

This resource assessment is designed to gather and display information specific to Juab 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.

Contents

[Observations and Summary](#)

[Land Use](#)

[Resource Concerns - Soils](#)

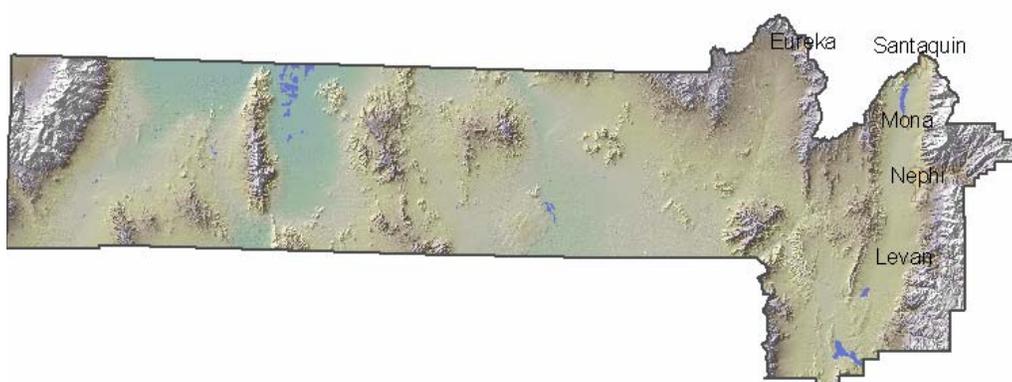
[Resource Concerns - Water](#)

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

[Resource Concerns - Social and Economic](#)

[Survey Results](#)

[Footnotes/Bibliography](#)



Introduction

Juab County was formed in 1852, including portions of what is now Nevada. The size of the county was reduced in 1854 and 1856 along with various other changes through the years until the current borders were set.

The first real settlement came in 1851 when Mormon pioneers settled Nephi. They relied mainly on agriculture for their livelihoods. In 1869, silver, gold, copper and other precious metals were discovered in the Tintic region. Many mining towns, such as Diamond, Silver City and Eureka popped up during this era. By 1899, it was considered to be one of the richest mining districts in the entire nation. Mining continued into the mid-1900's with the operations scaling down through the rest of the century.

Area: 3,412 square miles; *population*: 5,817 (in 1990); county seat: Nephi; *origin of county name*: from the Ute word meaning flat or level plain; *principal cities/towns*: Nephi (3,515), Mona (584), Eureka (562), Levan (416); *economy*: agriculture, manufacturing, mining, recreation; *points of interest*: Historic Tintic Mining District, Little Sahara Recreation Area, Old Pony Express and Stage Route, Yuba Reservoir, Goshute Indian Reservation, Tintic Mining Museum in Eureka, Mount Nebo Wilderness Area, Fish Springs National Wildlife Refuge.

Equal Opportunity Providers and Employers.



