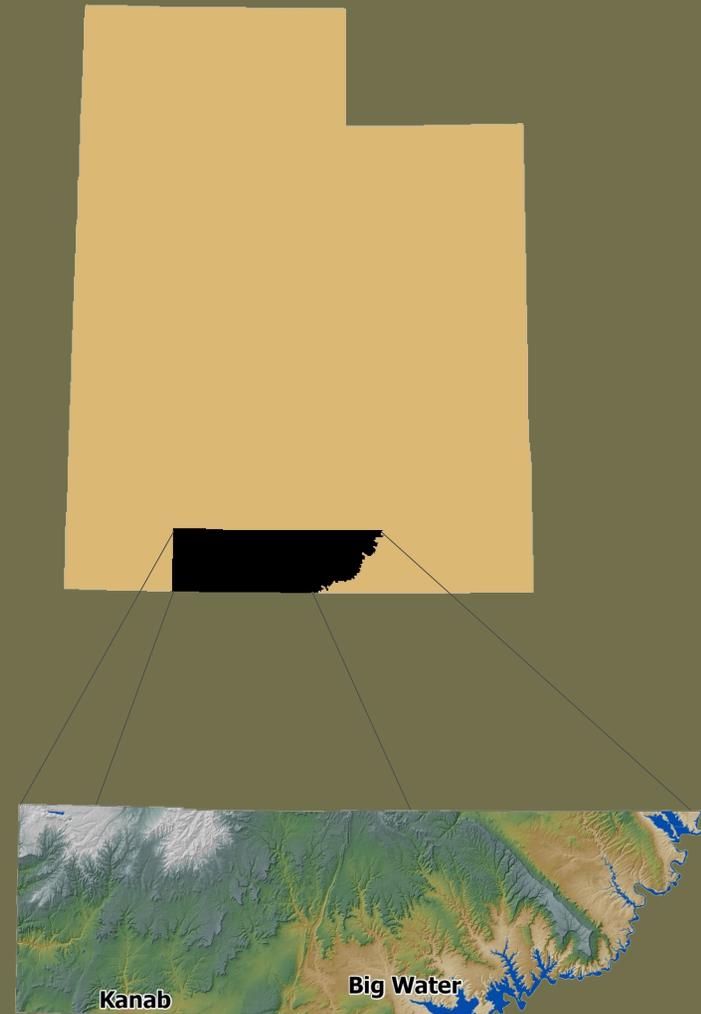


# KANE COUNTY RESOURCE ASSESSMENT

FEBRUARY 2013

*Conserving Natural Resources For Our Future*

KANE COUNTY CONSERVATION DISTRICT



## Acknowledgments

### Kane County Conservation District

with the:

- Utah Association of Conservation Districts
- Utah Department of Agriculture and Food
- Natural Resources Conservation Service

In partnership with the:

### Utah Conservation Commission

- Utah Conservation Districts Zone 5
- Utah Association of Conservation Districts
- Utah Department of Agriculture and Food
- Utah Department of Environmental Quality
- Utah Department of Natural Resources
- Utah School and Institutional Trust Lands Administration
- Utah State University Extension
- Utah Weed Supervisor Association

### UtahPCD

#### State Agencies and Organizations:

- Utah Association of Conservation Districts
- Utah Department of Agriculture and Food
- Utah Department of Community and Culture
- Utah Department of Environmental Quality
- Utah Department of Natural Resources
- Utah Resource Conservation & Development Councils
- Utah School and Institutional Trust Lands Administration
- Utah State University Cooperative Extension Service
- Utah Energy Office

#### Federal Agencies:

- U.S. Department of Interior
  - Bureau of Land Management
  - U.S. Fish and Wildlife Service
  - Bureau of Reclamation
- U.S. Department of Agriculture
  - U.S. Forest Service
  - Natural Resources Conservation Service
  - Agriculture Research Service
  - Farm Service Agency

## Other

- State Historical Preservation Office
- Governor's Office of Planning and Budget
- Utah County Commission

## Credits

- Tyce Palmer and Anne Excell – Writer/Document Compilation, Zone 5
- Anne Johnson – GIS Specialist/Maps/Illustrations, UDAF
- Patti Sutton – GIS Specialist, NRCS
- Cherie Quincieu – Document Design, UACD
- Kandice Johnson – Editor, UACD

## Contributors/Specialists

**Many thanks to all those that have made comments and suggestions for this project.**

# Table of Contents

• <b>Executive Summary</b>	ii
<hr/> Why a Resource Assessment? · Natural Resource Priorities and Concerns · General Resource Observations	
• <b>Introduction</b>	I
<hr/> Conservation District Movement · Conservation Progress · Public Outreach	
• <b>County Overview</b>	2
<hr/> Background · Land Ownership	
• <b>Natural Resource Priorities and Concerns</b>	4
<hr/> Watershed Health · Noxious Weeds · Grazing/Rangeland Improvement · Wildlife	
• <b>General Resource Observations</b>	12
<hr/> Soil · Water · Air & Climate · Plants · Animals · Humans: Social & Economic Considerations	
• <b>References &amp; Credits</b>	18
<hr/> Sources	

# Kane County Resource Assessment: Executive Summary



## Why a Resource Assessment?

The Kane County Conservation District has developed this resource assessment with the goal that conservation efforts in the county address the most important local resource needs. This report identifies natural and social resources present in Kane County and details specific areas of concern. Local, state, and regional entities can use this assessment to develop county resource management plans or to target conservation assistance needs.

We recognize that all who could have provided information may not have had the opportunity. This document is dynamic and will be updated as additional information is available.

Your comments are requested:

Kane County Conservation District  
P.O. Box 806  
Panguitch, UT 84759  
(435) 676-8189

## Natural Resource Priorities and Concerns

The Kane County Conservation District has identified five natural resource priorities and concerns. These priorities receive special emphasis because of their immediate significance to Kane County.

1. Watershed Health
2. Noxious Weeds & Invasive Species
3. Grazing & Rangeland Improvement
4. Wildlife

## General Resource Observations

Natural and social resources are categorized as soil, water, air, plants, animals, and humans (SWAPA + H). This assessment describes the general condition of these resources and highlights additional concerns in each category. As opportunities become available to address these issues, and as circumstances change, their emphasis should be elevated accordingly.

**Soil:** Highly erodible soils and wind erosion is a concern.

**Water:** Availability of water is a concern, as is the water erosion that occurs along the Virgin River and Kanab Creek.

