Upper Weber Watershed Factsheet

U.S. Department of Agriculture

Conservation Security Program—Utah 2008 Watershed

Introduction

The major portion of the Upper Weber Watershed is located in Summit County. A portion of the watershed (sub-watershed #040) called Lost Creek is located in Morgan County. The Upper Weber Watershed boundaries are along the steep rugged ridges of the Wasatch and Uinta Mountain ranges. The mountain slopes are forested, with Douglas fir on the northern slopes, Quacking aspen at the higher elevations and Gambel oak dominates much of the mid-range elevation. The benches and higher valleys produce hay. The lower valleys and wet meadows are used as pasture. Sheep and cattle ranches utilize the rangeland and meadows. There are a few dairies in the watershed but most of the hayland is occupied by small farms or ranchettes with a variety of livestock. Park City Ski Resort and the associated urban build-up are located in the southwest corner of the watershed.

LAND AND COVER USE:

- 369 farms totaling 481,400 acres.
- 19,400 acres of crop/hayland
- 15,500 acres pasture.
- 446,500 acres of rangeland.
- 23,500 beef cows
- 1,500 dairy cows
- 32,500 sheep
- 61,000 mink
- 1,580 acres under pest management
- 945 acres under irrigation water management
- 32,988 acres under grazing management

Physical Description

Weber Upper River watershed has experienced rapid urban growth in the resent past and is projected to grow rapidly into the future. The most rapid growth is taking place in the Park City area, but growth is also spreading to the other smaller communities.

The watershed is dominated by livestock operations. Many large sheep operations still exist but most have converted to cattle operations. These animals graze on grasses, sagebrush, oakbrush and other shrub vegetation grown on the mountain ranges. During the winter the stock must be fed or taken to lower elevation rangeland, out of the watershed, to graze. Some other agricultural uses within the area are mink ranching, dairy farming, horse breeding, and logging. Big game hunting operations on private land is providing a good secondary income to large rangeland owners. Most of the watershed is privately owned but about 20% is U. S. Forest Service land.

There are six significant tributaries that flow into the main stem of the Weber River from the watershed. These are Beaver Creek, Chalk Creek, Echo Creek, Lost Creek, Smith & Morehouse and Silver Creek.

The four major reservoirs in the Upper Weber River watershed are Rockport, Echo, Smith & Morehouse and Lost Creek.

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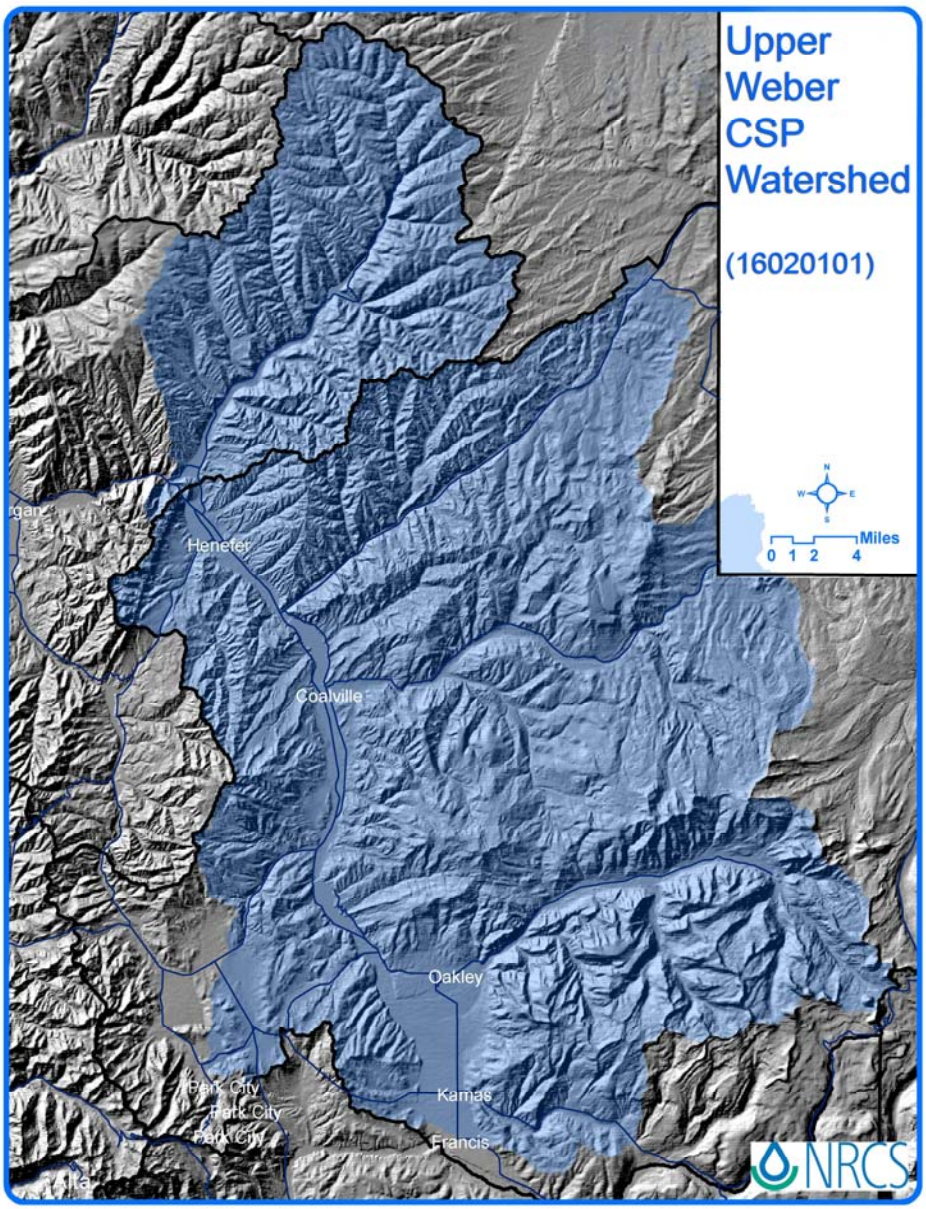
Climate & Topography