General Land Use Observations

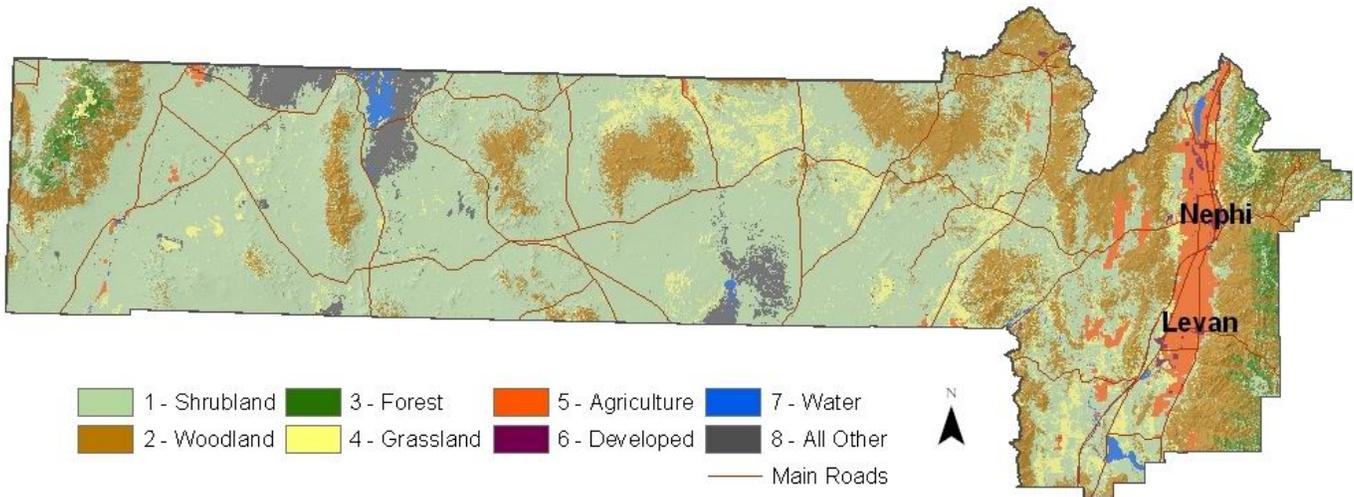
Land Use

Juab County is a part of the Basin and Range physiographic province. Most of the fertile farming land in the county is located in the Juab Valley near Nephi at the base of Mount Nebo (11,877 feet). The western portion of the county consists of broad, semi-arid valleys and low desert mountains. The Wasatch Mountains are located to the east, and moving west there are the East Tintic Range, West Tintic Range, Thomas Range (Topaz Mountain 7,113 feet), Fish Springs Range, and the southern tip of the Deep Creek Range in the extreme northwest corner of the county.

Resource Assessment Summary

Categories	Concern high, medium, or low	Description and Specific Location (quantify where possible)
Soil	High	On farm ground and along streams and channels, county wide.
Water Quantity	High	Adequate supply for irrigation and other desired uses, county wide
Water Quality Ground Water	High	Concern for impurities that are found in some wells and for contamination from outside sources, county wide.
Water Quality Surface Water	High	Available water clean enough for desired uses, county wide.
Air Quality	Medium	From blowing dust and odors, county wide.
Plant Suitability	High	Concern for invasive species and noxious weeds, county wide.
Plant Condition	Medium	Concern for plant health, production and adequate quantities, county wide.
Fish and Wildlife	Medium/Low	Medium concern for adequate food, water and cover, county wide. Low concern for T&E county wide.
Domestic Animals	Medium	Medium concern for adequate food, water and cover, county wide.
Social and Economic	High/Medium	High concern for loss of agriculture lands in Eastern Juab County. Medium concern for urban/suburban growth, county wide.

Land Cover



According to the U.S. Census Bureau, the county has a total area of 8,822 km² (3,406 mi²). 8,785 km² (3,392 mi²) of it is land and 38 km² (15 mi²) of it is water. The total area is 0.43% water.

Land Cover/Land Use		
	Acres	%
Forest	94,404	20%
Grain Crops	10,898	2%
Conservation Reserve Program <i>*a</i>	19,400	4%
Grass/Pasture/Haylands	19,100	4%
Orchards/Vineyards	0	0%
Row Crops	0	0%
Shrub/Rangelands	305,414	65%
Water	5,760	1%
Wetlands	10,500	2%
Developed	3,390	1%
Juab County Totals <i>*b</i>	468,866	100%

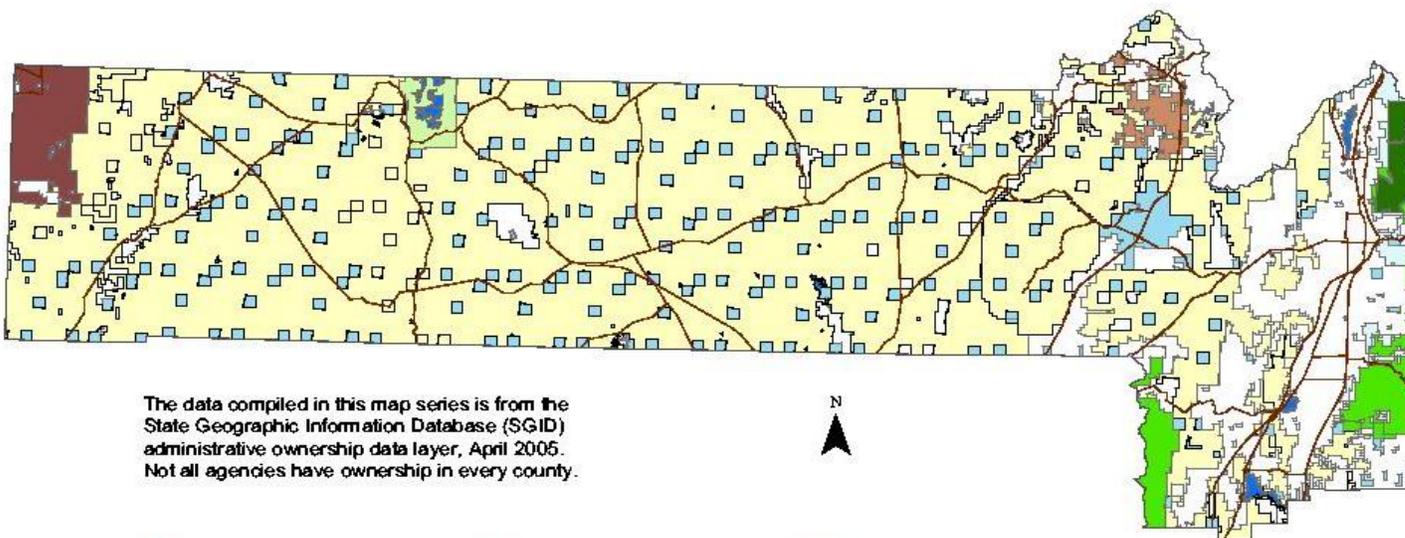
**a: Estimate from Farm Service Agency records and include CRP/CREP. *b: Totals may not add due to rounding and small unknown acreages.*

