	\$1,603	\$86,881	
Pest Management (ac.) 595	11,185	\$0	\$0	\$11,185	\$11,185	\$0	\$55,924	\$86,087	
Pipeline (ft.) 516	627,685	\$627,685	\$0	\$125,537	\$753,222	\$627,685	\$25,107	\$733,447	
Prescribed Grazing (ac.) 528	49,747	\$0	\$0	\$49,747	\$49,747	\$0	\$248,737	\$382,894	
Pumping Plant (no.) 533	21	\$37,540	\$0	\$7,508	\$45,048	\$37,540	\$1,502	\$43,865	
Range Planting (ac.) 550	274	\$13,689	\$0	\$2,738	\$16,427	\$13,689	\$274	\$14,842	
Stream Crossing (ft.) 578	4,107	\$41,067	\$0	\$8,213	\$49,280	\$41,067	\$821	\$44,526	
Water Well (no.) 642	45	\$335,544	\$0	\$67,109	\$402,653	\$335,544	\$6,711	\$363,813	
Watering Facility (no.) 614	194	\$165,310	\$0	\$33,062	\$198,372	\$165,310	\$9,919	\$207,091	
Subtotal	136,889	\$1,515,763	\$0	\$364,085	\$1,879,848	\$1,515,763	\$359,353	\$2,215,128	
Grand Total	267,100	\$2,375,483	\$0	\$555,560	\$2,931,044	\$2,375,483	\$490,658	\$3,366,910	

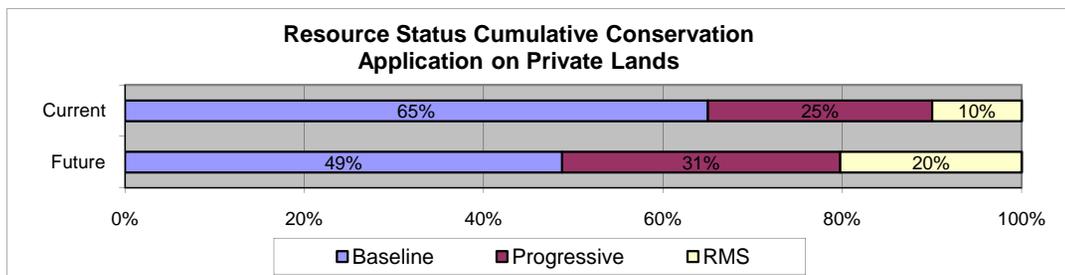


Chart Refers To	
Landuse Type	RANGELAND AND PASTURE
Calculated Participation Rate	22%

Average PV Costs per Ac		
System	Federal	Private
Prog	\$8.07	\$8.85
RMS	\$13.73	\$16.18

Enter Watershed Variables Below

Watershed Name	<input type="text" value="Upper Lake Oahe"/>	Watershed Code	<input type="text" value="10130102"/>	<input type="button" value="Help"/>	
Landuse Type	<input type="text" value="Hayland"/>	Landuse Acres	<input type="text" value="74,800"/>	Interest Rate	<input type="text" value="6%"/>
Typical Unit Size (ac)	<input type="text" value="40"/>	Percent TA of FA	<input type="text" value="20%"/>	Cost-Share Rate	<input type="text" value="50%"/>
<i>Estimated Time Frame = 5 years</i>	Participation Rate	<input type="text" value="8%"/>	COMPARE	<input type="text" value="7%"/>	Calculated Participation Rate
	<i>(Based on Watershed Profile)</i>			<i>(Based on Projected Future Conditions)</i>	
				<input type="button" value="Next"/>	

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
						Total			Static	Treated
Baseline	20%	14,960	Baseline	90%	13,464	Baseline	18%	13,464	13,464	0
			Progressive	5%	748					
			RMS	5%	748					
<i>Must Total 100%</i>			<i>100%</i>							
Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
						Total			Static	Treated
Progressive	30%	22,440	Progressive	95%	21,318	Progressive	30%	22,066	21,318	748
			RMS	5%	1,122					
<i>Must Total 100%</i>			<i>100%</i>							
Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
						Total			Static	Treated
RMS	50%	37,400	RMS	100%	37,400	RMS	53%	39,270	37,400	1,870
Grand Totals	100%	74,800					100%	74,800	72,182	2,618

DOCUMENTATION SECTION

PRACTICE FACTOR SHEET

Only shaded practices are in this analysis.

