Upper Weber River - HUC # 16020101
Rapid Watershed Assessment
July 2007

This rapid assessment is designed to gather and display information specific to the Upper Weber River hydrologic unit code (HUC) #16020101. This report highlights the natural and social resources present in the basin, details specific concerns, and can 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-group partnership effort.

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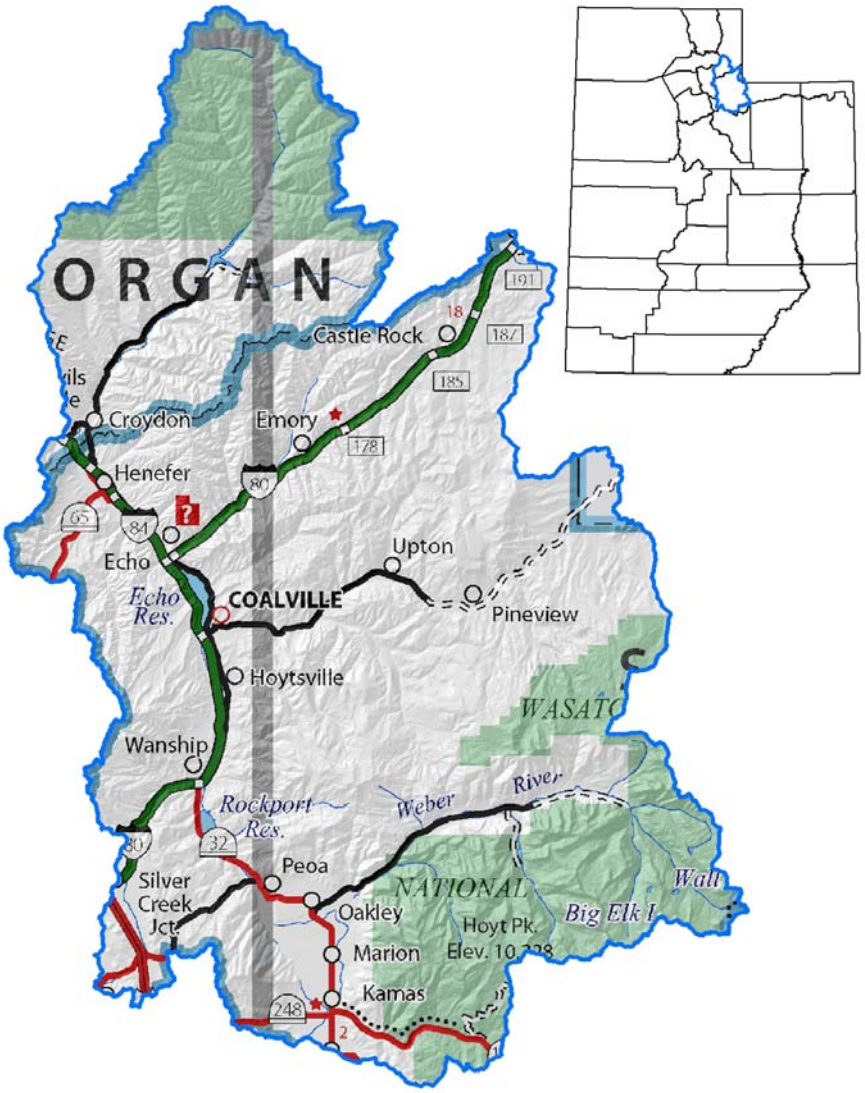
Introduction



The watershed encompasses 734,685 acres within Utah and 4,741 acres within Wyoming.

The high alpine valleys between the Uinta and Wasatch Mountains served as traditional hunting grounds for the Shoshone and Ute tribes for thousands of years, before the arrival of the white man. The natural riches of the mountains continue to supply much needed water for the area and the Wasatch front from the numerous mountain springs, four rivers, and two major storage reservoirs at Echo and Rockport.

Agriculture has been a prominent industry with irrigated hay fields and pastures in the valleys. Sheep and cattle are raised in the valleys and utilize the rangeland in the mountains in the summer. In recent years a new trend in land ownership has changed the nature of agriculture in some areas from large scale full-time livestock operations to small 10 to 20 acre properties owned by retirees and businessmen who value a pastoral lifestyle.

The watershed is served through NRCS and the Utah Association of Conservation Districts from the Coalville, and Ogden Field Offices.

A Coordinated Resource Management Plan (CRMP) has been completed in the Chalk Creek watershed above Coalville and a similar plan is underway for the Echo Creek watershed north of Coalville.

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General Land Use Observations

Cropland / Pasture / Hay Lands

- Complications related to overgrazing include poor pasture condition, soil compaction and water quality issues.
- Control of noxious plants is an ever increasing problem.
- The small, part-time farms are less likely to adopt conservation due to cost and difficulty of NRCS outreach due to their numbers. They have limited knowledge of conservation programs.
- Open spaces are diminishing as the area becomes more developed.
- Residue, nutrient and pest management are continually needed to control erosion and to protect water quality.

Rangeland

- Sediment in the streams coming from eroding rangeland is a serious problem – some of the sediment is from mass wasting (landslide) sources in various subwatersheds
- Overgrazing of riparian corridors is resulting in stream bank degradation and erosion.
- Grazing styles on rangeland are resulting in declining range condition in many areas.
- New and invading weeds are introduced and spread through recreation and livestock/wildlife movement. Summit County is the top of the Jordan River Watershed and the Weber Watershed; therefore, these new and invading plants have the potential of being spread throughout the watersheds.

Rees Creek – downcutting and lateral recession 1988 – major source of sediment in the Rees Creek sub-basin.

Wildlife

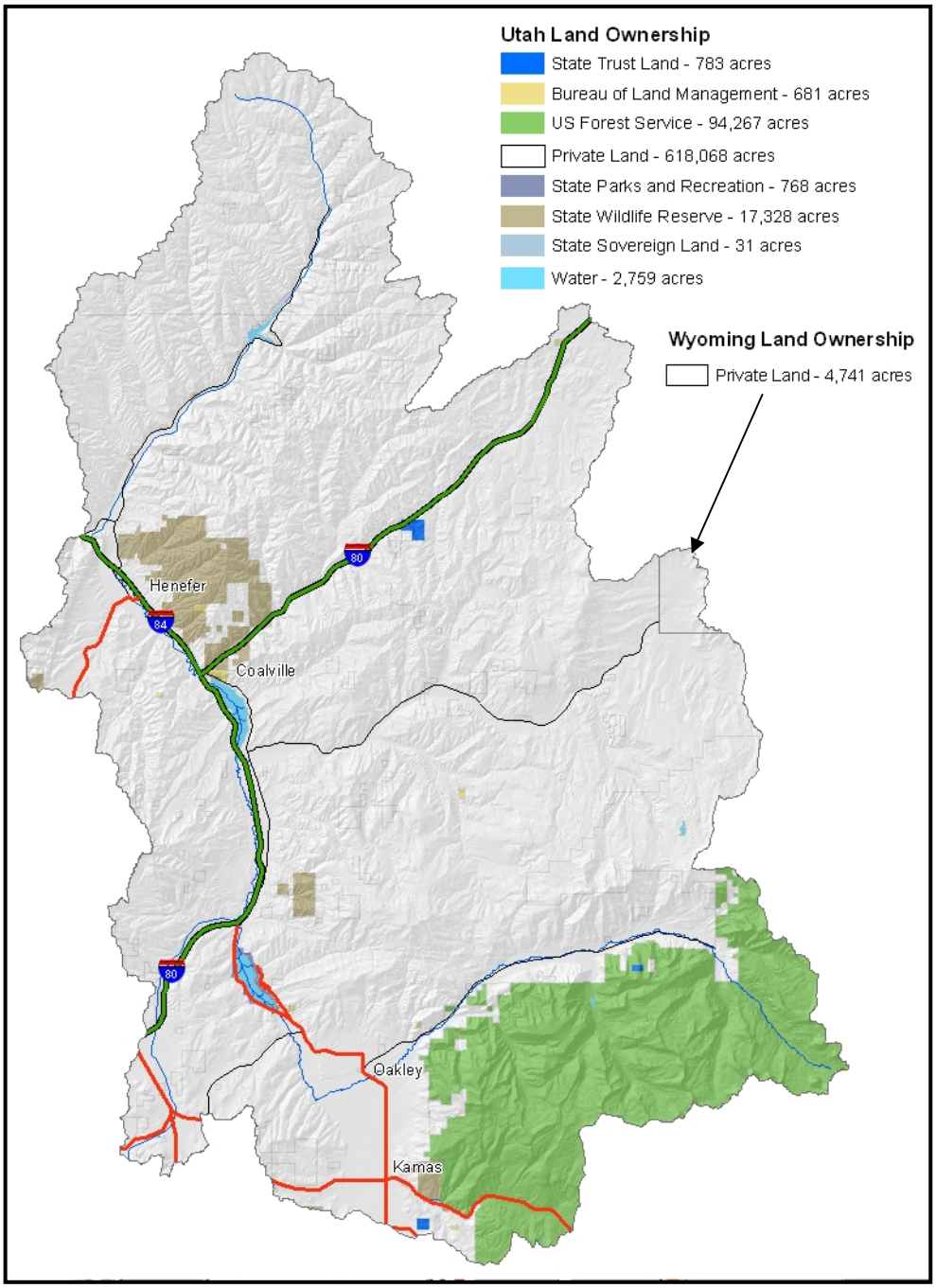
- Numbers of the elk herds are increasing and should be accommodated in grazing plans.
- Range management needs to encourage a mosaic pattern of shrubs, forbs and grasses to facilitate wildlife needs and enhance wildlife use especially by sage grouse.