**Air/Climate:** Concerns are related to wind erosion in the valleys.

**Plants:** Noxious weeds are a major concern, as is the invasion of pinyon/juniper.

**Animals:** Increasing elk populations and decreasing sage-grouse populations are a concern.

**Humans:** Restrictions and threats to livestock grazing and potential impact to the local economy is a concern.

# Introduction

## The Conservation District Movement

The Dust Bowl of the 1930's brought the beginning of national programs for conserving soil and water resources in the United States. On April 27, 1935, Congress declared soil erosion "a national menace" and established the Soil Erosion Service. Since then, the agency has changed to the Natural Resources Conservation Service (NRCS). In May of 1936, farmers were allowed to set up their own districts to direct soil conservation practices. Today, Utah has 38 conservation districts.

## Conservation Progress

Since the organization of the Kane County Conservation District in 1942, great strides have been made toward increasing and sustaining natural resources in Kane County. The 2005 resource assessment listed the most critical resource concerns as: 1) adequate water supply for desired uses, 2) presence of invasive plants, including noxious weeds, 3) loss of open space for agricultural lands, 4) wildfire hazards, 5) soil loss or erosion on land or along stream channels. The 2010 resource assessment provides an opportunity to evaluate the progress made during the last several years and to set new goals to address the highest priority conservation needs in Kane County.

## Public Outreach

In August 2005, the Kane County Conservation District conducted a survey to find out how the public views the county's natural resources and what conservation issues were most pressing. Respondents indicated that water quantity is still a major concern as well as properly managing grazing land to maintain a sustainable agricultural industry. Other top concerns included: weeds, particularly Scotch thistle, white top and knapweed; water storage facilities and structures; protecting sage-grouse habitat; and increasing elk populations and maintaining a healthy deer population on the Paunsagaunt Plateau in Kane County.

*Conservation districts provide local leadership and education to connect private property owners with state and federal assistance to improve, protect, and sustain Utah's soil, water, and related natural resources.*



*Cattle grazing in Kane County.*



Photo courtesy of NRCS

*A great "roller" moves across the land during the Dust Bowl.*

# Kane County Overview

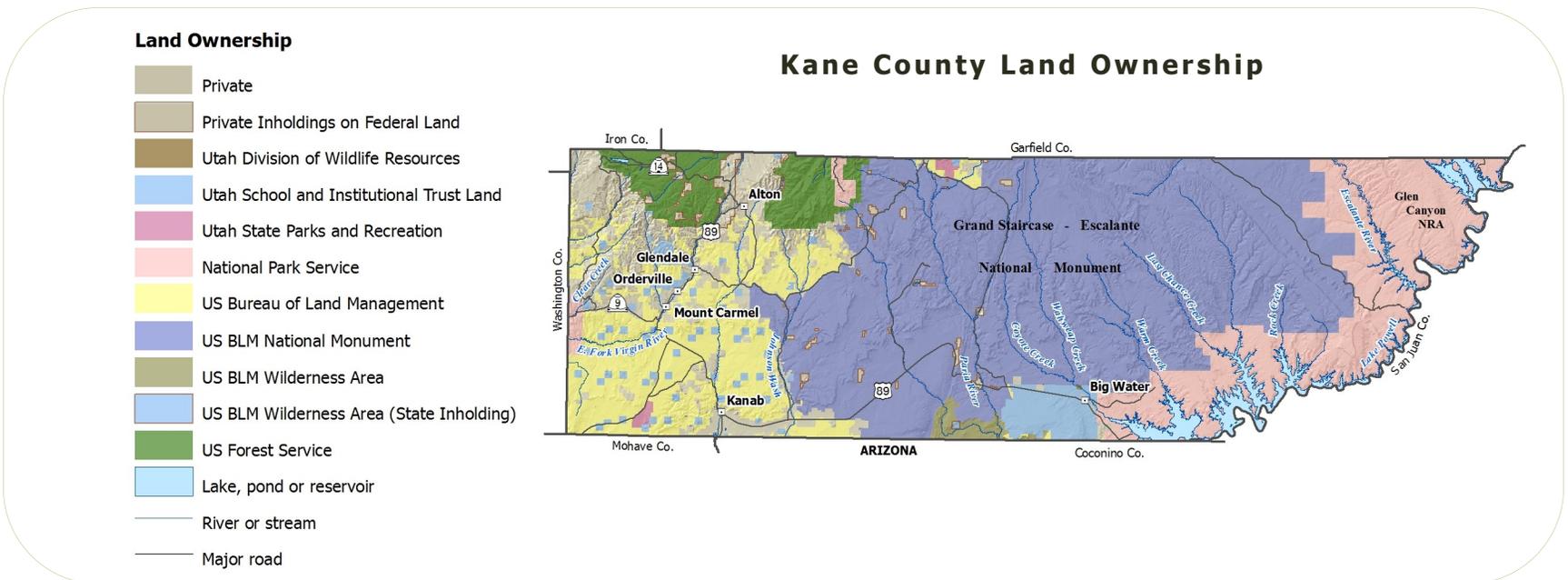
## Background

Kane County is located along Utah's southern border with Arizona. Garfield County borders Kane on the north, Iron County borders Kane on the west, and San Juan County borders Kane on the southeast. The main highway running through Kane County is U.S. Highway 89. The high desert landscape of Kane County belongs to the Colorado Plateau geographical province. The waters of man-made Lake Powell on the Colorado River form the county's eastern border, and most of the streams in Kane County are part of the Colorado River system.

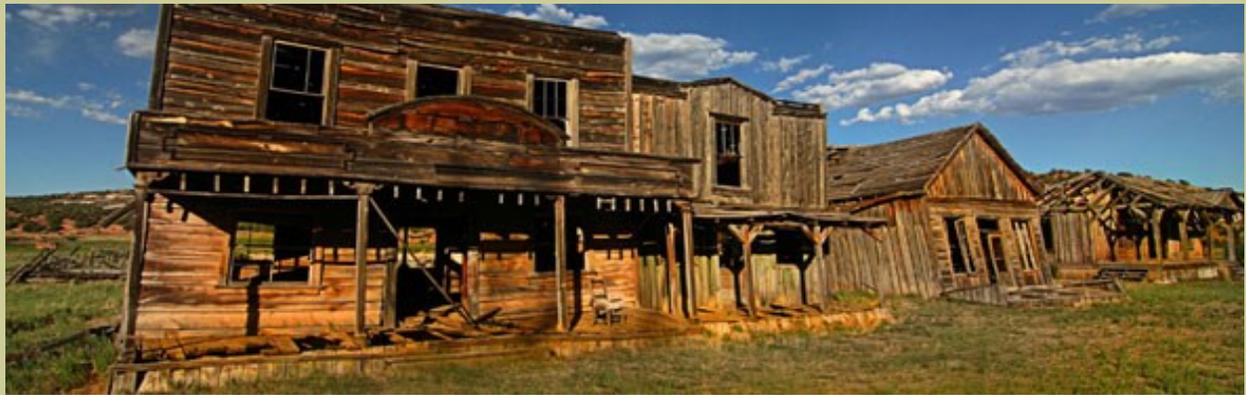
Kane County has an area of about 2,553,375 acres. Of these acres, 85% are federally owned, 10% are state owned, and 5% are privately owned. Kane County's population is about 6,046. The density of the county is approximately 1.47 people per square mile.<sup>1</sup>

Mean annual valley temperatures vary from 45°F to 61°F. Summer temperatures over 110°F are not uncommon. Precipitation ranges from six inches in the desert areas to 35 inches in the high mountains. Elevations range from 2,297 feet to 10,375 feet above sea level.

