

PASS CREEK SEVIER RIVER WATERSHED

One of the most prominent features within the Pass Creek Watershed is the reddish-orange Claron formation hoodoos. Red Canyon, Casto Canyon and Losee Canyon are all formed from the sixty million year old formations, which are characterized by dry, sparsely vegetated, sloping terrain, intricate deep-cut canyons, ridges and spires, and river valleys separated by high plateaus.

Red Canyon lies directly along State Highway 12, recently named an All-American

Red Canyon, managed by the Dixie National Forest, is a popular destination spot for tourists. Located on Highway 12, the Red Canyon area boasts spectacular scenery and camping, in addition to hiking, horseback riding, ATV and biking trails.

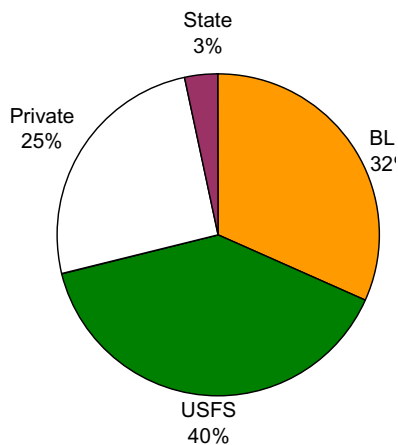


Fig. 4-17. Twenty-five percent of the land within the Pass Creek Watershed is private, with ranches and farms scattered all along the Upper Sevier River.

approximately 6,500 feet elevation has a consistently short growing season, impacting the types of crops grown within the watershed.

Land Ownership

The Pass Creek Watershed contains the largest percentage of private land (44,252 acres) within the Upper Sevier River Basin (Fig. 4-17, Fig. 4-18). U. S. Forest Service lands (68,635 acres), Bureau of Land Management administered lands (55,104 acres) and state lands (5,944 acres) are found bordering the privately-owned sections.

Farms and ranches dot much of the area along the Upper Sevier River, and around the small communities of Hatch and Hillsdale. Although this area has seen an increase in tourism in recent years, ranching and agriculture continue to be the primary enterprises, and much of the land

Road. This east-west

course links such famous attractions as Bryce Canyon and Capitol Reef National Parks and Grand Staircase–Escalante National Monument. A new visitors center is scheduled to open Spring 2004. The new center, complete with a bookstore, trip-planning area for visitors, cultural and nature exhibits, artisan gallery and demonstrations, and ranger programs will help visitors better understand resource issues within the Upper Sevier River Basin.

Highway 89 runs north-south through the watershed, paralleling the Upper Sevier River. Numerous ranches and farms are found along the highway and throughout the Panguitch Valley. The Panguitch Valley at approxi-

Pass Creek Subwatersheds	Acres
Big Hollow-Sevier River	20059
Castle Creek-Sevier River	22610
Casto Wash	14169
Graveyard Hollow	9756
Hillsdale-Sevier River	15677
Pass Creek	29033
Peterson Wash-Sevier River	14828
Pole Canyon-Sevier River	15498
Proctor Canyon-Sevier River	19845
Red Canyon	12461
Total	173935

Table 4-10. The ten Pass Creek Watersheds are known for the geological Claron formation hoodoos.

continues to be managed and owned by descendants of those that first settled the land in the 1870's.

The Pass Creek Watershed is composed of 10 subwatersheds, ranging in size from 9,756 acres (Graveyard Hollow subwatershed) to 29,033 acres (Pass Creek subwatershed) (Table 4-10).

Vegetation Types

Ponderosa pine, noted for both its scenic and timber value, are found throughout forested areas within the watershed; however, many areas throughout the west have

seen a recent decline in ponderosa pine through timber harvest and fire suppression. Although some trees may grow to be 600 years old, 4 feet in diameter and over 180 feet tall, most of the ponderosas within the Red Canyon area are relatively young, and are composed of even-age class stands.

Pinyon-juniper areas and sagebrush/grasslands are found within lower elevations of the watershed, along the length of Panguitch Valley . Many of the historic sagebrush-grasslands have been converted to agricultural lands, and riparian areas within the watershed are heavily grazed. Small populations of mountain shrub, mixed conifer, grass/forb, aspen and spruce-fir are also found within the watershed (Table 4-11, Fig. 4-19).