Special Considerations for Juab County:

- As of January 2005, 19,414.3 acres of CRP have been applied (FSA).
- Crop Production includes approximately: (2003 Ag. Statistics)
 - 29,998 acres of harvested cropland
 - 22,236 acres irrigated cropland
 - 5000 acres of dry land winter wheat, producing approx. 34,000 Bu..
 - 500 acres of corn producing 7200 tons
 - 19,100 acres hay (Alf. & grass) producing 55,500 tons.
 - 5398 acres are used for the production of oats, barley
- There are approximately: (2003 Ag. Statistics)
 - 17,000 head of cattle & calves
 - 4100 head of sheep & lambs

Land Ownership

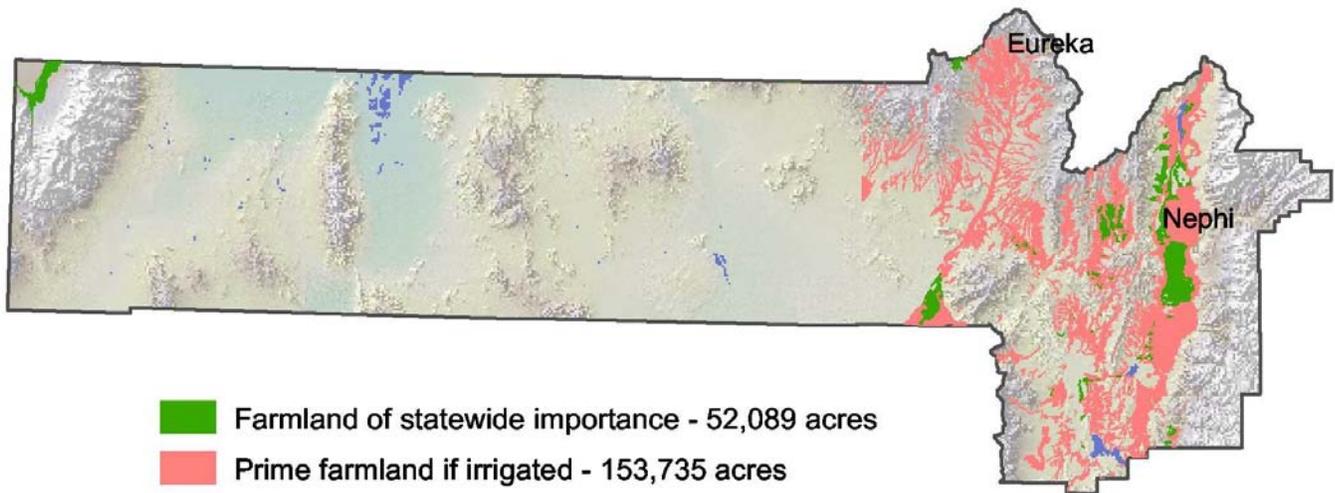
Juab County covers 2,183,681 acres (3,412 sq. Miles) of that 1,569,966 ac. are federally owned with BLM covering 1,442,917 ac., Forest Service taking in 109,917 and Fish and Wildlife picking the remaining 17,992. State lands cover 178,526 acres with 39,038 belonging to the Goshute Reservation. There are approx. 382,144 ac. of private land, 9,819 in road and rail road right-of-ways. The incorporated cities of Nephi (1962.2 ac), Mona (763.2 ac.), Eureka (550.3 ac.) and Levan (484.3 ac.) comprise the noted acres.



The data compiled in this map series is from the State Geographic Information Database (SGID) administrative ownership data layer, April 2005. Not all agencies have ownership in every county.

- | | | |
|--|---|--|
| State | BLM Wilderness Area | National Park Service (NPS) |
| Private | USFS Wilderness Area | State, County, City; Wildlife, Park and Outdoor Recreation Areas |
| US Forest Service (USFS) | Bankhead-Jones Land Use Lands | US Fish and Wildlife (USFWS) National Wildlife Refuge |
| Bureau of Land Management (BLM) | Indian Reservation (IR) | Military Reservations and Corps of Engineers |
| | | Water |

