

This resource assessment is designed to gather and display information specific to Uintah County, Utah. This report will highlight the natural and social resources present in the county, detail specific 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 partnership effort. The general observations and summaries are listed first, followed by the specific resource inventories.

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Introduction

Uintah County is located in the central portion of the Uinta Basin, which extends sixty miles into western Colorado. The northern rim of the basin is formed by the Uinta Mountains, the western rim by the Wasatch Mountains, and the southern rim by the Roan and Book cliffs. The basin is the geological remains of prehistoric Uinta Lake, formed during the late Tertiary period, the same period when sediment was deposited in the lake bottom to form gilsonite, oil shale, tar sands, and oil. Ashley and White Creek and the Uinta and Green rivers are major water resources in the county. The Green, the largest of the four, slices through the central portion of the county.

The dominant industries in Uintah County are cattle, hay and alfalfa, lumber, mining, oil and gas. Uintah County consists of 4,487 square miles of land and 62% of the land is shrub/rangeland.

Average low winter temperatures: 16°F; average high summer temperatures: 72°F; average precipitation: 10 inches.

Equal Opportunity Providers and Employers.



General Land Use Observations

Grass / Pasture / Hay Lands

- Complications related to overgrazing include poor pasture condition, soil compaction and water quality issues.
- Flood irrigation in salt-loaded soils contributes to high salinity levels in the Colorado River.
- 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.

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.

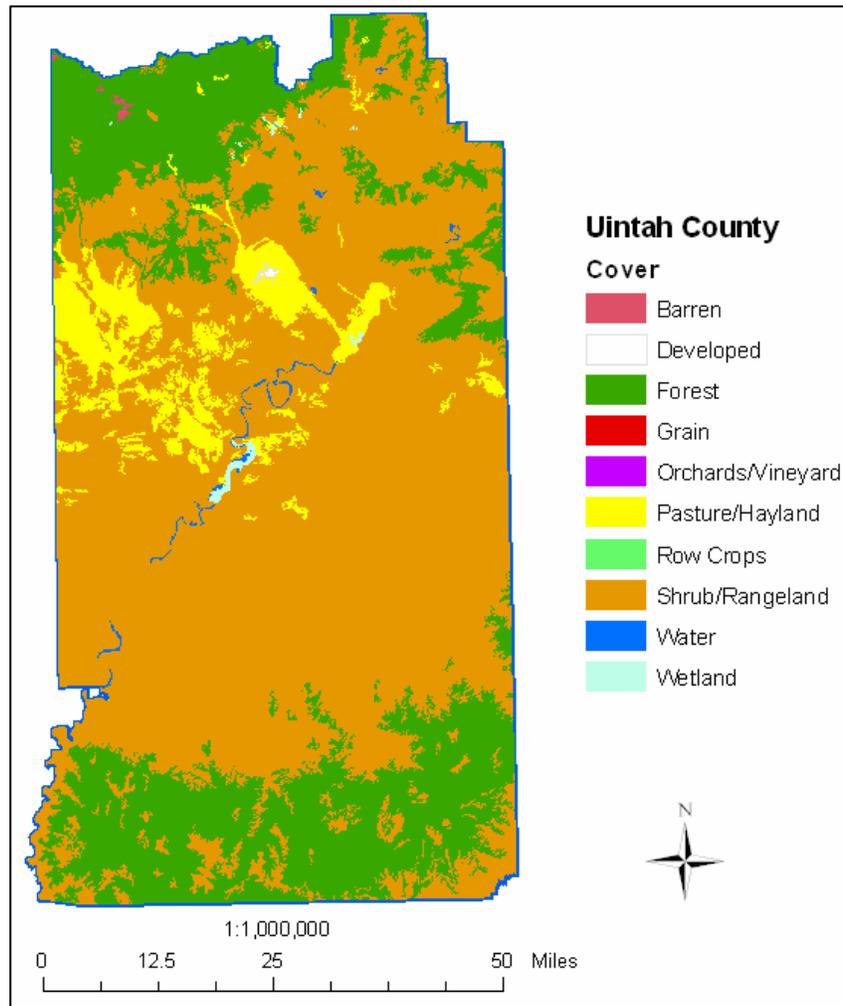
Forest

- On private, non-industrial forest there are issues with erosion, water quality and forest productivity.

