

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

The intent of this rapid watershed assessment is to gather and display information specific to the Montezuma Creek eight-digit watershed (#14080203) located in San Juan County, Utah. This document will highlight the natural and social resources present in the county, detail some concerns, and be used to aid in resource planning and target conservation assistance needs. This document is dynamic and will be updated as additional information is available through a multi-agency and other interested parties partnership effort. The general observations and summaries are listed first, followed by the specific resource inventories.

Contents

[Observations and Summary](#)

[Land Use](#)

[Resource Concerns - Soils](#)

[Resource Concerns - Water](#)

[Resource Concerns - Air, Plants, Animals](#)

[Resource Concerns - Social and Economic](#)

[Demographics](#)

[Survey Results](#)

[Footnotes/Bibliography](#)

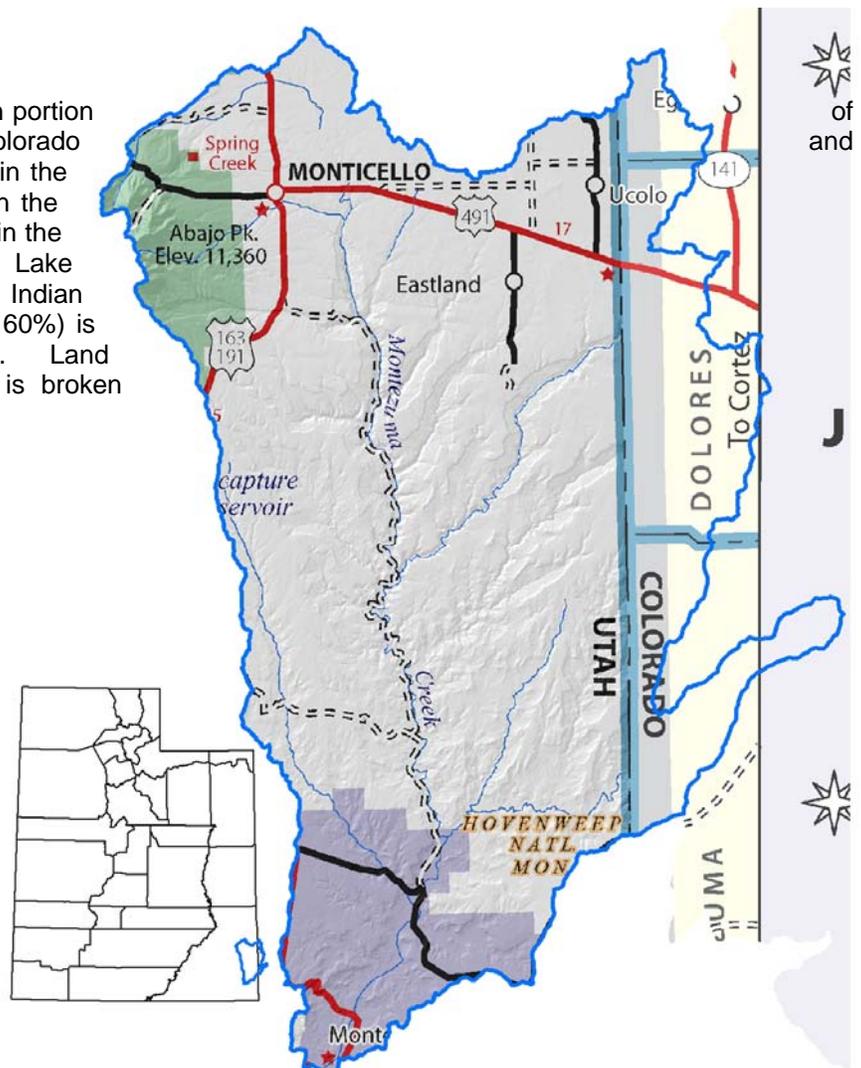
Introduction

The watershed is located in the far south-eastern portion Utah within the Colorado Plateau along the Colorado Arizona borders. The watershed is located within the largest county in Utah and the second largest in the United States. Some of the principal attractions in the general area are Canyonlands National Park, Lake Powell, Four Corners area and the Navajo Indian Reservation. The majority of the land (approx. 60%) is administered by federal and tribal agencies. Land ownership/administration within the watershed is broken down as follows (acres, % of total):

BLM	213,389, 42%
Indian Reservation	59,443, 12%
US Forest Service	28,434, 6%
State Trust Land	23,455, 5%
Private	184,385, 36%.

There are 98,624 acres of the watershed within Colorado of which 62 percent (61,501 acres) is private land used for cropland, pastureland and rangeland.

Summer precipitation patterns are typical for the southwest with monsoonal storms, with heavier snow accumulations within the higher elevations during the winter months. The average growing season is June 1 through October 1, with slightly longer periods in the lower elevations. The average annual precipitation within the watershed is between 6 and 22 in per year⁻¹.



Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

General Land Use Observations

Grass / Pasture / Hay Lands

- Complications related to overgrazing include poor pasture condition, soil compaction and water quality issues
- Control of noxious and invasive plants is an ever increasing problem
- The small, part-time farms are less likely to adopt conservation due to cost and low farm income
- There is significant potential for more prescribed grazing, fencing etc.....on tribal lands
- Wind erosion is a problem where there is overgrazing or poor management

Rangelands

- Invasive plants are a problem for overall management of grazing lands – some progress is being made to address the spread of tamarisk within the watershed (photo right). Some groups have tried to control tamarisk through grazing by goats as shown in the photo, and/or a combination of mechanical and biological methods
- Wildfires are a perennial issue in the watershed - the invasion of cheatgrass following a fire is common if the burn area is not re-seeded soon after the fire



Goats are sometimes used to help with the control of tamarisk as well as biological and mechanical methods - Photo courtesy San Juan woody invasives initiative website

Row & Perennial (orchards / vineyards / nurseries) Crops

- Residue, nutrient and pest management are needed to control erosion and to protect water quality
- The small, part-time farms are less likely to adopt conservation due to cost and low farm income
- Wind erosion is a perennial issue in the watershed

Forest

- On private, non-industrial forest there are issues with erosion, water quality and forest productivity
- On non-industrial forest land, landowner objectives often are not on actively managing the land for timber production. Land use constraints and the lack of economic incentives further discourage conservation

Resource Assessment Summary

Categories	Concern high, medium, or low	Description and Specific Location (quantify where possible)
Soil	Medium	Soil erosion associated with dryland farming.
Water Quantity	Medium	Water depletion in Lake Powell and additional lower basin storage.
Water Quality Ground Water	Medium	General concerns regarding ground water quality.
Water Quality Surface Water	Medium	General concerns regarding ground water quality.
Air Quality	Low	No concerns mentioned.
Plant Suitability	Medium	General concerns regarding noxious/invasive weeds.
Plant Condition	Low	No concerns mentioned.
Fish and Wildlife	Medium	Do not want the reintroduction of wolves in the area.
Domestic Animals	Low	No concerns mentioned.
Social and Economic	Low	No concerns mentioned.

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Practices - Montezuma Crk # 14080203	Applied			Planned			% Applied Utah			% Planned Utah		
	Year	2004	2005	2006	2004	2005	2006	2004	2005	2006	2004	2005
Brush Management (314) (ac)	110			1557	250	255	2.30%	0.41%	0.59%	0.71%	-	-
Conservation Completion Incentive First Year (CCIA) (no)						5	-	-	0.10%	-	-	-
Conservation Completion Incentive Second Year (CCIB) (no)							-	-	-	-	-	-
Conservation Cover (327) (ac)	1084	2476	13550	7062	1074	11783	43.46%	12.15%	35.54%	39.59%	37.78%	48.97%
Conservation Crop Rotation (328) (ac)	14557	20432	4400	17664	17023	7967	64.33%	75.84%	30.60%	76.19%	82.21%	67.44%
Enhancement - Air Resource Management (EAM) (ac)					154		-	100.00%	-	-	-	-
Enhancement - Energy Management (EEM) (ac)			2140		2294		-	75.31%	-	-	-	100.00%
Enhancement - Habitat Management (EHM) (ac)			2140		2294		-	87.52%	-	-	-	100.00%
Enhancement - Nutrient Management (ENM) (ac)			2140		2294		-	87.52%	-	-	-	100.00%
Enhancement - Pest Management (EPM) (ac)					154		-	26.55%	-	-	-	-
Enhancement - Salinity Management (ESL) (ac)					2294		-	84.37%	-	-	-	-
Enhancement - Soil Management (ESM) (ac)			2140				-	-	-	-	-	100.00%
Fence (382) (ft)	36427		39350	153940		4850	11.60%	-	0.50%	8.98%	-	14.14%
Forage Harvest Management (511) (ac)		328			328		-	0.93%	-	-	10.29%	-
Grassed Waterway (412) (ac)				5			71.43%	-	-	-	-	-
Irrigation System, Microirrigation (441) (ac)				1			0.41%	-	-	-	-	-
Irrigation System, Sprinkler (442) (ac)	3	23		44	21	120	0.07%	0.05%	0.24%	0.38%	0.16%	-
Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic (430DD) (ft)	1600			7680			0.61%	-	-	0.32%	-	-
Irrigation Water Management (449) (ac)	56	41		167	21	120	0.44%	0.03%	0.15%	0.45%	0.22%	-
Nutrient Management (590) (ac)						697	-	-	1.89%	-	-	-
Pasture and Hay Planting (512) (ac)	5013			453		121	5.65%	-	1.02%	73.79%	-	-
Pest Management (595) (ac)	1979		17848	2373		17294	15.81%	-	22.28%	24.87%	-	47.89%
Pipeline (516) (ft)	11867		2600	22700	3500		3.01%	0.84%	-	8.48%	-	4.32%
Planned Grazing System (762) (ac)	398	4152		4686			49.83%	-	-	42.03%	100.00%	-