The high mountain areas receive 25 to 30 inches of precipitation annually. Snow accounts for the most significant part of our water yield. This is important because the farms rely on this snow accumulation for summer irrigation. The watershed elevation varies from 5,200 feet at the base of Devils Slide to about 11,000 feet in the Wasatch National Forest area. The flood plains along the creeks and rivers are dominated by Narrowleaf cottonwood, willows, Dogwood, Alder, River birch and other water loving plants. The valleys vary from a half mile to four miles in width. The average frost free days in the valley areas is 90 days during June, July and August.

Common Resource Areas

Semiarid Range on Low Mountains and Hills, Wasatch and Uintah Mountains
This unit is in the gently sloping to moderately steep semiarid soils on low mountains and hills in the Wasatch and Uintah Mountains MLRA near the Sevier River and other narrow canyons. Soils in the area are usually well drained xeric with frigid temperatures. Precipitation ranges from 10 to about 16 inches. Elevations are about 6,000 to 8 ,000 feet. Range is the predominant land use.



High Mountains and Alpine, Wasatch and Uintah Mountains

This unit is in the steep frigid mountains of the Wasatch and Uintah Mountains MLRA. Soils in the area are usually well drained with frigid temperatures. Soils may have thick layers of high organic matter contents and some with influences of residuum derived from volcanic rocks. Precipitation ranges from 16 to about 40 inches. Elevations are usually more than 6,000 feet and range to more than 10,000 feet.

Common Land Unit

The CLUs have been digitized for those farmers who have participated in USDA programs in the past, but many of the new and small acreage farms have not be digitized. Until the participants come in and sign up FSA will not know where their land is.

Resource Concerns

The major resource concerns for the watershed and areas that may be the focus of CSP enhancements are:

Invasive Plants

All of the 19 plant species declared to be noxious weeds by the state of Utah are found in the watershed. In addition, five other species have been declared by Summit County to be noxious weeds (poison hemlock, yellow nutsedge, buffalobur, puncture vine, and burdock). These and numerous other weedy species have invaded thousands of acres and are a significant problem in the watershed.

Water Quality& Soil Erosion

Water quality is a very important issue since part of the water is eventually treated and used for drinking water in the populated areas of Ogden, Roy, Kaysville and Layton.

Causes of Water Pollution Problems in the watershed:

- Most of the hay land is irrigated by wild flood irrigation systems with efficiencies below 30%, which produces high transportation of field nutrients back into the river and is an inefficient use of reservoir water.
- An increase of brush and other less desirable woody plant species on rangeland has caused a decrease of grasses. This problem facilitates erosion and reduces groundwater intake.
- The concentration of livestock along the riparian areas caused bank erosion and fish habitat degradation along streams.
- Water seeping through mine tailings, left over from Park cities' mining days, collects Zink, lead and other heavy metals which is carried into the Weber River by Silver Creek.
- The elimination of vegetative cover by mining, highways, development, railroads, farming, logging, trails, ski slopes, and etc. has increased soil erosion and water pollution.
- Rapid urban growth with its high demand for more water has also increased the water quality problems by leaving less surface water in the streams.