Modify the formula for each Base, Prog, RMS to enter feet, no. or acres for each practice factor.

Please enter appropriate factor for each level of treatment (Baseline, Progressive, & RMS)



Code	BASE	PROG	RMS	SHORT NOTE <i>TU = Typical Unit Size</i>	Practice Name
511	0.0%	0.0%	x 100.0%	PERCENT of TU	Forage Harvest Management (ac.) 511
512	x 1.0%	x 2.0%	x 3.0%	PERCENT of TU	Pasture & Hayland Planting (ac.) 512
590	0.0%	0.0%	x 50.0%	PERCENT of TU	Nutrient Management (ac.) 590
595	0.0%	0.0%	x 50.0%	PERCENT of TU	Pest Management (ac.) 595
430	0	15	40	FEET per TU	Irrigation Water Conveyance, Pipeline (ft.) 430
442	0.0%	0.0%	0.1%	PERCENT of TU	Irrigation System, Sprinkler (ac.) 442
449	0.0%	0.0%	10.0%	PERCENT of TU	Irrigation Water Management (ac.) 449
388	300	300	300	FEET per TU	Irrigation Field Ditch (ft.) 388
443	0.0%	0.0%	5.0%	PERCENT of TU	Irrigation System, Surface and Subsurface (ac.) 443
606	0	0	0	FEET per TU	Subsurface Drain (ft.) 606
378	1	0	0	NUMBER per TU	Pond (no.) 378
382	1,000	2,500	7,500	FEET per TU	Fence (ft.) 382
516	0	5,000	10,000	FEET per TU	Pipeline (ft.) 516
528	25.0%	50.0%	100.0%	PERCENT of TU	Prescribed Grazing (ac.) 528
533	0	1	1	NUMBER per TU	Pumping Plant (no.) 533
550	0.0%	0.0%	10.0%	PERCENT of TU	Range Planting (ac.) 550
574	1	1	1	NUMBER per TU	Spring Development (no.) 574
614	1	3	5	NUMBER per TU	Watering Facility (no.) 614
642	0	1	1	NUMBER per TU	Water Well (no.) 642
314	10.0%	20.0%	40.0%	PERCENT of TU	Brush Management (ac.) 314
410	0	0	1	NUMBER per TU	Grade Stabilization Structure (no.) 410
548	0.0%	0.0%	10.0%	PERCENT of TU	Grazing Land Mechanical Treatment (ac.) 548
561	0.0%	0.0%	5.0%	PERCENT of TU	Heavy Use Area Protection (ac.) 561
575	5.0%	5.0%	5.0%	PERCENT of TU	Animal Trails and Walkways (ac.) 575
328	100.0%	100.0%	100.0%	PERCENT of TU	Conservation Crop Rotation (ac.) 328
353	1	1	1	NUMBER per TU	Monitoring Well (no.) 353
412	5.0%	5.0%	5.0%	PERCENT of TU	Grassed Waterway (ac.) 412
560	500	500	500	FEET per TU	Access Road (ft.) 560
702	1	1	1	NUMBER per TU	Agrichemical Handling Facility (no.) 702
311	30.0%	30.0%	30.0%	PERCENT of TU	Alley Cropping (ac.) 311



WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102			LANDUSE ACRES		74,800	
LANDUSE TYPE		HAYLAND			TYPICAL UNIT SIZE ACRES		40	
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		7%	
Conservation Systems by Treatment Level	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Soil Erosion – Sheet and Rill	Plant Condition – Productivity, Health and Vigor	Plant Condition – Noxious and Invasive Plants	Plant Condition – Forage Quality and Palatability
Baseline	System Rating ->				2	3	1	3
Pasture & Hayland Planting (ac.) 512	150	135	0	135	4	5	2	5
Total Acreage at Baseline	14,960	13,464	0	1				
Progressive	System Rating ->				2	3	1	3
Pasture & Hayland Planting (ac.) 512	449	434	7	441	4	5	2	5
Total Acreage at Progressive Level	22,440	21,318	748	22,066				
RMS	System Rating ->				3	5	4	4
Forage Harvest Management (ac.) 511	37,400	37,400	1,870	39,270	3	4	3	4
Nutrient Management (ac.) 590	18,700	18,700	935	19,635	0	3	0	4
Pasture & Hayland Planting (ac.) 512	1,122	1,152	26	1,178	4	5	2	5
Pest Management (ac.) 595	18,700	18,700	935	19,635	1	5	5	4
Total Acreage at RMS Level	37,400	37,400	1,870	39,270				

WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102						LANDUSE ACRES			74,800
LANDUSE TYPE		HAYLAND						TYPICAL UNIT SIZE ACRES			40
POSSIBLE SOURCES OF FUNDING							CALCULATED PARTICIPATION			7%	
Conservation Systems by Treatment Level		FUTURE	FARM BILL					OTHERS			NOTES/COMMENTS
		New Treatment Units	CTA	EQIP	WRP	WHIP	CSP	CRP/CREP	Fed	State	
Progressive											
Pasture & Hayland Planting (ac.) 512	7	X	X		X						
New Treatment Acreage	748										
RMS											
Forage Harvest Management (ac.) 511	1,870	X									
Nutrient Management (ac.) 590	935	X									
Pasture & Hayland Planting (ac.) 512	26	X	X		X						
Pest Management (ac.) 595	935	X	X	X	X						
New Treatment Acreage	1,870										

Enter Watershed Variables Below

Watershed Name	<input type="text" value="Upper Lake Oahe"/>	Watershed Code	<input type="text" value="10130102"/>	<input type="button" value="Help"/>	
Landuse Type	<input type="text" value="Headquarters - Farmstead"/>	Landuse Acres	<input type="text" value="16,500"/>	Interest Rate	<input type="text" value="6%"/>
Typical Unit Size (ac)	<input type="text" value="15"/>	Percent TA of FA	<input type="text" value="20%"/>	Cost-Share Rate	<input type="text" value="50%"/>
Estimated Time Frame = 5 years	Participation Rate	<input type="text" value="17%"/>	COMPARE	<input type="text" value="18%"/>	Calculated Participation Rate
		<small>(Based on Watershed Profile)</small>		<small>(Based on Projected Future Conditions)</small>	<input type="button" value="Next"/>

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
Baseline	60%	9,900	Baseline	80%	7,920	Baseline	48%	7,920	7,920	0
			Progressive	15%	1,485					
			RMS	5%	495					
			<small>Must Total 100%</small>		<small>100%</small>					
Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
Progressive	30%	4,950	Progressive	85%	4,208	Progressive	35%	5,693	4,208	1,485
			RMS	15%	743					
			<small>Must Total 100%</small>		<small>100%</small>					
Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
RMS	10%	1,650	RMS	100%	1,650	RMS	18%	2,888	1,650	1,238
Grand Totals	100%	16,500					100%	16,500	13,778	2,723

DOCUMENTATION SECTION

PRACTICE FACTOR SHEET

Only shaded practices are in this analysis.

Modify the formula for each Base, Prog, RMS to enter feet, no. or acres for each practice factor.

Please enter appropriate factor for each level of treatment (Baseline, Progressive, & RMS)