Resource Assessment Summary

Categories	Concern high, medium, or low	Description and Specific Location (quantify where possible)
Soil	High	High salt content due to geologic nature of area. Some soil types also are very erodable. (Duchesne and Ashley River Drainages)
Water Quantity	Medium	Uintah County must plan for growing population and water needs. More water storage areas are needed. (Vernal City area)
Water Quality Ground Water	High	Deep percolation from flood irrigation washes salts into Colorado River. (Farming ground in the Vernal area)
Water Quality Surface Water	Medium	Over irrigation produces high sediment load and salt runoff into surface waters. (Irrigated crop and pastureland in Vernal area)
Air Quality	Medium	Population boom will possibly bring in more construction and vehicle pollutants. Could affect quality of life if not accounted for. (Vernal area)
Plant Suitability	Low	
Plant Condition	Medium	Water and nutrient management affects plant condition, therefore affecting crop production and sustainability. (All farming ground in Uintah County)
Fish and Wildlife	Medium	Water quality and urban sprawl affect the livelihood of both fish and wildlife.
Domestic Animals	Low	
Social and Economic	Medium	As a result of Oil and Gas mining boom, many are concerned that planning will not keep up with growth. Therefore, lifestyle may be adversely affected. However, the boom is also increasing the economic growth of Uintah County substantially.

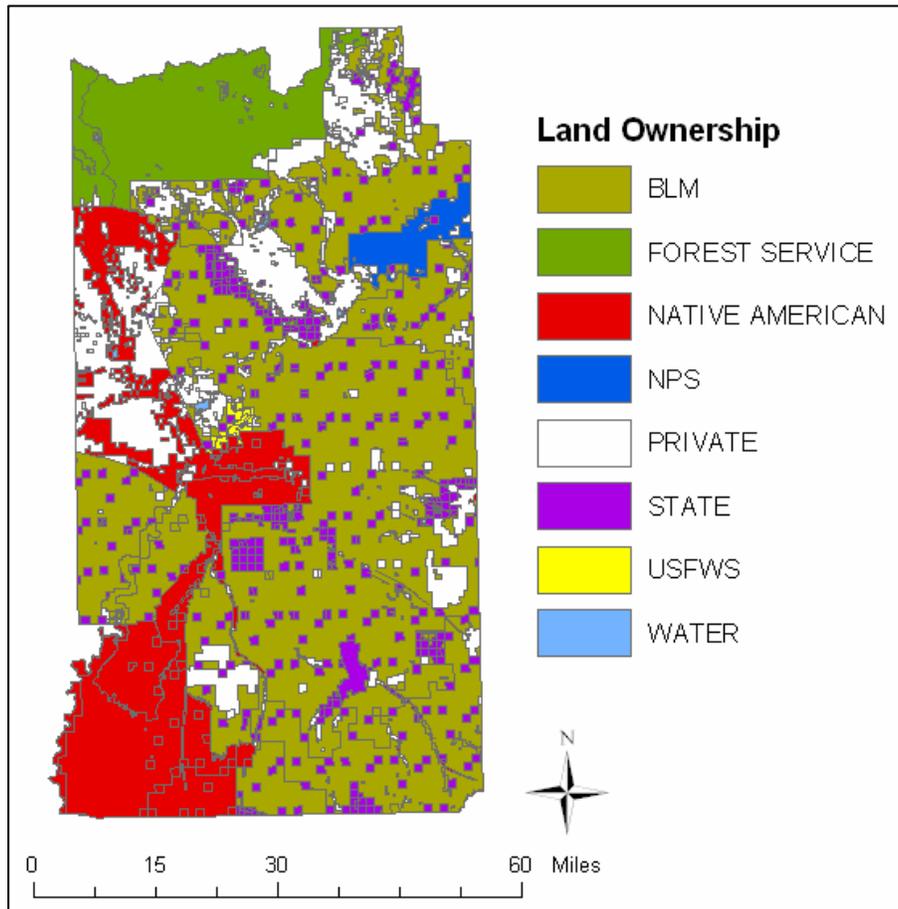
Land Use/Land Cover



Land Cover/Land Use		
	Acres	%
Forest	756,171	26.23%
Grain Crops	5,726	0.20%
Conservation Reserve Program *a	2,005	0.07%
Grass/Pasture/Haylands	301,816	10.47%
Orchards/Vineyards	31	0.00%
Row Crops	2,982	0.10%
Shrub/Rangelands	1,783,391	61.87%
Water	8,433	0.29%
Wetlands	6,417	0.22%
Developed	15,364	0.53%
Uintah County Totals *b	2,882,347	100.00%

**a: Estimate from Farm Service Agency records and include CRP/CREP. *b: Totals may not add due to rounding and small unknown acreages.*