Specific Water Quality Impairments:

Waters formally listed as Impaired for Phosphorus

- East Canyon Creek from East Canyon Reservoir to the headwaters
- Chalk Creek main stem and all tributaries except the East Fork

Waters with Elevated Phosphorus (Not formally listed)

- Beaver Creek from confluence with the Weber River upstream to Kamas
- Fort Creek (near Peoa) confluence with Weber River to headwaters
- Silver Creek
- Weber River between Rockport and Echo Reservoirs
- Echo Creek

Waters formally listed as Impaired for Sediment

- Chalk Creek
- Echo Creek

Waters with high metals

- Silver Creek, which flows from above Park City to Wanship where it meets the main stem of the Weber River, has been formally listed for excessive levels of zinc and cadmium. The source of the metals is from the long history of hard rock mining that has occurred in the Park City area starting back in the late 1800's.

Wildlife Concerns

Some species of wildlife within the watershed are classified as Sensitive by the Utah Division of Wildlife Resources because populations have decreased due to habitat loss and fragmentation.

Riparian Sensitive Species

- Bald Eagle Haliaeetus leucocephalus
- Bobolink Dolichonyx oryzivorus
- Columbia Spotted Frog Rana luteiventris
- Common Yellowthroat Geothlypis trichas
- Ferruginous Hawk Buteo regalis
- Northern River Otter Lutra canadensis
- Osprey Pandion haliaetus
- Swainson's Hawk Buteo swainsoni

Upland Sensitive species

- Greater Sage Grouse Centrocercus urophasianus
- Northern Flying Squirrel Glaucomys sabrinus
- Canada Lynx Lynx canadensis
- Three-Toed Woodpecker Picoides tridactylus
- Western Toad Bufo boreas
- Williamson's Sapsucker Sphyrapicus thyroideus
- Wolverine Gulo gulo

Improvements of wildlife habitat has been selected as the additional resource concern for Tier II requirements.

Fisheries within the watershed include the native Bonneville Cutthroat Trout and Mountain Whitefish. The Bonneville Cutthroat is listed as a Sensitive Species for the State of Utah as a "Conservation Species". This means that the Bonneville Cutthroat Trout is a species that would qualify as Threatened or Endangered, but is receiving sufficient special management under a Conservation Agreement developed and implemented by the State to preclude federal listing. The Bonneville strain is found in higher elevation tributaries that have never been stocked with non-natives and/or have a fish barrier somewhere along the line that precludes non-natives from going further upstream. Upper Chalk Creek has been identified as the largest remaining source of Bonneville Cutthroat left.

Other Concerns

- The land value can no longer be purchased as agricultural land with the expectation of repaying the purchase price by producing an agricultural product.
- Building and construction on the flood plains is another serious problem.

Studies or Assessments

- Weber River Watershed Report, Echo Creek preliminary TMDL report.
- Chalk Creek Coordinated Resource Management Plan.

TMDL reports are being prepared for Echo reservoir and Silver Creek

Census and Social Data

Summit County is one of the fastest growing counties in the state. Population in Summit County in 1980 was 10,198; in 2005 is 35,162; and is projected to reach 68,474by 2030.