Forest

- Increased percentages of evergreen species and diminished deciduous trees are resulting in a change in ground water hydrology, species diversity, and reduced forage production.
- Higher percentage of evergreen trees increases the potential for catastrophic, high-intensity fires.
- On private forest land, landowners often are not actively managing the land for timber production. Land use and/or geographical constraints and the lack of economic incentives further discourage timber harvesting resulting in decadent stands.

Land Ownership

Land within the basin is dominated by private ownership (84%) within Utah state lines. The balance is made up of mostly Forest Service land with minor amounts of state and BLM managed lands. There is about 4,700 acres of the basin within Wyoming state lines.



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Resource Assessment Summary

Categories	Concern high, medium, or low	Description and Specific Location (quantify where possible)
Soil	MEDIUM	SHEET EROSION ON SOME RANGE AREAS
Water Quantity	HIGH	EXCESSIVE CONSUMPTIVE USE BY CONIFERS
Water Quality Ground Water	MEDIUM	REES CREEK, CHALK CREEK, STORM RUNOFF
Water Quality Surface Water	HIGH	EXCESS SUSPENDED SEDIMENT IN ECHO CREEK AND OTHERS
Air Quality	LOW	
Plant Suitability	MEDIUM	WEEDS ARE INCREASING CONCERN IN THE BASIN
Plant Condition	MEDIUM	SOME EXCESSIVE GRAZING
Fish and Wildlife	MEDIUM	TROUT FISHERY, TURBIDITY IN STREAMS
Domestic Animals	HIGH	LACK OF PRESCRIBED GRAZING IN PASTURE AND RANGELAND
Social and Economic	LOW	

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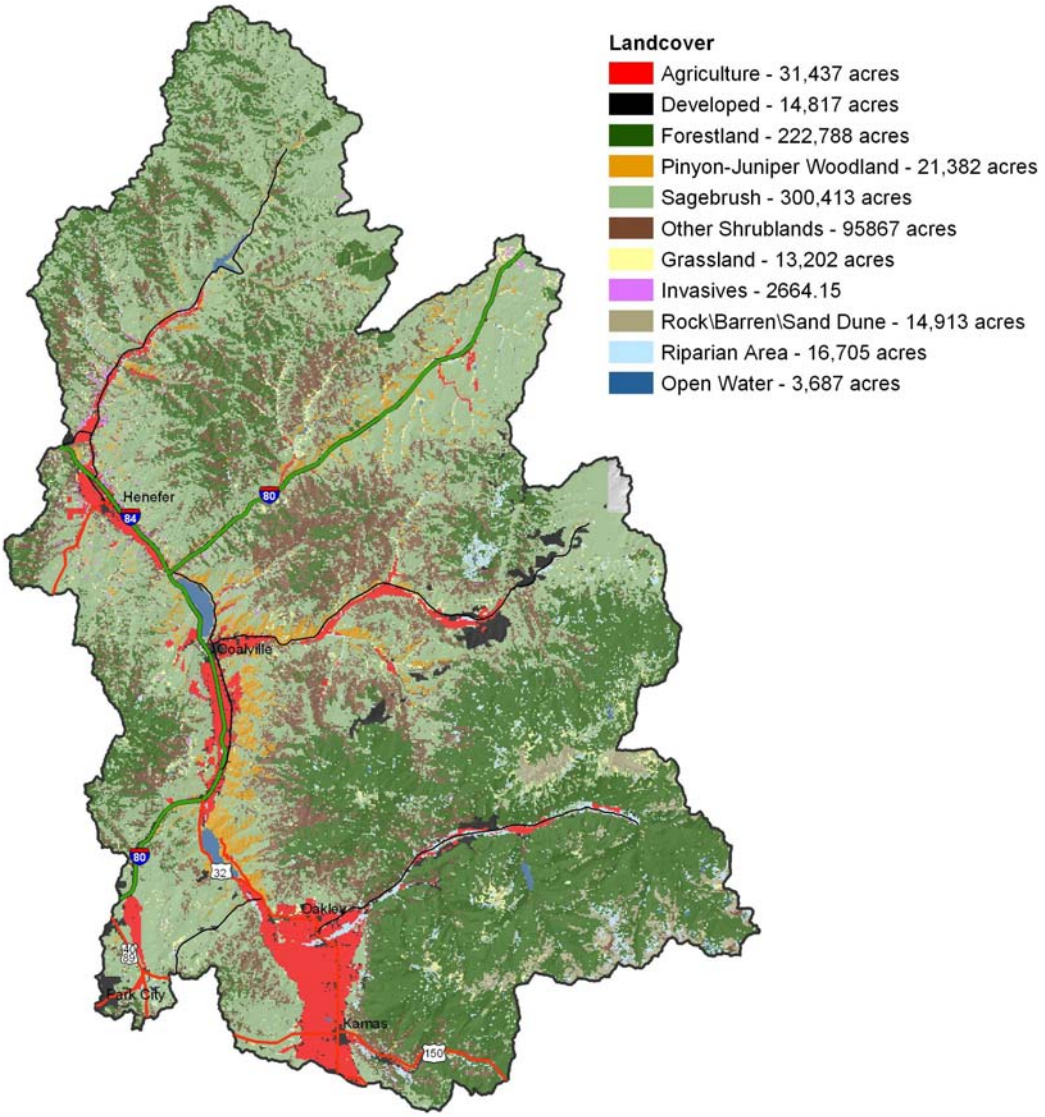
Land Cover

Sagebrush and Forestland make up the largest percentage of the landcover in the watershed at 71 percent (523,201 acres). Grazing is the principal use of this acreage.



Land Cover/Land Use	Acres	%
Agricullture	31,437	4%
Developed	14,817	2%
Forestland	222,788	30%
Pinyon-Juniper	21,382	3%
Sagebrush	300,413	41%
Other Shrublands	95,867	13%
Grassland	13,202	2%
Invasives	2,664	0%
Rock\Barren\Sand Dune	14,913	2%
Riparian Area	16,705	2%
Open Water	3,687	0%
#16020101 Totals	737,875	100%

Acreage computed using 2006 GAP coverage - includes 4,700+ acres of sagebrush in Wyoming

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Special Considerations for the Upper Weber River HUC #16020101:

- 90% of the rangeland acreage is privately owned.
- Farmland is limited to valley bottoms.
- Due to high elevations, there is a short, cool growing season so crops are limited to alfalfa with two cuttings, small grains harvested for forage, and irrigated pasture.
- Private forest land is harvested but may not have a forestry plan.
- Public recreation on forest land has impacts increasing erosion, spread of noxious weeds and water quality.
- Due to low acreage of grain, there is very little infrastructure for grain harvest.
- Primarily consists of cow/calf operations. Feeder livestock, including lambs and calves, are exported.
- There are less than ten dairies in the county.
- There is a significant amount of rangeland that is grazed by sheep.
- A Coordinated Resource Management Plan (CRMP) has been implemented in the Chalk Creek sub-basin – good examples of streambank/habitat restoration along the Chalk Creek corridor
- A similar CRMP is underway for the Echo Creek sub-basin
- The watershed area is in one of the fastest growing regions of the state – development is continuing to encroach on agricultural lands
- Weed control continues to be a prime concern of the agricultural community (Dyers woad, white top, thistle)
- Some work has been in the Rees Creek drainage to help trap sediment and affect the overall grade of the creek and reduce streambank erosion
- Knowledge, ethic and the willingness of landowners to adopt conservation practices is relatively high due to past efforts having a positive affect on farming operations and habitat enhancement
- Land is

Flows from Rees Creek (left) into Echo Creek – Spring 2002
Photo from Weber River Watershed Restoration Action Strategy.