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

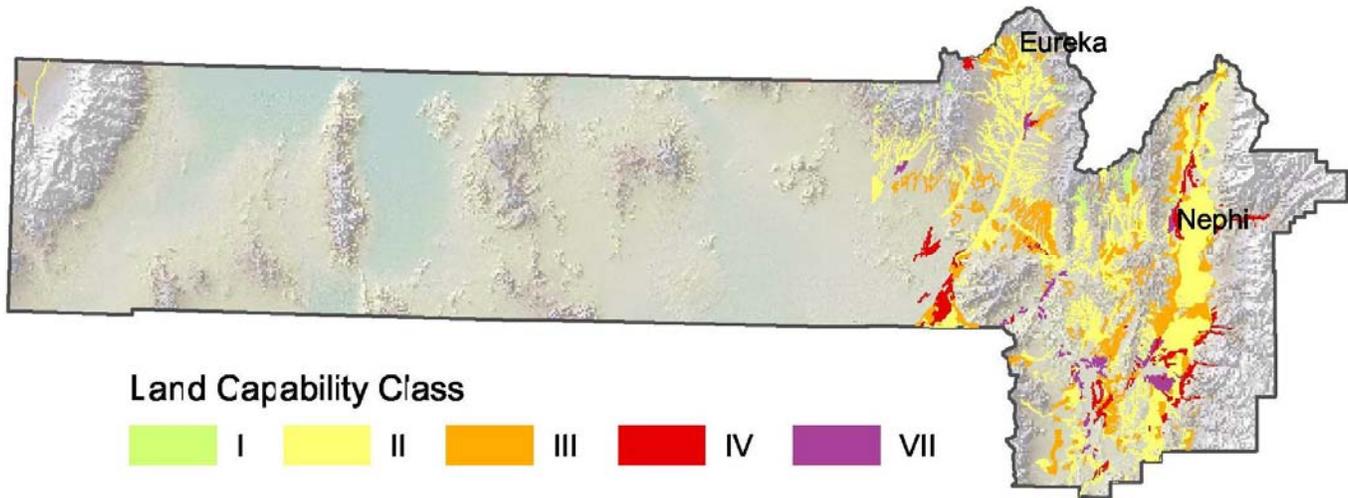
Additional farmland of statewide or local importance

Land identified by state or local agencies for agricultural use, but not of national significance

Resource Concerns – SOILS

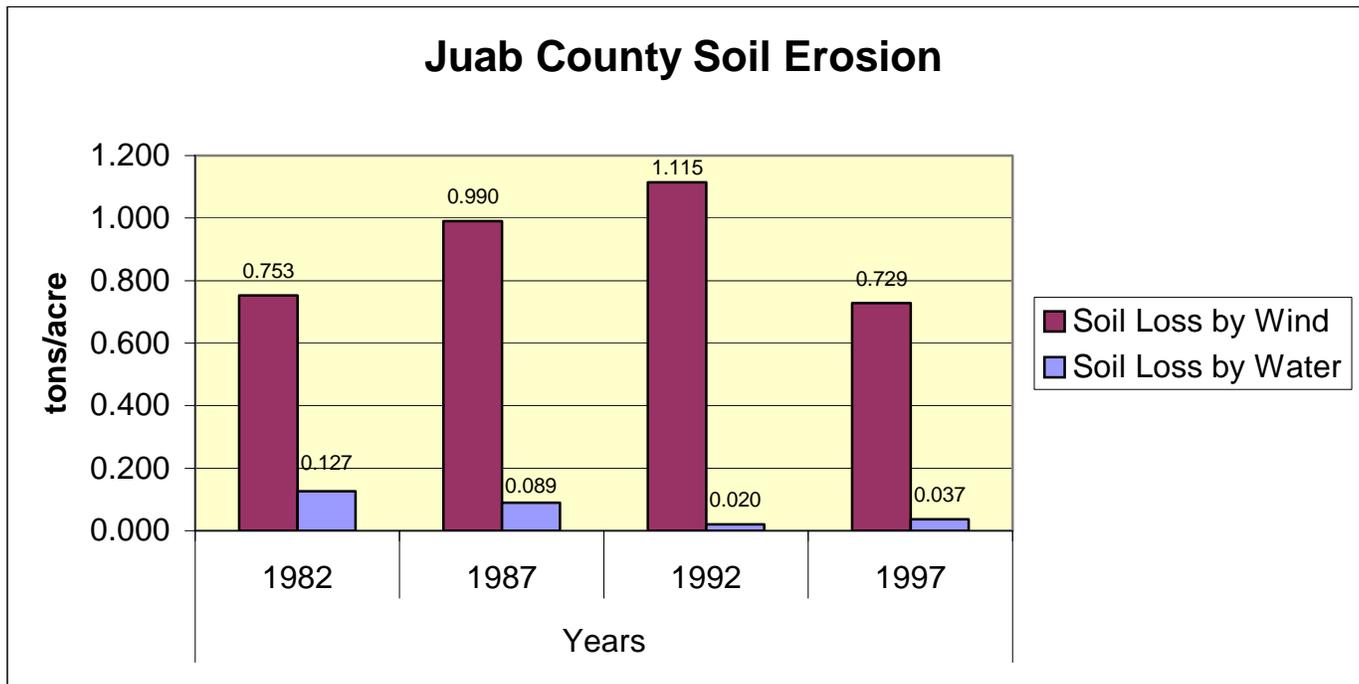
Categories	Specific Resource Concern / Issue	Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area
Soil Erosion	Sheet and Rill				X	X			X							
	Wind	X	X													
	Ephemeral Gully				X	X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