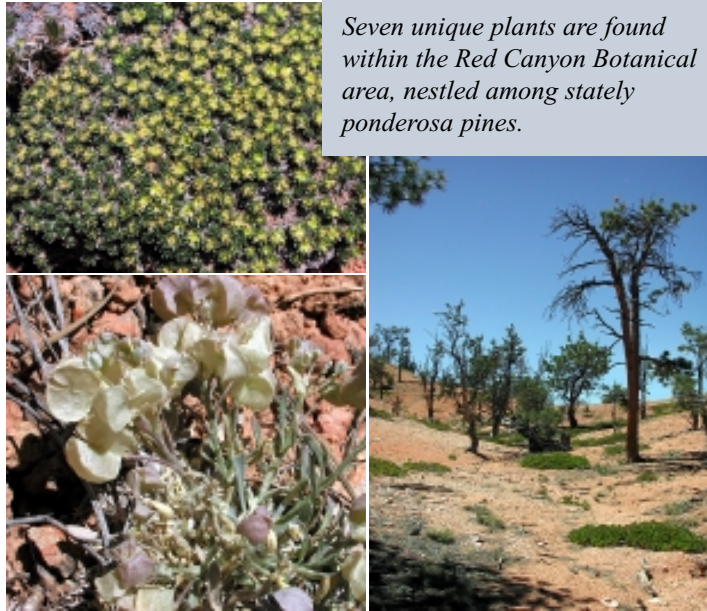
Of special interest within this watershed is the Red Canyon Botanical Area, located near Red Canyon. This area is home to seven plant species that are found together nowhere else in the world - reveal paintbrush (*Castilleja parvula var. revealii*), yellow-white cryptantha (*Cryptantha ochroleuca*), least spring parsley (*Cymopterus minimus*), Widtsoe buckwheat (*Eriogonum aretioides*), Claron pepperplant (*Lepidium montanum var. claronense*), Red Canyon beardtongue (*Penstemon btracteatus*) and Maguire campion (*Silene petersonii*). These plants can be found growing on soils that are rich in calcium carbonate (limestone) and are called calciphiles or "limestone lovers". These rare

Vegetation Type	Acres	%
Agriculture	2930	2%
Aspen	779	0%
Grass/Forb	13646	8%
Mixed Conifer	6115	4%
Mountain Shrub	1593	1%
Pinyon/Juniper	62495	36%
Ponderosa Pine	15909	9%
Sagebrush/Grass	38456	22%
Spruce/Fir	153	0%
Other	31858	18%
Total	173935	100%

Table 4-11. The large expanses of sagebrush/grassland within the watershed provide habitat for Utah prairie dog and sage grouse, as well as elk and deer. Maintaining diversity within the sagebrush/grass and pinyon-juniper vegetation types, is listed as a priority by many of the technical advisory committees.

plants have become adapted to the severe environmental conditions that are found in the Red Canyon area – shallow soils, extreme changes in temperature from summer to winter, summer thunderstorms, intense sunlight, and a variable supply of moisture. The U.S. Forest Service

established the Red Canyon Botanical Area in 2001 to allow researchers to study these unique plant species and to enable the public to enjoy them as well. Because the distribution of these unique plants is closely tied to underlying soil structure, destruction of habitat is a major concern.



Seven unique plants are found within the Red Canyon Botanical area, nestled among stately ponderosa pines.

Elevation, Roads & Streams

Utah's only All-American Road traverses the Pass Creek Watershed. The byway begins south of Panguitch on Highway 89 and runs east and north to Torrey at the junction of Highway 24. This scenic stretch passes through portions of the Dixie National Forest,

Bryce Canyon National Park, Red Canyon, the historic Burr Trail and Grand Staircase-Escalante National Monument (Fig. 4-20). The byway, one of only 20 All-American Roads in the United States, possesses archaeological, cultural, historical, natural, recreational and scenic qualities of national significance.

The Red Canyon Mountain Bike Trail, which begins at the Red Canyon Visitor Center and ends 5.5 miles later where the Great Western Trail Begins, is one of the newest additions along Highway 12. The paved trail is for non-motorized vehicles and winds past the Red Canyon campground, and amidst the red-rock hoodoos. The Red Rock Mountain Trail project was conducted by Utah Department of Transportation in conjunction with Garfield County, and officials are hoping to work with local landowners for property easements to continue the trail into Bryce Canyon National Park.

The recently completed bicycle and foot path, within the Red Canyon area, may eventually connect to other recreational trails.