The area is marked by colorful cliffs and plateaus on the east to broad valleys and mountains to the west. Pinyon/juniper and mountain shrubs are the primary vegetation. These plants cover nearly one-third of the area, with rock land accounting for 15 percent. There are 25,600 acres of irrigated cropland in the county. The federal government administers over two-thirds of the total area and the state about eight percent. About 23 percent of the land is in private ownership, and 1.3 percent is tribal lands.<sup>2</sup>



1 2005 NRCS Resources Assessment  
2 State Water Plan, Kanab Creek



## KANE COUNTY

*Photos courtesy of the Kane County Travel Council Website.*

# Natural Resource Priorities and Concerns

## WATERSHED HEALTH

Watershed health in Kane County has been identified as a major priority, particularly in the Upper Kanab Creek Watershed. Of particular concern, within this watershed, is the expansion and encroachment of the pinyon/juniper monoculture into areas once dominated by shrubs, grasses, and other herbaceous vegetation. An increase in pinyon/juniper affects soil resources, water quantity and quality, fire regimes, plant community structure and composition, forage production for livestock and wildlife, and wildlife habitat. The conservation district and county officials, with the BLM, support a watershed level restoration project in this watershed. This project would utilize a variety of resource management tools, such as prescribed fire, mechanical and chemical treatments, and seedings and grazing management strategies to enhance sagebrush and grassland areas and reduce the invading pinyon/juniper throughout the project area.

### Strategies

- Support the Bureau of Land Management (BLM) Upper Kanab Creek Watershed Vegetation Management Project Planning proposal and environmental assessment.
- Support other planning efforts that conform and associate with the watershed project's application to vegetation treatments, including BLM fire management planning, the Healthy Forest Restoration Act, BLM Vegetation Treatments EIS, National Sage-Grouse Conservation Strategy, Color Country Adaptive Resource Management Plan for Sage-Grouse, UDWR Management Plan for Mule Deer, and rangeland health standards.
- Develop important partnerships with the BLM and other federal and state, conservation district, and local elected officials, ranching industry and agricultural groups, wildlife and sportsman groups, and other interests to prioritize and develop a working watershed restoration project.
- Develop funding opportunities, with watershed partnerships, for watershed restoration projects.

### Actions & Tasks

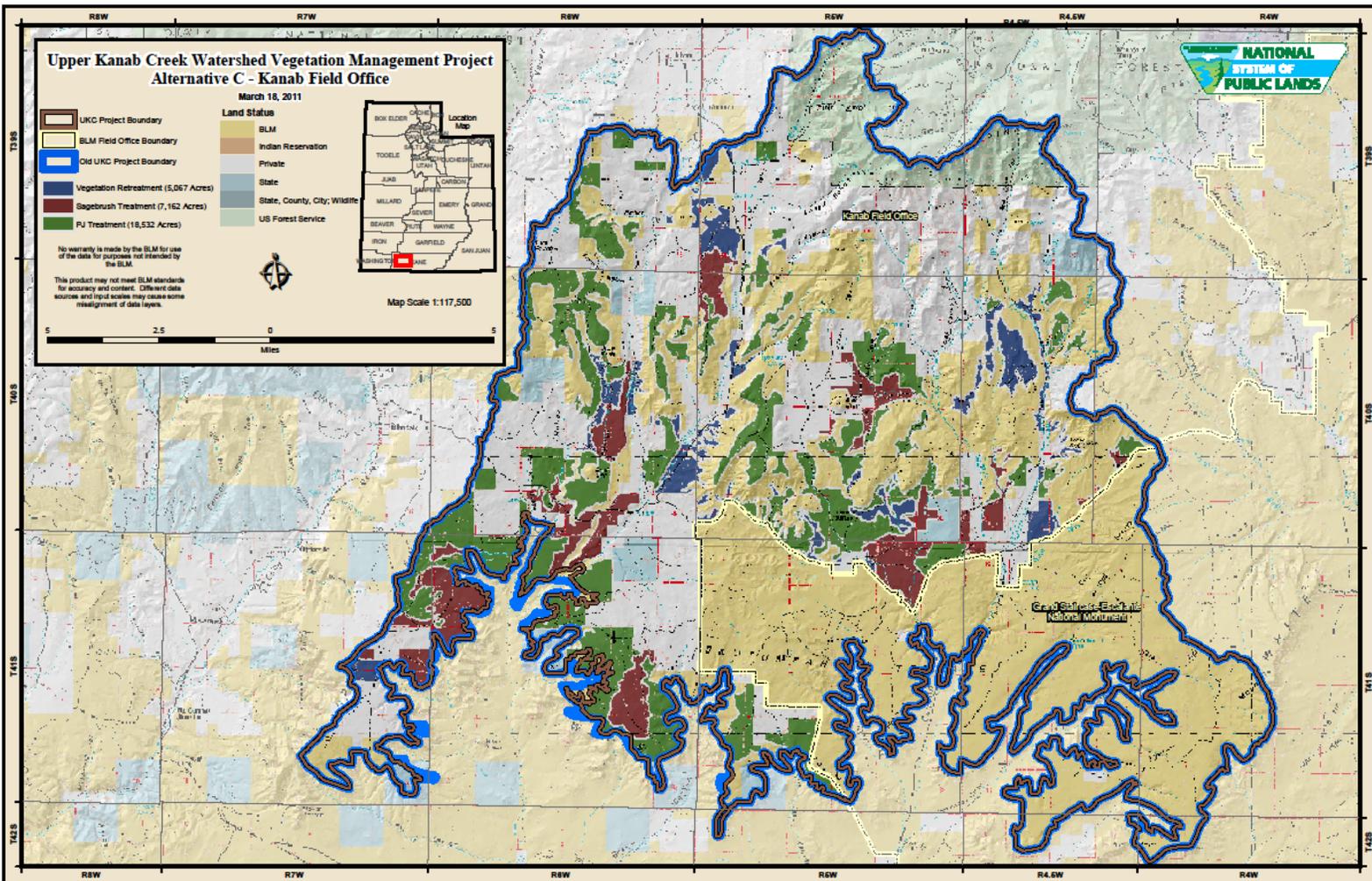
- Continue the development and organization of a watershed steering committee, through the local leadership efforts of the conservation district and their conservation partners.
- Develop relationships with district's legislative officials, locally elected officials and BLM leadership and other partners to facilitate funding mechanisms and actions pertaining to a working watershed restoration project.
- Develop a local Coordinated Resource Management Planning approach with the steering group and stakeholders and organize technical advisory committees within the conservation partnership.