Land Capability Class on Cropland and Pastureland



		Acres	Percentage
Land Capability Class (Irrigated Cropland & Pastureland Only)	I - slight limitations	3,198	2%
	II - moderate limitations	113,014	53%
	III - severe limitations	59,127	28%
	IV - very severe limitations	29,725	14%
	V - no erosion hazard, but other limitations	0	0%
	VI - severe limitations, unsuited for cultivation, limited to pasture, range, forest	0	0%
	VII - very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife	7,411	3%
	VIII - misc areas have limitations, limited to recreation, wildlife, and water supply	0	0%

Soil Erosion



- ❖ Sheet and rill erosion by water on the croplands and pasturelands have been reduced by more than .4 tons per acre of soil per year from 1992 to 1997. While water losses have increased by .017 tons per acre according to statistics which do not make since because of the amount of acres that have gone from flood irrigation to sprinkler.
- ❖ 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 have been reduced significantly over the past 20 years.

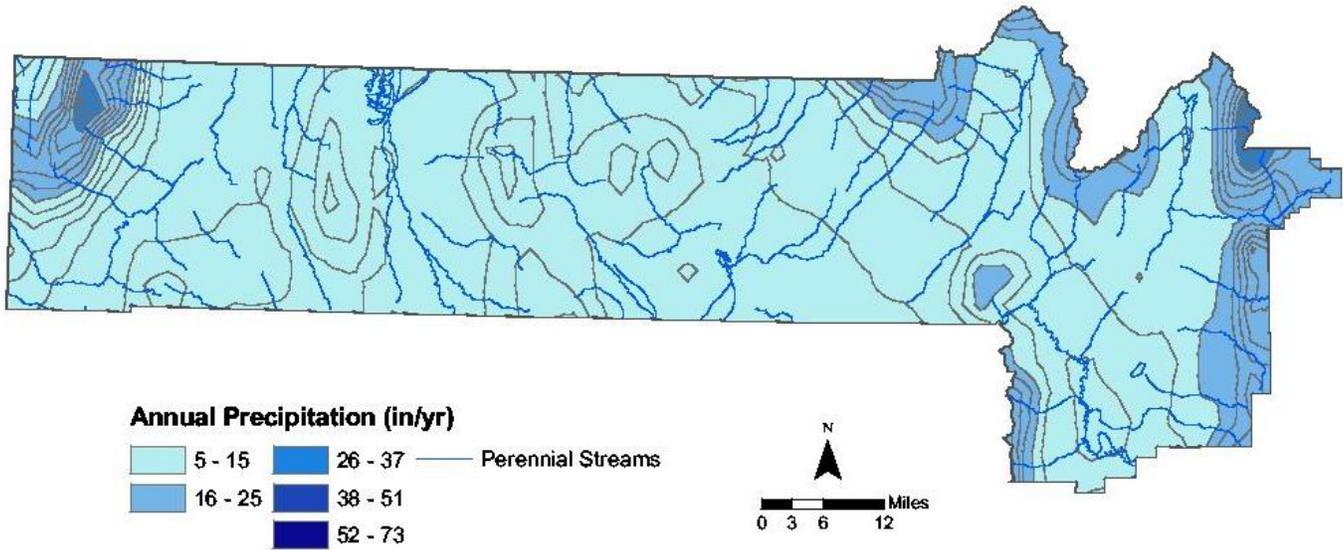
Resource Concerns – WATER

Northern Juab Valley is defined as the alluvial valley which is tributary to Currant Creek and is bounded on the east by the Wasatch and San Pitch mountains, on the west by the West Hills and Long Ridge, on the north by York Ridge, and on the south by Levan Ridge.

Developments in Utah Valley are having an impact on the land use practices in Juab Valley. Land use is being changed from agricultural to residential. The water resources of this valley are tributary to Utah Lake through Mona Reservoir and Currant Creek. Hence, ground-water development and changes in water use practices appear to have an effect on the Utah Lake System, which is fully appropriated.