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Pond (378) (no)	20	4	21	32	17	5	19.28%	25.37%	12.82%	74.07%	10.53%	38.89%
Prescribed Grazing (528) (ac)	2089		848	6536		57487	35.59%	-	12.43%	19.71%	-	0.65%
Prescribed Grazing (528A) (ac)	5540	6322	17717	9061	3462	16955	2.18%	1.21%	42.06%	3.72%	4.67%	46.61%
Pumped Well Drain (532) (no)		6881			9406		-	6.92%	-	-	10.09%	-
Pumping Plant (533) (no)	1			14			7.07%	-	-	2.38%	-	-
Range Planting (550) (ac)	651			3683	1		6.74%	0.51%	-	7.90%	-	-
Rangeland Fertilization (721) (ac)		724			424		-	0.84%	-	-	17.36%	-
Residue Management, Mulch Till (329B) (ac)	6501	15442	5596	7979	19520	5583	50.88%	90.77%	33.64%	74.55%	90.04%	68.11%
Residue Management, No-Till/Strip Till (329A) (ac)				170		1145	100.00%	-	100%	-	-	-
Residue Management, Seasonal (344) (ac)	9823	10290		10985	10290	8014	94.85%	94.12%	84.63%	99.66%	100.00%	-
Spring Development (574) (no)	8	2		6	3		7.50%	4.55%	-	42.11%	18.18%	-
Terrace (600) (ft)	302554	244650	139445	597661	574378	2E+05	89.66%	89.40%	86.15%	100.00%	96.48%	71.94%
Upland Wildlife Habitat Management (645) (ac)	19843	27124	21710	33824	20899	82842	12.98%	17.21%	20.18%	28.55%	24.26%	14.44%
Use Exclusion (472) (ac)	259	725	1897	5196	608	337	41.98%	16.75%	6.12%	100.00%	33.71%	35.96%
Water Well (642) (no)		1	1	8	1		2.94%	2.33%	-	-	8.33%	6.25%
Watering Facility (614) (no)	5	2	3	23	4		1.03%	1.37%	-	0.27%	3.33%	3.90%
Wildlife Watering Facility (648) (no)			2				-	-	-	-	-	33.33%
Year - Montezuma	2001	2002	2003				2001	2002	2003	-	-	-
Erosion Reduction Applied (Acres)	12782	20082	16590				11.61%	15.45%	26.25%	-	-	-
Inventory & Evaluations		7	19				-	1.19%	1.39%	-	-	-
Total Irrigation Water Management (Acres)	123	723					0.33%	1.23%	-	-	-	-
Pest Management Systems Applied (595A) (Acres)	5623	1100					37.69%	2.57%	-	-	-	-
Prescribed Grazing Applied (528A) (Acres)	25115	15267	13431				6.10%	3.37%	4.97%	-	-	-
Total Residue Management (Acres)		15916	11722				-	99.82%	100%	-	-	-
Tree & Shrub Establishment (612) (Acres)	3	3	3				3.70%	0.96%	0.21%	-	-	-
Total Wetlands Created, Restored, or Enhanced (Acres)	0	1					-	0.04%	-	-	-	-
Total Wildlife Habitat (Acres)	7170	11522	6916				9.32%	4.24%	6.98%	-	-	-

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

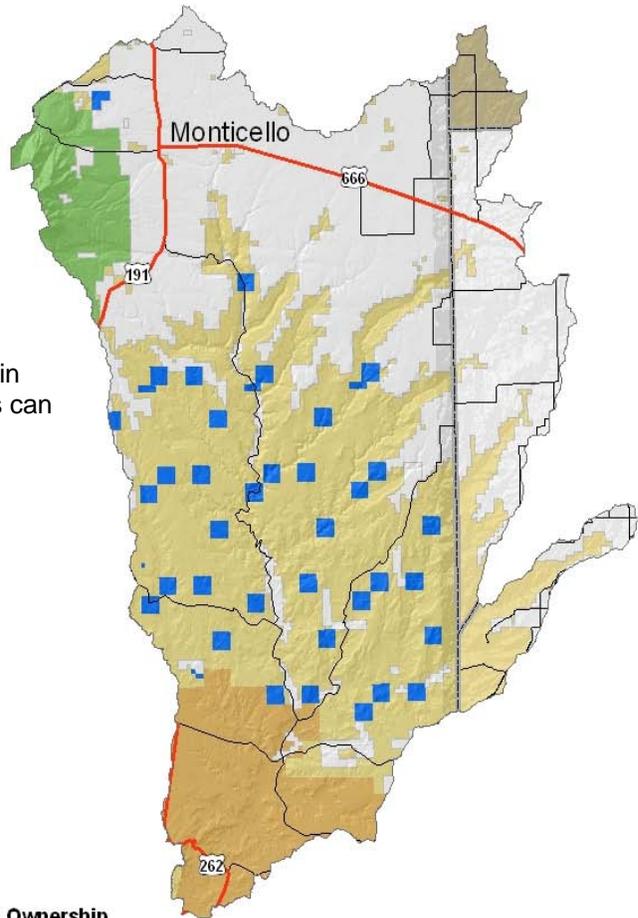
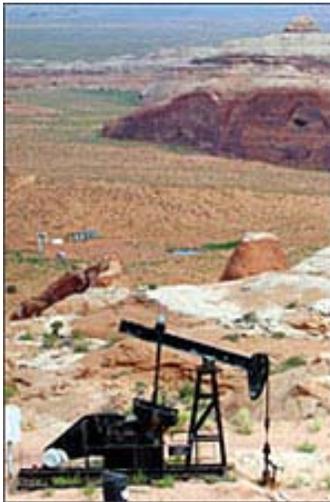
Land Ownership

A portion of this watershed is located within Colorado state lines (90,000+ acres) of which over 61,000 acres is privately owned and the remaining acreage managed by BLM and the State of Colorado.

The largest portion of the watershed is managed by the BLM (42%) with the other major portion privately owned (36%). The Navajo tribe controls over 59,000 acres of mostly rangeland in the southern end of the watershed.

Mineral production facilities are common on public lands within the watershed. Maps showing the lease areas on BLM lands can be accessed at:

<http://www.ut.blm.gov/leasesalemay2006/maps.htm>



Utah Land Ownership

- State Trust Land - 23,455 acres
- Bureau of Land Management - 213,389 acres
- US Forest Service - 28,434 acres
- Indian Reservation - 59,443 acres
- Private Land - 184,385 acres

Colorado Land Ownership

- Bureau of Land Management - 27,174 acres
- Private Land - 61,501 acres
- State Wildlife Reserve - 9,949 acres

Montezuma Creek - Rapid Watershed Assessment

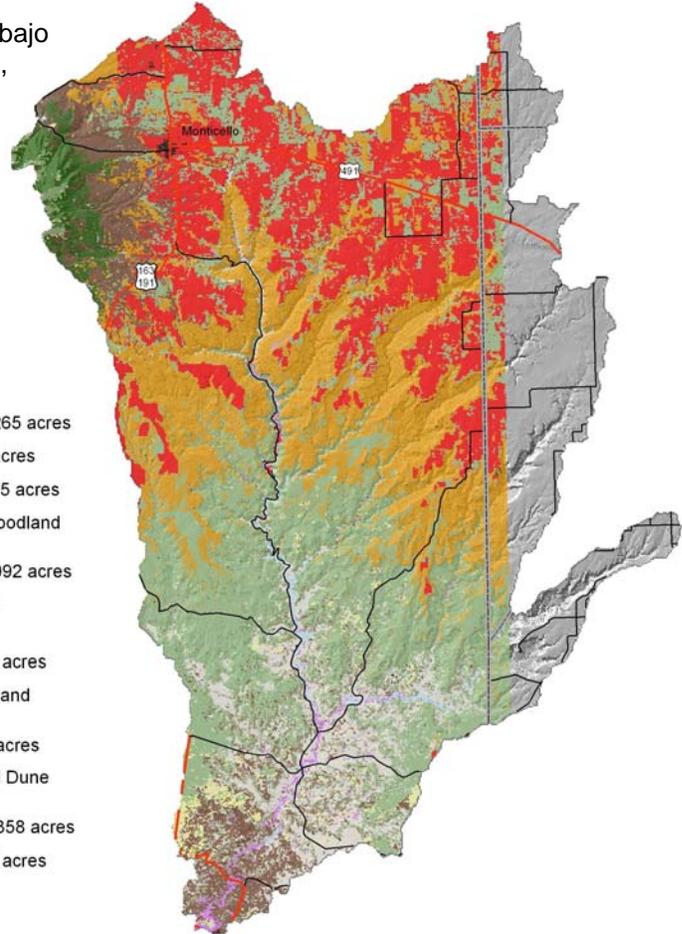
HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Land Cover

The watershed is bounded on the northwest by the Abajo Mountain, on the north by a Moncos Shale upland plateau, on the east by the hydrologic divide for the Dolores River, on the south by the San Juan River and on the west by the hydrologic divide for Recapture Creek.

Most of the intense agriculture is located in the northern half of the watershed and is susceptible to wind erosion and sheet erosion progressing into rill and some gully erosion.