### Outcomes

Outcomes related to watershed health include better plant diversity and forage for livestock and wildlife, increased water quantity and quality for wildlife, livestock, and communities downstream, improved wildlife habitat for deer, elk, sage-grouse, and other important nongame species, improved soil conditions and less erosion within the watershed, and mitigated future catastrophic wildfires in the area.

## Kanab Creek Watershed

The Kanab Creek/Virgin River Basin is tributary to the Lower Colorado River Basin. The Lower Colorado Basin includes everything below Lee's Ferry. The total area of the Lower Colorado River (Kanab Creek/Virgin River) Basin in Utah is 2.2 million acres. This includes the Virgin River, 1.8 million acres; Johnson Wash, 211,000 acres; and Kanab Creek, 189,000 acres.



# Natural Resource Priorities and Concerns

## NOXIOUS WEEDS & INVASIVE SPECIES

Noxious weed infestation and invasive species are major concerns and a priority in Kane County. Over the last several years, a ramped up effort throughout the county has taken place, with the reorganization of the county weed board, the creation of the Canyon Country Cooperative Weed Management Area (CWMA) and its committee, increased county funding for weed mitigation efforts, and additional opportunities for state weed grants to focus on critical priority areas. Noxious weeds such as Scotch thistle, white top, Russian knapweed are among the top species that are targeted by the county. Invasive species such as Russian olive and tamarisk (salt cedar) are also being targeted on waterways and are a problem in parts of the Virgin River, Kanab Creek, and Paria River and their tributaries.

### Strategies

- Increase funding opportunities for noxious weeds and invasive species.
- Develop more effective leadership as the county weed board and broaden board's identity and actions. Maintain relationship and cooperation with the Canyon Country CWMA.
- Develop a public outreach campaign educating citizens and landowners about noxious weeds.
- Improve county inventory of noxious weeds and where priority areas need to be focused.

### Actions & Tasks

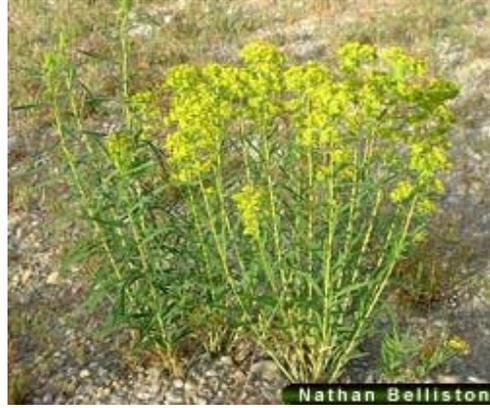
- Develop state noxious weed grant proposals through the Canyon Country Cooperative Weed Management Area and the Kane County Weed Board.
- Continue to upgrade county-wide weed and invasive species inventory maps for effective coordination and planning efforts.
- Develop a county noxious weed and invasive species information and education program through the CWMA, weed board, and conservation district.
- Sponsor noxious weed spray days in critical areas, with CWMA partnership and local landowners.
- Present noxious weed education to youth at natural resource field days.
- Develop county noxious weed and invasive species information and materials to distribute to communities and landowners throughout the county.
- Coordinate efforts with the CWMA, private landowners, and agencies to mitigate Russian olive and develop conservation plans for private landowners and public lands.
- Develop effective county weed board meetings. Invite the county commission and give direction and recommendations to county weed supervisor, county sprayer, and seasonal staff. Give input to the CWMA on weed grant proposals.

### Outcomes

Outcomes related to noxious weeds and invasive species include increasing weed control, improving landscapes in the county's watersheds, improving water quality and quantity, increasing forage for livestock, and improving wildlife habitat on public and private lands.



Hoary Cress



Leafy Spurge



Russian Knapweed



Salt Cedar



Scotch Thistle

## 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 and Food under Section 4-17-3, Utah Noxious Weed Act:

- Bermudagrass\* (*Cynodon dactylon*)
- Black henbane (*hyoscyamus niger*)
- Canada thistle (*Cirsium arvense*)
- Dalmation toadflax (*Linaria dalmatica*)
- Diffuse knapweed (*Centaurea diffusa*)
- Dyer's woad (*Isatis tinctoria*)
- Field bindweed (wild morning-glory) (*Convolvulus arvensis*)
- Hoary cress (*Cardaria drabe*)
- Houndstounge (*Cynoglossum officianale*)
- Johnsongrass (*Sorghum halepense*)
- Leafy spurge (*Euphorbia esula*)
- Medusahead (*Taeniatherum caput-medusae*)
- Musk thistle (*Carduus mutans*)
- Ox-eye daisy (*Chrysanthemum leucanthemum*)
- Perennial Pepperweed (*Lepidium latifolium*)
- Poison hemlock (*Conium maculatum*)
- Purple loosestrife (*Lythrum salicaria*)
- Quackgrass (*Agropyron repens*)
- Russian knapweed (*Centaurea repens*)
- Saltcedar (*Tamarix ramosissima*)
- Scotch thistle (*Onpordum acanthium*)
- Spotted knapweed (*Centaurea squarrosa*)
- Squarrose knapweed (*Centaurea squarrosa*)
- St. Johnswort (*Hypericum perforatum*)
- Sulfur cinquefoil (*Potentilla recta*)
- Yellow starthistle (*Centaurea solstitialis*)
- Yellow toadflax (*Linaria vulgaris*)

\*Bermudagrass is not considered a noxious weed in Washington County.

# Natural Resource Priorities and Concerns

## GRAZING & RANGELAND IMPROVEMENT

Kane County is a large, natural resource oriented county. However, only a little over four percent of the land in Kane County is privately owned. The agricultural and ranching industry depend on public grazing lands and their accompanying resources for economic stability. Therefore, it is in the county's best interest that Bureau of Land Management (BLM) and U.S. Forest Service (USFS) land management practices encourage economic and ecological viability. Livestock production in this rural county continues to play a vital role in the county's lifestyle and economic base. There is a need for better grazing management practices and rangeland improvements throughout the county. Encroachment of pinyon/juniper and sagebrush is a priority concern. Lack of good pasture fences, grazing and pasture allotment management, and spring developments and poor water distribution are also areas of concern. Promoting rangeland projects that will benefit livestock and wildlife, including the threatened sage-grouse (considered the most southerly population in the nation) is also a priority.