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											
	Excessive Seepage			X												
	Excessive Runoff, Flooding, or Ponding	X	X													
	Excessive Subsurface Water															
	Drifted Snow															
	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	X											X	
	Reduced Storage of Water Bodies by Sediment Accumulation														X	
	Aquifer Overdraft															
	Insufficient Flows in Watercourses															
Water Quality, Groundwater	Harmful Levels of Pesticides in Groundwater													X		
	Excessive Nutrients and Organics in Groundwater													X		
	Excessive Salinity in Groundwater															
	Harmful Levels of Heavy Metals in Groundwater													X		
	Harmful Levels of Pathogens in Groundwater													X		
	Harmful Levels of Petroleum in Groundwater															
Water Quality, Surface	Harmful Levels of Pesticides in Surface Water													X		
	Excessive Nutrients and Organics in Surface Water													X		
	Excessive Suspended Sediment and Turbidity in Surface Water	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															
	Harmful Levels of Petroleum in Surface Water															

Precipitation and Streams



		ACRES	ACRE-FEET
Irrigated Adjudicated Water Rights	Surface		
	Well		
	Total Irrigated Adjudicated Water Rights	0.00	0.00
Stream Flow Data	USGS 14922834 Kay's Creek at Kaysville	Total Avg. Yield	24,889
		May-Sept Yield	9,975
Stream Data		MILES	PERCENT
	Total Miles - Major (100K Hydro GIS Layer)	3486.00	n/a
	303d (DEQ Water Quality Limited Streams)	284.00	8%

		Irrigation Efficiency:		
		<40%	40 - 60%	>60%
Percentage of Total Acreage	Cropland	20%	40%	40%
	Pastureland	60%	30%	20%

Watersheds & Total Maximum Daily Load (TMDL)

Watershed Projects, Plans, Studies and Assessments			
NRCS Watershed Projects		NRCS Watershed Plans, Studies & Assessments	
Name	Status	Name	Status
0	0	0	0
DEQ TMDL's		NRCS Comprehensive Nutrient Management Plans	
Name	Status	Number	Status
0	0	0	0

AFO/CAFO

Animal Feeding Operations (AFO)						
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Farms		38				35
No. of Animals		40				38

Potential Confined Animal Feeding Operations (PCAFO)						
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Farms		1				
No. of Animals		700				

Confined Animal Feeding Operations - Utah CAFO Permit					
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Other
No. of Permitted Farms	1				
No. of Permitted Animals	800				

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	X	X	X	X								X			
	Objectionable Odors												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											
	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											
	Forage Quality and Palatability			X	X											
Plant Condition – Wildfire Hazard				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	X											
	Inadequate Shelter															
	Inadequate Stock Water			X	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 Juab County (2003): Blue Flowering Lettuce

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:	(None)			
Threatened:	Bald Eagle	Bird	Lowland Riparian	Agriculture
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
	Least Chub	Fish	Water - Lentic	Wetland
Species of Concern:	American White Pelican	Bird	Water - Lentic	Wetland
	Bobolink	Bird	Wet Meadow	Agriculture
	Burrowing Owl	Bird	High Desert Scrub	Grassland
	California Floater	Mollusk	Water - Lotic	Water - Lentic
	Dark Kangaroo Mouse	Mammal	High Desert Scrub	Shrubsteppe
	Eureka Mountainsnail	Mollusk	Mountain Shrub	Rock
	Ferruginous Hawk	Bird	Pinyon-Juniper	Shrubsteppe
	Fringed Myotis	Mammal	Northern Oak	Pinyon-Juniper
	Greater Sage-grouse	Bird	Shrubsteppe	
	Kit Fox	Mammal	High Desert Scrub	
	Leatherside Chub	Fish	Water - Lotic	Mountain Riparian
	Lewis's Woodpecker	Bird	Ponderosa Pine	Lowland Riparian
	Long-billed Curlew	Bird	Grassland	Agriculture
	Pygmy Rabbit	Mammal	Shrubsteppe	
	Short-eared Owl	Bird	Wetland	Grassland
	Three-toed Woodpecker	Bird	Sub-Alpine Conifer	Lodgepole Pine
	Townsend's Big-eared Bat	Mammal	Pinyon-Juniper	Mountain Shrub
Utah Physa	Mollusk	Wetland		
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 key habitats state-wide are (in order of priority):