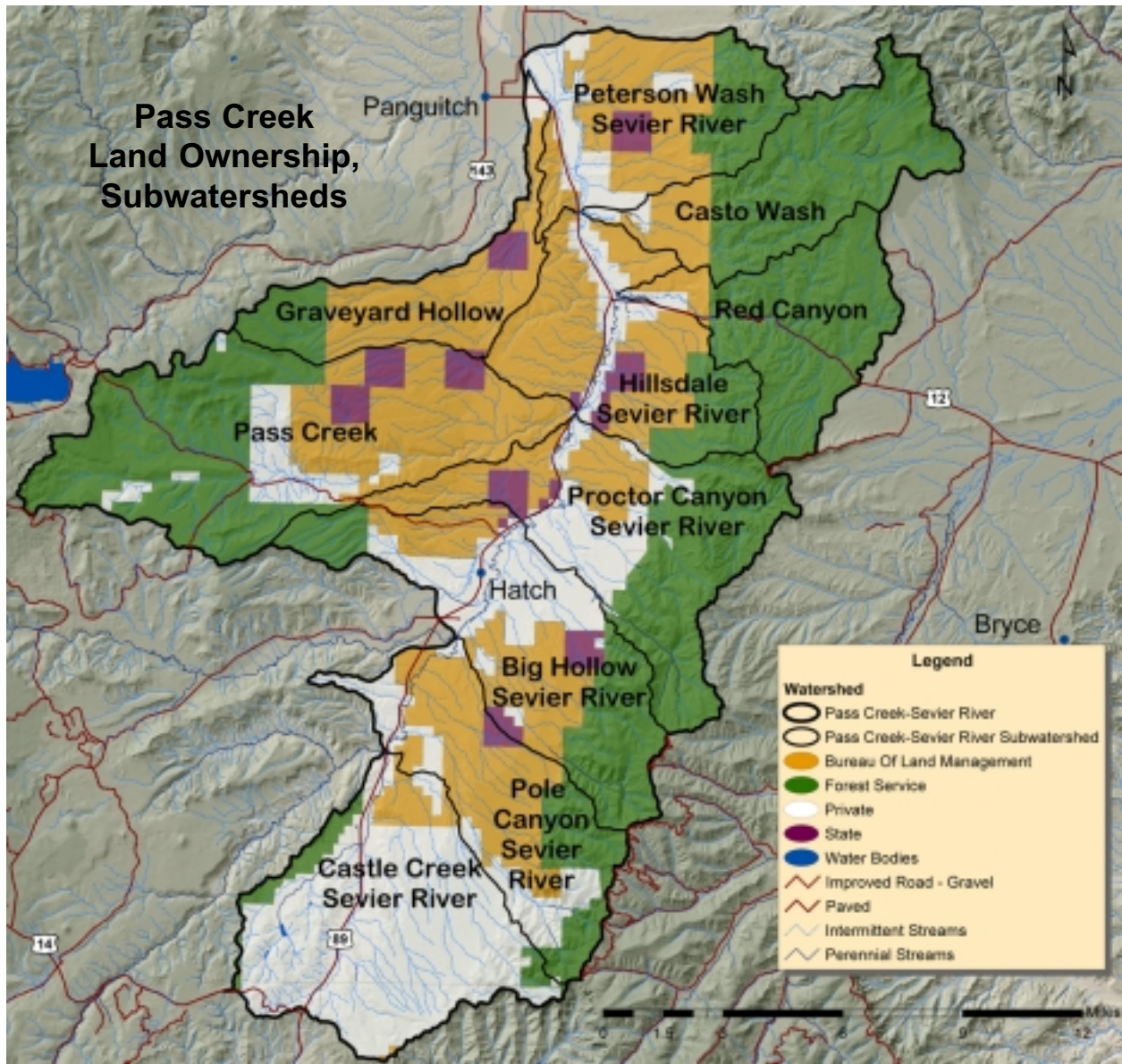


Fig. 4-18. Most of the agricultural lands along the Sevier River have been owned by generations of pioneer families.