Special Considerations for the Montezuma Creek Watershed – HUC #14080203:

- There are 59,443 acres of Navajo tribal lands within the watershed - A good percentage of the farmland of statewide importance within this watershed is located on reservation lands
- The qualitative survey of lower Montezuma Creek, found only one species of fish, the speckled dace (*Rhinichthys osculus*). The dace were found in the canyon, about 2 km upstream of the confluence with Verdure Creek
- In the upper Montezuma Creek dry cropland areas, annual gross erosion rates are about 6 tons/acre. Some upper watershed areas are eroding at 39 tons per acre annually. Presently, there is severe erosion on 82,500 acres of rangeland yielding 236,460 tons of sediment and 17,600 acres of cropland yielding 216,480 tons annually. The total salt load is 15,230 tons annually. Establishment of a healthy watershed is the best way to reduce erosion and the resulting downstream sedimentation and salt loading (*SE Colorado Basin Report – State Water Plan*)
- **Navajo Reservation Lands:** need for more agricultural and culinary water storage on tribal lands
- **Navajo Reservation Lands:** need to reduce damages to crops, rangelands etc. from wind erosion
- **Potential Limited Resource Producers:** 64
- **Beginning Farmers/Ranchers:** 52
- Cropland Erosion Rates in the northern part of the watershed are high – mostly related to wind erosion
- Water storage for agricultural and culinary purposes is a critical need in the watershed

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Prime & Unique Farm Land

Prime farmland

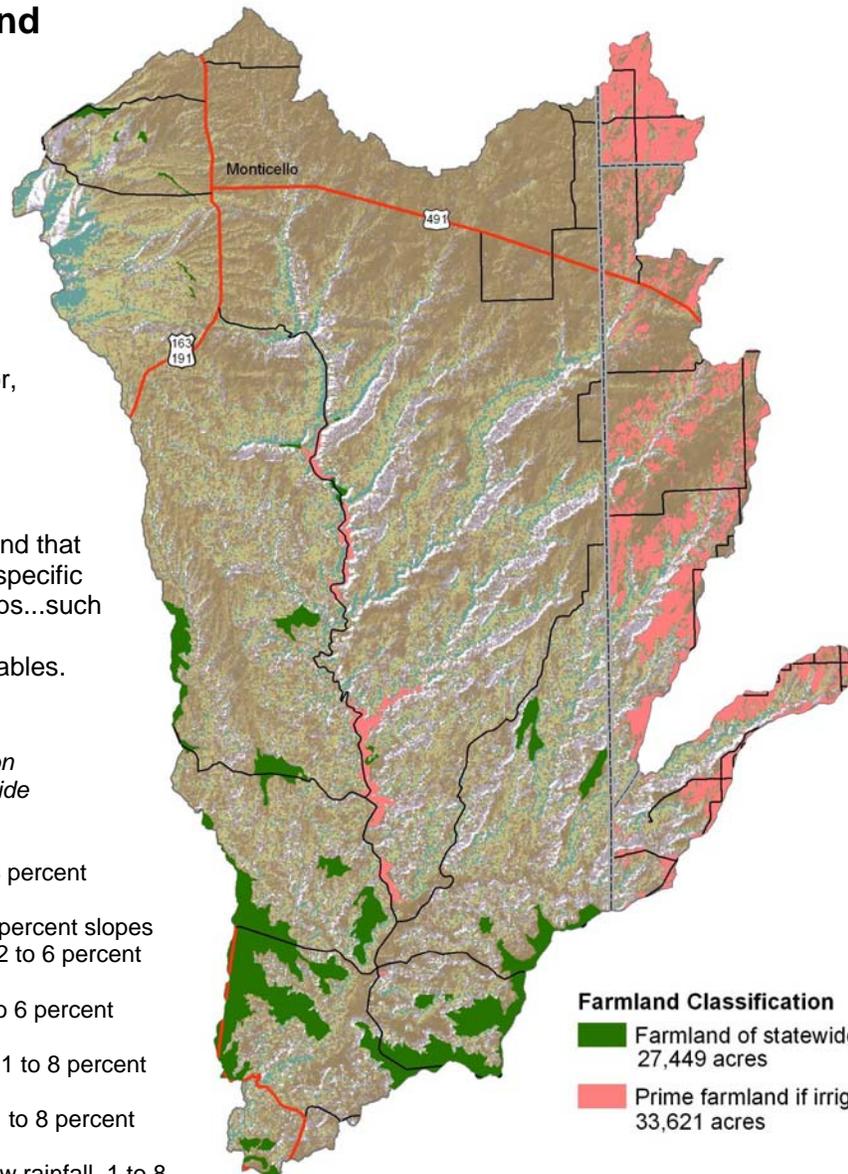
Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion.

Unique farmland

Land other than prime farmland that is used for the production of specific high-value food and fiber crops...such as, citrus, tree nuts, olives, cranberries, fruits, and vegetables.

Soils Units on the Navajo Reservation Designated with Farmland of Statewide Importance:

- BbD Begay loamy fine sand**, 3 to 8 percent slopes
- NaB Nakai loamy fine sand**, 1 to 8 percent slopes
- NbC Nakai very fine sandy loam**, 2 to 6 percent slopes
- NnD Neskahi fine sandy loam**, 2 to 6 percent slopes
- SnB Sogzie very fine sandy loam**, 1 to 8 percent slopes
- WhB Whit very fine sandy loam**, 1 to 8 percent slopes
- WkB Whit very fine sandy loam**, low rainfall, 1 to 8 percent slopes



Farmland Classification

- Farmland of statewide importance
27,449 acres
- Prime farmland if irrigated
33,621 acres

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Resource Concerns – SOILS

Categories	Specific Resource Concern / Issue																
		Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area	
Soil Erosion	Sheet and Rill	x			x	x							x			x	x
	Wind	x			x								x			x	x
	Ephemeral Gully	x			x	x		x	x								x
	Classic Gully	x															
	Streambank				x	x											x
	Shoreline																
	Irrigation-induced		x	x													
	Mass Movement					x	x										x
	Road, roadsides and Construction Sites	x				x	x						x	x		x	
Soil Condition	Organic Matter Depletion	x															
	Rangeland Site Stability				x	x											x
	Compaction	x	x	x													
	Subsidence														x	x	
	ContaminantsSalts and Other Chemicals															x	
	Contaminants: Animal Waste and Other OrganicsN	x	x	x											x		
	Contaminants: Animal Waste and Other OrganicsP	x	x	x											x		
	Contaminants: Animal Waste and Other OrganicsK	x	x	x											x		
	Contaminants : Commercial FertilizerN	x	x	x					x						x		
	Contaminants : Commercial FertilizerP	x	x	x					x						x		
	Contaminants : Commercial FertilizerK	x	x	x					x						x		
	ContaminantsResidual Pesticides	x	x	x					x								
	Damage from Sediment Deposition	x			x	x			x						x		

There are four major types of unconsolidated surface materials occurring within the watershed. These are regolithic material derived from weathered bedrock, eolian material covering the bedrock, alluvial fan material and alluvium in the stream channels derived from eolian and transported sediment. The upland are partially covered by a variable thickness of wind-blown sediment as well as soil derived from bedrock.

General Geology: The general structure of the area is that of Mesozoic age sedimentary rocks with a low angle of dip to the southwest. The Abajo Mountain range to the west is an igneous intrusion and there is a broad gentle anticlinal structure in the Mancos Shale in the northern portion of the watershed (Christenson, 1985, fig.3).

The central, southern and western areas of the watershed are characterized by canyon with steep walls. The valleys are filled with easily eroded alluvial and wind-blown sediments.

Montezuma Creek - Rapid Watershed Assessment

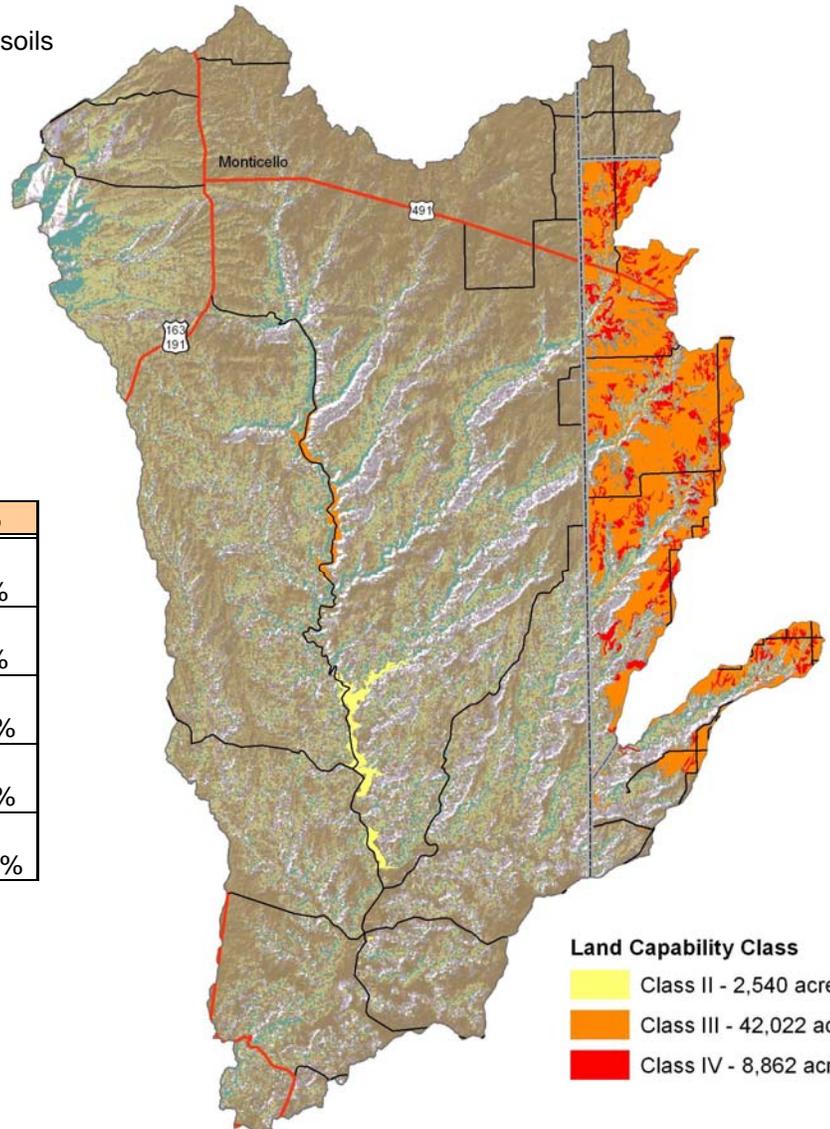
HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Land Capability Class on Cropland and Pastureland

Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period. Land capability classification is subdivided into capability class and capability subclass nationally.

Capability class is the broadest category in the system. Class codes I to VIII indicate progressively greater limitations and narrower choices for agriculture. The numbers are used to represent both irrigated and nonirrigated land capability.