### Strategies

- Promote proven, science based grazing management practices and strategies throughout the county's public and private lands, prioritizing larger landscape scale projects on BLM, Forest Service, State Trust Lands, and BLM/Grand Staircase Escalante National Monument rangelands.
- Assist permittees and ranchers in implementing best management practices (BMPs) on private pastures and public grazing allotments that will improve and increase the carrying capacity of those pastures and allotments, thus maintaining healthy livestock production while stabilizing or increasing AUMs.
- Improve coordination with public land managers in prioritizing critical areas for conservation projects, meet with them on a more consistent basis, and educate them about the unique opportunities of working with conservation districts.

### Actions & Tasks

- Utilize Grazing Improvement Program (GIP) staff, district planners, the extension agent, NRCS range specialists, and conservation partners to work with permittees and federal and state land managers to develop rangeland improvement projects, environmental assessments, and project plans for key landscapes needing improved conservation treatments.
- Promote and assist producers in applying for and giving technical assistance for federal and state conservation cost-share programs, such as GIP, state Agriculture Resource Development Loans (ARDL), the USDA Environmental Quality Incentive Program, and other conservation programs.
- Coordinate with state and federal land managers at regional conservation coordinating committee meetings, conservation district meetings, range tours and workshops, UACD Zone Five annual meetings, regional GIP board meetings, and other regional and county functions and venues.
- Promote and look for large-scale management plans that could benefit the permittees, improve infrastructure (cost), and benefit the landscape for livestock and wildlife.

### Outcomes

Outcomes related to rangeland health include healthy rangelands and watersheds, increased carrying capacity for livestock and wildlife, positive cooperation with state and federal land management agencies, increased economic base for Garfield County, and maintained sustainability of livestock industry within the county.



Heaton Brothers Ranch in Kane County, one mile south of Alton, Utah. Cattle grazing on seeded range. This picture was taken from the south-east corner of the property, looking northeast. Ross Heaton and his son, Karl, are on the horses. The grass seeding shown in the picture was made in the fall of 1952, on approximately 1,200 acres. It was seeded to smooth brome, intermediate wheat, orchard, and yellow blossom sweet clover. While we don't usually recommend orchard grass for seeding in this area, orchard was recommended in this case because the seed was produced locally. Clippings made since the second growing season have shown that this land is producing between 1,500 and 2,500 pounds of air dry palatable forage per acre. Before seeding, the range was producing about 250 pounds of sagebrush per acre and there was no grass or palatable weeds. Cost of clearing and seeding ran between \$10 and \$15 per acre. Seeding this spring-fall range was a considerable help to the ranchers. Feed in southern Utah is normally short in the spring.

*Photo taken in 1958, by Earl Spendlove.*



*Range restoration projects on the Upper Kanab Creek Watershed.*



# Natural Resource Priorities and Concerns

## WILDLIFE

Kane County has a diversified and healthy population of wildlife, including big game species such as mule deer and Rocky Mountain elk. The county is also host to what is considered the most southerly populations of the greater sage-grouse, which has been in decline over the last century. While planning and conservation efforts to increase sage-grouse numbers are in place (through the conservation partnership efforts of the Color Country Adaptive Resource Management (CCARM) group, local officials, and agencies), the numbers and management of elk in many county watersheds is of great concern. Elk numbers in Kane County have increased over the last two decades, as in other parts of the west, and larger herds of elk are being spotted and impacting private lands in nontraditional lower elevation areas in the county. Increased numbers of elk above management levels on the Paunsagaunt Plateau also adversely affect livestock permit holders in the forest, as elk compete with livestock for forage and are harder to manage in a grazing system or pasture allotment plan. Elk are generally classified as both a grazer and a browser, with grasses and forbs making up the bulk of their summer diet. However, during harsh winters elk consume large quantities of browse species. These same browse species available to elk in the area are some of the same species consumed and relied on by mule deer in the winter. The Paunsagaunt Plateau is also home to one of the state's only two premium trophy mule deer hunting units.

### Strategies

- Promote large scale watershed restoration efforts for enhanced wildlife grazing and browsing habitat at higher elevations (Forest Service) for better management of elk.
- Support landowners, landowner groups, sportsman's groups, agencies, and local officials in maintaining elk as reasonable management populations.
- Support additional depredation opportunities, including issuing additional hunting tags for local landowners impacted by elk on farms and ranches.
- Support DWR's management of the Paunsagaunt Deer Herd Unit as a premium mule deer buck hunting unit, with mule deer as priority species, and improving mule deer habitat.
- Support and coordinate with CCARM group in developing projects with landowners and public land management agencies that will increase and promote sage-grouse habitat.

### Actions & Tasks

- Coordinate with federal and local officials within the Upper Sevier Watershed Management Planning area, particularly the East Fork Sevier River Watershed and Paunsagaunt Plateau area, regarding elk management strategies for Kane County.
- Coordinate with CCARM group, private landowners, NRCS, BLM, and wildlife officials in identifying prime sage grouse habitat restoration projects within the county.
- Support efforts with BLM and local officials to forward the Upper Kanab Creek Watershed Vegetation Project, which would enhance over fifty thousand acres for wildlife habitat.
- Coordinate with GIP Coordinator and the Southwest GIP Board in developing GIP program projects, education, and outreach to local livestock producers.
- Continue to market ARDL and USDA Farm Bill programs to local cooperators within the county.

## Outcomes

Outcomes related to wildlife management include more diverse and healthy habitat for wildlife, both big-game and non-game species, increased populations of sage-grouse within the county, which will aid in keeping the species off the threatened and endangered species list, healthier and more productive uplands and rangeland for wildlife and livestock, improved forest land through vegetation improvements and regeneration of aspen stands, which will benefit wildlife, and maintained and improved important habitat for the trophy mule deer unit on the Paunsagaunt Plateau, which also contributes to the local economy.

### Greater Sage Grouse in Color Country



Female

#### Natural History Information

**Greater Sage-grouse** (*Centrocercus urophasianus*), inhabit open sagebrush plains. This large, ground-dwelling, chicken-like bird (25-30" long; 3-7 lbs) is similar to the smaller blue grouse (21" long; 3.5 lbs), which lives at higher elevations. Their mottled brown, black and white coloring serves as a camouflage from predators. Each spring, male sage grouse gather together and perform courtship displays on historic strutting grounds (leks). Females then lay 5-9 eggs, and raise their chicks in moist habitat where high-protein insects are available.



Male

#### Status

Studies estimate that Greater Sage-grouse have declined approximately 50% in the past century. Declining Greater sage-grouse numbers may be an indicator that our sagebrush-steppe community is unhealthy or declining. Hunting for sage-grouse has been closed in this area since the early 1990s.