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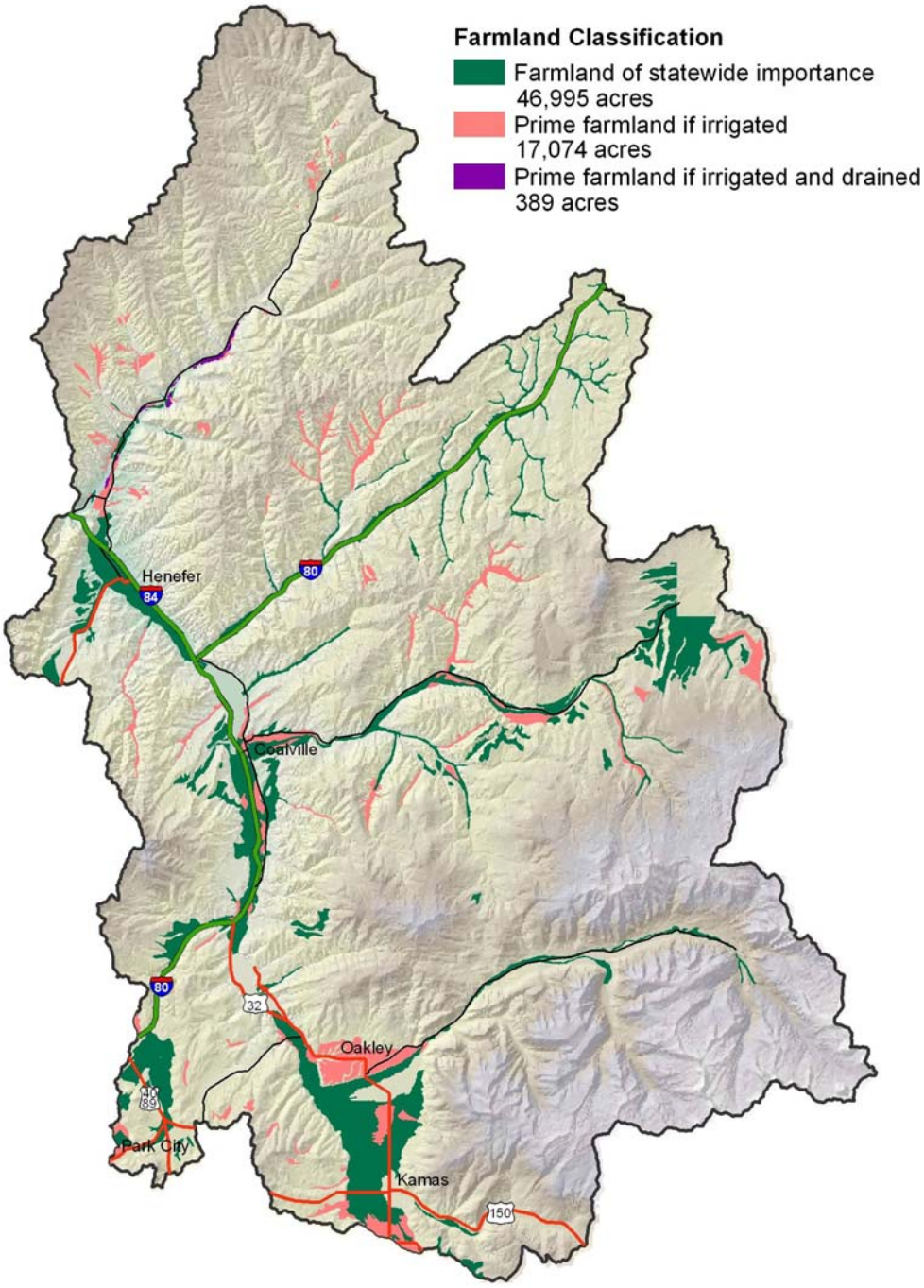
Prime & Unique Farm Land

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

Additional farmland of statewide or local importance
land identified by state or local agencies for agricultural use, but not of national significance



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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															
	Wind												X			
	Ephemeral Gully															
	Classic Gully															
	Streambank			X	X			X	X					X		
	Shoreline								X					X		
	Irrigation-induced	X	X													
	Mass Movement				X											
	Road, roadsides and Construction Sites															
Soil Condition	Organic Matter Depletion															
	Rangeland Site Stability				X	X	X									
	Compaction															
	Subsidence															
	ContaminantsSalts and Other Chemicals													X		
	Contaminants: Animal Waste and Other OrganicsN															
	Contaminants: Animal Waste and Other OrganicsP	X	X													
	Contaminants: Animal Waste and Other OrganicsK															
	Contaminants : Commercial FertilizerN															
	Contaminants : Commercial FertilizerP															
	Contaminants : Commercial FertilizerK															
	ContaminantsResidual Pesticides															
	Damage from Sediment Deposition	X												X		

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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.

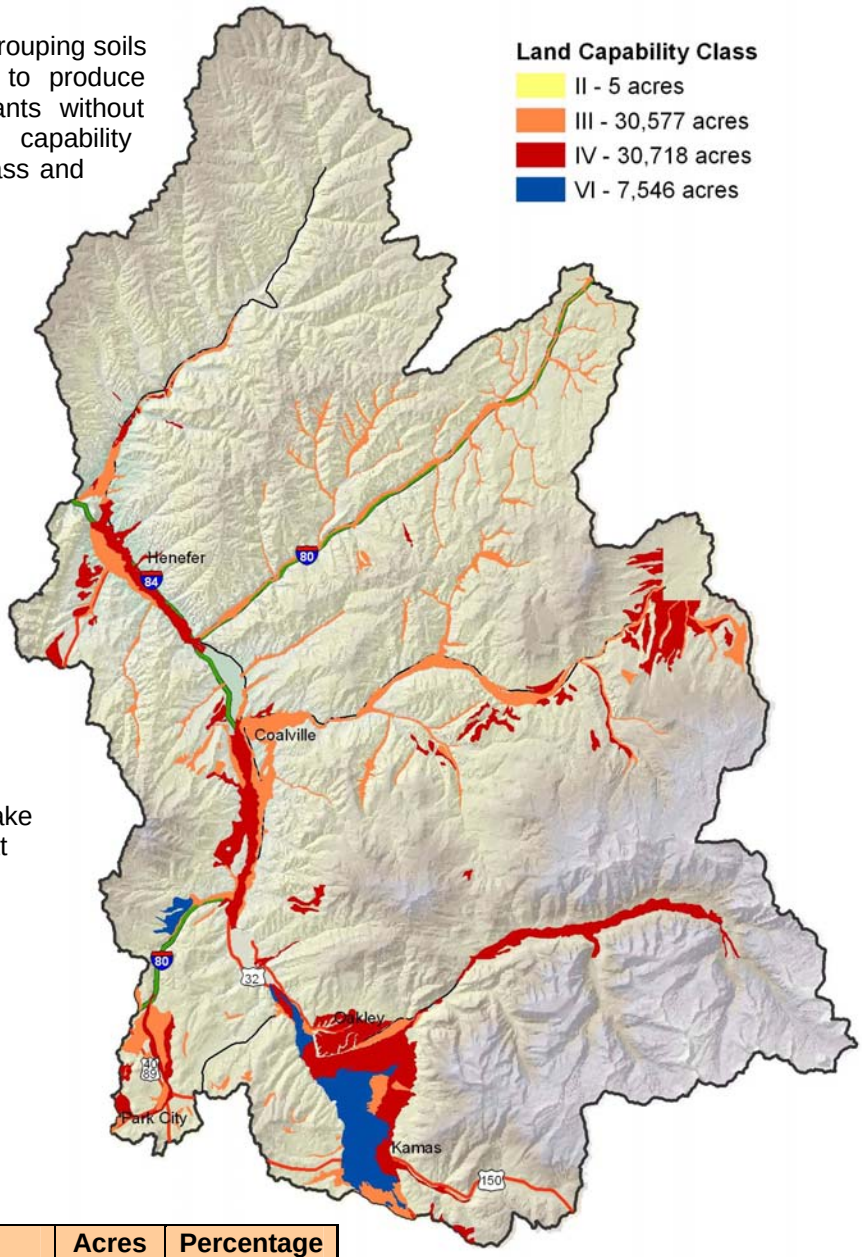
Capability Classes in this HUC:

Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices. Most of this class is found in the northern part of the watershed and in small zones of the valleys.

Class III soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.

Class IV soils have very severe limitations that restrict the choice of plants or require very careful management, or both.

Class VI soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.



		Acres	Percentage
Land Capability Class (Irrigated Cropland & Pastureland Only)	**I** - slight limitations	0	0%
	II - moderate limitations	5	minor
	III - severe limitations	30,577	44%
	IV - very severe limitations	30,718	45%
	VI - severe limitations, unsuited for cultivation, limited to pasture, range, forest	7,546	11%

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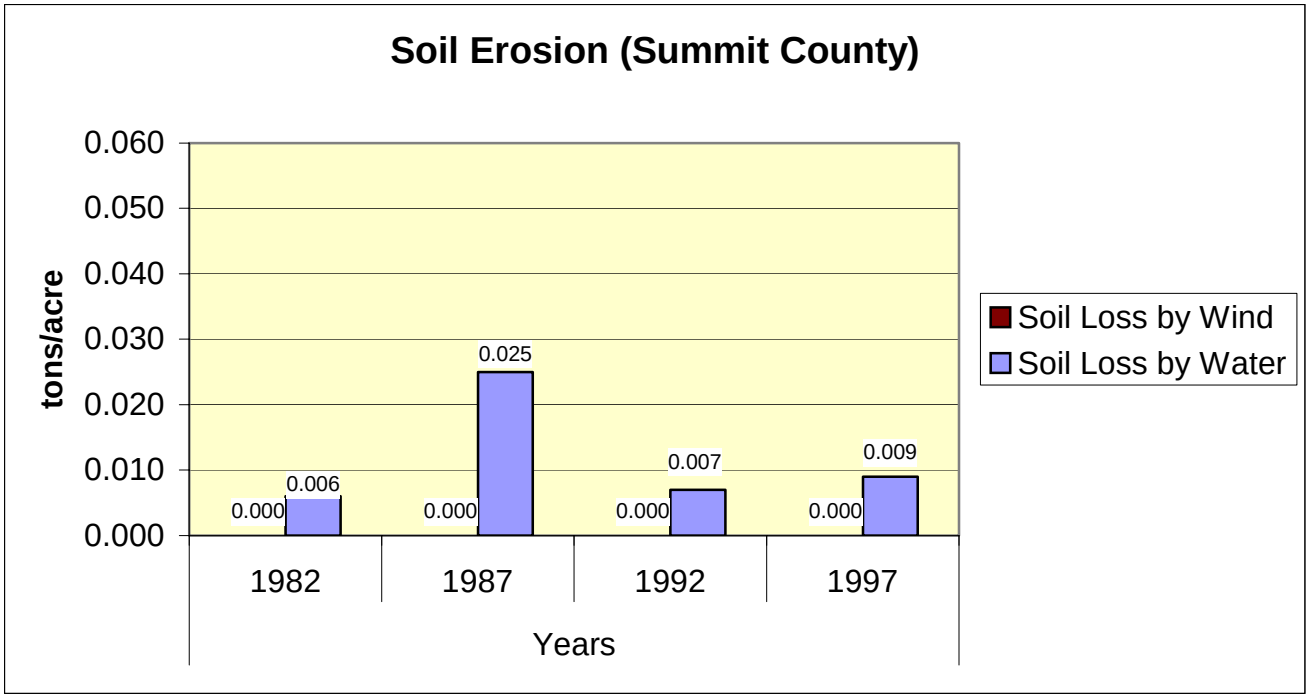
Soil Erosion on Cropland