		Acres	%
Land Capability Class (Irrigated Cropland & Pastureland Only)	I - slight limitations	0	0%
	II - moderate limitations	2,540	5%
	III - severe limitations	42,022	79%
	IV - very severe limitations	8,862	17%
	Total Crop & Pasture Lands	53,424	100%

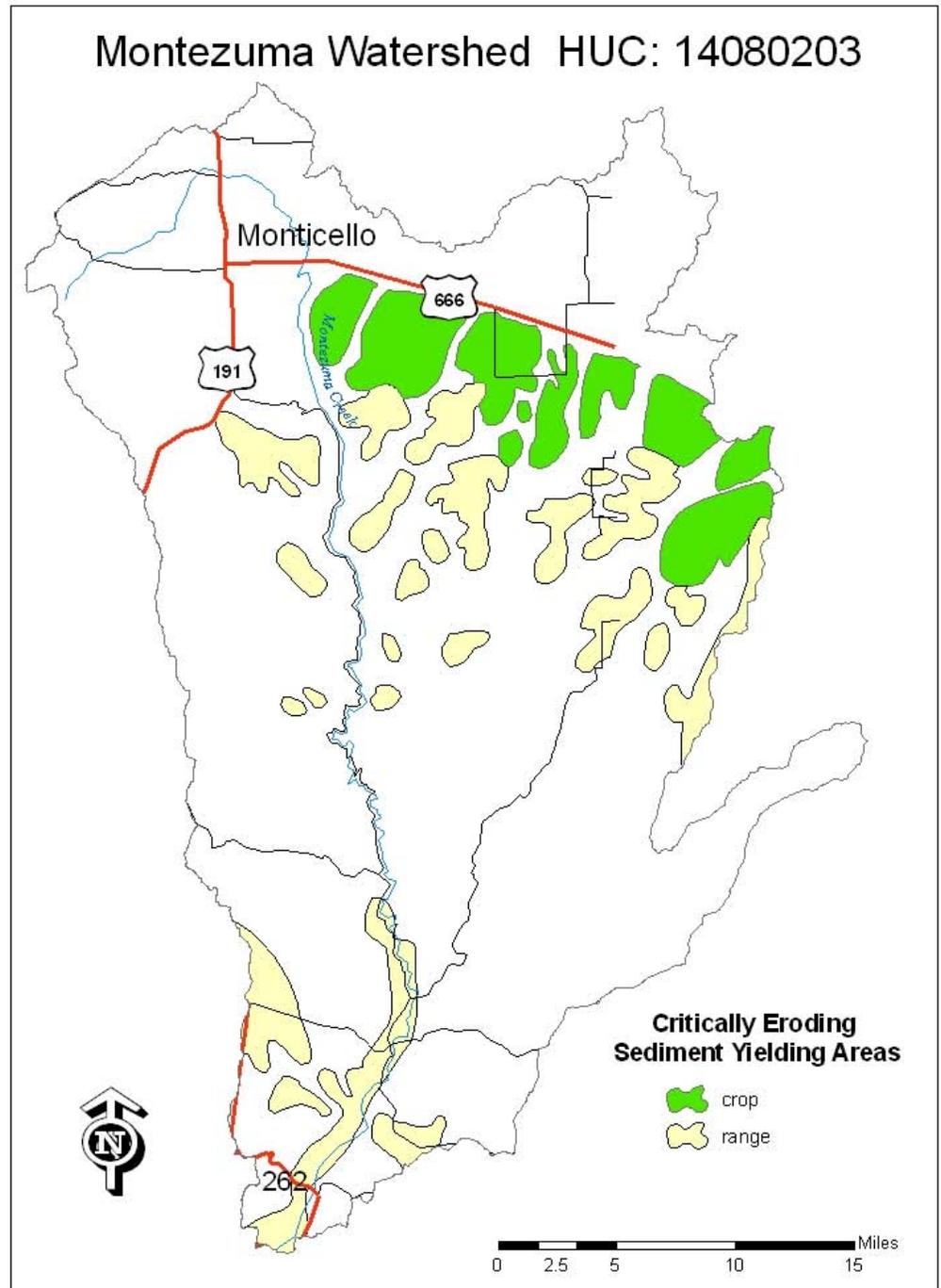
Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Soil Erosion

Sheet and rill erosion by water on the sub basin pasturelands have been reduced by .08 tons of soil per acre from 1992 to 1997. Dry cropland in San Juan County can be compared using a multiplier of ten.

- ❖ Controlling erosion not only sustains the long-term productivity of the land, but also affects the amount of soil, pesticides, fertilizer, and other substances that move into the nation's waters.
- ❖ Through NRCS programs many farmers and ranchers have applied conservation practices to reduce the effects of erosion by water. As a result, erosion rates on pasturelands fell 40 percent from 0.164 to 0.12 tons/acre/year from 1987 to 1997. Dry cropland in San Juan County can be compared using a multiplier of ten.
- ❖ Map shows critically eroding areas within the watershed. Severely eroding acreage estimated at 71,800 acres with an average of 2.1 tons per acre sediment yield rate or 149,790 tons and 3,500 tons of salt. A 3 percent salt content was used to derive salt tonnage (NRCS-BLM, Feb. 1988). These rates may have changed since then due to conservation practices implemented in the area since then.



Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Resource Concerns – WATER

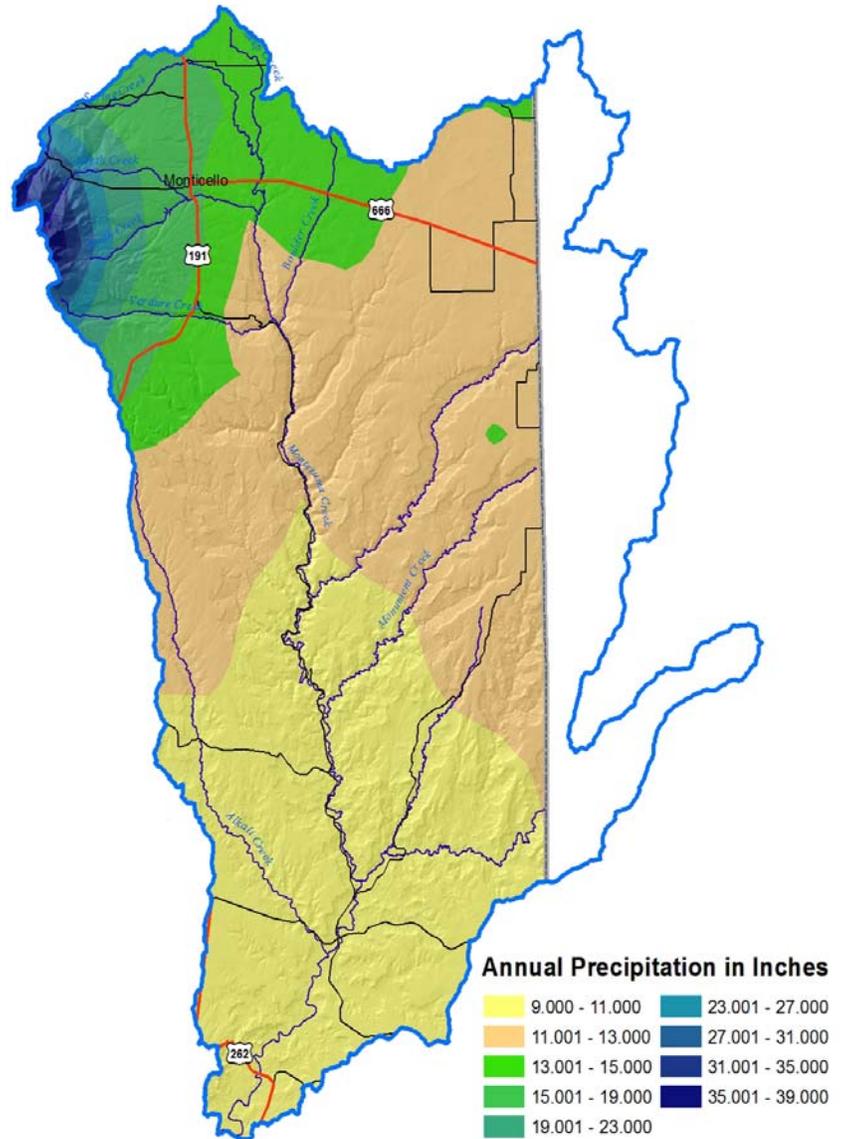
Categories	Specific Resource Concern / Issue	Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area	
Water Quantity	Water Quantity – Rangeland Hydrologic Cycle				X	X			X	X						X	
	Excessive Seepage																
	Excessive Runoff, Flooding, or Ponding	X	X	X	X	X			X	X	X	X	X		X	X	
	Excessive Subsurface Water																
	Drifted Snow	X			X	X						X	X		X		
	Inadequate Outlets																
	Inefficient Water Use on Irrigated Land	X	X	X													
	Inefficient Water Use on Non-irrigated Land	X			X	X											
	Reduced Capacity of Conveyances by Sediment Deposition																
	Reduced Storage of Water Bodies by Sediment Accumulation					X	X		X	X							X
	Aquifer Overdraft																
	Insufficient Flows in Watercourses					X	X		X	X							X
Water Quality, Groundwater	Harmful Levels of Pesticides in Groundwater																
	Excessive Nutrients and Organics in Groundwater																
	Excessive Salinity in Groundwater																
	Harmful Levels of Heavy Metals in Groundwater																
	Harmful Levels of Pathogens in Groundwater																
	Harmful Levels of Petroleum in Groundwater																
Water Quality, Surface	Harmful Levels of Pesticides in Surface Water	X	X	X													
	Excessive Nutrients and Organics in Surface Water																
	Excessive Suspended Sediment and Turbidity in Surface Water	X	X	X	X	X				X		X			X	X	
	Excessive Salinity in Surface Water																
	Water Quality – Colorado River Excessive Salinity																
	Harmful Levels of Heavy Metals in Surface Water																
	Harmful Temperatures of Surface Water																
	Harmful Levels of Pathogens in Surface Water	X			X	X											
	Harmful Levels of Petroleum in Surface Water																