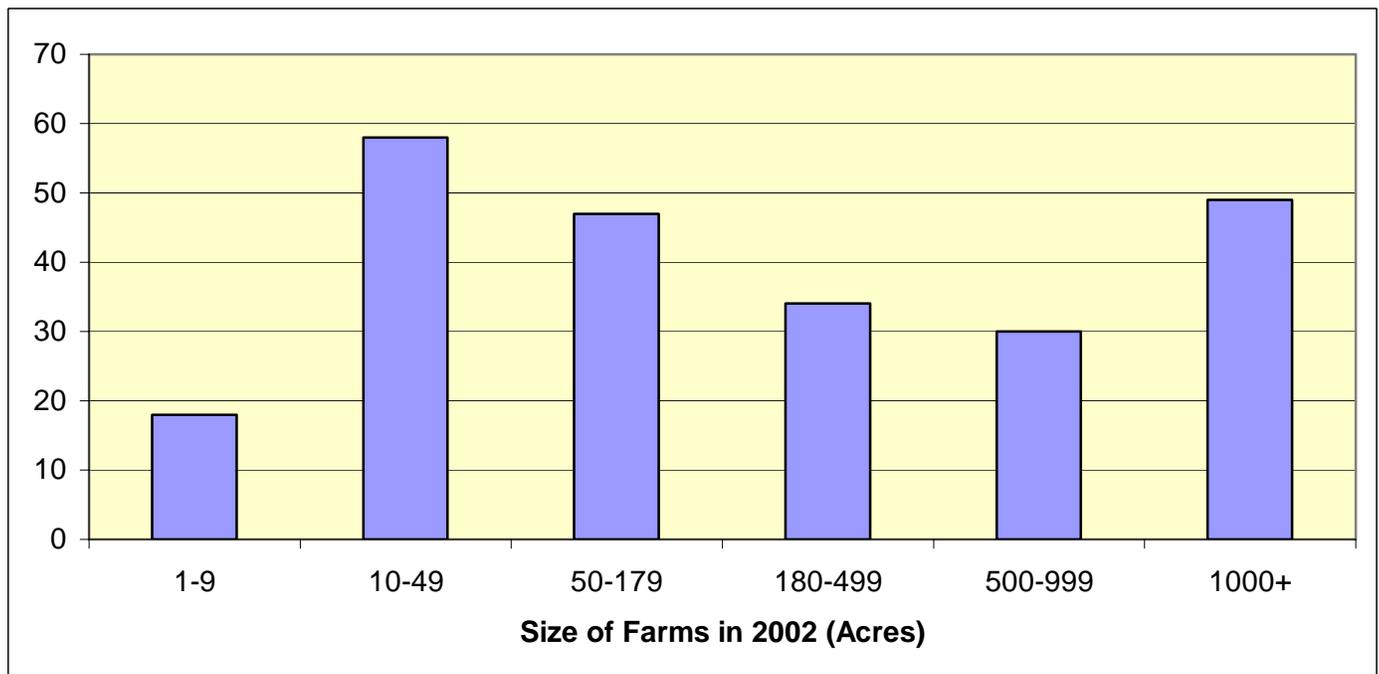
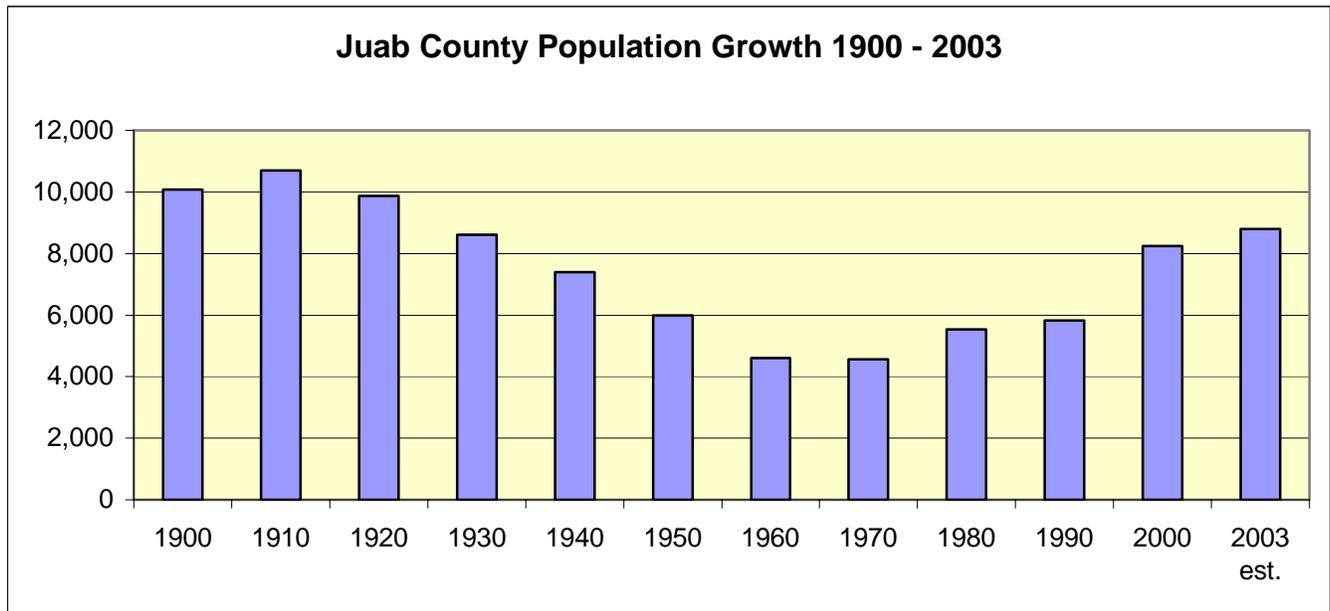
- 1) **Lowland Riparian** (riparian areas <5,500 ft elevation; principal vegetation: Fremont cottonwood and willow)
- 2) **Wetland** (marsh <5,500 ft elevation; principal vegetation: cattail, bulrush, and sedge)
- 3) **Mountain Riparian** (riparian areas >5,500 ft elevation; principal vegetation: narrowleaf 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															
	Urban Encroachment on Agricultural Land	X	X	X	X					X				X		
	Marketing of Resource Products	X	X													
	Innovation Needs															
	Non-Traditional Land Uses	X	X	X										X		
	Population Demographics, Changes and Trends															
	Special Considerations for Land Mangement (High State and Federal Percentage)				X					X						
	Active Resource Groups (CRMs, etc)															
	Full Time vs Part Time Agricultural Communities													X		
	Size of Operating Units															
	Land Removed from Production through Easments	X	X	X												
Land Removed from Production through USDA Programs	X															
Other																