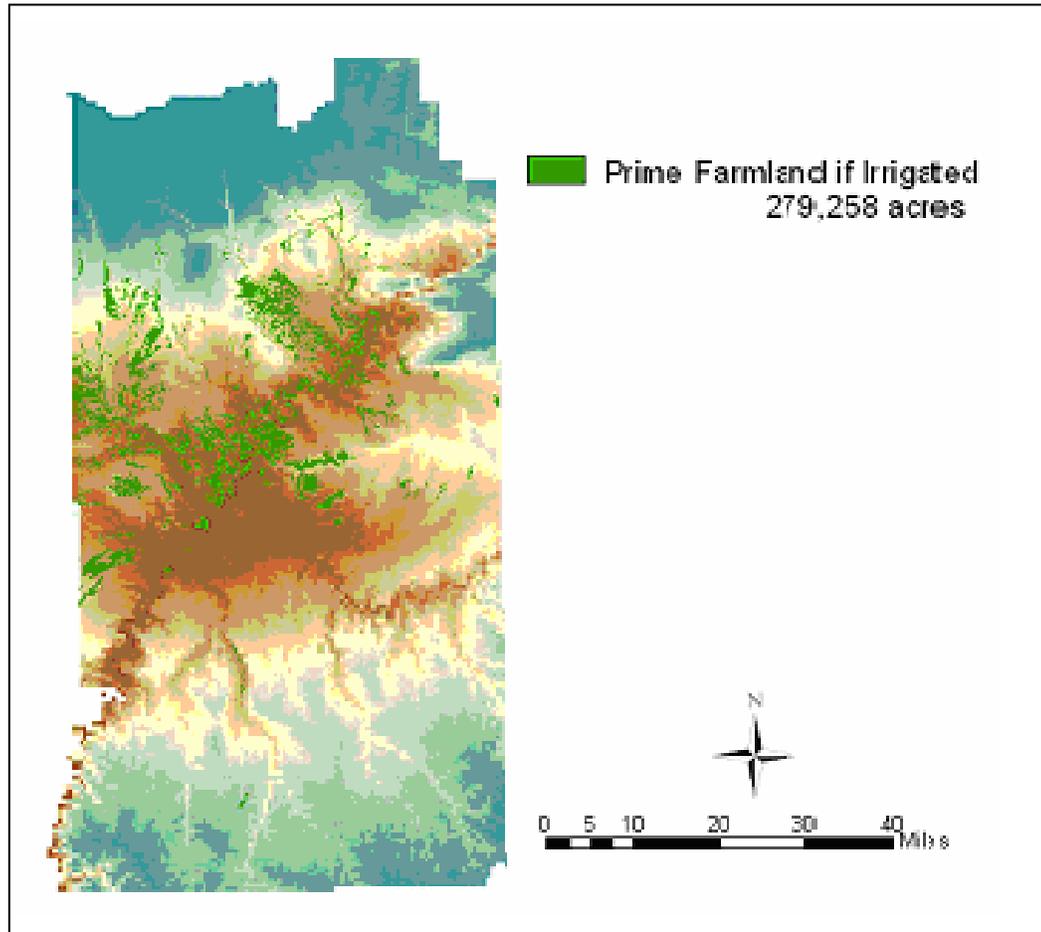
Land Ownership



Special Considerations for Uintah County:

- As of December 2004, 0 acres of CREP have been applied (FSA).
- There are only 4 farms with 31 acres of land in orchards and nurseries in Uintah County.
- Orchards/Nurseries include other perennial crops such as nursery stock, hybrid poplars, fruit trees, and evergreen trees.
- Grass/Pasture/Hay includes approximately:
 - 1 farm with minimal acres produces grass seed (USDA, 2002 Census of Agriculture)
 - 33,330 acres of pasture (USDA, 2002 Census of Agriculture)
 - 30,431 acres of hay (USDA, 2002 Census of Agriculture)
 - Leaving 240,060 acres of miscellaneous grasslands within Uintah County.
- Row crops mainly consist of corn silage used for livestock feed.
- There are approximately 396 acres of grain grown in the County (USDA, 2002 Census of Agriculture)
- Shrub/rangelands consist of sagebrush, pinyon/juniper, oak stands, and other open areas of brush/trees.
- 15,364 acres of the county is developed land for both residential and commercial use.