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Precipitation and Streams



		ACRES	ACRE-FEET
Irrigated Adjudicated Water Rights	Surface	8930.00	35720.00
	Well		
	Total Irrigated Adjudicated Water Rights	8930.00	35720.00
Stream Flow Data	USGS 09379500 San Juan River Near Bluff, UT	Total Avg. Yield	11,075
		May-Sept Yield	15,555
Stream Data		MILES	PERCENT
	Total Miles - Major (100K Hydro GIS Layer)	2140.00	n/a
	303d (DEQ Water Quality Limited Streams)	0.00	0%

[Back to Contents](#)

Montezuma Creek - Rapid Watershed Assessment
HUC # 14080203 – San Juan Co., Utah

	Irrigation Efficiency:	<40%	40 - 60%	>60%
Percentage of Total Acreage	Cropland	15%	45%	40%
	Pastureland	15%	25%	60%

Watersheds & Total Maximum Daily Load (TMDL)

Watershed Projects, Plans, Studies and Assessments			
NRCS Watershed Projects		NRCS Watershed Plans, Studies & Assessments	
Name	Status	Name	Status
		Montezuma Crk - Erosion Study, NRCS-BLM, 1988	1988
DEQ TMDL's		NRCS Comprehensive Nutrient Management Plans	
Name	Status	Number	Status
Cottonwood Wash	Completed 2002	0	
TMDL for Ken's Lake	Completed 2002		
Montezuma Crk-S.Juan	Completed 1999		
Montezuma Crk-Monticello	2005, chlorine residual-waste load	0	

AFO/CAFO

Animal Feeding Operations (AFO)						
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Farms	0	33	0	0	0	0
No. of Animals						

Potential Confined Animal Feeding Operations (PCAFO)						
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Farms	0	1	0	0	0	0
No. of Animals						

Confined Animal Feeding Operations - Utah CAFO Permit					
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Other
No. of Permitted Farms	0	0	0	0	0
No. of Permitted Animals					

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Resource Concerns – AIR, PLANTS, ANIMALS

Categories	Specific Resource Concern / Issue														
		Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined
Air Quality	Particulate matter less than 10 micrometers in diameter (PM 10)	X			X				X					X	X
	Particulate matter less than 2.5 micrometers in diameter (PM 2.5)	X			X				X					X	X
	Excessive Ozone														
	Excessive Greenhouse Gas: CO2 (carbon dioxide)	X			X				X					X	X
	Excessive Greenhouse Gas: N2O (nitrous oxide)														
	Excessive Greenhouse Gas: CH4 (methane)														
	Ammonia (NH3)														
	Chemical Drift														
	Objectionable Odors														
	Reduced Visibility	X			X				X					X	X
	Undesirable Air Movement														
	Adverse Air Temperature														
Plant Suitability	Plants not adapted or suited				X	X			X						
Plant Condition	Plant Condition – Productivity, Health and Vigor				X	X			X						
	Threatened or Endangered Plant Species: Plant Species Listed or Proposed for Listing under the Endangered Species Act				X	X			X						
	Threatened or Endangered Plant Species: Declining Species, Species of Concern				X	X			X						
	Noxious and Invasive Plants	X	X	X	X	X			X				X	X	
	Forage Quality and Palatability		X	X	X	X			X						
	Plant Condition – Wildfire Hazard				X	X			X						
Fish and Wildlife	Inadequate Food				X	X		X							
	Inadequate Cover/Shelter				X	X		X							
	Inadequate Water				X	X		X							
	Inadequate Space				X	X		X							
	Habitat Fragmentation				X	X		X							
	Imbalance Among and Within Populations				X	X		X							
	Threatened and Endangered Species: Species Listed or Proposed for Listing under the Endangered Species Act				X	X		X							
Domestic Animals	Inadequate Quantities and Quality of Feed and Forage	X	X	X	X	X									
	Inadequate Shelter	X	X	X	X	X									
	Inadequate Stock Water	X	X	X	X	X									
	Stress and Mortality	X	X	X	X	X									

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Noxious Weeds

Utah Noxious Weed List

The following weeds are officially designated and published as noxious for the State of Utah, as per the authority vested in the Commissioner of Agriculture under Section 4-17-3, Utah Noxious Weed Act:

- Bermuda grass** (cynodon dactylon)
- Canada thistle (cirsium arvense)
- Diffuse knapweed (centaurea diffusa)
- Dyers woad (isatis tinctoria L)
- Field bindweed (Wild Morning Glory) (convolvulus arvensis)
- Hoary cress (cardaria drabe)
- Johnson grass (sorghum halepense)
- Leafy spurge (euphorbia esula)
- Medusa head (taeniatherum caput-medusae)
- Musk thistle (carduus mutans)
- Perennial pepper weed (lepidium latifolium)
- Perennial sorghum (sorghum halepense L & sorghum alnum)
- Purple loosestrife (lythrum salicaria L.)
- Quack grass (agropyron repens)
- Russian knapweed (centaurea repens)
- Scotch thistle (onopordum acanthium)
- Spotted knapweed (centaurea maculosa)
- Squarrose knapweed (centaurea squarrosa)
- Yellow starthistle (centaurea solstitialis)

Additional noxious weeds declared by San Juan County (2003): Silverleaf Nightshade, Buffalobur, Whorled Milkweed, Jointed goatgrass

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Wildlife Species of Greatest Conservation Need

The Utah Comprehensive Wildlife Conservation Strategy (CWCS) prioritizes native animal species according to conservation need. At-risk and declining species in need of conservation were identified by examining species biology and life history, populations, distribution, and threats. The following table lists species of greatest conservation concern in the county.

AT-RISK SPECIES				
	Common Name	Group	Primary Habitat	Secondary Habitat
FEDERALLY-LISTED				
Endangered:	California Condor (experimental)	Bird	Cliff	
	Black-footed Ferret (extirpated)	Mammal	Grassland	High Desert Scrub
	Gray Wolf (extirpated)	Mammal	Mountain Shrub	Mixed Conifer
	Bonytail Chub	Fish	Water - Lotic	
	Colorado Pikeminnow	Fish	Water - Lotic	
	Humpback Chub	Fish	Water - Lotic	
	Razorback Sucker	Fish	Water - Lotic	
Threatened:	Southwestern Willow Flycatcher	Bird	Lowland Riparian	Mountain Riparian
	Mexican Spotted Owl	Bird	Cliff	Lowland Riparian
	Bald Eagle	Bird	Lowland Riparian	Agriculture
Candidate:	Brown (Grizzly) Bear (extirpated)	Mammal	Mixed Conifer	Mountain Shrub
	Gunnison Sage-grouse	Bird	Shrubsteppe	
Proposed:	Yellow-billed Cuckoo	Bird	Lowland Riparian	Agriculture
	(None)			
STATE SENSITIVE				
Conservation Agreement Species:	Northern Goshawk	Bird	Mixed Conifer	Aspen
	Bluehead Sucker	Fish	Water - Lotic	Mountain Riparian
	Roundtail Chub	Fish	Water - Lotic	
	Flannelmouth Sucker	Fish	Water - Lotic	
Species of Concern:	Allen's Big-eared Bat	Mammal	Lowland Riparian	Pinyon-Juniper
	American White Pelican	Bird	Water - Lentic	Wetland
	Arizona Toad	Amphibian	Lowland Riparian	Wetland
	Big Free-tailed Bat	Mammal	Lowland Riparian	Cliff
	Bobolink	Bird	Wet Meadow	Agriculture
	Burrowing Owl	Bird	High Desert Scrub	Grassland
	Common Chuckwalla	Reptile	High Desert Scrub	Low Desert Scrub
	Desert Night Lizard	Reptile	Low Desert Scrub	Pinyon-Juniper
	Ferruginous Hawk	Bird	Pinyon-Juniper	Shrubsteppe
	Fringed Myotis	Mammal	Northern Oak	Pinyon-Juniper
	Greater Sage-grouse	Bird	Shrubsteppe	
	Gunnison's Prairie-dog	Mammal	Grassland	High Desert Scrub
	Kit Fox	Mammal	High Desert Scrub	
	Lewis's Woodpecker	Bird	Ponderosa Pine	Lowland Riparian
	Mexican Vole	Mammal	Ponderosa Pine	Aspen
	Short-eared Owl	Bird	Wetland	Grassland
	Silky Pocket Mouse	Mammal	Grassland	Shrubsteppe
	Smooth Greensnake	Reptile	Mountain Riparian	Wet Meadow
	Spotted Bat	Mammal	Low Desert Scrub	Cliff
	Three-toed Woodpecker	Bird	Sub-Alpine Conifer	Lodgepole Pine
Townsend's Big-eared Bat	Mammal	Pinyon-Juniper	Mountain Shrub	
Yavapai Mountainsnail	Mollusk	Aspen	Rock	

*Definitions of habitat categories can be found in the Utah Comprehensive Wildlife Conservation Strategy.