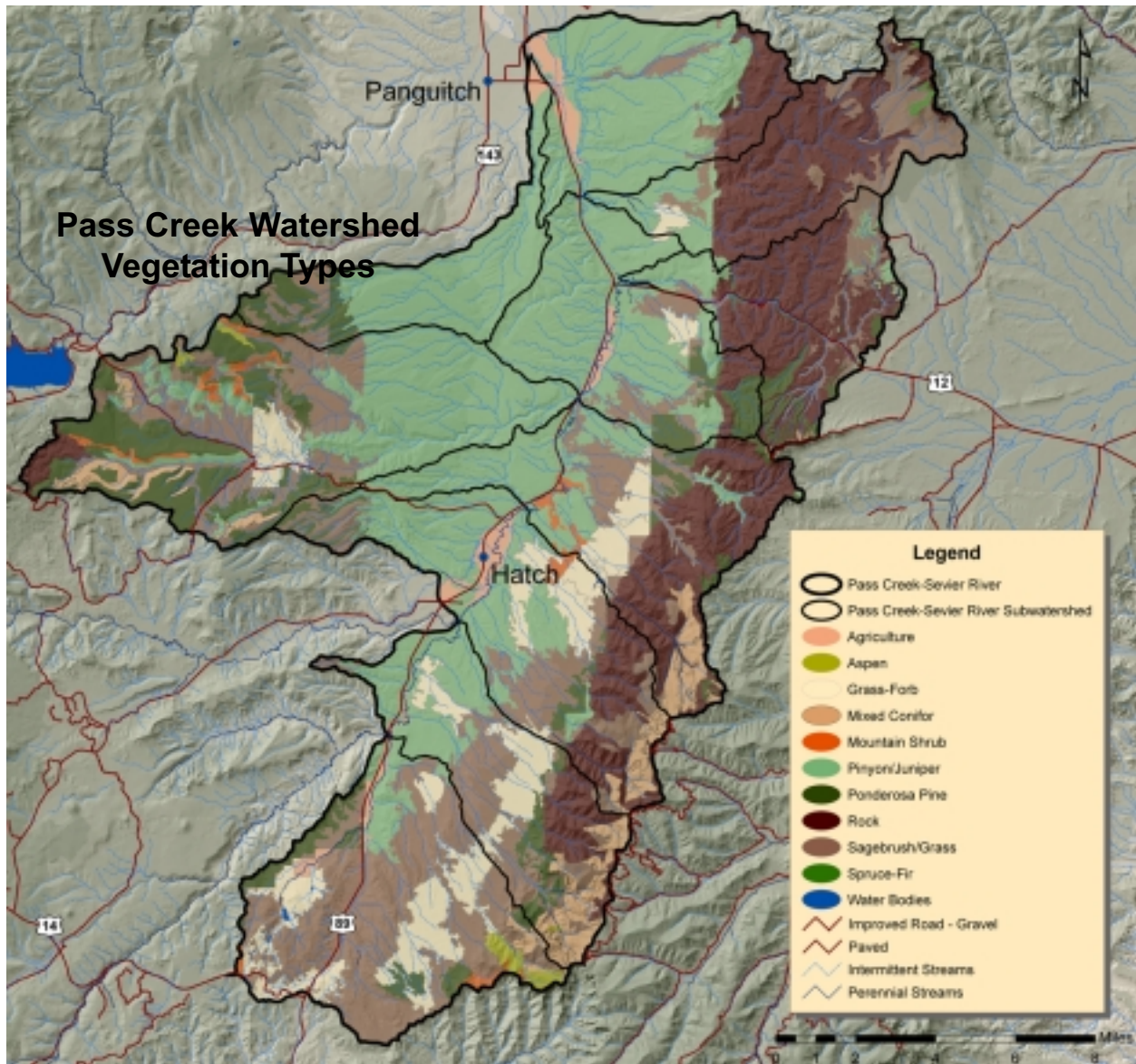


Fig. 4-19. Ponderosa pine, sagebrush/grasslands and pinyon-juniper are the dominant vegetation types within the Pass Creek Watershed.