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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	X							X		X
	Excessive Seepage															
	Excessive Runoff, Flooding, or Ponding				X	X	X					X	X	X		
	Excessive Subsurface Water		X	X		X	X									
	Drifted Snow					X					X	X	X			
	Inadequate Outlets															
	Inefficient Water Use on Irrigated Land	X	X	X												
	Inefficient Water Use on Non-irrigated Land															
	Reduced Capacity of Conveyances by Sediment Deposition											X		X		
	Reduced Storage of Water Bodies by Sediment Accumulation													X		
	Aquifer Overdraft															
	Insufficient Flows in Watercourses	X	X	X	X	X	X	X	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	X														
	Harmful Levels of Pathogens in Groundwater															
	Harmful Levels of Petroleum in Groundwater															
Water Quality, Surface	Harmful Levels of Pesticides in Surface Water															
	Excessive Nutrients and Organics in Surface Water															
	Excessive Suspended Sediment and Turbidity in Surface Water	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	X	X	X	X	X										
	Harmful Levels of Pathogens in Surface Water															
	Harmful Levels of Petroleum in Surface Water															

New concern for Utah Waterbodies:

Recently, quagga mussels were found in the Lower Colorado River drainage, including lakes Mead, Mojave and Havasu in Nevada. Quagga mussels usually have a dark and white (zebra-like) pattern on their shells. When they're fully grown, t

Enlarged photo of a Quagga mussel – size is usually about ¾ of an inch.

Quagga mussels cluster in tremendous numbers. Clusters of more than 700,000 quagga mussels per square meter have been found in the Great Lakes.

Quagga mussels often attach themselves to hard surfaces, such as rocks, pipes, cement, anchors, cables, other quagga mussels and even the bottoms of boats. In fact, hitchhiking on the hulls of fishing and ski boats is one of their favorite ways to move from one lake to another.

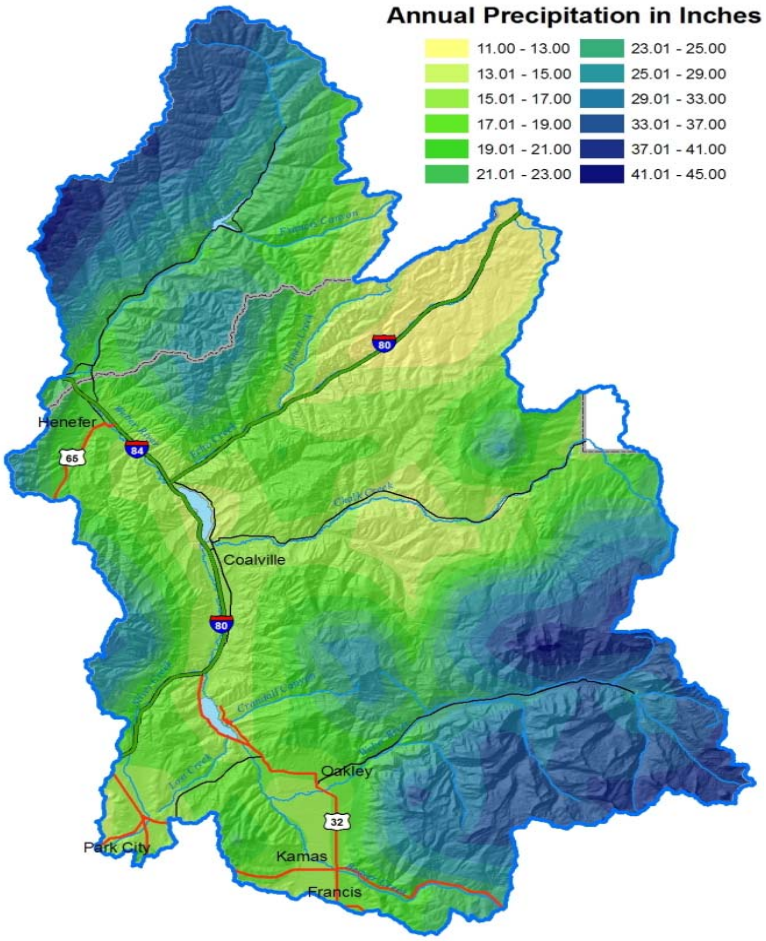
The mussels concentrating in irrigation canals and pipelines could threaten Utah's agriculture. To learn more about this new concern in Utah access the Utah Division of Wildlife Resources web page at: http://wildlife.utah.gov/news/07-03/quagga.php or more information can be found at the web page : http://100thmeridian.org/zebras.asp.

Precipitation and Streams

This basin is one of Utah's wettest with variable precipitation from the valleys to the higher peaks in the Uinta and Wasatch mountain ranges. The basin averages about 27 inches annually.

There are 4 principal sub-basins within this huc which include: Lost Creek, Echo Creek, Chalk Creek of the eastern side and the main stem of the Weber River including the southern end and western side of the basin.

Stream flows are highly dependant on the annual snowpack of the higher elevations. The snowpack is controlled by storing in reservoirs for later releases to agricultural, municipal & industrial and other uses downstream. The main reservoirs in the basin include Rockport, Echo and Lost Creek.



		ACRES	ACRE-FEET
Irrigated Adjudicated Water Rights	Surface		
	Well		
	Total Irrigated Adjudicated Water Rights	0.00	0.00
Stream Flow Data	USGS 10129500 WEBER RIVER NEAR WANSHIP, UT	Total Avg. Yield	24,889
		May-Sept Yield	9,975
		MILES	**PERCENT**
Stream Data	**Total Miles - Major (100K Hydro GIS Layer)**	2,372	n/a
	303d (DEQ Water Quality Limited Streams)	1,385	58%

Minimum In-stream Flow Agreements – Basin

Reservoir/Diversion Dam	River	Minimum Flow (cfs)
Rockport	Weber	25
Echo	Weber	0
Lost	Lost Creek	8
Smith & Morehouse	Morehouse Creek	5

	Irrigation Efficiency:	<40%	40 - 60%	>60%
Percentage of Total Acreage	Cropland	70%	25%	5%
	Pastureland	70%	30%	0%

Watersheds & Total Maximum Daily Load (TMDL)

Plans, Studies and			
NRCS Watershed Projects		NRCS Watershed Plans, Studies & Assessments	
Name	Status	Name	Status
East Canyon	Implementation phase	Echo Watershed	Planning phase
DEQ TMDL's		NRCS Comprehensive Nutrient Management Plans	
Name	Status	Number	Status
East Canyon Silver Creek	EPA Approved - 2000 In Progress		Planned Implemented

303(d) listed waterbodies in the basin (16020101)

Waterbody	Size	Pollutants of Concern
Echo Reservoir	1,394 ac	Total Phosporus
Echo Reservoir	1,394 ac	Dissolved Oxygen
Echo Creek	43 miles	Sediments
Silver Creek	21.4 miles	Zinc
Silver Creek	21.4	Cadmium, Sediment
Chalk Creek		Total Phosphorus

AFO/CAFO

Animal Feeding Operations (AFO)						
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Farms	3	60	0	0	7	10
No. of Animals	300	900	0	0	7000	200

Potential Confined Animal Feeding Operations (PCAFO)						
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Farms	5	12	0	0		
No. of Animals	800	500	0	0		

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	0	0	0	0	0

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

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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:

- Bermudagrass** (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)
- Johnsongrass (sorghum halepense)
- Leafy spurge (euphorbia esula)
- Medusahead (taeniatherum caput-medusae)
- Musk thistle (carduus mutans)
- Perennial pepperweed (lepidium latifolium)
- Perennial sorghum (sorghum halepense L & sorghum almum)
- Purple loosestrife (lythrum salicaria L.)
- Quackgrass (agropyron repens)
- Russian knapweed (centaurea repens)
- Scotch thistle (onopordum acanthium)
- Spotted knapweed (centaurea maculosa)
- Squarrose knapweed (centaurea squarrosa)
- Yellow starthistle (centaurea solstitialis)