Census and Social Data



Number of Farms: The 2003 Utah Ag. Statistics reported from the 1997 census, the number of farms in Juab County to be 228 with a total of 275,632 acres making the average farm size 1208.9 acres.

Number of Operators: 306

- Full-Time Operators: 41
- Part-Time Operators: 265

Public Survey/Questionnaire Results:

#4 Zone Natural Resources Conservation Concerns Survey Results

(including mailed surveys & surveys in public meetings & outreach efforts)

Date: May & June 2005

County/Soil Conservation District: NO DEMOGRAPHICS REPORTED.

Total Number of Respondents:

SCORING:

32

3 = a concern that should be addressed immediately

2 = a concern that should be addressed in the future

1 = a minor concern

0 = not a concern

Topic of Concern	3	2	1	0
Soil loss or erosion on land or along stream channels	12	11	4	3
Soil condition due to compaction or other changes	4	7	13	4
Soil contamination due to salts, chemicals or other materials	5	11	8	5
Adequate water supply for desired uses	20	5	1	3
Available water is clean enough for desired uses	16	9	2	3
Ground water quality and quantity	16	7	4	2
Storm runoff or flooding	10	12	6	1
Air quality, including blowing dust, smells and other pollutants	7	11	10	1
Plant health, production and adequate quantities	5	15	5	4
Presence of invasive plants including noxious weeds	18	8	3	0
Wildfire hazard	13	8	5	2
Adequate food, water and cover available for livestock	11	13	4	1
Adequate food, water and cover available for wildlife	7	14	6	2
Wildlife species of special concern including threatened & endangered	4	10	13	2
Loss of open space or agricultural lands	14	9	4	2
Urban/suburban growth	6	13	3	7
Adequate energy sources available	13	12	2	2
Recreation opportunities	4	15	9	1
Adequate support of historic/prehistoric resources	5	11	9	4
Adequate marketing for agricultural products	16	6	5	2

Remarks: Top 5 concerns (Immediate, Future, Minor)

Immediate

- 1-Adequate water supply for desired uses
- 2-Presence of invasive plants including noxious weeds
- 3-Available water is clean enough for desired uses
- Ground water quality and quantity
- Adequate marketing for agricultural products
- 4-Loss of open space or agricultural lands
- 5-Wildfire hazard
- Adequate energy sources available

Demographics

Gender:

# males	# females

Ethnicity/Race:

Future

- 1-Plant health, production and adequate quantities
- Recreation opportunities
- 2-Adequate food, water and cover available for wildlife
- 3-Adequate food, water and cover available for livestock

	Native American	Asian	Caucasian
Hispanic			

African

Urban/suburban growth	American	Other		
4-Storm runoff or flooding				
Adequate energy sources available				
5-Soil loss or erosion on land or along stream channels	Age:			
Soil contamination due to salts, chemicals or other materials	18-24	25-38	39-50	51-65
Air quality, including blowing dust, smells and other pollutants				
Adequate support of historic/prehistoric resources				
Minor	66+			
1-Soil condition due to compaction or other changes				
Wildlife species of special concern including threatened & endangered				
2-Air quality, including blowing dust, smells and other pollutants				
3-Recreation opportunities				
Adequate support of historic/prehistoric resources				
4-Soil contamination due to salts, chemicals or other materials				
5-Storm runoff or flooding				
Adequate food, water and cover available for wildlife				

Footnotes / Bibliography

1. General information about Juab County obtained from the official Juab County website:
<http://www.co.juab.ut.us>
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 disc ordered 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 Utah division of Water Rights.
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 Utah Division of Water Quality.
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>