Prime & Unique Farm Land



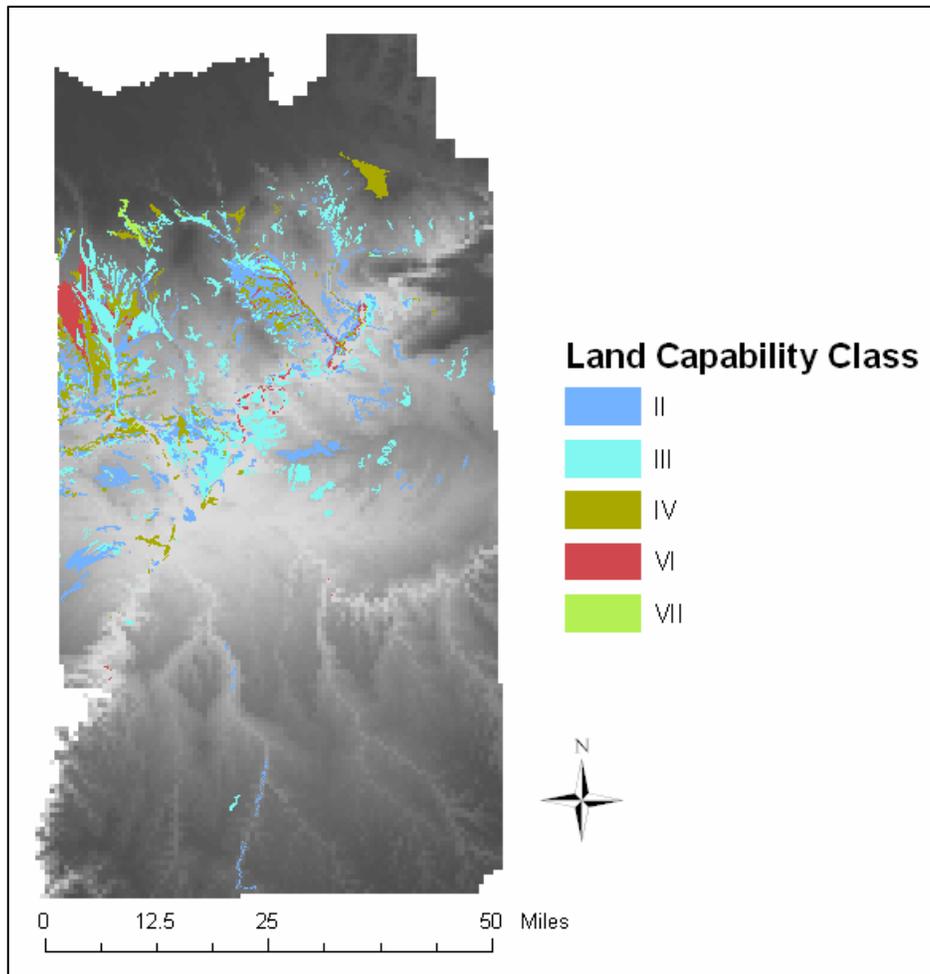
Prime farmland

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.

Resource Concerns – SOILS

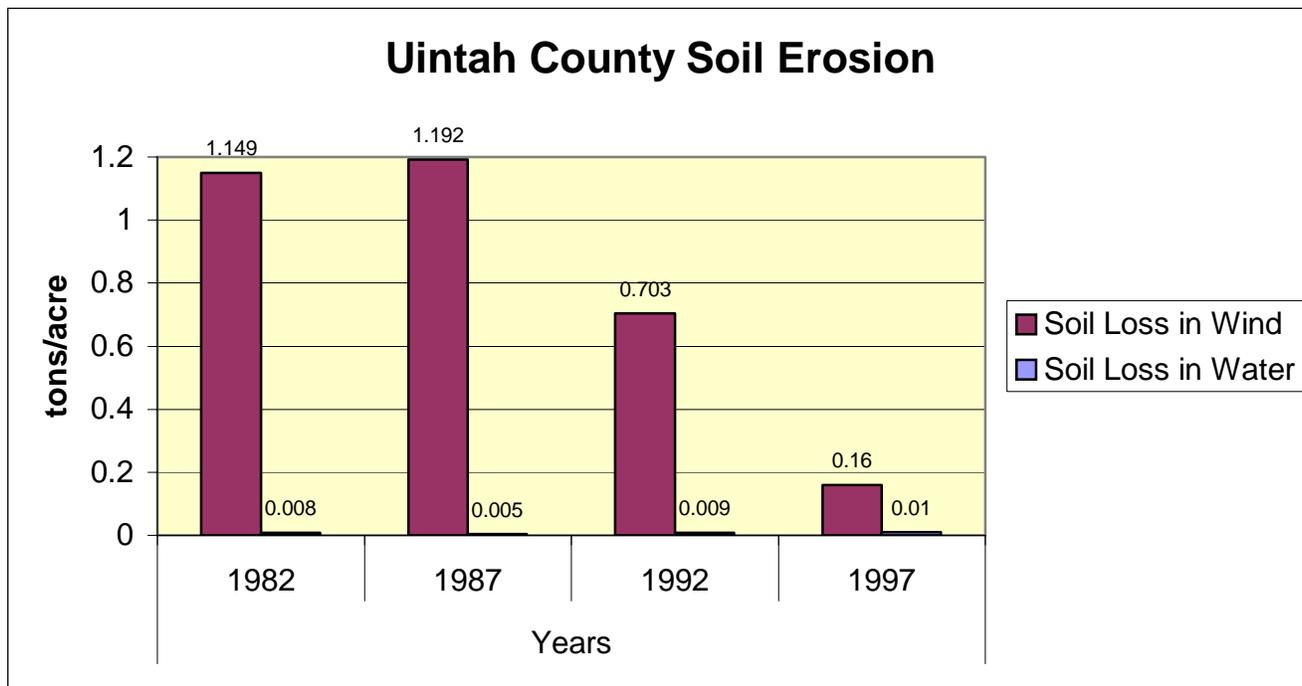
Categories	Specific Resource Concern / Issue	Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area
Soil Erosion	Sheet and Rill	X							X							X
	Wind	X			X											X
	Ephemeral Gully	X				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