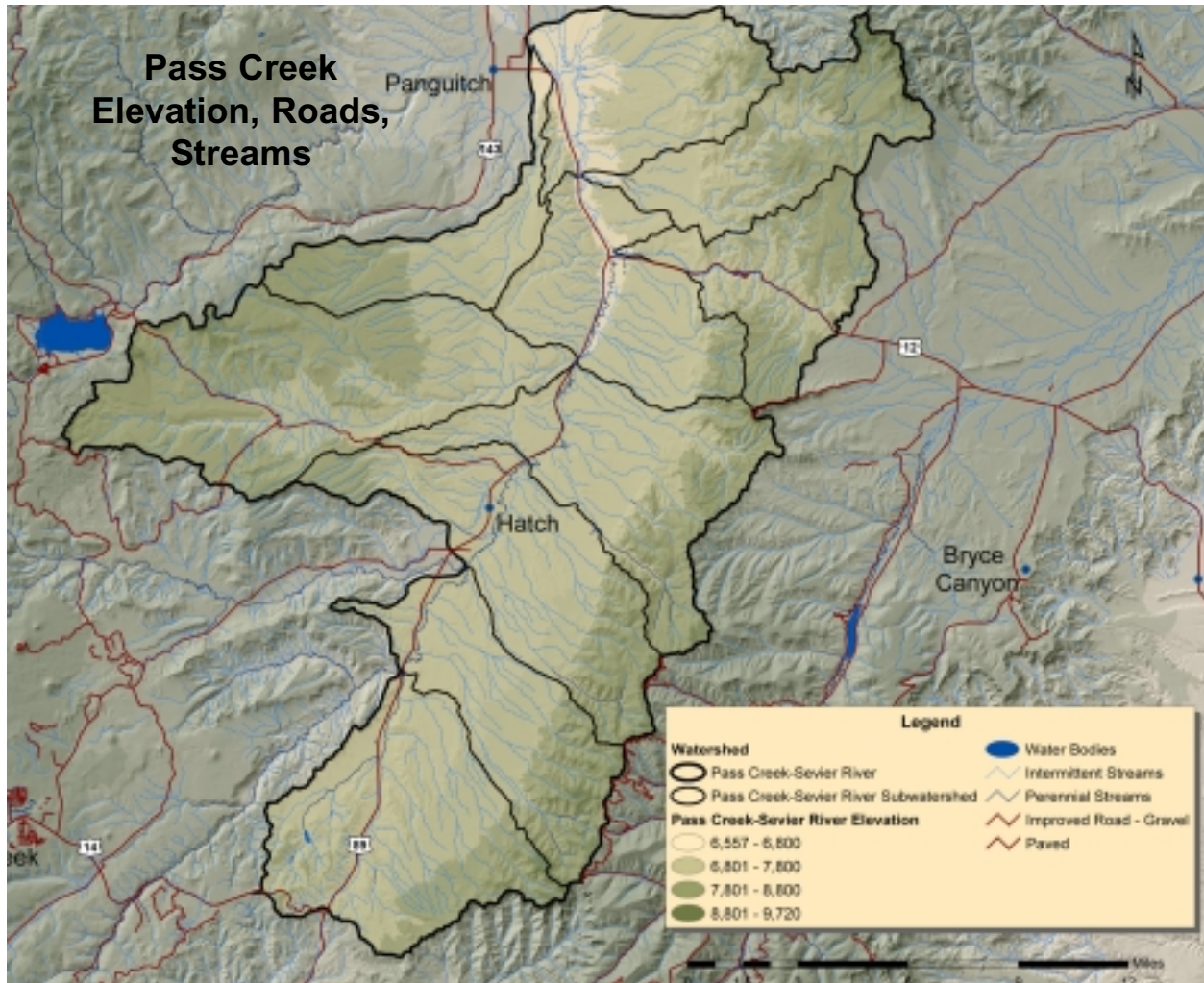


Fig. 4-20. Highway 12, recently named an All-American Road, boasts over 1.5 million travelers each year, en-route to area National Parks. The main stem of the Sevier traverses north-south through the watershed and is heavily utilized for grazing and agricultural enterprises.

Key Issues

Key issues identified for the Pass Creek Watershed are: 1) Active Channel Adjustments; 2) Communities at Risk to Wildfire; 3) Developed and Dispersed Recreation; 4) Development and Effects to Ground/Surface Water; 5) Enhancement or Protection of Sage Grouse Habitat; 6) Enhancement and Protection of Utah Prairie Dog Habitat; 7) Noxious Weeds; 8) PJ, Sagebrush/Grasslands - Fuel Conditions, Vegetation Composition & Accelerated Erosion; and 9) Wildlife Management in Agricultural Areas (Figure 4-21). (Other issues and ratings within the Pass Creek Watershed are listed in Table 4-12)

1. **Active Channel Adjustments**

Woody plant species and late seral herbaceous species are lacking throughout all subwatersheds where they historically would be present. Where woody plant species (willow and cottonwood) are present, recruitment of young plants is limited and the majority of plants are in a mature stage. Bank erosion has resulted in downcutting along many stream corridors and increased head cuts on the upstream ends. Stream channelization, from road construction, has eliminated riparian vegetation and straightened stream reaches, compromising channel stability. Loss of upland vegetation cover has resulted in accelerated sheet and rill erosion into streams.