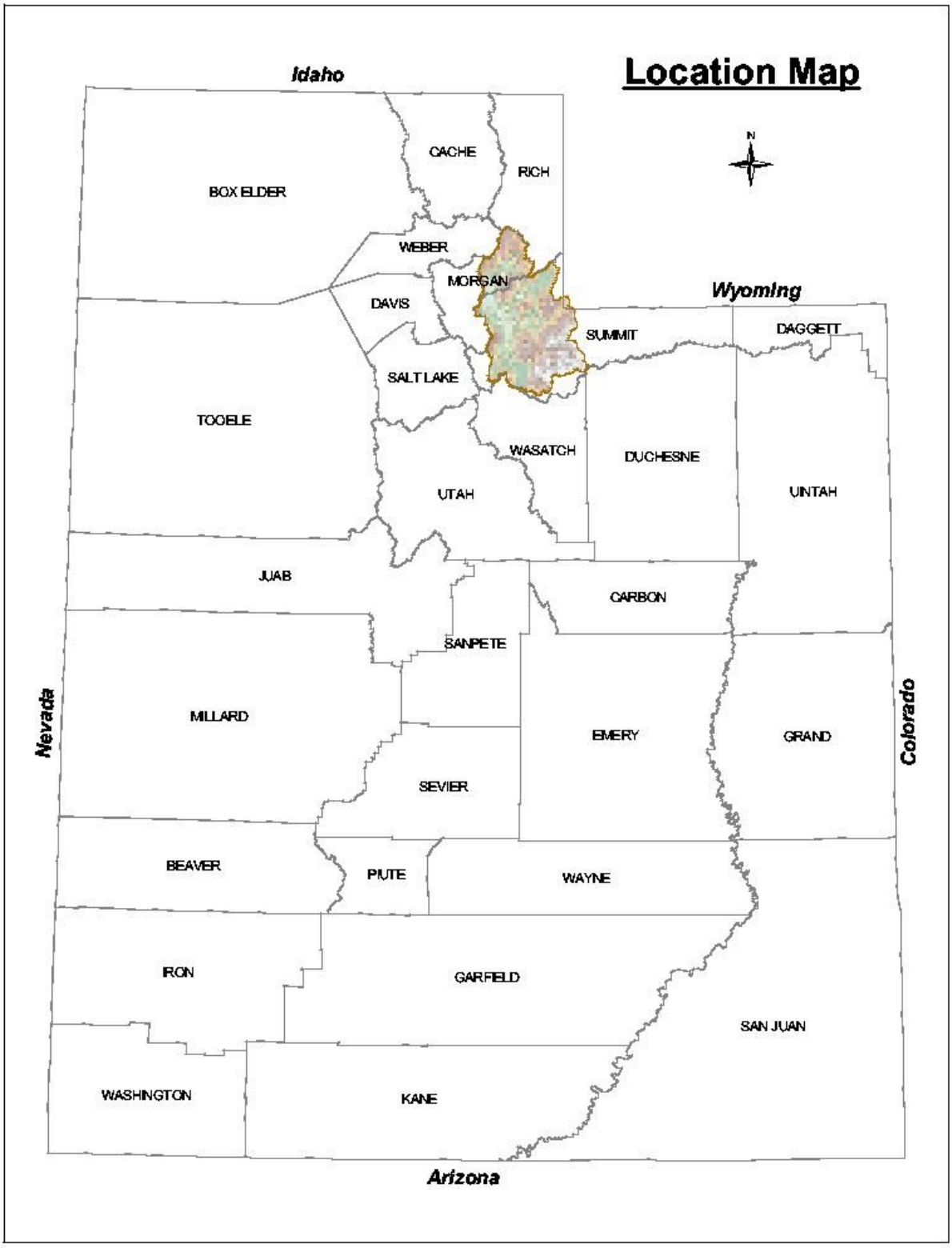
Population by City

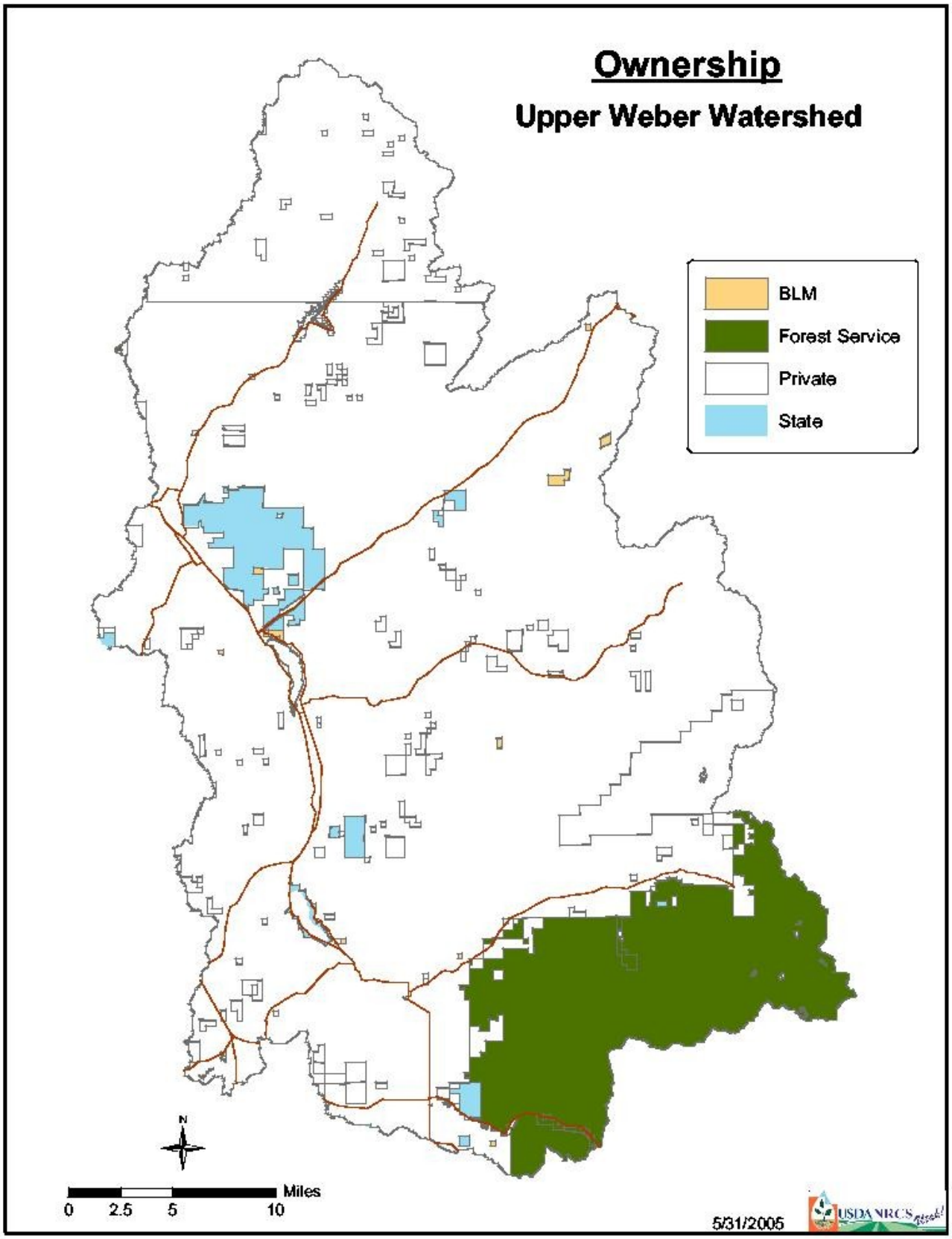
Census	2000	2001	2002	Change 0-02
Summit County	29,736	30,957	31,857	+3.5%
Coalville	1,382	1,397	1,396	+0.5%
Francis town	698	707	706	+0.6%
Henefer town	684	700	703	+1.4%
Kamas city	1,274	1,354	1,379	+4.0%
Oakley town	948	991	1,003	+2.9%
Park City	7,371	7,653	7,714	+2.3%
Balance of Summit County	17,379	18,155	18,956	+4.4%