Land Capability Class on Cropland and Pastureland



		Acres	Percentage
Land Capability Class (Irrigated Cropland & Pastureland Only)	I - slight limitations	0	0.0%
	II - moderate limitations	95,431	30.5%
	III - severe limitations	113,124	36.2%
	IV - very severe limitations	47,377	15.2%
	V - no erosion hazard, but other limitations	0	0.0%
	VI - severe limitations, unsuited for cultivation, limited to pasture, range, forest	20,399	6.5%
	VII - very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife	2,927	0.9%
	VIII - misc areas have limitations, limited to recreation, wildlife, and water supply	0	0.0%

Soil Erosion

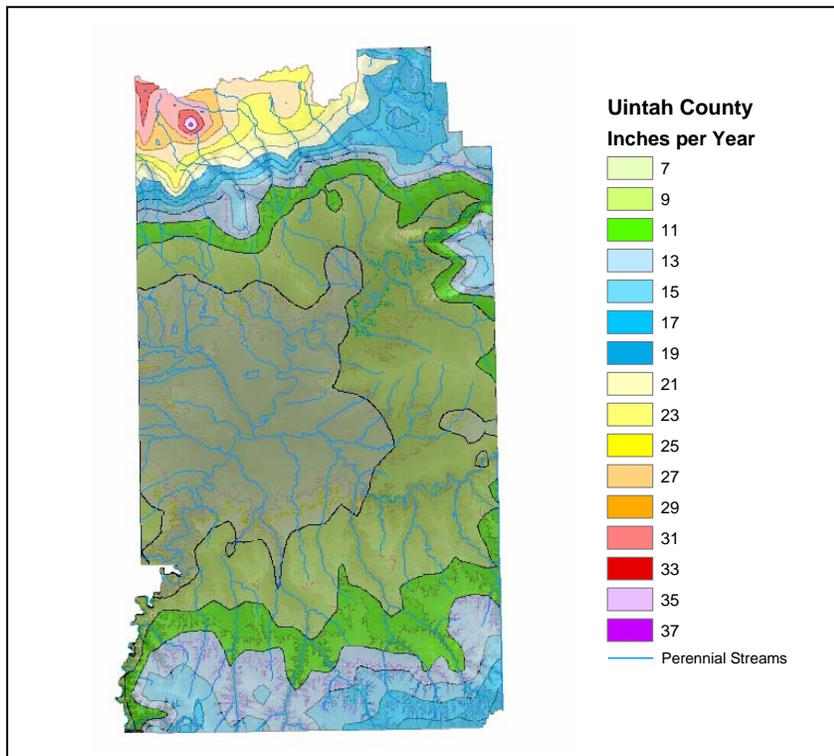


- ❖ Sheet and rill erosion by water on the sub-basin croplands and pasturelands have been reduced by more than 50 thousand tons of soil per year from 1982 to 1997.
- ❖ Controlling erosion not only sustains the long-term productivity of the land, but also affects the amount of soil, pesticides, fertilizer, 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 croplands and pasturelands fell 40 percent from 1.6 to 0.9 tons/acre/year from 1982 to 1997.