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

The Utah CWCS also prioritizes habitat categories based on several criteria important to the species of greatest conservation need. The top ten key habitats state-wide are (in order of priority):

- 1) **Lowland Riparian** (riparian areas <5,500 ft elevation; principal vegetation: Fremont cottonwood and willow)
- 2) **Wetland** (marsh <5,500 ft elevation; principal vegetation: cattail, bulrush, and sedge)
- 3) **Mountain Riparian** (riparian areas >5,500 ft elevation; principal vegetation: narrowleaf cottonwood, willow, alder, birch and dogwood)
- 4) **Shrubsteppe** (shrubland at 2,500 - 11,500 ft elevation; principal vegetation: sagebrush and perennial grasses)
- 5) **Mountain Shrub** (deciduous shrubland at 3,300 - 9,800 ft elevation; principal vegetation: mountain mahogany, cliff rose, bitterbrush, serviceberry, etc.)
- 6) **Water - Lotic** (open water; streams and rivers)
- 7) **Wet Meadow** (water saturated meadows at 3,300 - 9,800 ft elevation; principal vegetation: sedges, rushes, grasses and forbs)
- 8) **Grassland** (perennial and annual grasslands or herbaceous dry meadows at 2,200 - 9,000 ft elevation)
- 9) **Water - Lentic** (open water; lakes and reservoirs)
- 10) **Aspen** (deciduous aspen forest at 5,600 - 10,500 ft elevation)

Resource Concerns – SOCIAL AND ECONOMIC

Categories	Specific Resource Concern / Issue															
		Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area
Social and Economic	Non-Traditional Landowners and Tenants	X	X	X					X							
	Urban Encroachment on Agricultural Land															
	Marketing of Resource Products	X	X	X												
	Innovation Needs	X	X	X												
	Non-Traditional Land Uses	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Population Demographics, Changes and Trends															
	Special Considerations for Land Mangement (High State and Federal Percentage)				X	X				X					X	X
	Active Resource Groups (CRMs, etc)															
	Full Time vs Part Time Agricultural Communities															
	Size of Operating Units															
	Land Removed from Production through Easments															
	Land Removed from Production through USDA Programs	X	X	X	X	X										
Other																

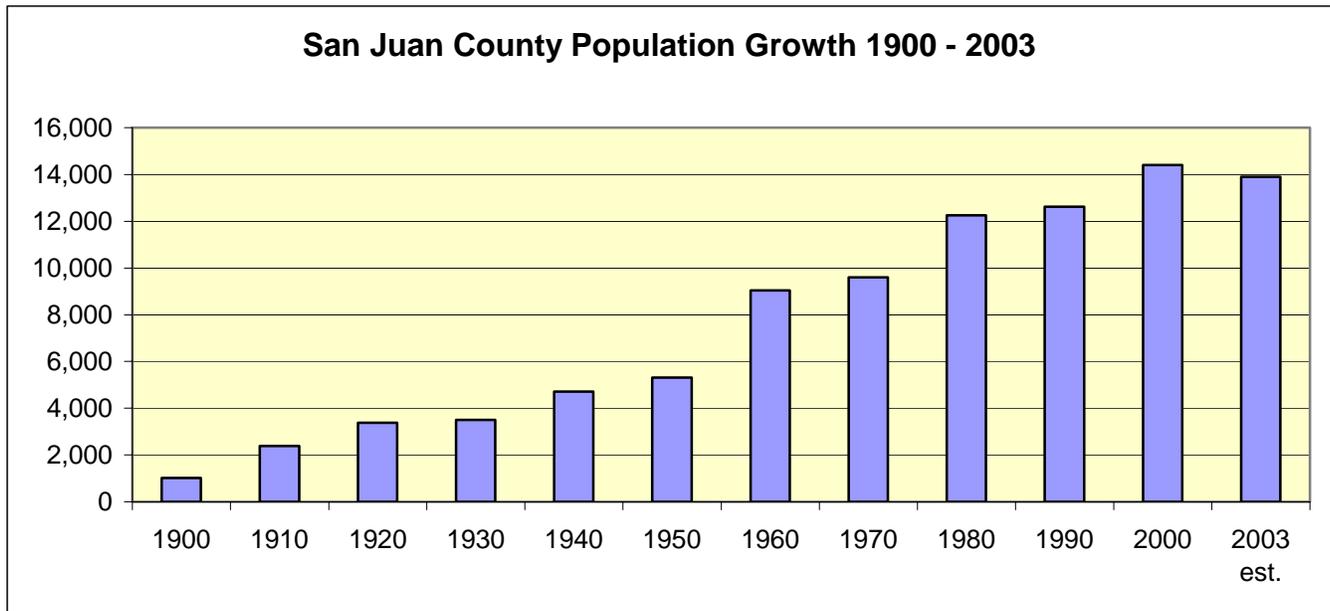
Montezuma Creek (Town- at the south end of the watershed) compared to Utah state average: Source - <http://www.city-data.com/city/Montezuma-Creek-Utah.html>

- Median household income **below** state average.
- Median house value **significantly below** state average.
- Unemployed percentage **significantly above** state average.
- Percentage with bachelors **significantly below** state average
- Hispanic race population percentage **significantly below** state average.
- Median age **significantly below** state average.

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Census and Social Data



Demographics – Montezuma Creek Watershed

HUC Area	#14080203	
Zip Code	84534	84535
Male	919	1384
Female	925	1305
Med. Age	20	30
White	46	2241
Black or African American	0	5
Am Indian or Alaska Native	1783	204
Asian	0	18
Hawaiian or Pac Islander	0	3
Other	3	453
Two or more races	12	65
Hispanic Origin	15	310
Pop >25 years old	863	1475
Education at or above HS	411	1235
Language other than English	1374	324

[Back to Contents](#)

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Public Survey/Questionnaire Results:

Categories	Concern high, medium, or low	Description and Specific Location (quantify where possible)
Soil	Medium	Soil erosion associated with dryland farming.
Water Quantity	Medium	Water depletion in Lake Powell and additional lower basin storage.
Water Quality Ground Water	Medium	General concerns regarding ground water quality.
Water Quality Surface Water	Medium	General concerns regarding ground water quality.
Air Quality	Low	No concerns mentioned.
Plant Suitability	Medium	General concerns regarding noxious/invasive weeds.
Plant Condition	Low	No concerns mentioned.
Fish and Wildlife	Medium	Do not want the reintroduction of wolves in the area.
Domestic Animals	Low	No concerns mentioned.
Social and Economic	Low	No concerns mentioned.

Social Capital: **Moderate to Low**

Landowners within the watershed have participated in recent Farm Bill Programs associated with the Conservation Security Program, EQIP on other various programs. The tribe has initiated efforts in the last couple years to treat their rangeland and has been working with the local NRCS office in Monticello. The social capital on tribal grounds would be considered low at this point, but initiatives have started that will help members improve their natural resource conditions.

Agriculture in San Juan County: http://www.city-data.com/county/San_Juan_County-UT.html

Average size of farms:	6,747 acres
Average value of agricultural products sold per farm:	\$32,538
Average value of crops sold per acre for harvested cropland:	\$53.61
Average total farm production expenses per farm:	\$37406
Harvested cropland as a percentage of land in farms:	1.91%
Irrigated harvested cropland as a percentage of land in farms:	6.93%
Average market value of all machinery and equipment per farm:	\$104,150
The percentage of farms operated by a family or individual:	79.65%
Average age of principal farm operators:	56 years
Average number of cattle and calves per 100 acres of all land in farms:	0.88
Milk cows as a percentage of all cattle and calves:	0.07%

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Future Conservation Needs

The following information is an estimate of the future needs of resource protection in the watershed. Estimates of furniture needs in the watershed are based on the following factors:

1. Estimates of total conservation needs based on benchmark conditions in the watershed
2. Present level of conservation installation reported in the NRCS web based reporting system.
3. Local knowledge of the area, past and ongoing project activities and professional judgment

Number of Farms:	137	
Acreage:	217,758	1,589 acres per farm
Beginning Farmers or Ranchers:	52	
Potential Limited Resource Farmers:	64	

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

WATERSHED NAME & CODE	MONTEZUMA CREEK - 14080203				LANDUSE ACRES	2,120			
LANDUSE TYPE	IRRIGATED				TYPICAL UNIT SIZE ACRES	20			
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION	48%			
Conservation Systems by Treatment Level	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS				
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Soil Erosion – Wind	Soil Condition – Organic Matter Depletion	Water Quantity – Inefficient Water Use on Irrigated Land	Plant Condition – Productivity, Health and Vigor	
Baseline	System Rating ->				1	0	2	0	
Fence (ft.) 382	26,500	7,950	0	7,950	0	0	0	1	
Irrigation System, Sprinkler (ac.) 442	1,060	318	0	318	2	0	4	0	
Total Acreage at Baseline	1,060	318	0	318					
Progressive	System Rating ->				4	4	4	5	
Fence (ft.) 382	21,200	31,535	0	31,535	0	0	0	1	
Forage Harvest Management (ac.) 511	848	678	583	1,261	4	4	2	5	
Irrigation System, Sprinkler (ac.) 442	848	1,261	0	1,261	2	0	4	0	
Irrigation Water Management (ac.) 449	848	678	583	1,261	2	4	5	3	
Nutrient Management (ac.) 590	848	678	583	1,261	1	3	1	5	
Pasture & Hayland Planting (ac.) 512	848	678	583	1,261	4	4	2	5	
Upland Wildlife Habitat Management (ac.) 645	848	678	583	1,261	0	0	0	4	
Total Acreage at Progressive Level	848	678	583	1,261					
RMS	System Rating ->				2	3	3	5	
Forage Harvest Management (ac.) 511	212	382	159	541	4	4	2	5	
Irrigation Water Management (ac.) 449	212	382	159	541	2	4	5	3	
Nutrient Management (ac.) 590	212	382	159	541	1	3	1	5	
Upland Wildlife Habitat Management (ac.) 645	212	382	159	541	0	0	0	4	
Total Acreage at RMS Level	212	212	329	541					