#### Threats to Sage-Grouse Populations

- Native and non-native predators
- Increased populations of invasive vegetation
- Loss of sagebrush habitat
- Habitat loss due to roads, utilities, and other development



**Legend**  
■ Broad leaved habitat  
■ CCARM local working group  
■ Counties

#### How Can I Help?

**Respect the birds and their habitat by:**

- Viewing sage-grouse from a distance
- Avoiding and not disturbing strutting grounds during breeding season
- Staying on ATV trails or existing roads
- Reporting sage-grouse sightings to local management agencies (UDWR:435-865-6100)
- Reporting poaching (1-800-662-DEER)

#### Finding a Solution –Working Together!

Color Country Local Working Group formed several years ago to address Greater Sage-grouse needs in Southern Utah. The working group consists of: Utah Farm Bureau Federation, Utah State University Extension, Color Country Resource Conservation & Development, Upper Sevier River Community Watershed Project, Local Conservation Districts, County Commissions, Bureau of Land Management, U.S. Forest Service, Natural Resources Conservation Service, Utah Division of Wildlife Resources, local ranchers and farmers, and YOU!

For more info contact:  
[nicki.frey@usu.edu](mailto:nicki.frey@usu.edu) or  
 stop by your local  
 Extension office.



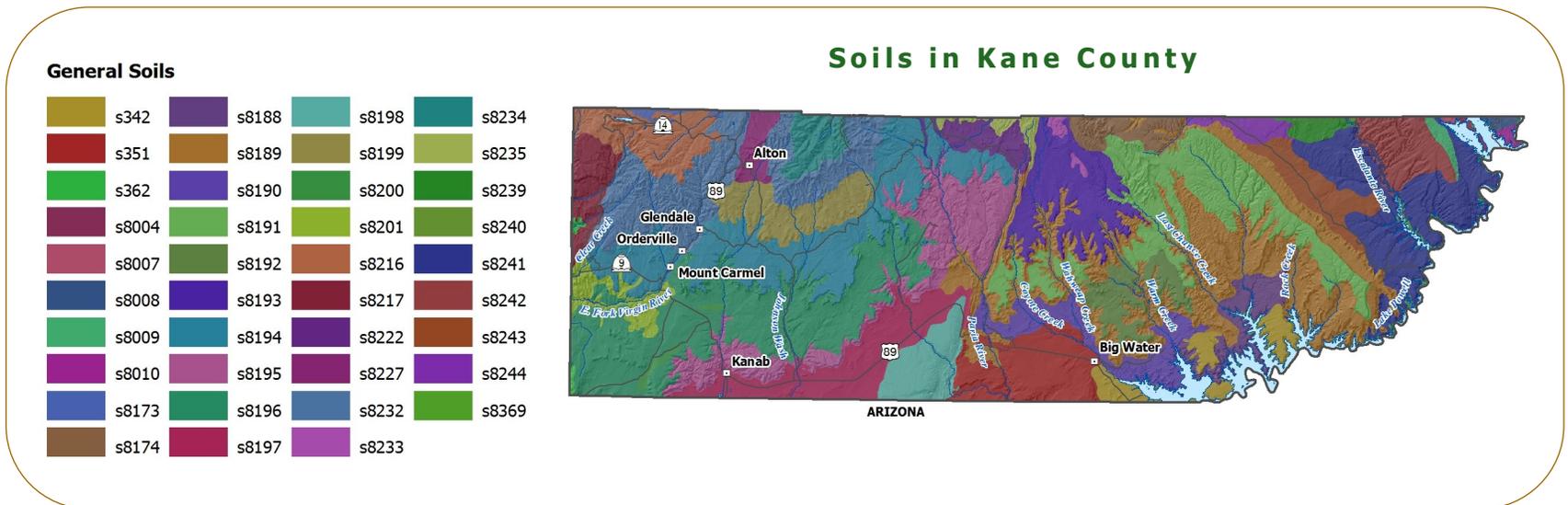


# General Resource Observations

## SOIL

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 24%, from .116 to .028 tons/acre/year, from 1982 to 1997.<sup>1</sup>

Wind erosion is more of an issue in Kane County than water erosion. In the valleys and lower areas where the wind is stronger, there is a higher occurrence of wind erosion. Water erosion occurs along the Virgin River and Kana Creek.



Soil limitations identified in soil surveys include but are not limited to frequent flooding, ponding or standing water, shrink/swell properties, settling after saturated with water, high erosion properties, potential excavation difficulties, subsidence properties, and danger of sliding on slopes.

# WATER

New water storage and delivery facilities have been proposed to meet the demand of water for the needs of projected population growth. These proposals have invoked objections by special interest groups seeking to preserve and protect the area in its present state. This, coupled with proposed wilderness areas where no development is allowed, could severely restrict future development. The need for long-range plans is clear.

Based on population projections, the demand for culinary and secondary water supplies will increase over four times by 2040. This amounts to diversions of 82,710 acre-feet and 65,030 acre-feet, respectively, by 2040.

Agricultural water use has remained fairly constant. Future development will displace some presently irrigated farm land. This will make irrigation water available for other uses.

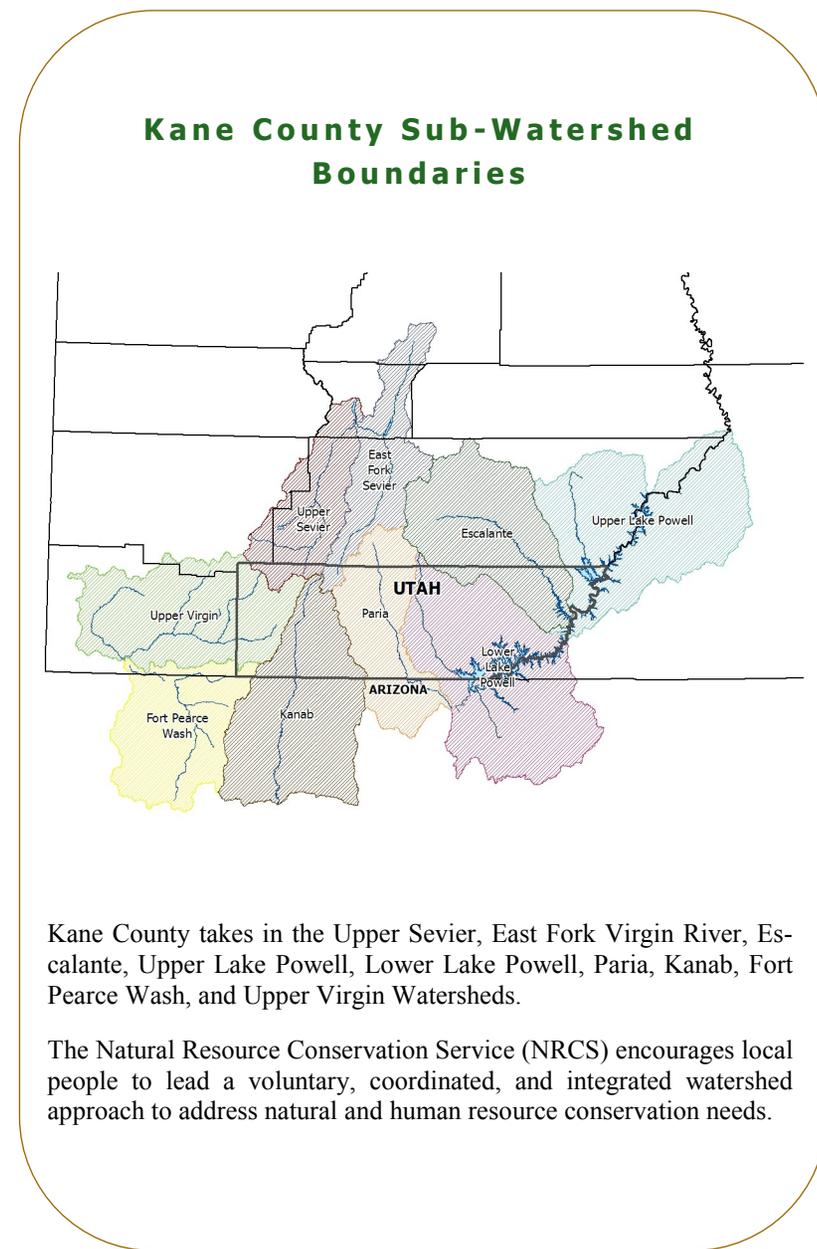
The demands and needs for water-based recreation and water for fish and wildlife will increase. Recreation activity should increase at about the same rates as population. Fish and wildlife needs will increase at a slower rate.