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

Precipitation and Streams

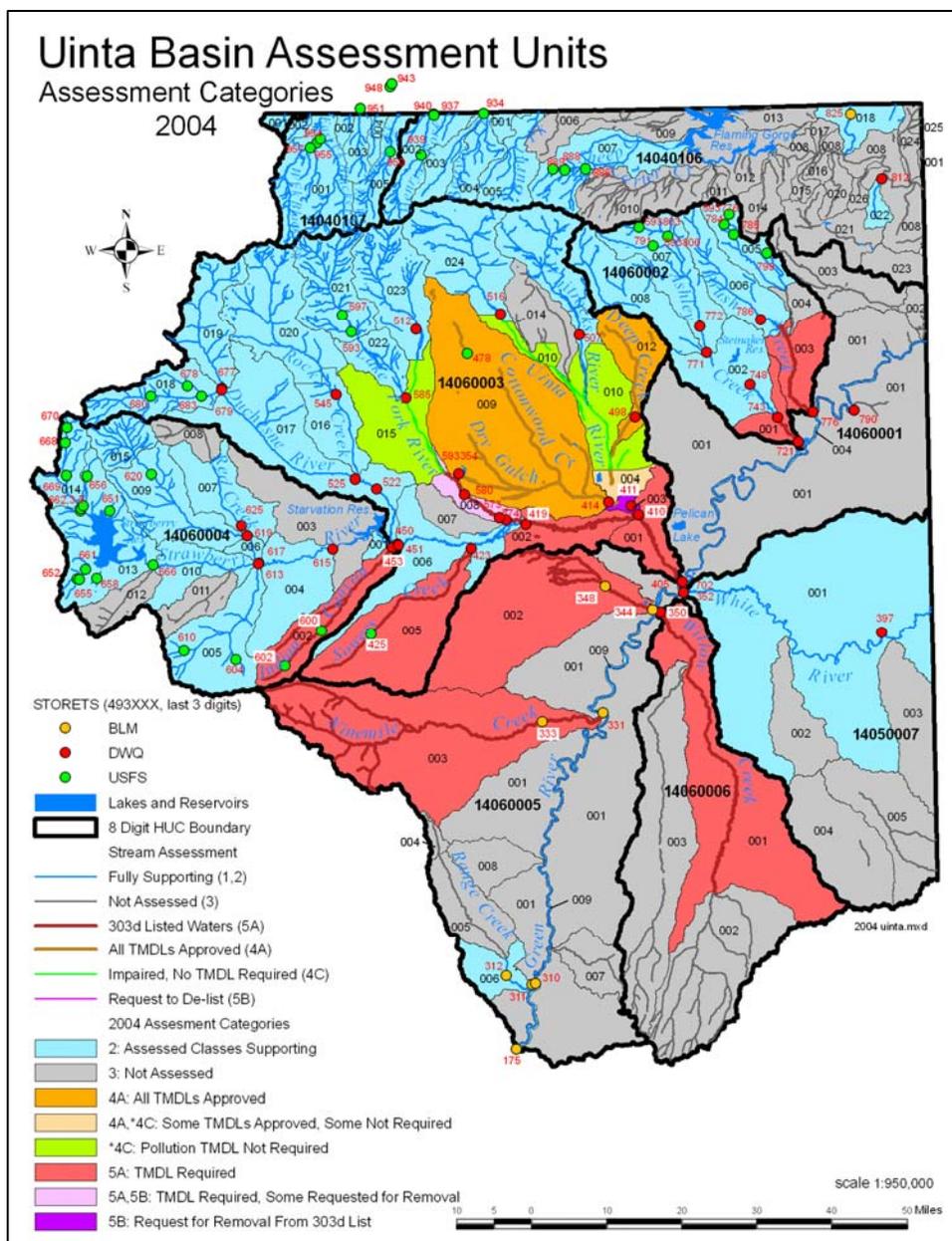


		ACRES	ACRE-FEET
Irrigated Adjudicated Water Rights	Surface	N/A	N/A
	Well	N/A	N/A
	Total Irrigated Adjudicated Water Rights	N/A	N/A
Stream Flow Data	USGS 09261700 Big Brush Creek Abv Red Fleet, Nr Vernal, UT	Total Avg. Yield	30,188
		May - Sept. Yield	21,420
Stream Data		MILES	PERCENT
	Total Miles - Major (100K Hydro GIS Layer)	8,692.7	n/a
	303d (DEQ Water Quality Limited Streams)	3,995.2	46%

		Irrigation Efficiency:		
		<40%	40 - 60%	>60%
Percentage of Total Acreage	Cropland	5%	5%	90%
	Pastureland	2%	6%	92%

Watersheds & Total Maximum Daily Load (TMDL)

Watershed Projects, Plans, Studies and Assessments			
NRCS Watershed Projects		NRCS Watershed Plans, Studies & Assessments	
Name	Status	Name	Status
Uintah Basin Salinity Project	In Progress		
DEQ TMDL's		NRCS Comprehensive Nutrient Management Plans	
Name	Status	Number	Status
Ashley Creek Watershed	EPA Approved - 2001	8	Planned
Uinta River Watershed	EPA Approved - 2003	3	Implemented



AFO/CAFO

Animal Feeding Operations (AFO)						
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Farms		28		1		5
No. of Animals		11895		300		1500

Potential Confined Animal Feeding Operations (PCAFO)						
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Farms		7		1		
No. of Animals		3498		300		

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

County	Number of AFO's and Distance to Water						Grand Total
	< 100 Feet	100 to 500 Feet	500 to 1000 Feet	1000 to 2000 Feet	2000 to 5000 Feet	>5000 Feet	
Uintah	1	1	1		2	5	10

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)												X			
	Excessive Greenhouse Gas: N2O (nitrous oxide)															
	Excessive Greenhouse Gas: CH4 (methane)															
	Ammonia (NH3)															
	Chemical Drift															
	Objectionable Odors			X									X			
	Reduced Visibility												X			
	Undesirable Air Movement															
	Adverse Air Temperature															
Plant Suitability	Plants not adapted or suited															
Plant Condition	Plant Condition – Productivity, Health and Vigor	X	X													
	Threatened or Endangered Plant Species: Plant Species Listed or Proposed for Listing under the Endangered Species Act											X			X	
	Threatened or Endangered Plant Species: Declining Species, Species of Concern														X	
	Noxious and Invasive Plants	X	X	X										X		
	Forage Quality and Palatability			X												
	Plant Condition – Wildfire Hazard				X	X			X	X						
Fish and Wildlife	Inadequate Food															
	Inadequate Cover/Shelter															
	Inadequate Water															
	Inadequate Space															
	Habitat Fragmentation															
	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													
	Inadequate Shelter															
	Inadequate Stock Water				X											
	Stress and Mortality															