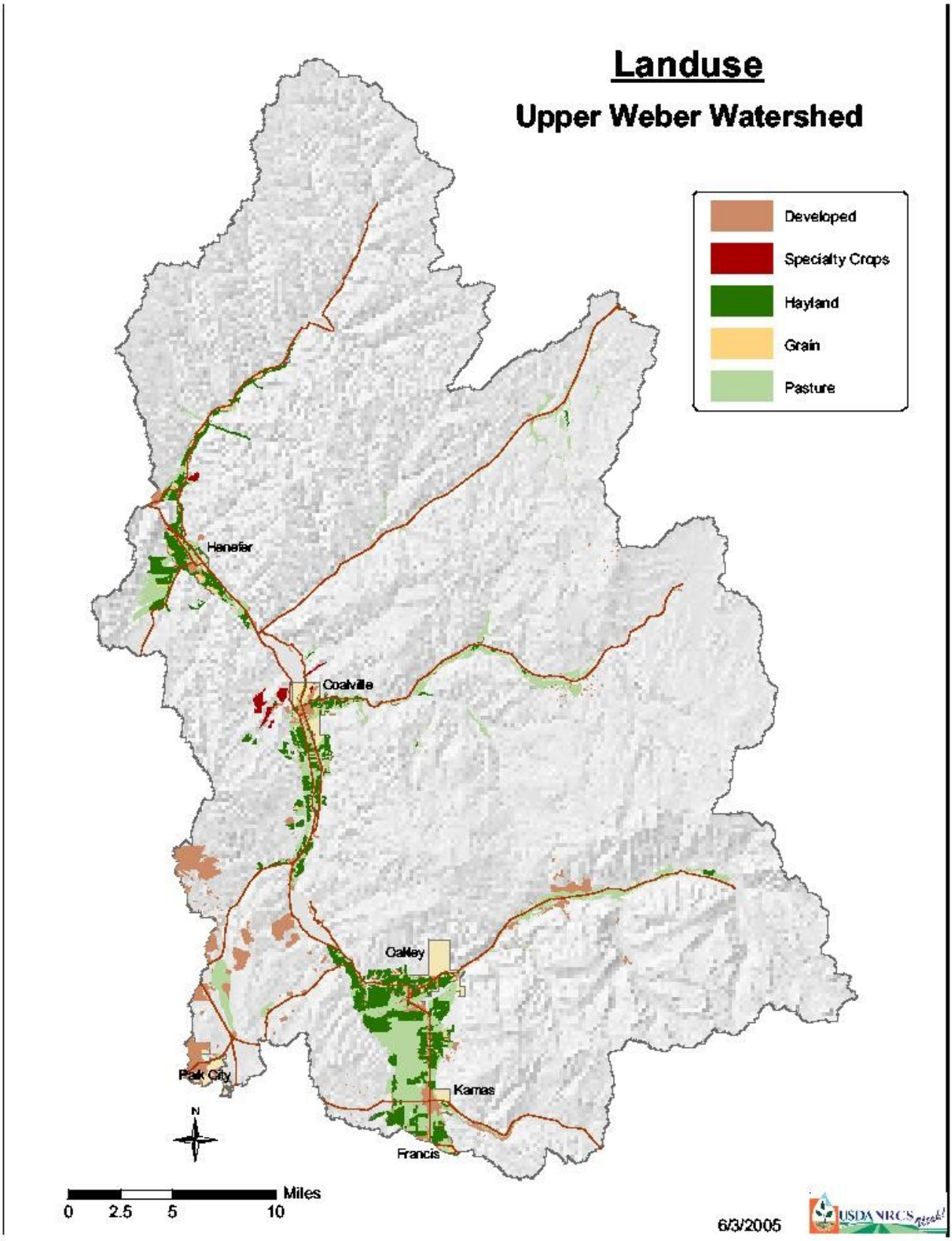
Population by Race (2002)