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Watershed Name & Code	MONTEZUMA CREEK - 14080203				Landuse Acres	2,120		
Landuse Type	IRRIGATED				Typical Unit Size Acres	20		
Conservation Cost Table					Calculated Participation	48%		
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	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Forage Harvest Management (ac.) 511	583	\$0	\$13,992	\$2,798	\$15,265	\$0	\$4,664	\$7,180
Irrigation System, Sprinkler (ac.) 442	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Irrigation Water Management (ac.) 449	583	\$0	\$34,980	\$6,996	\$38,163	\$0	\$11,660	\$17,949
Nutrient Management (ac.) 590	583	\$0	\$26,235	\$5,247	\$28,622	\$0	\$8,745	\$13,462
Pasture & Hayland Planting (ac.) 512	583	\$26,235	\$0	\$5,247	\$31,482	\$26,235	\$525	\$28,445
Upland Wildlife Habitat Management (ac.) 645	583	\$0	\$17,490	\$0	\$19,082	\$0	\$5,830	\$8,974
Subtotal	583	\$26,235	\$92,697	\$23,786	\$132,615	\$26,235	\$31,424	\$76,010
RMS								
Forage Harvest Management (ac.) 511	159	\$0	\$3,816	\$763	\$4,163	\$0	\$1,272	\$1,958
Irrigation Water Management (ac.) 449	159	\$0	\$9,540	\$1,908	\$10,408	\$0	\$3,180	\$4,895
Nutrient Management (ac.) 590	159	\$0	\$7,155	\$1,431	\$7,806	\$0	\$2,385	\$3,671
Upland Wildlife Habitat Management (ac.) 645	159	\$0	\$4,770	\$954	\$5,204	\$0	\$1,590	\$2,448
Subtotal	329	\$0	\$25,281	\$5,056	\$27,582	\$0	\$8,427	\$12,972
Grand Total	912	\$26,235	\$117,978	\$28,843	\$160,196	\$26,235	\$39,851	\$88,982

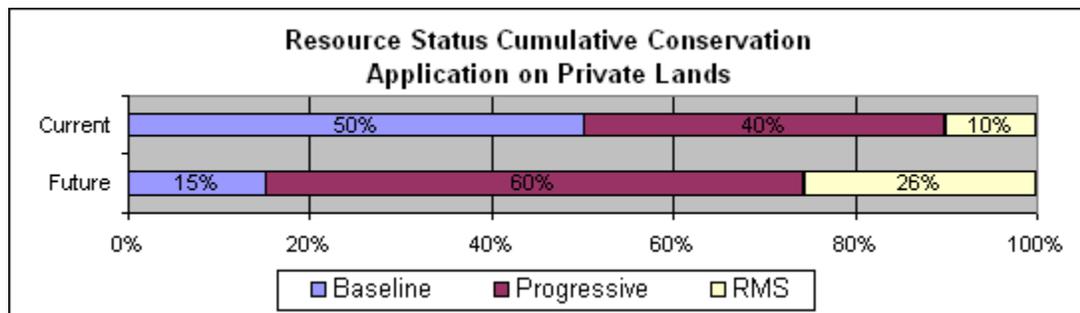


Chart Refers To	
Landuse Type	IRRIGATED
Calculated Participation Rate	48%

Average PV Costs per Ac		
System	Federal	Private
Prog	\$227.47	\$130.38
RMS	\$83.94	\$39.48

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

WATERSHED NAME & CODE	MONTEZUMA CREEK - 14080203				LANDUSE ACRES	106,000		
LANDUSE TYPE	DRY CROPLAND				TYPICAL UNIT SIZE ACRES	80		
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION	43%		
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	Soil Erosion – Wind	Plant Condition – Productivity, Health and Vigor	Fish and Wildlife – T & E Species: Declining Species, Species of Concern
Baseline	System Rating ->				0	0	0	0
Fence (ft.) 382	524,700	209,880	0	209,880	0	0	1	1
Terrace (ft.) 600	1,049,400	419,760	0	419,760	-1	0	0	0
Total Acreage at Baseline	63,600	25,440	0	25,440				
Progressive	System Rating ->				3	4	4	0
Conservation Cover (ac.) 327	3,710	3,154	3,180	6,334	5	5	5	0
Conservation Crop Rotation (ac.) 328	37,100	31,535	31,800	63,335	3	3	4	0
Fence (ft.) 382	1,224,300	1,303,005	787,050	2,090,055	0	0	1	1
Terrace (ft.) 600	1,224,300	1,565,355	524,700	2,090,055	-1	0	0	0
Total Acreage at Progressive Level	37,100	31,535	31,800	63,335				
RMS	System Rating ->				4	4	5	0
Conservation Cover (ac.) 327	530	1,087	636	1,723	5	5	5	0
Conservation Crop Rotation (ac.) 328	5,300	10,865	6,360	17,225	3	3	4	0
Nutrient Management (ac.) 590	5,300	5,300	11,925	17,225	1	1	5	0
Pest Management (ac.) 595	5,300	5,300	11,925	17,225	1	1	3	0
Residue Management, Seasonal (ac.) 344	5,300	5,300	11,925	17,225	4	4	0	0
Upland Wildlife Habitat Management (ac.) 645	5,300	5,300	11,925	17,225	0	0	4	0
Total Acreage at RMS Level	5,300	5,300	11,925	17,225				

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

WATERSHED NAME & CODE	MONTEZUMA CREEK - 14080203				LANDUSE ACRES	106,000		
LANDUSE TYPE	DRY CROPLAND				TYPICAL UNIT SIZE ACRES	80		
CONSERVATION COST TABLE					CALCULATED PARTICIPATION	43%		
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	3,180	\$159,000	\$0	\$31,800	\$190,800	\$159,000	\$9,540	\$199,186
Conservation Crop Rotation (ac.) 328	31,800	\$0	\$1,431,000	\$286,200	\$1,561,227	\$0	\$477,000	\$734,271
Fence (ft.) 382	787,050	\$983,813	\$0	\$196,763	\$1,180,575	\$983,813	\$39,353	\$1,149,580
Terrace (ft.) 600	524,700	\$393,525	\$0	\$78,705	\$472,230	\$393,525	\$23,612	\$492,985
Subtotal	31,800	\$1,536,338	\$1,431,000	\$593,468	\$3,404,832	\$1,536,338	\$549,504	\$2,576,022
RMS								
Conservation Cover (ac.) 327	636	\$31,800	\$0	\$6,360	\$38,160	\$31,800	\$1,908	\$39,837
Conservation Crop Rotation (ac.) 328	6,360	\$0	\$286,200	\$57,240	\$312,245	\$0	\$95,400	\$146,854
Nutrient Management (ac.) 590	11,925	\$0	\$536,625	\$107,325	\$585,460	\$0	\$178,875	\$275,352
Pest Management (ac.) 595	11,925	\$0	\$715,500	\$143,100	\$780,613	\$0	\$238,500	\$367,135
Residue Management, Seasonal (ac.) 344	11,925	\$0	\$178,875	\$35,775	\$195,153	\$0	\$59,625	\$91,784
Upland Wildlife Habitat Management (ac.) 645	11,925	\$0	\$357,750	\$71,550	\$390,307	\$0	\$119,250	\$183,568
Subtotal	11,925	\$31,800	\$2,074,950	\$421,350	\$2,301,939	\$31,800	\$693,558	\$1,104,530
Grand Total	43,725	\$1,568,138	\$3,505,950	\$1,014,818	\$5,706,770	\$1,568,138	\$1,243,062	\$3,680,551

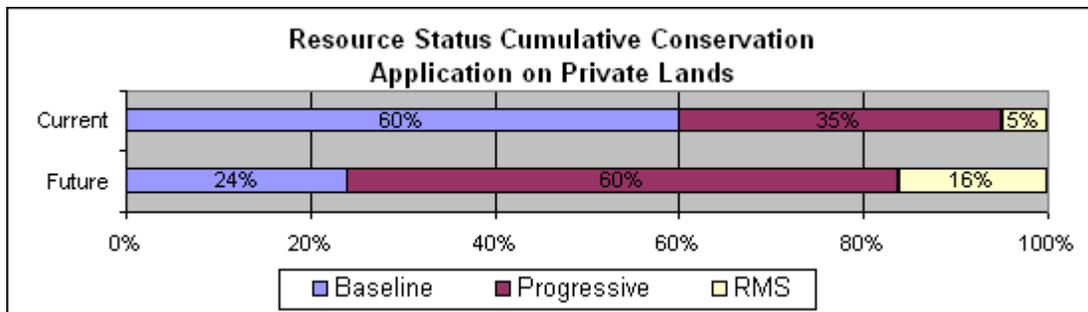


Chart Refers To	
Landuse Type	DRY CROPLAND
Calculated Participation Rate	43%

Average PV Costs per Ac		
System	Federal	Private
Prog	\$107.07	\$81.01
RMS	\$193.03	\$92.62

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

WATERSHED NAME & CODE		MONTEZUMA CREEK - 14080203			LANDUSE ACRES		76,265		
LANDUSE TYPE		PRIVATE RANGELAND			TYPICAL UNIT SIZE ACRES		300		
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		48%		
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	Fish and Wildlife – T & E Species: Declining Species, Species of Concern
Baseline		System Rating ->			4	3	2	1	
Fence (ft.) 382		127,108	38,133	0	38,133	0	1	0	1
Pipeline (ft.) 516		127,108	38,133	0	38,133	3	0	0	0
Pond (no.) 378		127	38	0	38	0	0	0	0
Total Acreage at Baseline		38,133	11,440	0	11,440				
Progressive		System Rating ->			5	5	5	3	
Brush Management (ac.) 314		7,627	6,101	5,720	11,821	4	5	5	3
Fence (ft.) 382		101,687	157,614	0	157,614	0	1	0	1
Grazing Land Mechanical Treatment (ac.) 548		30,506	24,405	22,880	47,284	4	4	0	0
Pipeline (ft.) 516		101,687	157,614	0	157,614	3	0	0	0
Pond (no.) 378		102	158	0	158	0	0	0	0
Prescribed Burning (ac.) 338		30,506	24,405	22,880	47,284	1	4	4	0
Prescribed Grazing (ac.) 528		30,506	47,284	0	47,284	5	5	4	2
Range Planting (ac.) 550		30,506	24,405	22,880	47,284	4	5	4	3
Restoration and Management of Declining Habitats (ac.) 643		30,506	24,405	22,880	47,284	3	5	3	3
Water Harvesting Catchment (no.) 636		102	81	76	158	0	0	0	0
Total Acreage at Progressive Level		30,506	24,405	22,880	47,284				
RMS		System Rating ->			5	4	5	4	
Brush Management (ac.) 314		1,907	3,432	953	4,385	4	5	5	3
Early Successional Habitat Development/Management (ac.) 647		7,627	7,627	9,914	17,541	0	-2	1	2
Fence (ft.) 382		25,422	58,470	0	58,470	0	1	0	1
Grazing Land Mechanical Treatment (ac.) 548		7,627	13,728	3,813	17,541	4	4	0	0
Pest Management (ac.) 595		7,627	7,627	9,914	17,541	1	3	5	0
Pipeline (ft.) 516		25,422	58,470	0	58,470	3	0	0	0
Pond (no.) 378		25	58	0	58	0	0	0	0