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*)

Additional noxious weeds declared by Uintah County (2003): Russian Olive, Salt Cedar

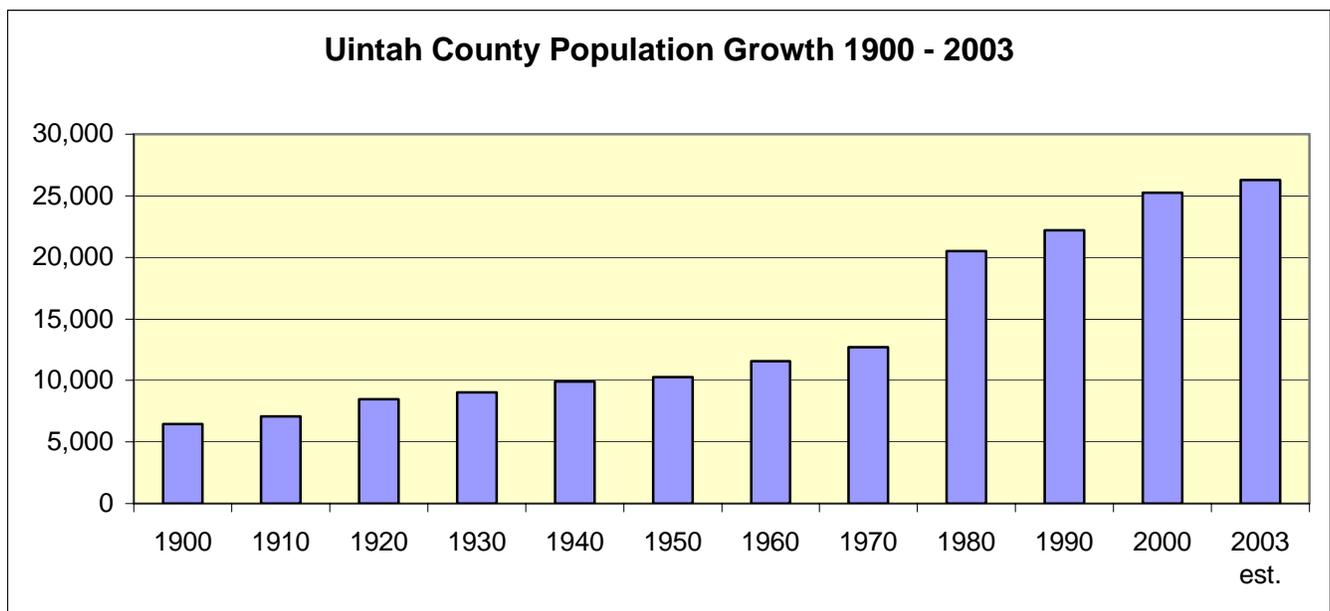
Wildlife

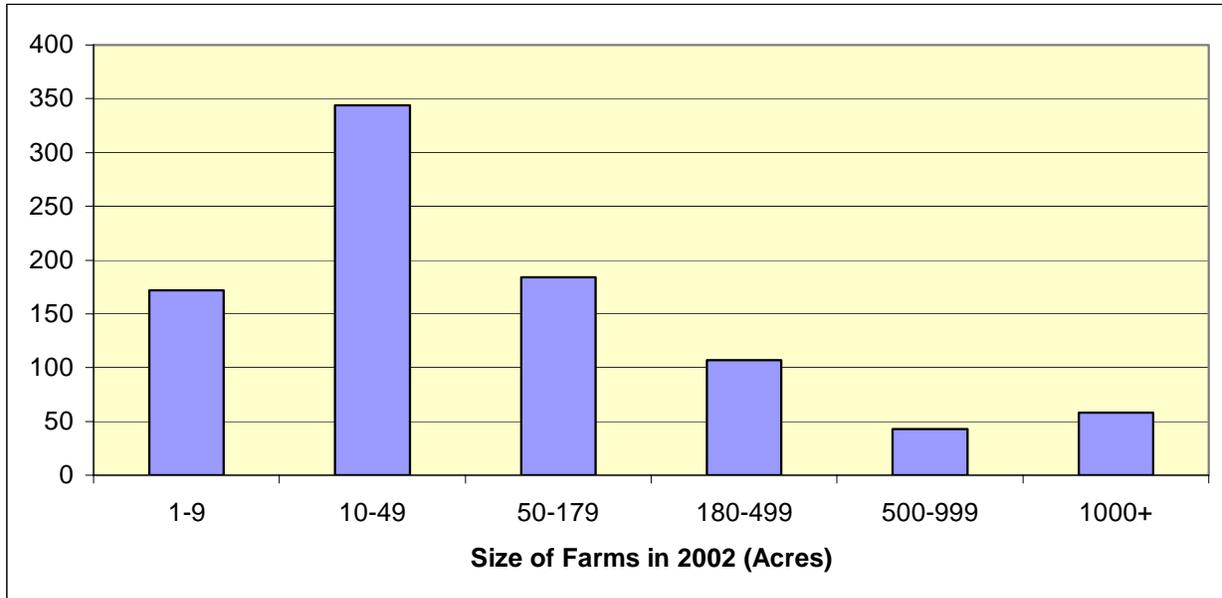
AT-RISK SPECIES				
	Common Name	Group	Primary Habitat	Secondary Habitat
FEDERALLY-LISTED				
Endangered:	Black-footed Ferret (experimental)	Mammal	Grassland	High Desert Scrub
	Gray Wolf (extirpated)	Mammal	Mountain Shrub	Mixed Conifer
	Bonytail	Fish	Water - Lotic	
	Colorado Pikeminnow	Fish	Water - Lotic	
	Humpback Chub	Fish	Water - Lotic	
	Razorback Sucker	Fish	Water - Lotic	
Threatened:	Brown (Grizzly) Bear (extirpated)	Mammal	Mixed Conifer	Mountain Shrub
	Canada Lynx	Mammal	Sub-Alpine Conifer	Lodgepole Pine
	Mexican Spotted Owl	Bird	Cliff	Lowland Riparian
	Bald Eagle (breeding)	Bird	Lowland Riparian	Agriculture
Candidate:	Yellow-billed Cuckoo	Bird	Lowland Riparian	Agriculture
Proposed:	(None)			
STATE SENSITIVE				
Conservation Agreement Species:	Northern Goshawk	Bird	Mixed Conifer	Aspen
	Colorado River Cutthroat Trout	Fish	Water - Lotic	Mountain Riparian
	Bluehead Sucker	Fish	Water - Lotic	Mountain Riparian
	Roundtail Chub	Fish	Water - Lotic	
	Flannelmouth Sucker	Fish	Water - Lotic	
	American White Pelican	Bird	Water - Lentic	Wetland
	Big Free-tailed Bat	Mammal	Lowland Riparian	Cliff
	Black Swift	Bird	Lowland Riparian	Cliff
Species of Concern:	Burrowing Owl	Bird	High Desert Scrub	Grassland
	Cornsnake	Reptile	Lowland Riparian	Pinyon-Juniper
	Ferruginous Hawk	Bird	Pinyon-Juniper	Shrubsteppe
	Fringed Myotis	Mammal	Northern Oak	Pinyon-Juniper
	Greater Sage-grouse	Bird	Shrubsteppe	
	Kit Fox	Mammal	High Desert Scrub	
	Lewis's Woodpecker	Bird	Ponderosa Pine	Lowland Riparian
	Long-billed Curlew	Bird	Grassland	Agriculture
	Short-eared Owl	Bird	Wetland	Grassland
	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