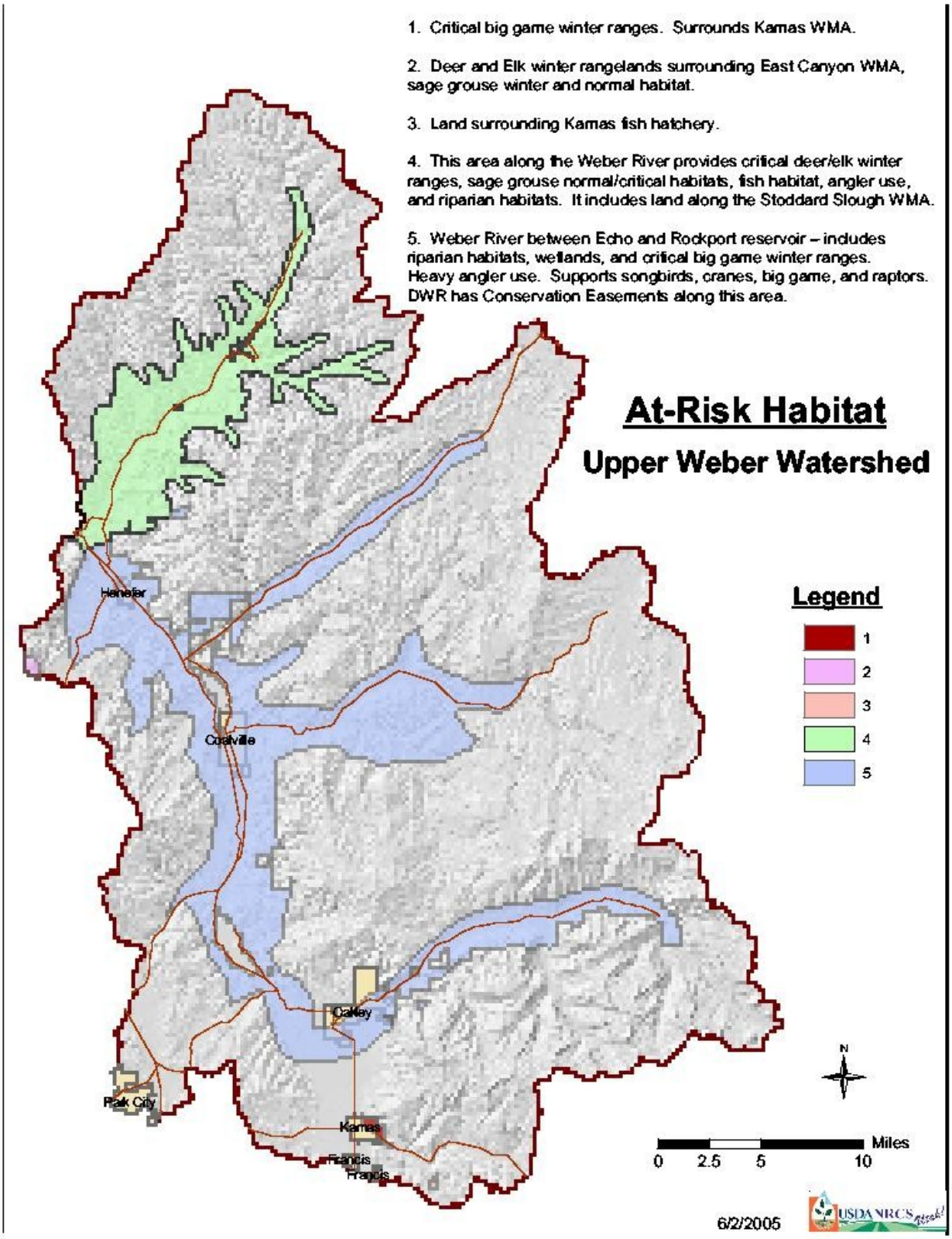
	One Race					
Total Population	White	Black	American Indian	Asian/ Pacific Islander	Two or more Races	Hispanic Origin
31,857	31,058	97	141	356	205	2,781
	97.5%	0.3%	0.4%	1.1%	0.6%	8.7%