Code	BASE	PROG	RMS	SHORT NOTE <i>TU = Typical Unit Size</i>	Practice Name
313	0	0	x 0	NUMBER per TU	Waste Storage Facility (no.) 313
342	0.0%	x 1.0%	x 1.5%	PERCENT of TU	Critical Area Planting (ac.) 342
362	0	0	x 32	FEET per TU	Diversion (ft.) 362
380	x 500	x 600	x 800	FEET per TU	Windbreak/Shelterbreak Establishment (ft.) 380
484	x 1.0%	x 1.3%	x 1.5%	PERCENT of TU	Mulching (ac.) 484
561	0.0%	0.0%	x 45.0%	PERCENT of TU	Heavy Use Area Protection (ac.) 561
633	0.0%	0.0%	x 35.0%	PERCENT of TU	Waste Utilization (ac.) 633
650	x 100	x 200	x 350	FEET per TU	Windbreak/Shelterbreak Renovation (ft.) 650
350	0	0	0	NUMBER per TU	Sediment Basin (no.) 350
317	0	0	0	NUMBER per TU	Composting Facility (no.) 317
590	0.0%	0.0%	15.0%	PERCENT of TU	Nutrient Management (ac.) 590
595	20.0%	40.0%	50.0%	PERCENT of TU	Pest Management (ac.) 595
328	100.0%	100.0%	100.0%	PERCENT of TU	Conservation Crop Rotation (ac.) 328
329	0.0%	15.0%	30.0%	PERCENT of TU	Residue Management, No-Till/Strip Till/Direct Seed (ac.) 329
344	100.0%	40.0%	10.0%	PERCENT of TU	Residue Management, Seasonal (ac.) 344
345	0.0%	5.0%	10.0%	PERCENT of TU	Residue and Tillage Management, Mulch Till (ac.) 345
412		5.0%	5.0%	PERCENT of TU	Grassed Waterway (ac.) 412
585	0.0%	5.0%	10.0%	PERCENT of TU	Stripcropping (ac.) 585
378	1	0	0	NUMBER per TU	Pond (no.) 378
382	1,000	2,500	7,500	FEET per TU	Fence (ft.) 382
512	0.0%	10.0%	0.0%	PERCENT of TU	Pasture & Hayland Planting (ac.) 512
516	0	5,000	10,000	FEET per TU	Pipeline (ft.) 516
528	25.0%	50.0%	100.0%	PERCENT of TU	Prescribed Grazing (ac.) 528
533	0	1	1	NUMBER per TU	Pumping Plant (no.) 533
550	0.0%	0.0%	10.0%	PERCENT of TU	Range Planting (ac.) 550
574	1	1	1	NUMBER per TU	Spring Development (no.) 574
614	1	3	5	NUMBER per TU	Watering Facility (no.) 614
642	0	1	1	NUMBER per TU	Water Well (no.) 642
314	10.0%	20.0%	40.0%	PERCENT of TU	Brush Management (ac.) 314
410	0	0	1	NUMBER per TU	Grade Stabilization Structure (no.) 410



WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102			LANDUSE ACRES		16,500	
LANDUSE TYPE		HEADQUARTERS - FARMSTEAD			TYPICAL UNIT SIZE ACRES		15	
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		18%	
Conservation Systems by Treatment Level	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Water Quality – Excessive Nutrients and Organics in Groundwater	Water Quality – Excessive Nutrients and Organics in Surface Water	Water Quality – Excessive Suspended Sediment and Turbidity in Surface Water	Air Quality – Objectionable Odors
Baseline	System Rating ->				2	3	2	1
Diversion (ft.) 362	0	0	0	0	0	0	2	0
Waste Storage Facility (no.) 313	0	0	0	0	3	4	0	-2
Mulching (ac.) 484	99	79	0	79	1	4	2	0
Windbreak/Shelterbreak Establishment (ft.) 380	330,000	264,000	0	264,000	2	1	2	2
Windbreak/Shelterbreak Renovation (ft.) 650	66,000	52,800	0	52,800	2	2	1	2
Total Acreage at Baseline	9,900	7,920	0	7,920				
Progressive	System Rating ->				3	4	2	1
Diversion (ft.) 362	0	0	0	0	0	0	2	0
Waste Storage Facility (no.) 313	17	14	5	19	3	4	0	-2
Critical Area Planting (ac.) 342	50	42	15	57	1	3	1	0
Mulching (ac.) 484	62	67	4	71	1	4	2	0
Windbreak/Shelterbreak Establishment (ft.) 380	198,000	217,800	9,900	227,700	2	1	2	2
Windbreak/Shelterbreak Renovation (ft.) 650	66,000	66,000	9,900	75,900	2	2	1	2
Total Acreage at Progressive Level	4,950	4,208	1,485	5,693				
RMS	System Rating ->				3	5	3	2
Critical Area Planting (ac.) 342	25	32	11	43	1	3	1	0
Diversion (ft.) 362	3,520	3,520	2,640	6,160	0	0	2	0
Heavy Use Area Protection (ac.) 561	743	743	557	1,299	1	5	2	1
Mulching (ac.) 484	25	39	4	43	1	4	2	0
Waste Storage Facility (no.) 313	9	11	4	15	3	4	0	-2
Waste Utilization (ac.) 633	578	578	433	1,011	2	3	0	4
Windbreak/Shelterbreak Establishment (ft.) 380	88,000	134,200	19,800	154,000	2	1	2	2
Windbreak/Shelterbreak Renovation (ft.) 650	38,500	51,700	15,675	67,375	2	2	1	2
Total Acreage at RMS Level	1,650	1,650	1,238	2,888				

WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102				LANDUSE ACRES			16,500
LANDUSE TYPE		HEADQUARTERS - FARMSTEAD				LOCAL UNIT SIZE ACRES			15
POSSIBLE SOURCES OF FUNDING		UPPER LAKE OAHE - 10130102				MATCHED PARTICIPATION			18%
Conservation Systems by Treatment Level	FUTURE	FARM BILL				OTHERS			NOTES/COMMENTS
	New Treatment Units	CTA	EQIP	WRP	WHIP	Fed	State	Local	
Progressive									
Diversion (ft.) 362	0	X	X						
Waste Storage Facility (no.) 313	5	X	X						
Critical Area Planting (ac.) 342	15	X	X		X				
Mulching (ac.) 484	4	X	X		X				
Windbreak/Shelterbreak Establishment (ft.) 380	9,900	X	X		X				
Windbreak/Shelterbreak Renovation (ft.) 650	9,900	X	X		X				
New Treatment Acreage	1,485								
RMS									
Critical Area Planting (ac.) 342	11	X	X		X				
Diversion (ft.) 362	2,640	X	X						
Heavy Use Area Protection (ac.) 561	557	X	X						
Mulching (ac.) 484	4	X	X		X				
Waste Storage Facility (no.) 313	4	X	X						
Waste Utilization (ac.) 633	433	X							
Windbreak/Shelterbreak Establishment (ft.) 380	19,800	X	X		X				
Windbreak/Shelterbreak Renovation (ft.) 650	15,675	X	X		X				
New Treatment Acreage	1,238								

Enter Watershed Variables Below

Watershed Name	<input type="text" value="Upper Lake Oahe"/>	Watershed Code	<input type="text" value="10130102"/>	<input type="button" value="Help"/>	
Landuse Type	<input type="text" value="CRP - Wildlife Land"/>	Landuse Acres	<input type="text" value="110,800"/>	Interest Rate	<input type="text" value="6%"/>
Typical Unit Size (ac)	<input type="text" value="20"/>	Percent TA of FA	<input type="text" value="20%"/>	Cost-Share Rate	<input type="text" value="50%"/>
<i>Estimated Time Frame = 5 years</i>	Participation Rate <small>(Based on Watershed Profile)</small>	<input type="text" value="1%"/>	← COMPARE →	<input type="text" value="5%"/>	Calculated Participation Rate <small>(Based on Projected Future Conditions)</small>
					<input type="button" value="Next"/>

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
Baseline	90%	99,720	Baseline	95%	94,734	Baseline	86%	94,734	94,734	0
			Progressive	3%	2,992					
			RMS	2%	1,994					
			<i>Must Total 100%</i>		<i>100%</i>					

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
Progressive	5%	5,540	Progressive	95%	5,263	Progressive	7%	8,255	5,263	2,992
			RMS	5%	277					
			<i>Must Total 100%</i>		<i>100%</i>					

Current Conditions			Projected Change			Projected Future Condition				
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres		
								Total	Static	Treated
RMS	5%	5,540	RMS	100%	5,540	RMS	7%	7,811	5,540	2,271

Grand Totals	100%	110,800					100%	110,800	105,537	5,263
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DOCUMENTATION SECTION

PRACTICE FACTOR SHEET

Only shaded practices are in this analysis.