The total area of all agricultural lands in the county is about two million acres. Less than two percent of the total land area is used as cropland, although six percent have soils suitable for cultivation. The balance is used for grazing. There are over 90,000 AUMs of livestock grazing, with nearly 50,000 AUMs allocated for wildlife.

Irrigated cropland covers 25,600 acres and depletes 51,300 acre-feet of water annually, mostly for alfalfa and pastures. Most of the crop production is used to support the livestock industry, although some alfalfa is exported.

There are critical erosion areas throughout the basin. These areas are eroding at over three times the background geologic rate, primarily because the watershed range condition is poor. Water deficits on irrigated cropland are 19,000 acre-feet, or 37 percent of the average depletion. It is estimated that about 7,000 acres of irrigated cropland will be lost to other uses by the year 2040.

There are various alternatives for solving problems including canal lining and pipelines, reservoir storage, and rangeland improvement measures. Increasing resource use efficiencies is always a viable option.<sup>1</sup>



Kane County takes in the Upper Sevier, East Fork Virgin River, Escalante, Upper Lake Powell, Lower Lake Powell, Paria, Kanab, Fort Pearce Wash, and Upper Virgin Watersheds.

The Natural Resource Conservation Service (NRCS) encourages local people to lead a voluntary, coordinated, and integrated watershed approach to address natural and human resource conservation needs.

<sup>1</sup> State Water Plan-Kanab Creek/Virgin River Basin



# PLANTS

Noxious weeds are a concern throughout Kane County. They adversely affect crop ground and range land. The invasion of undesirable plants, such as cheat grass and pinyon/juniper, is an increasingly serious problem.<sup>1</sup>

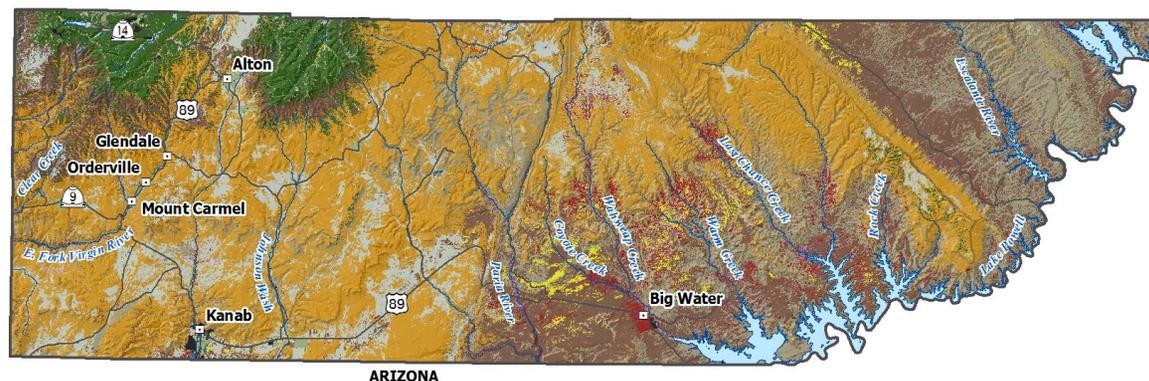
There has been a high occurrence of mortality in the sagebrush flats. The sagebrush is rapidly dying off in some areas. Many rangelands in Kane County that have been treated in the past years have turned into a monoculture, affecting the health of the ranges.<sup>1</sup>

According to the 2010 Utah Agricultural Statistics, there were 8,000 tons of alfalfa and alfalfa mix hay, produced on 2,700 acres of ground, in 2009. According to the Farm Service/Ag Statistics there are 7,000 acres of pasture, 3,000 acres of alfalfa hay, and 1,000 acres of other hay being grown in Kane County. There are also many apple orchards in the Long Valley area, which includes Alton, Glendale, Mt. Carmel, and Orderville.

## Land Cover

	Pinyon-Juniper Woodland - 998,035 acres
	Rock\Barren\Sand Dune - 557,532 acres
	Other Shrublands - 472,993 acres
	Sagebrush - 255,204 acres
	Forestland - 132,291 acres
	Open Water - 71,607 acres
	Salt Desert Shrubland - 63,500 acres
	Grassland - 36,922 acres
	Agriculture - 13,393 acres
	Invasives - 10,682 acres
	Riparian Area - 9,523 acres
	Developed - 5,725 acres
	Lake, pond or reservoir
	River or stream
	Major road

## Kane County Land Use/Land Cover



# General Resource Observations

## ANIMALS

### Livestock

According to the 2010 Utah Agricultural Statistics, there were 7,000 cattle and calves, with 8,000 of those cattle being beef cows, and 600 sheep and lambs in Kane County. According to the 2007 U.S. Census of Agriculture, there were three goat farms, 581 horses and ponies, and twelve farms with a total of 330 miscellaneous poultry in Kane County. The sheep in the county produced 3,781 pounds of wool in 2007. The average of livestock sales for 2007 was \$9,157,000.

### Sensitive Species

#### Greater Sage-Grouse

The greater sage-grouse (*Centrocercus urophasianus*) is also known as the sage-hen or the sage-chicken.