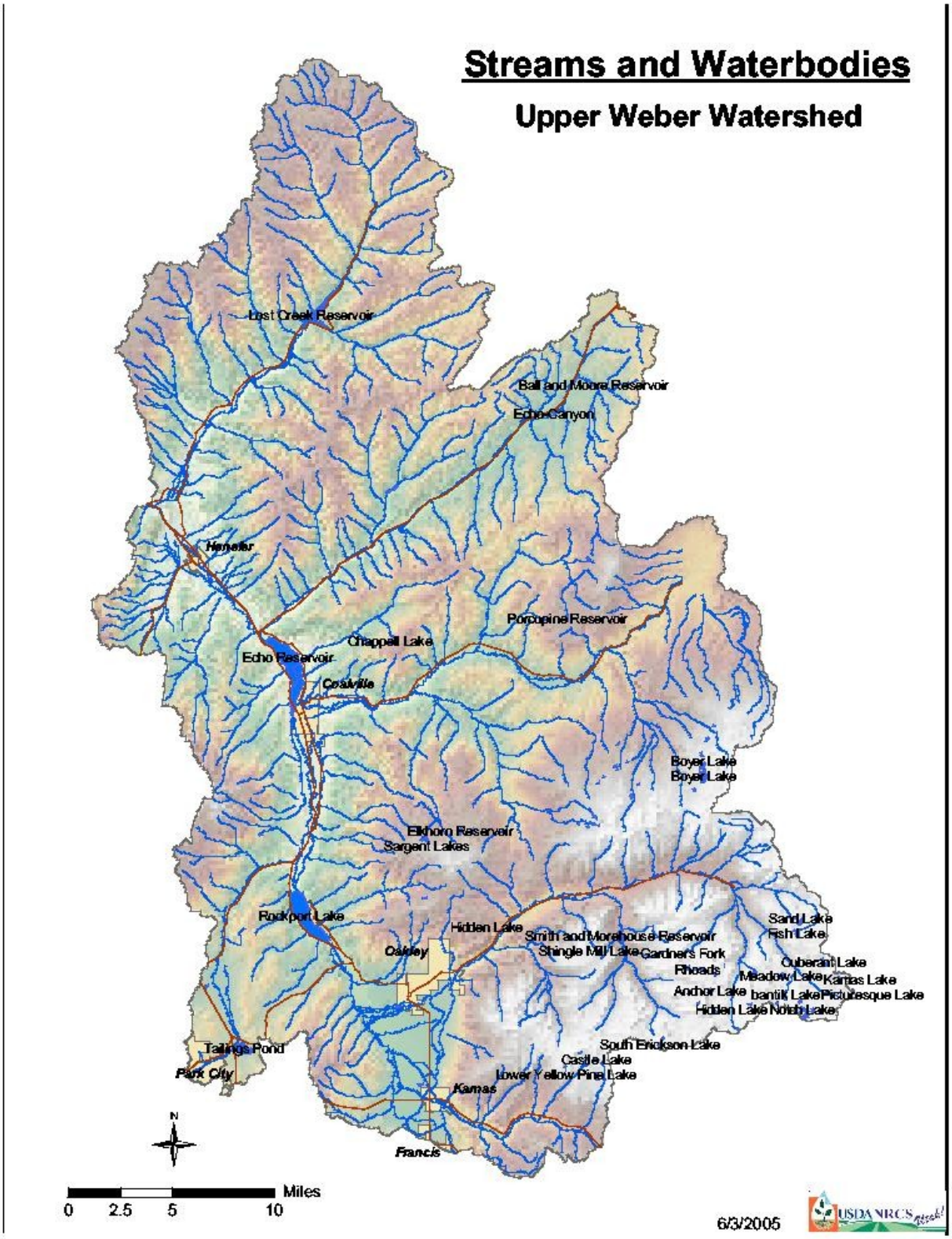
Maps on the following 5 pages




Ownership
Upper Weber Watershed
BLM
Forest Service
Private
State
N
Miles
0 2.5 5 10
5/31/2005
USDA NRCS


Landuse
Upper Weber Watershed
Developed
Specialty Crops
Hayland
Grain
Pasture
Henefer
Coalville
Oakley
Park City
Kamas
Francis
N
Miles
0 2.5 5 10
6/3/2005
USDA NRCS


1. Critical big game winter ranges. Surrounds Kamas WMA.
2. Deer and Elk winter rangelands surrounding East Canyon WMA, sage grouse winter and normal habitat.
3. Land surrounding Kamas fish hatchery.
4. This area along the Weber River provides critical deer/elk winter ranges, sage grouse normal/critical habitats, fish habitat, angler use, and riparian habitats. It includes land along the Stoddard Slough WMA.
5. Weber River between Echo and Rockport reservoir – includes riparian habitats, wetlands, and critical big game winter ranges. Heavy angler use. Supports songbirds, cranes, big game, and raptors. DWR has Conservation Easements along this area.
At-Risk Habitat
Upper Weber Watershed
Legend
1
2
3
4
5
Henefer
Coalville
Oakley
Park City
Kamas
Francis
Francis
N
Miles
0 2.5 5 10
6/2/2005
USDA NRCS