Modify the formula for each Base, Prog, RMS to enter feet, no. or acres for each practice factor.

Please enter appropriate factor for each level of treatment (Baseline, Progressive, & RMS)



Code	BASE	PROG	RMS	SHORT NOTE <i>TU = Typical Unit Size</i>	Practice Name
327	x 25.0%	x 50.0%	x 100.0%	PERCENT of TU	Conservation Cover (ac.) 327
380	x 200	x 300	x 500	FEET per TU	Windbreak/Shelterbreak Establishment (ft.) 380
390	0.0%	x 0.0%	x 0.1%	PERCENT of TU	Riparian Herbaceous Cover (ac.) 390
391	0.0%	0.0%	x 0.2%	PERCENT of TU	Riparian Forest Buffer (ac.) 391
393	0.0%	0.0%	x 4.0%	PERCENT of TU	Filter Strip (ac.) 393
472	x 30.0%	x 75.0%	x 100.0%	PERCENT of TU	Access Control (ac.) 472
484	x 1.0%	x 1.5%	x 2.0%	PERCENT of TU	Mulching (ac.) 484
595	0.0%	0.0%	x 75.0%	PERCENT of TU	Pest Management (ac.) 595
643	0.0%	0.0%	x 30.0%	PERCENT of TU	Restoration and Management of Declining Habitats (ac.) 643
644	0.0%	0.0%	x 0.7%	PERCENT of TU	Wetland Wildlife Habitat Management (ac.) 644
645	x 10.0%	x 25.0%	x 100.0%	PERCENT of TU	Upland Wildlife Habitat Management (ac.) 645
657	0.0%	0.0%	x 10.0%	PERCENT of TU	Wetland Restoration (ac.) 657
658	0.0%	0.0%	0.0%	PERCENT of TU	Wetland Creation (ac.) 658
659	0.0%	10.0%	0.1%	PERCENT of TU	Wetland Enhancement (ac.) 659
422	0	0	3	FEET per TU	Hedgerow Planting (ft.) 422
614	0	0	0	NUMBER per TU	Watering Facility (no.) 614
511	0.0%	30.0%	100.0%	PERCENT of TU	Forage Harvest Management (ac.) 511
512	100.0%	100.0%	100.0%	PERCENT of TU	Pasture & Hayland Planting (ac.) 512
590	0.0%	0.0%	1.0%	PERCENT of TU	Nutrient Management (ac.) 590
430	0	15	40	FEET per TU	Irrigation Water Conveyance, Pipeline (ft.) 430
442	0.0%	0.0%	0.1%	PERCENT of TU	Irrigation System, Sprinkler (ac.) 442
449	0.0%	0.0%	10.0%	PERCENT of TU	Irrigation Water Management (ac.) 449
388	300	300	300	FEET per TU	Irrigation Field Ditch (ft.) 388
443	0.0%	0.0%	5.0%	PERCENT of TU	Irrigation System, Surface and Subsurface (ac.) 443
606	0	0	0	FEET per TU	Subsurface Drain (ft.) 606
378	1	0	0	NUMBER per TU	Pond (no.) 378
382	1,000	2,500	7,500	FEET per TU	Fence (ft.) 382
516	0	5,000	10,000	FEET per TU	Pipeline (ft.) 516
528	25.0%	50.0%	100.0%	PERCENT of TU	Prescribed Grazing (ac.) 528
533	0	1	1	NUMBER per TU	Pumping Plant (no.) 533



WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102			LANDUSE ACRES		110,800	
LANDUSE TYPE		CRP - WILDLIFE LAND			TYPICAL UNIT SIZE ACRES		20	
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		5%	
Conservation Systems by Treatment Level	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Plant Condition – Noxious and Invasive Plants	Fish and Wildlife – Inadequate Cover/Shelter	Fish and Wildlife – Habitat Fragmentation	Fish and Wildlife – T & E Fish/Wildlife Species: Listed or Proposed under ESA
Baseline				System Rating ->	4	5	4	3
Access Control (ac.) 472	29,916	28,420	0	28,420	4	3	3	0
Conservation Cover (ac.) 327	24,930	23,684	0	23,684	5	5	5	0
Upland Wildlife Habitat Management (ac.) 645	9,972	9,473	0	9,473	0	5	5	5
Windbreak/Shelterbreak Establishment (ft.) 380	997,200	947,340	0	947,340	0	3	0	0
Total Acreage at Baseline	99,720	94,734	0	1				
Progressive				System Rating ->	4	5	5	3
Access Control (ac.) 472	4,155	4,845	1,346	6,191	4	3	3	0
Conservation Cover (ac.) 327	2,770	3,379	748	4,127	5	5	5	0
Riparian Herbaceous Cover (ac.) 390	0	0	0	0	0	0	3	2
Upland Wildlife Habitat Management (ac.) 645	1,385	1,615	449	2,064	0	5	5	5
Windbreak/Shelterbreak Establishment (ft.) 380	83,100	108,861	14,958	123,819	0	3	0	0
Total Acreage at Progressive Level	5,540	5,263	2,992	8,255				
RMS				System Rating ->	5	5	5	5
Access Control (ac.) 472	5,540	6,346	1,465	7,811	4	3	3	0
Conservation Cover (ac.) 327	5,540	6,177	1,634	7,811	5	5	5	0
Filter Strip (ac.) 393	222	222	91	312	0	2	1	2
Mulching (ac.) 484	111	111	45	156	3	0	0	0
Pest Management (ac.) 595	4,155	4,155	1,704	5,859	5	0	0	0
Restoration and Management of Declining Habitats (ac.) 643	1,662	1,662	681	2,343	4	2	3	4
Riparian Forest Buffer (ac.) 391	11	11	5	16	4	3	3	2
Riparian Herbaceous Cover (ac.) 390	6	6	2	8	0	0	3	2
Upland Wildlife Habitat Management (ac.) 645	5,540	5,809	2,003	7,811	0	5	5	5
Wetland Restoration (ac.) 657	554	554	227	781	-1	4	4	4
Wetland Wildlife Habitat Management (ac.) 644	39	39	16	55	1	5	5	5
Windbreak/Shelterbreak Establishment (ft.) 380	138,500	162,599	32,686	195,285	0	3	0	0
Total Acreage at RMS Level	5,540	5,540	2,271	7,811				

WATERSHED NAME & CODE		UPPER LAKE OAHE - 10130102				LANDUSE ACRES			110,800	
LANDUSE TYPE		CRP - WILDLIFE LAND				TYPICAL UNIT SIZE ACRES			20	
POSSIBLE SOURCES OF FUNDING						CALCULATED PARTICIPATION			5%	
Conservation Systems by Treatment Level		FUTURE	FARM BILL				OTHERS			NOTES/COMMENTS
		New Treatment Units	CTA	EQIP	WRP	WHIP	Fed	State	Local	
Progressive										
Access Control (ac.) 472	1,346	X								
Conservation Cover (ac.) 327	748	X								
Riparian Herbaceous Cover (ac.) 390	0	X	X		X					
Upland Wildlife Habitat Management (ac.) 645	449	X	X		X					
Windbreak/Shelterbreak Establishment (ft.) 380	14,958	X	X		X					
New Treatment Acreage	2,992									
RMS										
Access Control (ac.) 472	1,465	X								
Conservation Cover (ac.) 327	1,634	X								
Filter Strip (ac.) 393	91	X	X		X					
Mulching (ac.) 484	45	X	X		X					
Pest Management (ac.) 595	1,704	X	X	X	X					
Restoration and Management of Declining Habitats (ac.) 643	681	X	X		X					
Riparian Forest Buffer (ac.) 391	5	X	X		X					
Riparian Herbaceous Cover (ac.) 390	2	X	X		X					
Upland Wildlife Habitat Management (ac.) 645	2,003	X	X		X					
Wetland Restoration (ac.) 657	227	X	X		X					
Wetland Wildlife Habitat Management (ac.) 644	16	X	X		X					
Windbreak/Shelterbreak Establishment (ft.) 380	32,686	X	X		X					
New Treatment Acreage	2,271									