Viper's Bugloss: Viper's Bugloss was brought in as an ornamental plant and can be found on roadsides, disturbed areas and in the mountains. It was classified, in Summit County, as a noxious on September 28, 2005. ➔

Wildlife Species of Greatest Conservation Need

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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:	Black-footed Ferret (extirpated)	Mammal	Grassland	High Desert Scrub
Threatened:	Bald Eagle	Bird	Lowland Riparian	Agriculture
	Canada Lynx	Mammal	Sub-Alpine Conifer	Lodgepole Pine
	Brown (Grizzly) Bear (extirpated)	Mammal	Mixed Conifer	Mountain Shrub
Candidate:	Yellow-billed Cuckoo	Bird	Lowland Riparian	Agriculture
Proposed:	(None)			
STATE SENSITIVE				
Conservation Agreement Species:	Columbia Spotted Frog	Amphibian	Wetland	Wet Meadow
	Northern Goshawk	Bird	Mixed Conifer	Aspen
	Bonneville Cutthroat Trout	Fish	Water - Lotic	Mountain Riparian
	Colorado River Cutthroat Trout	Fish	Water - Lotic	Mountain Riparian
	Bluehead Sucker	Fish	Water - Lotic	Mountain Riparian
Species of Concern:	Bobolink	Bird	Wet Meadow	Agriculture
	Deseret Mountainsnail	Mollusk	Mountain Shrub	Rock
	Ferruginous Hawk	Bird	Pinyon-Juniper	Shrubsteppe
	Greater Sage-grouse	Bird	Shrubsteppe	
	Leatherside Chub	Fish	Water - Lotic	Mountain Riparian
	Lewis's Woodpecker	Bird	Ponderosa Pine	Lowland Riparian
	Long-billed Curlew	Bird	Grassland	Agriculture
	Smooth Greensnake	Reptile	Mountain Riparian	Wet Meadow
	Three-toed Woodpecker	Bird	Sub-Alpine Conifer	Lodgepole Pine
	Western Pearlshell	Mollusk	Water - Lotic	Mountain Riparian
	Western Toad	Amphibian	Wetland	Mountain Riparian

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

The Utah CWCS also prioritizes habitat categories based on several criteria important to the species of greatest conservation need. The top ten hey 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)

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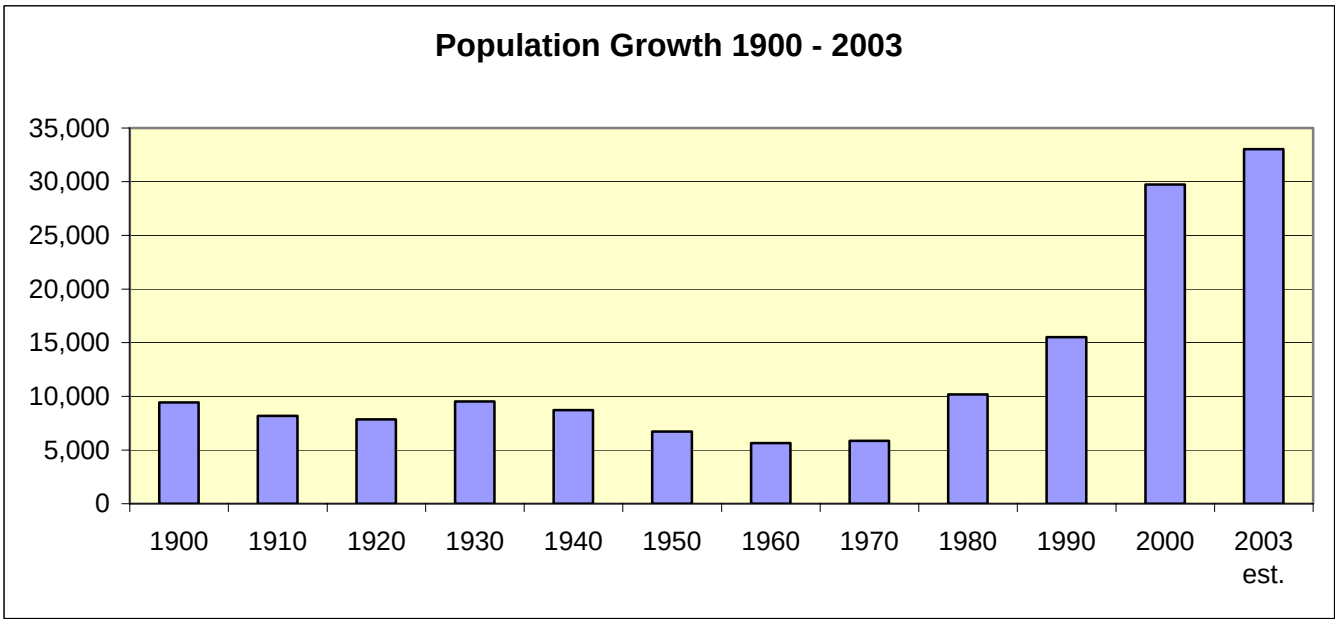
Resource Concerns – SOCIAL AND ECONOMIC

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												
	Urban Encroachment on Agricultural Land	X	X	X												
	Marketing of Resource Products															
	Innovation Needs															
	Non-Traditional Land Uses							X	X	X			X			
	Population Demographics, Changes and Trends	X	X	X								X				
	Special Considerations for Land Mangement (High State and Federal Percentage)				X	X		X	X	X			X	X		X
	Active Resource Groups (CRMs, etc)	X	X	X	X	X	X	X	X	X			X	X		X
	Full Time vs Part Time Agricultural Communities	X	X	X	X	X	X									
	Size of Operating Units	X	X	X												
	Land Removed from Production through Easments															
	Land Removed from Production through USDA Programs															
Other																

Census and Social Data



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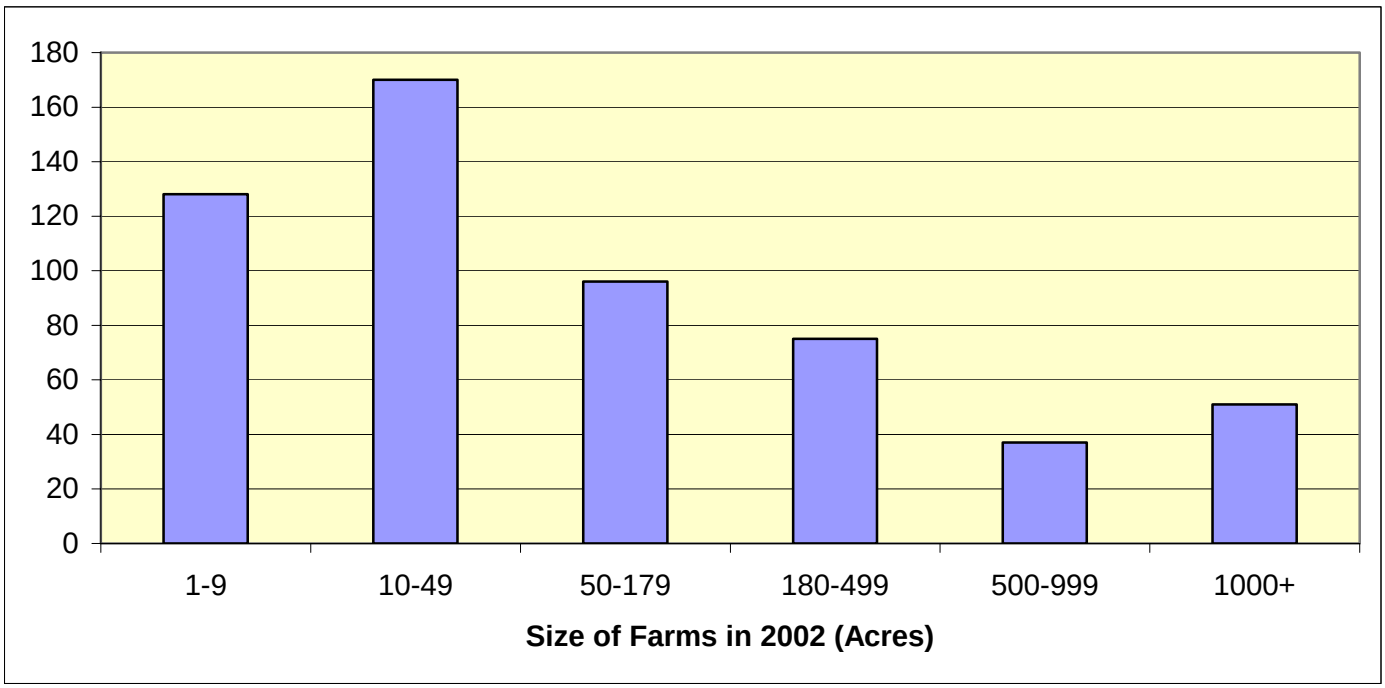
For more info:

http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&_lang=en&_sse=on&_state=04000US49&_county=Morgan%20County



Number of Farms: 557
Number of Operators:

- Full-Time Operators: 277
- Part-Time Operators: 280

Conservation Progress – Status

Type	Applied			Planned		
Year	2004	2005	2006	2004	2005	2006
Access Road (560) (ft)				4044		12825
Brush Management (314) (ac)				1858		
Comprehensive Nutrient Management Plan (100) (no)		1	3			5
Conservation Completion Incentive First Year (CCIA) (no)						2
Dike (356) (ft)	220					900
Fence (382) (ft)	21670	18014	20824	29032	16000	31454
Irrigation Land Leveling (464) (ac)			63		63	
Irrigation System, Microirrigation (441) (ac)			2	1		
Irrigation System, Sprinkler (442) (ac)	5		18	19	25	
Irrigation Water Conveyance, Ditch and Canal Lining, Galvanized Steel (428C) (ft)			100	110		110
Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic (430DD) (ft)	5932		2548	19156		
Irrigation Water Conveyance, Pipeline, Low-Pressure, Underground, Plastic (430EE) (ft)						900
Irrigation Water Management (449) (ac)			67	62	63	22
Manure Transfer (634) (no)					1600	
Nutrient Management (590) (ac)				150	125	276
Pest Management (595) (ac)		4			104	
Pipeline (516) (ft)		2678	800	1300	2800	3586
Pond (378) (no)		2		2	5	
Pond Sealing or Lining, Bentonite Sealant (521C) (no)		1				
Prescribed Burning (338) (ac)	90					
Prescribed Grazing (528) (ac)			1000			5284
Prescribed Grazing (528A) (ac)		7585	955	18672	6375	6971
Pumped Well Drain (532) (no)		1704			9015	
Pumping Plant (533) (no)	1		1	4		3
Range Planting (550) (ac)				936		
Rangeland Fertilization (721) (ac)		400			138	
Riparian Forest Buffer (391) (ac)	20	4		20	6	
Spring Development (574) (no)		5	2	13	5	1
Stream Habitat Improvement and Management (395) (ac)		45			45	
Streambank and Shoreline Protection (580) (ft)		1555			5205	
Structure for Water Control (587) (no)	1			3		1
Tree/Shrub Establishment (612) (ac)			6		63	
Upland Wildlife Habitat Management (645) (ac)	1700	4	10777	9130	142	13099
Use Exclusion (472) (ac)		20			41	
Waste Storage Facility (313) (no)			2	4	2	
Water and Sediment Control Basin (638) (no)		7			3	9
Water Harvesting Catchment (636) (no)		5		5		
Watering Facility (614) (no)	3	6	3	16	10	11
Wetland Wildlife Habitat Management (644) (ac)					14	
Windbreak/Shelterbelt Establishment (380) (ft)			230	2350		

Year	2001	2002	2003			
Total Conservation Buffers (Acres)	430	47	22			
Erosion Reduction Applied (Acres)	1848	527	3480			
Inventory & Evaluations			5			
Total Irrigation Water Management (Acres)	0	1482				
Pest Management Systems Applied (595A) (Acres)	0		1580			
Prescribed Grazing Applied (528A) (Acres)	23788	6700	2500			
Tree & Shrub Establishment (612) (Acres)	0		16			
Total Wildlife Habitat (Acres)	0	25	2518			

Public Survey/Questionnaire Results:

From Morgan County Assessment: Questionnaire respondents were asked to rate the urgency of addressing 41 natural resource concerns. They chose **loss of agricultural land** as their top natural resource concern by a wide margin. **Agricultural sustainability, weeds, groundwater, and irrigation water management** were the other four of the five most pressing natural resource concerns. Over 70% of the respondents listed these as concerns that should be addressed immediately. In addition, 65% of the respondents thought that surface water, land conversion to development, soil quality/soil health, water conservation and supply, and water quality concerns should also be addressed immediately. See the table below for a complete listing of the results for all the natural resources concerns.

Six people listed the following areas as needing the most attention: Lost Creek, Cottonwood Creek, the valley floor, rivers and streams, and the railway corridor.

Respondents were also asked to rank the importance of five different roles of the Soil Conservation District. **Providing technical assistance to landowners** was perceived as the most important role. Scores for the different roles were: 65 Technical Assistance to Landowners 45 Financial Assistance to Landowners 41 Intermediary between Landowners and Regulatory Agencies 39 Natural Resources Education 35 Data Collection

It was also thought that the SCD should provide more weed information as part of its education role.

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Footnotes / Bibliography

1. General information about Summit County obtained from the official Summit County website: http://utahreach.org/summit/visitor/HISTORY.HTM

2. Location and land ownership maps made using GIS shapefiles 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 through the 2006 GAP database.

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 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. Stream Flow data from USGS Utah Water Science Center Surface-water data found at http://waterdata.usgs.gov/ut/nwis/sw.

10. Stream length data calculated using ArcMap and 100k stream data from AGRC and 303d waters from the Utah Department of Environmental Quality.

11. Watershed information from Natural Resources Conservation Service Ogden Service Center Office staff.

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/ .

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

Assessment Matrices: The following tables identify opportunities that may be achieved taking into account local participation rates and the average ability of landowners to finance their portion of the average cost share for conservation programs. Estimates in the RWA are developed based on availability of optimal funding and staffing for conservation efforts. The matrices tables are developed around the general farmland use in the basin and are estimated from GIS-based land status coverage. The main use for the matrices will be by the local NRCS field offices and some partner conservation groups.

WATERSHED NAME & CODE	UPPER WEBER - 16020101				LANDUSE ACRES		30,770	
LANDUSE TYPE	Pasture, irrigated				TYPICAL UNIT SIZE ACRES		80	
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		63%	
	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
Conservation Systems by Treatment Level	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Water Quantity – Inefficient Water Use on Irrigated Land	Water Quality – Excessive Nutrients and Organics in Surface Water	Plant Condition – Productivity, Health and Vigor	Plants not adapted or suited
Baseline				**System Rating ->**	**1**	**0**	**0**	**0**
Fence (ft.) 382	355,394	71,079	0	71,079	0	0	0	0
Structure for Water Control (no.) 587	0	0	0	0	2	0	0	0
Total Acreage at Baseline	**21,539**	**4,308**	**0**	**4,308**				
Progressive				**System Rating ->**	**3**	**3**	**4**	**4**
Dike (ft.) 356	0	0	0	0	0	0	0	0
Fence (ft.) 382	203,082	477,243	284,315	761,558	0	0	0	0
Irrigation Land Leveling (ac.) 464	0	0	0	0	4	2	2	0
Irrigation Water Management (ac.) 449	0	0	0	0	3	3	3	0
Pasture & Hayland Planting (ac.) 512	615	585	1,723	2,308	2	2	5	0
Pest Management (ac.) 595	0	0	0	0	1	0	3	5
Structure for Water Control (no.) 587	0	0	0	0	2	0	0	0
Tree/Shrub Establishment (ac.) 612	0	0	0	0	0	2	4	0
Watering Facility (no.) 614	77	73	215	288	0	0	2	4
Total Acreage at Progressive Level	**6,154**	**5,846**	**17,231**	**23,078**				
RMS				**System Rating ->**	**4**	**4**	**5**	**5**
Dike (ft.) 356	0	0	0	0	0	0	0	0
Fence (ft.) 382	101,541	111,695	0	111,695	0	0	0	0
Irrigation Land Leveling (ac.) 464	0	0	0	0	4	2	2	0
Irrigation System, Sprinkler (ac.) 442	0	0	0	0	4	2	0	0
Irrigation Water Management (ac.) 449	0	0	0	0	3	3	3	0
Nutrient Management (ac.) 590	3,077	3,077	308	3,385	0	5	3	0
Pasture & Hayland Planting (ac.) 512	308	338	0	338	2	2	5	0
Pest Management (ac.) 595	3,077	3,077	308	3,385	1	0	3	5
Pipeline (ft.) 516	76,925	76,925	7,693	84,618	3	0	0	3
Prescribed Grazing (ac.) 528	3,077	3,077	308	3,385	1	1	5	0
Pumping Plant (no.) 533	38	38	4	42	3	0	0	3
Structure for Water Control (no.) 587	0	0	0	0	2	0	0	0
Tree/Shrub Establishment (ac.) 612	31	31	3	34	0	2	4	0
Upland Wildlife Habitat Management (ac.) 645	3,077	3,077	308	3,385	0	0	4	5
Watering Facility (no.) 614	77	81	4	85	0	0	2	4
Total Acreage at RMS Level	**3,077**	**3,077**	**308**	**3,385**				

WATERSHED NAME & CODE	UPPER WEBER - 16020101				LANDUSE ACRES		30,770	
LANDUSE TYPE	Pasture, irrigated				TYPICAL UNIT SIZE ACRES		80	
CONSERVATION COST TABLE					CALCULATED PARTICIPATION		63%	
	FUTURE	FEDERAL				PRIVATE		
Conservation Systems by Treatment Level	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								
Dike (ft.) 356	0	$0	$0	$0	$0	$0	$0	$0
Fence (ft.) 382	284,315	$497,551	$0	$99,510	$597,061	$497,551	$19,902	$581,386
Irrigation Land Leveling (ac.) 464	0	$0	$0	$0	$0	$0	$0	$0
Irrigation Water Management (ac.) 449	0	$0	$0	$0	$0	$0	$0	$0
Pasture & Hayland Planting (ac.) 512	1,723	$139,573	$0	$27,915	$167,487	$139,573	$2,791	$151,331
Pest Management (ac.) 595	0	$0	$0	$0	$0	$0	$0	$0