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Prescribed Burning (ac.) 338	7,627	13,728	3,813	17,541	1	4	4	0
Prescribed Grazing (ac.) 528	7,627	17,541	0	17,541	5	5	4	2
Range Planting (ac.) 550	7,627	13,728	3,813	17,541	4	5	4	3
Restoration and Management of Declining Habitats (ac.) 643	7,627	13,728	3,813	17,541	3	5	3	3
Spring Development (no.) 574	25	38	20	58	0	0	0	0
Upland Wildlife Habitat Management (ac.) 645	7,627	7,627	9,914	17,541	0	4	4	0
Water Harvesting Catchment (no.) 636	25	46	13	58	0	0	0	0
Watering Facility (no.) 614	25	25	33	58	0	1	0	0
Wildlife Watering Facility (no.) 648	25	25	33	58	0	0	0	0
Total Acreage at RMS Level	7,627	7,627	9,914	17,541				
WATERSHED NAME & CODE	MONTEZUMA CREEK - 14080203				LANDUSE ACRES	76,265		
LANDUSE TYPE	PRIVATE RANGELAND				TYPICAL UNIT SIZE ACRES	300		
CONSERVATION COST TABLE					CALCULATED PARTICIPATION	48%		
	FUTURE	FEDERAL				PRIVATE		
Conservation Systems by Treatment Level	New Treatment Units	Installation Cost	Management Cost - 3 yrs	Technical Assistance	Total Present Value Cost	Installation Cost	Annual O & M + Mgt Costs	Total Present Value Cost
		50%	100%	20%		50%	100%	
Progressive								
Brush Management (ac.) 314	5,720	\$214,495	\$0	\$42,899	\$257,394	\$214,495	\$4,290	\$232,566
Fence (ft.) 382	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Grazing Land Mechanical Treatment (ac.) 548	22,880	\$285,994	\$0	\$57,199	\$343,193	\$285,994	\$28,599	\$406,465
Pipeline (ft.) 516	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pond (no.) 378	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Prescribed Burning (ac.) 338	22,880	\$400,391	\$0	\$80,078	\$480,470	\$400,391	\$8,008	\$434,123
Prescribed Grazing (ac.) 528	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Range Planting (ac.) 550	22,880	\$1,029,578	\$0	\$0	\$1,235,493	\$1,029,578	\$20,592	\$1,116,317
Restoration and Management of Declining Habitats (ac.) 643	22,880	\$285,994	\$0	\$0	\$343,193	\$285,994	\$28,599	\$406,465
Water Harvesting Catchment (no.) 636	76	\$190,663	\$0	\$0	\$228,795	\$190,663	\$11,440	\$238,851
Subtotal	22,880	\$2,407,114	\$0	\$481,423	\$2,888,537	\$2,407,114	\$101,528	\$2,834,786
RMS								
Brush Management (ac.) 314	953	\$35,749	\$0	\$7,150	\$42,899	\$35,749	\$715	\$38,761
Early Successional Habitat Development/Management (ac.) 647	9,914	\$74,358	\$0	\$14,872	\$89,230	\$74,358	\$0	\$74,358
Fence (ft.) 382	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Grazing Land Mechanical Treatment (ac.) 548	3,813	\$47,666	\$0	\$9,533	\$57,199	\$47,666	\$4,767	\$67,744
Pest Management (ac.) 595	9,914	\$0	\$594,867	\$118,973	\$649,002	\$0	\$198,289	\$305,237
Pipeline (ft.) 516	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pond (no.) 378	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Prescribed Burning (ac.) 338	3,813	\$66,732	\$0	\$13,346	\$80,078	\$66,732	\$1,335	\$72,354

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

Prescribed Grazing (ac.) 528	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Range Planting (ac.) 550	3,813	\$171,596	\$0	\$34,319	\$205,916	\$171,596	\$3,432	\$186,053
Restoration and Management of Declining Habitats (ac.) 643	3,813	\$47,666	\$0		\$57,199	\$47,666	\$4,767	\$67,744
Spring Development (no.) 574	20	\$25,422	\$0		\$30,506	\$25,422	\$508	\$27,563
Upland Wildlife Habitat Management (ac.) 645	9,914	\$0	\$297,434		\$324,501	\$0	\$99,145	\$152,618
Water Harvesting Catchment (no.) 636	13	\$31,777	\$0		\$38,133	\$31,777	\$1,907	\$39,808
Watering Facility (no.) 614	33	\$16,524	\$0		\$19,829	\$16,524	\$991	\$20,700
Wildlife Watering Facility (no.) 648	33	\$24,786	\$0		\$29,743	\$24,786	\$496	\$26,874
Subtotal	9,914	\$542,276	\$892,301	\$286,915	\$1,624,235	\$542,276	\$316,350	\$1,079,816
Grand Total	32,794	\$2,949,390	\$892,301	\$768,338	\$4,512,771	\$2,949,390	\$417,878	\$3,914,602

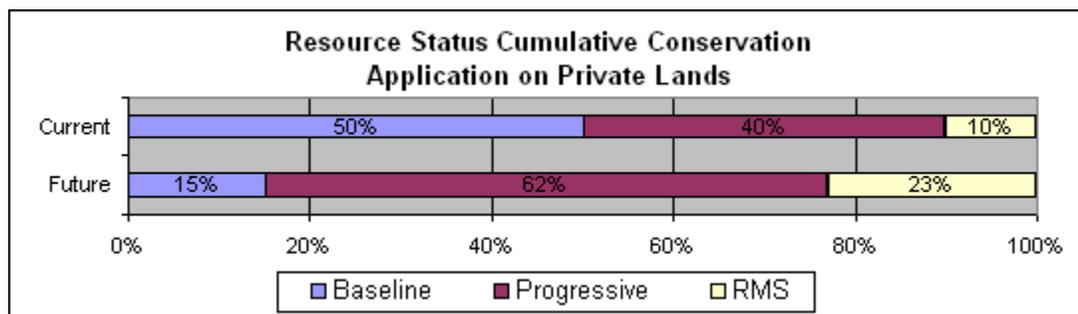


Chart Refers To	
Landuse Type	PRIVATE RANGELAND
Calculated Participation Rate	48%

Average PV Costs per Ac		
System	Federal	Private
Prog	\$126.25	\$123.90
RMS	\$163.82	\$108.91

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

[Back to Contents](#)

Footnotes / Bibliography

1. General information about San Juan County obtained from a San Juan County website and the NRCS office.
2. Location and land ownership maps made using GIS shape files from the Automated Geographical Reference Center (AGRC), a Utah State Division of Information Technology. Website: <http://agrc.utah.gov/>
3. Land Use/Land Cover layer developed by the Utah Department of Water Resources. A polygon coverage containing water-related land-use for all 2003 agricultural areas of the state of Utah. Compiled from initial USGS 7.5 minute Digital Raster Graphic water bodies, individual farming fields and associated areas are digitized from Digital Orthophotos, then surveyed for their land use, crop type, irrigation method, and associated attributes.
4. Prime and Unique farmlands derived from SURGO Soils Survey UT607 and Soil Data Viewer. Definitions of Prime and Unique farmlands from U.S. Geological Survey, http://water.usgs.gov/eap/env_guide/farmland.html#HDR5
5. Land Capability Classes derived from SURGO Soils Survey UT607 and Soil Data Viewer.
6. Tons of Soil Loss by Water Erosion data gathered from National Resource Inventory (NRI) data. Estimates from the 1997 NRI Database (revised December 2000) replace all previous reports and estimates. Comparisons made using data published for the 1982, 1987, or 1992 NRI may produce erroneous results. This is due to changes in statistical estimation protocols, and because all data collected prior to 1997 were simultaneously reviewed (edited) as 1997 NRI data were collected. In addition, this December 2000 revision of the 1997 NRI data updates information released in December 1999 and corrects a computer error discovered in March 2000. For more information: <http://www.nrcs.usda.gov/technical/NRI/>
7. Precipitation data was developed by the Oregon Climate Service at Oregon State University using average monthly or annual precipitation from 1960 to 1990. Publication date: 1998. Data was downloaded from the Resource Data Gateway, <http://dgateway-wb01.lighthouse.itc.nrcs.usda.gov/lighthouse>
8. Irrigated Adjudicated Water Rights obtained from the Utah Division of Water Rights.
9. USGS [USGS Real-Time Data for the Nation](#)
10. Stream length data calculated using ArcMap and 100k stream data from AGRC and 303d waters from the Utah Department of Environmental Quality.
11. General information about San Juan County obtained from a San Juan County website and the NRCS office.
12. The 2003 noxious weed list was obtained from the State of Utah Department of Food and Agriculture. For more information contact Steve Burningham, 801-538-7181 or visit their website at http://ag.utah.gov/plantind/noxious_weeds.html
13. Wildlife information derived from the Utah Division of Wildlife Resources' Comprehensive Wildlife Conservation Strategy (CWCS) (<http://wildlife.utah.gov/cwcs/>) and from the Utah Conservation Data Center (<http://dwrcdc.nr.utah.gov/ucdc/>).

Montezuma Creek - Rapid Watershed Assessment

HUC # 14080203 – San Juan Co., Utah

14. County population data from the U.S. Census Bureau, Utah Quick Facts, <http://quickfacts.census.gov/qfd/states/49000.html>

15. Farm information obtained from the National Agricultural Statistics Service, 2002 Census of Agriculture. <http://www.nass.usda.gov/census/census02/volume1/index2.htm>