The largest of the North American grouse, the male is 25 to 30 inches in length and may weigh up to seven pounds. The female is smaller, averaging 20 inches in length and slightly less than three pounds. It is a grayish-brown bird with a dark belly and long pointed tail feathers. The feet are feathered to the toes. The throat of the male is black, bordered with white at the rear. Yellow air sacs, covered with short, stiff, scale-like white feathers, are found on each side of the neck. The female has the same general appearance but lacks the air sacs and has a white throat.



These birds inhabit sagebrush plains, foothills, and mountain valleys. Sagebrush is the predominant plant of quality habitat. Where there is no sagebrush, there are no sage-grouse. A good understory of grasses and forbs, and associated wet meadow areas, are essential for optimum habitat.

Sage-grouse were abundant in pioneer times, but sagebrush eradication and intensive use of lands by domestic livestock have reduced their numbers. Sage-grouse range is declining in Utah in both quantity and quality. Indiscriminate spraying of sagebrush, cropland conversion, and over-grazing of mountain meadows are the causes. The result has been an overall decline in Sage-grouse populations. Sage-grouse range has declined 50 percent from historical times.

Greater sage-grouse are native to Utah and are listed as a sensitive species by the Utah Division of Wildlife Resources.<sup>1</sup>

<sup>1</sup> Utah Conservation Data Center

### At-Risk Species

Included on Utah's State Listed Conservation Species Agreement with the U.S. Fish and Wildlife Service and Species of Concern in Kane County:

- **Greater sage-grouse\***
- **Yellow-billed cuckoo**
- **Black-footed ferret**
- **Bear Lake sculpin**
- **Bear Lake springsnail**
- **Bear Lake whitefish**
- **Bobolink**
- **Bonneville cisco**
- **Bonneville cutthroat trout**
- **Burrowing owl**
- **California floater**
- **Ferruginous hawk**
- **Lewis's woodpecker**
- **Northern goshawk**
- **Pygmy rabbit**
- **Western toad**
- **White-tailed prairie-dog**

This list was compiled using known species observations from the Utah Natural Heritage Program within the last 20 years. A comprehensive species list, which is updated quarterly, can be obtained from the Utah Division of Wildlife Resources website at: [dwrcdc.nr.utah.gov/ucdc/](http://dwrcdc.nr.utah.gov/ucdc/).

\*The greater sage-grouse status as a candidate species is verified and confirmed from U.S. Fish & Wildlife Service News Release *Interior Expands Common-Sense Efforts to Conserve Sage Grouse Habitat in the West*, dated 3/5/10, available at: [www.fws.gov/news/NewsReleases/](http://www.fws.gov/news/NewsReleases/).

# HUMANS: Social and Economic Considerations

What county in Utah is home to the largest animal sanctuary in the United States? Kane County's Best Friends Animal Sanctuary is the largest animal sanctuary in the U.S. and is also the county's largest employer. In many nonurban counties, the largest employer is typically the public school district. Tourism-related jobs make up a larger than average share of Kane County's employment base. Lake Powell and other recreation sites contribute to a leisure and hospitality sector that comprises almost 30 percent of total nonfarm jobs, compared to ten percent statewide.<sup>1</sup>

## Population

In the 2000 population estimate put together by the Governor's Office of Planning and Budget, the estimated population of Kane County was 6,046, with Kanab being home to 3,564 people. The same office put out a document in 2010, and the population of Kane County had grown to 7,125, with Kanab having increased to 4,312 people. That is a change of 17.8% in ten years. The growth rate for 2010-2011 in Kane County was 1.0%, compared with a state wide growth rate of only 1.4%.<sup>2</sup>

## Economics

In October of 2011, the total labor force in Kane County was 3,452 people and the unemployment rate was 5.7% compared to the state's labor force of 1,338,703 and unemployment rate of 6.3%.<sup>1</sup> The major growth sectors are transportation, communications, public utilities, and service. All sectors except agriculture are expected to grow at about four percent annually. Agricultural employment is expected to continue its decline. Southwestern Utah will grow as an economic force. This will come through recreation, retirement living, and tourism, along with some industrial and manufacturing expansion.<sup>3</sup>

As in many areas throughout Utah, there is the ever increasing problem of development. Ranches are being broken down into five to ten acre ranchettes. The Grand Staircase Escalante National Monument is close to many producers, and many producers run cattle on this monument. As a result, there are many restrictions set on these producers by government management agencies, which makes it harder and harder for them to stay in the business of ranching.

## Kane County Population Data

Area name	Kane County
Period Year	2009
Population	6,740
Births	100
Deaths	52
Natural Increase	48
Net Migration	29
Annual Change	77
Annual Rate of Change	↑ 1.2%

Source: Utah Population Estimates Committee  
<http://www.governor.state.ut.us/dea/UPEC.html>

<sup>1</sup> [www.jobs.utah.gov](http://www.jobs.utah.gov)

<sup>2</sup> Governor's Office of Planning and Budget

<sup>3</sup> State Water Plan for Kanab Creek

## REFERENCES

### Executive Summary

Page ii: Photo taken by Tyce Palmer, UACD

Page 1: Photo taken by Tyce Palmer, UACD

### County Overview

1. 2005 NRCS Kane County Resource Assessment

2. State Water Plan-Kanab Creek/Virgin River Basin

Page 3. Photos courtesy of the Kane County Travel Council Website

## PRIORITY CONCERNS

### Water Conservation

Page 5. Upper Kanab Creek Watershed Vegetation Management Project map courtesy of Vicki Tyler, BLM

### Noxious Weeds & Invasive Species

Page 7. Noxious weed photos taken by Nathan Belliston, Uintah County Weed Department and available at the Utah Weed Control Association website, [www.utahweed.org](http://www.utahweed.org)

### Grazing & Rangeland Improvement

Page 9. Heaton Ranch photo taken by Earl Spendlove

### Wildlife

Page 11. Sage-grouse information courtesy of Nicki Frey

## **GENERAL RESOURCE OBSERVATIONS**

### **Soil**

1. 2005 NRCS Kane County Resource Assessment

### **Water**

1. State Water Plan-Kanab Creek/Virgin River Basin

### **Air and Climate**

1. NRCS Soil Survey
2. Information on SNOTEL sites in Kane County courtesy of the NRCS National Weather and Climate Center, [www.wcc.nrcs.usda.gov](http://www.wcc.nrcs.usda.gov)

### **Plants**

1. 2005 NRCS Kane County Resource Assessment

### **Animals**

1. Utah Conservation Data Center. All pictures and information about greater sage-grouse courtesy of Utah Conservation Data Center.

### **Humans**

1. Department of Workforce Services, [www.jobs.utah.gov](http://www.jobs.utah.gov)
2. Governor's Office of Planning and Budget
3. State Water Plan-Kanab Creek/Virgin River Basin