WATERSHED NAME & CODE	UPPER WEBER - 16020101	LANDUSE ACRES	30,770
LANDUSE TYPE	Pasture, irrigated	TYPICAL UNIT SIZE ACRES	80
ASSESSMENT INFORMATION		CALCULATED PARTICIPATION	63%

	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
Conservation Systems by Treatment Level	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Water Quantity – Inefficient Water Use on Irrigated Land	Water Quality – Excessive Nutrients and Organics in Surface Water	Plant Condition – Productivity, Health and Vigor	Plants not adapted or suited
Structure for Water Control (no.) 587	0	$0	$0		$0	$0	$0	$0
Tree/Shrub Establishment (ac.) 612	0	$0	$0		$0	$0	$0	$0
Watering Facility (no.) 614	215	$107,695	$0		$129,234	$107,695	$6,462	$134,914
Subtotal	**17,231**	**$744,819**	**$0**	**$148,964**	**$893,782**	**$744,819**	**$29,155**	**$867,631**
RMS								
Dike (ft.) 356	0	$0	$0	$0	$0	$0	$0	$0
Fence (ft.) 382	0	$0	$0	$0	$0	$0	$0	$0
Irrigation Land Leveling (ac.) 464	0	$0	$0	$0	$0	$0	$0	$0
Irrigation System, Sprinkler (ac.) 442	0	$0	$0	$0	$0	$0	$0	$0
Irrigation Water Management (ac.) 449	0	$0	$0	$0	$0	$0	$0	$0
Nutrient Management (ac.) 590	308	$0	$13,847	$2,769	$15,107	$0	$4,616	$7,105
Pasture & Hayland Planting (ac.) 512	0	$0	$0	$0	$0	$0	$0	$0
Pest Management (ac.) 595	308	$0	$18,462	$3,692	$20,142	$0	$6,154	$9,473
Pipeline (ft.) 516	7,693	$11,154	$0	$2,231	$13,385	$11,154	$446	$13,034
Prescribed Grazing (ac.) 528	308	$154	$0	$31	$185	$154	$0	$154
Pumping Plant (no.) 533	4	$12,500	$0		$15,000	$12,500	$500	$14,607
Structure for Water Control (no.) 587	0	$0	$0		$0	$0	$0	$0
Tree/Shrub Establishment (ac.) 612	3	$1,539	$0		$1,846	$1,539	$31	$1,668
Upland Wildlife Habitat Management (ac.) 645	308	$0	$1,292		$1,410	$0	$431	$663
Watering Facility (no.) 614	4	$1,923	$0		$2,308	$1,923	$115	$2,409
Subtotal	**308**	**$27,270**	**$33,601**	**$12,174**	**$69,383**	**$27,270**	**$12,293**	**$49,112**
Grand Total	**17,539**	**$772,089**	**$33,601**	**$161,138**	**$963,165**	**$772,089**	**$41,448**	**$916,743**

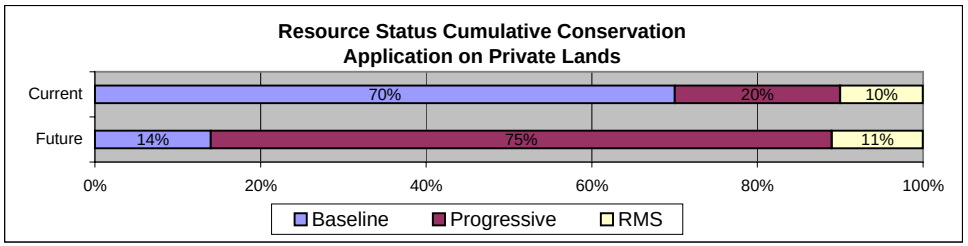

Chart Refers To	
Landuse Type	Pasture, irrigated
Calculated Participation Rate	63%

Average PV Costs per Ac		
System	Federal	Private
Prog	$51.87	$50.35
RMS	$225.49	$159.61

WATERSHED NAME & CODE	UPPER WEBER - 16020101	LANDUSE ACRES	4,496
LANDUSE TYPE	ALFALFA	TYPICAL UNIT SIZE ACRES	40
ASSESSMENT INFORMATION		CALCULATED PARTICIPATION	45%

	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
Conservation Systems by Treatment Level	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Water Quantity – Inefficient Water Use on Irrigated Land	Water Quality – Excessive Nutrients and Organics in Surface Water	Plant Condition – Productivity, Health and Vigor	Fish and Wildlife – T & E Species: Declining Species, Species of Concern
Baseline				**System Rating ->**	**1**	**3**	**2**	**0**
Fence (ft.) 382	50,580	15,174	0	15,174	0	1	1	1
Structure for Water Control (no.) 587	51	15	0	15	3	2	0	0
Tree/Shrub Establishment (ac.) 612	202	61	0	61	0	2	4	0
Watering Facility (no.) 614	51	15	0	15	0	4	1	0
Total Acreage at Baseline	**2,023**	**607**	**0**	**607**				
Progressive				**System Rating ->**	**3**	**3**	**4**	**1**
Dike (ft.) 356	12,645	10,116	7,587	17,703	0	0	0	0
Irrigation Water Management (ac.) 449	2,023	1,619	1,214	2,832	5	3	3	0
Prescribed Grazing (ac.) 528	2,023	1,619	1,214	2,832	1	3	5	2
Tree/Shrub Establishment (ac.) 612	202	283	0	283	0	2	4	0
Watering Facility (no.) 614	51	71	0	71	0	4	1	0
Total Acreage at Progressive Level	**2,023**	**1,619**	**1,214**	**2,832**				
RMS				**System Rating ->**	**3**	**4**	**5**	**1**
Irrigation Water Management (ac.) 449	450	854	202	1,057	5	3	3	0
Nutrient Management (ac.) 590	450	450	607	1,057	1	5	5	0
Pest Management (ac.) 595	450	450	607	1,057	1	0	3	0
Prescribed Grazing (ac.) 528	450	854	202	1,057	1	3	5	2
Tree/Shrub Establishment (ac.) 612	45	106	0	106	0	2	4	0
Watering Facility (no.) 614	11	26	0	26	0	4	1	0
Total Acreage at RMS Level	**450**	**450**	**607**	**1,057**				

WATERSHED NAME & CODE	UPPER WEBER - 16020101	LANDUSE ACRES	4,496
LANDUSE TYPE	ALFALFA	TYPICAL UNIT SIZE ACRES	40
CONSERVATION COST TABLE		CALCULATED PARTICIPATION	45%

	FUTURE	FEDERAL				PRIVATE		
Conservation Systems by Treatment Level	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								
Dike (ft.) 356	7,587	$6,108	$0	$1,222	$7,329	$6,108	$611	$8,680
Irrigation Water Management (ac.) 449	1,214	$0	$72,835	$14,567	$79,463	$0	$24,278	$37,373
Prescribed Grazing (ac.) 528	1,214	$4,249	$0	$850	$5,098	$4,249	$0	$4,249
Tree/Shrub Establishment (ac.) 612	0	$0	$0	$0	$0	$0	$0	$0
Watering Facility (no.) 614	0	$0	$0	$0	$0	$0	$0	$0
Subtotal	**1,214**	**$10,356**	**$72,835**	**$16,638**	**$91,891**	**$10,356**	**$24,889**	**$50,302**
RMS								
Irrigation Water Management (ac.) 449	202	$0	$12,139	$2,428	$13,244	$0	$4,046	$6,229
Nutrient Management (ac.) 590	607	$0	$27,313	$5,463	$29,799	$0	$9,104	$14,015
Pest Management (ac.) 595	607	$0	$36,418	$7,284	$39,732	$0	$12,139	$18,686
Prescribed Grazing (ac.) 528	202	$708	$0	$142	$850	$708	$0	$708
Tree/Shrub Establishment (ac.) 612	0	$0	$0	$0	$0	$0	$0	$0
Watering Facility (no.) 614	0	$0	$0	$0	$0	$0	$0	$0
Subtotal	**607**	**$708**	**$75,870**	**$15,316**	**$83,624**	**$708**	**$25,290**	**$39,638**
Grand Total	**1,821**	**$11,064**	**$148,705**	**$31,954**	**$175,515**	**$11,064**	**$50,179**	**$89,940**

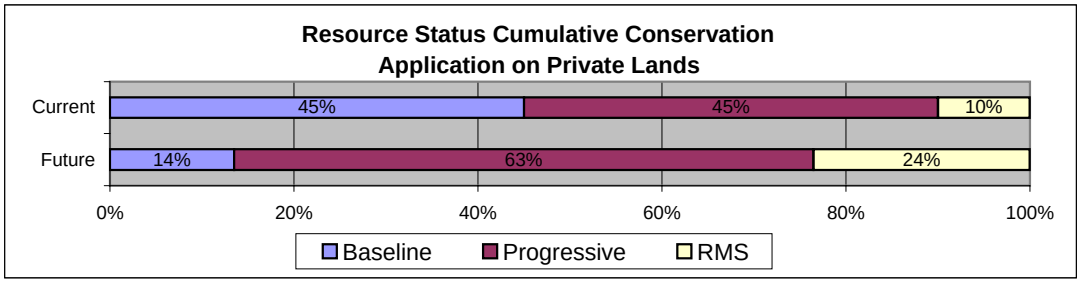

Chart Refers To	
Landuse Type	ALFALFA
Calculated Participation Rate	45%

Average PV Costs per Ac		
System	Federal	Private
Prog	$75.70	$41.44
RMS	$137.78	$65.31