Streams and Waterbodies
Upper Weber Watershed
Lost Creek Reservoir
Ball and Moore Reservoir
Echo Canyon
Henefer
Porcupine Reservoir
Chappell Lake
Echo Reservoir
Coalville
Boyer Lake
Boyer Lake
Elkhorn Reservoir
Sargent Lakes
Rockport Lake
Hidden Lake
Smith and Morehouse Reservoir
Shingle Mill Lake
Gardners Fork
Oakley
Sand Lake
Fish Lake
Rhoads
Oberant Lake
Meadow Lake
Kamas Lake
Anchor Lake
Pictuesque Lake
Hidden Lake
North Lake
South Erickson Lake
Tailings Pond
Castle Lake
Park City
Lower Yellow Pine Lake
Kamas
Francis
N
Miles
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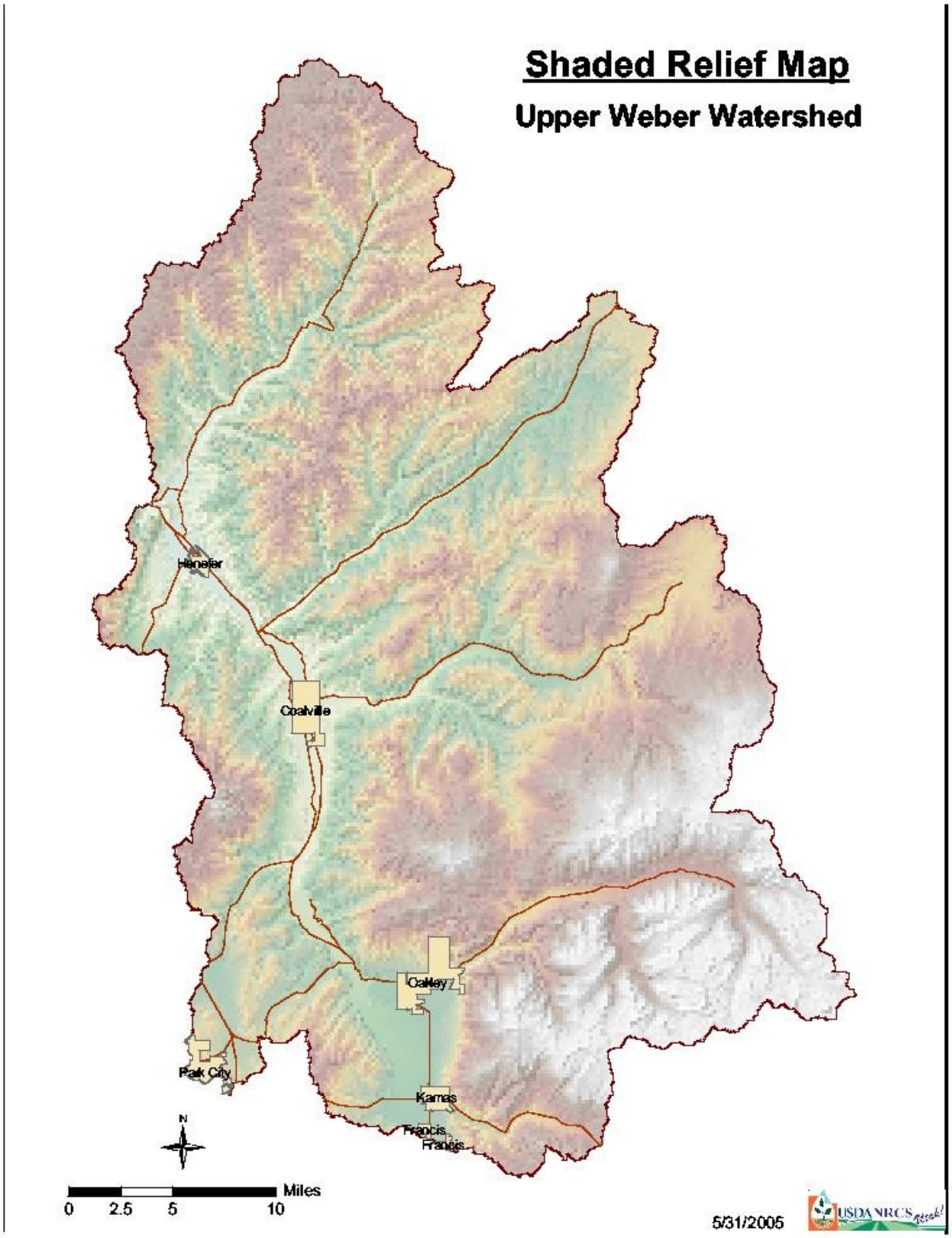
6/3/2005
USDA NRCS


Shaded Relief Map
Upper Weber Watershed
Henefer
Coalville
Oakley
Park City
Kamas
Francis
Francis
N
Miles
0 2.5 5 10
5/31/2005
USDA NRCS