White-tailed Prairie-dog	Mammal	Grassland	High Desert Scrub	
*Definitions of habitat categories can be found in the Utah Comprehensive Wildlife Conservation Strategy.				

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

Census and Social Data





Number of Farms: 908

Number of Operators:

- Full-Time Operators: 386
- Part-Time Operators: 522

Public Survey/Questionnaire Results:

A majority of respondents felt:		
The following concerns that should be addressed immediately are:	The following concerns that will need future attention are:	The following concerns are if minor importance:
Agricultural sustainability Energy Conservation Rangeland Health Fish and Wildlife Habitat/Population Flooding Forest Health Grazing Lands Invasive Species Loss of Ag. Land Open Space Weeds Irrigation Water Management Public Land Management Riparian Corridors Water Conservation and Supply Water Quality Land Conservation	Air Quality Food Production Groundwater Rural Land Use Surface Water Urban Land Use Waste Disposal Nutrient Management Pesticide Management Small-acreage Management Soil Erosion Soil Quality Timber Production Urban Water Pollution Wetlands Wildfire	Biological Diversity Cultural Resources Landslides Manure Management Mined Land Reclamation Threatened/Endangered Species

Total # of respondents: 18

Footnotes / Bibliography

1. General information about Uintah County obtained from the official Uintah County website: <http://utahreach.org/uintah/visitor/about.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 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 waterbodies, 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. Stream Flow data from <http://waterdata.usgs.gov/ut/nwis/uv?09261700>
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 <http://oaspub.epa.gov/pls/tmdl/>
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>