WATERSHED NAME & CODE	UPPER WEBER RIVER - 16020101	LANDUSE ACRES	2,340
LANDUSE TYPE	Crop, irrigated	TYPICAL UNIT SIZE ACRES	40
ASSESSMENT INFORMATION		CALCULATED PARTICIPATION	74%

	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
Conservation Systems by Treatment Level	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Water Quantity – Inefficient Water Use on Irrigated Land	Water Quality – Excessive Nutrients and Organics in Surface Water	Plant Condition – Productivity, Health and Vigor	Fish and Wildlife – T & E Species: Declining Species, Species of Concern
Baseline				**System Rating ->**	**2**	**1**	**4**	**0**
Conservation Crop Rotation (ac.) 328	1,872	187	0	187	2	2	4	0
Pasture & Hayland Planting (ac.) 512	187	19	0	19	2	2	5	0
Pumping Plant (no.) 533	47	5	0	5	3	0	0	0
Total Acreage at Baseline	**1,872**	**187**	**0**	**187**				
Progressive				**System Rating ->**	**5**	**4**	**5**	**2**
Conservation Crop Rotation (ac.) 328	468	1,919	0	1,919	2	2	4	0
Forage Harvest Management (ac.) 511	234	211	749	959	1	2	4	0
Irrigation System, Sprinkler (ac.) 442	468	421	1,498	1,919	4	2	0	0
Irrigation Water Conveyance, Pipeline (ft.) 430	23,400	21,060	74,880	95,940	5	0	0	0
Irrigation Water Management (ac.) 449	468	421	1,498	1,919	3	3	3	0
Nutrient Management (ac.) 590	468	421	1,498	1,919	0	5	3	0
Pasture & Hayland Planting (ac.) 512	47	192	0	192	2	2	5	0
Pumping Plant (no.) 533	12	48	0	48	3	0	0	0
Structure for Water Control (no.) 587	12	11	37	48	2	0	0	4
Total Acreage at Progressive Level	**468**	**421**	**1,498**	**1,919**				
RMS				**System Rating ->**	**5**	**5**	**5**	**0**
Conservation Crop Rotation (ac.) 328	0	234	0	234	2	2	4	0
Deep Tillage (ac.) 324	0	0	23	23	2	1	3	0
Fence (ft.) 382	0	0	15,444	15,444	0	0	0	0
Forage Harvest Management (ac.) 511	0	23	94	117	1	2	4	0
Hedgerow Planting (ft.) 422	0	0	3,861	3,861	0	2	3	0
Irrigation System, Microirrigation (ac.) 441	0	0	2	2	3	3	0	0
Irrigation System, Sprinkler (ac.) 442	0	47	187	234	4	2	0	0
Irrigation Water Conveyance, Pipeline (ft.) 430	0	2,340	9,360	11,700	5	0	0	0
Irrigation Water Management (ac.) 449	0	47	187	234	3	3	3	0
Nutrient Management (ac.) 590	0	47	187	234	0	5	3	0
Pasture & Hayland Planting (ac.) 512	0	23	0	23	2	2	5	0
Pest Management (ac.) 595	0	0	234	234	1	0	3	0
Pipeline (ft.) 516	0	0	5,850	5,850	3	0	0	0
Prescribed Grazing (ac.) 528	0	0	234	234	1	1	5	0
Pumping Plant (no.) 533	0	6	0	6	3	0	0	0
Riparian Forest Buffer (ac.) 391	0	0	5	5	0	5	4	0
Upland Wildlife Habitat Management (ac.) 645	0	0	234	234	0	0	4	0
Total Acreage at RMS Level	**0**	**0**	**234**	**234**				

WATERSHED NAME & CODE	UPPER WEBER RIVER - 16020101	LANDUSE ACRES	2,340
LANDUSE TYPE	Crop, irrigated	TYPICAL UNIT SIZE ACRES	40
CONSERVATION COST TABLE		CALCULATED PARTICIPATION	74%

	FUTURE	FEDERAL				PRIVATE		
Conservation Systems by Treatment Level	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 Crop Rotation (ac.) 328	0	$0	$0	$0	$0	$0	$0	$0
Forage Harvest Management (ac.) 511	749	$0	$17,971	$3,594	$19,607	$0	$5,990	$9,221
Irrigation System, Sprinkler (ac.) 442	1,498	$741,312	$0	$148,262	$889,574	$741,312	$29,652	$866,219
Irrigation Water Conveyance, Pipeline (ft.) 430	74,880	$149,760	$0	$29,952	$179,712	$149,760	$5,990	$174,994
Irrigation Water Management (ac.) 449	1,498	$0	$53,914	$10,783	$58,820	$0	$17,971	$27,664
Nutrient Management (ac.) 590	1,498	$0	$67,392	$13,478	$73,525	$0	$22,464	$34,580

WATERSHED NAME & CODE	UPPER WEBER RIVER - 16020101	LANDUSE ACRES	2,340
LANDUSE TYPE	Crop, irrigated	TYPICAL UNIT SIZE ACRES	40
ASSESSMENT INFORMATION		CALCULATED PARTICIPATION	74%

	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
Conservation Systems by Treatment Level	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Water Quantity – Inefficient Water Use on Irrigated Land	Water Quality – Excessive Nutrients and Organics in Surface Water	Plant Condition – Productivity, Health and Vigor	Fish and Wildlife – T & E Species: Declining Species, Species of Concern
Pasture & Hayland Planting (ac.) 512	0	$0	$0		$0	$0	$0	$0
Pumping Plant (no.) 533	0	$0	$0		$0	$0	$0	$0
Structure for Water Control (no.) 587	37	$34,258	$0		$41,109	$34,258	$1,370	$40,030
Subtotal	**1,498**	**$925,330**	**$139,277**	**$212,921**	**$1,262,347**	**$925,330**	**$83,439**	**$1,152,708**
RMS								
Conservation Crop Rotation (ac.) 328	0	$0	$0	$0	$0	$0	$0	$0
Deep Tillage (ac.) 324	23	$0	$2,106	$421	$2,298	$0	$702	$1,081
Fence (ft.) 382	15,444	$27,027	$0	$5,405	$32,432	$27,027	$1,081	$31,581
Forage Harvest Management (ac.) 511	94	$0	$2,246	$449	$2,451	$0	$749	$1,153
Hedgerow Planting (ft.) 422	3,861	$3,089	$0	$618	$3,707	$3,089	$309	$4,390
Irrigation System, Microirrigation (ac.) 441	2	$796	$0	$159	$955	$796	$80	$1,131
Irrigation System, Sprinkler (ac.) 442	187	$92,664	$0	$18,533	$111,197	$92,664	$3,707	$108,277
Irrigation Water Conveyance, Pipeline (ft.) 430	9,360	$18,720	$0	$3,744	$22,464	$18,720	$749	$21,874
Irrigation Water Management (ac.) 449	187	$0	$6,739	$1,348	$7,352	$0	$2,246	$3,458
Nutrient Management (ac.) 590	187	$0	$8,424	$1,685	$9,191	$0	$2,808	$4,322
Pasture & Hayland Planting (ac.) 512	0	$0	$0		$0	$0	$0	$0
Pest Management (ac.) 595	234	$0	$14,040		$15,318	$0	$4,680	$7,204
Pipeline (ft.) 516	5,850	$8,483	$0		$10,179	$8,483	$339	$9,912
Prescribed Grazing (ac.) 528	234	$117	$0		$140	$117	$0	$117
Pumping Plant (no.) 533	0	$0	$0		$0	$0	$0	$0
Riparian Forest Buffer (ac.) 391	5	$2,948	$0		$3,538	$2,948	$177	$3,694
Upland Wildlife Habitat Management (ac.) 645	234	$0	$983		$1,072	$0	$328	$504
Subtotal	**234**	**$153,843**	**$34,538**	**$37,676**	**$222,293**	**$153,843**	**$17,954**	**$198,698**
Grand Total	**1,732**	**$1,079,173**	**$173,815**	**$250,598**	**$1,484,641**	**$1,079,173**	**$101,393**	**$1,351,406**

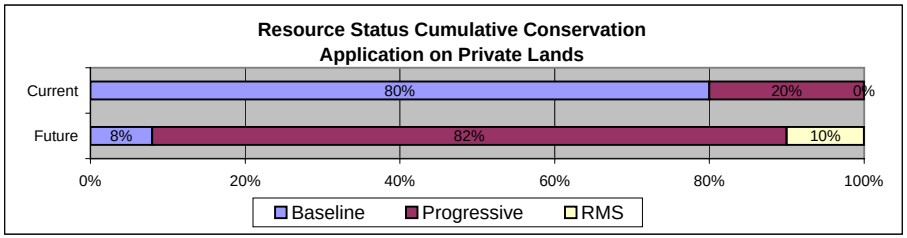

Chart Refers To	
Landuse Type	Crop, irrigated
Calculated Participation Rate	74%

Average PV Costs per Ac		
System	Federal	Private
Prog	$842.91	$769.70
RMS	$949.97	$849.14