Reference Conditions, Patterns and Trends

Prior to European settlement, stream channels in this watershed were most likely in dynamic equilibrium, and experienced natural erosion processes. Streambanks consisted of mosaics of thick willows and late seral grasses. Cottonwood and willow communities were present at lower elevations along the Sevier River. Expansive and diverse riparian grasses, along with willow and cottonwood, helped reduce sediment influx, maintained coarser stream substrate, contributed to cooler stream temperatures, and supported normal flow regimes. Natural stream meandering dissipated stream flow energy. Adequate ground cover from native upland vegetation reduced and slowed overland flows.

Natural/Human Causes of Change Between Current/Reference Conditions



Bonneville cutthroat trout were once found in portions of the Sevier River drainage; however, now only a few populations remain.

Changes in channel stability have resulted from a variety of land uses including live-stock grazing, water diversions, road construction, recreation, and cropland cultivation.

2. Communities at Risk to Wildfire

Current Conditions, Patterns and Trends

Fire regimes of frequent, small intensity fires have been altered from historic conditions, and the risk of losing key ecosystem components as well as community structures remains high, especially in developed areas within the Hillsdale and Pass Creek subwatersheds. Ponderosa pine forests have changed from open, park-like areas with scattered large trees to stands with dense thickets of small-diameter trees which are at risk of burning due to high amounts of fuel accumulations. In areas where sagebrush occurs, plants are decadent, with even age classes of old individuals and excessive crown canopies. Drought conditions coupled with high fuel loads threaten even small communities.

Reference Conditions, Patterns and Trends

Historically, periodic fires affected vegetative communities by regulating structure, composition and patterns of mixed conifer and sagebrush/grassland areas. Sagebrush/grass communities most likely dominated the watershed. Frequent small intensity fires in ponderosa pine and mixed conifer ecotypes helped reduce fuel accumulations while maintaining structural diversity and minimizing tree densities.

In areas where natural fire has been eliminated, prescribed fire may be needed to reduce the risk of catastrophic wildfire, especially around established communities.



Natural/ Human Causes of Change Between Current/Reference Conditions

Fire suppression efforts, as well as an increase in recreational homes and recreational use of forested areas has resulted in large accumulations of vegetation around established communities.

3. Developed and Dispersed Recreation

Current Conditions, Patterns and Trends



The close proximity of vegetation to individual homes demonstrates the need for fire prevention education and defensible space.

Recreational use of forests, grasslands and riparian areas continues to increase. Areas along the Upper Sevier River and tributaries are utilized for recreation and fishing. Dispersed recreation has increased in the Pass Creek Watershed in areas closest to Panguitch Lake.

Associated impacts from dispersed recreation include vegetation loss through trampling of stream banks and upland areas, disposal of litter along travel corridors, improper human waste disposal, and increased foot/recreational vehicle traffic traveling to and from sensitive soil, wildlife and vegetation areas.

Reference Conditions, Patterns and Trends

Historically, most use of the watershed was minimal, with most use associated with ranchers moving cattle and timber harvesting. Human impacts within the watershed were limited to agricultural activities, with little or no recreational use.

Natural/ Human Causes of Change Between Current/Reference Conditions

Recreational use of forested areas has risen considerably over the past 20 years. As established camping areas become crowded, more and more recreationists look to dispersed areas to avoid human interactions. Accessibility by four-wheel drive and ATV's allows recreationists to travel in areas once undisturbed.



4. Development and Effects to Ground/Surface Water

Current Conditions, Patterns and Trends

There are approximately 1,164 developed lots in the Bryce Woodlands (722 lots), Long Valley Estates (220 lots), and Tod's Junction Area (222 lots), all currently using septic tanks.



The Sevier River and tributaries are heavily utilized for a variety of purposes, from recreation to agriculture. Careful planning of future water use will provide long-term benefits to the watershed.

As development continues to increase, impacts to groundwater may be a potential problem. Acceptable levels of coliform and nitrate levels are currently present in some areas; however these areas may not be

suitable for septic system use (sewered systems are more desirable). Currently, the Southwest District Health Department is sponsoring a water quality study to determine potential impacts of septic systems to groundwater, and to determine long-term impacts.

Dispersed recreation, in areas where few or no sanitary facilities exist, may also potentially impact groundwater through increased sedimentation and presence of human waste.

Reference Conditions, Patterns and Trends

Historically, most use of the watershed was used on an intermittent/seasonal basis, with few year-round residents. Travel was limited to major roads, with little or no off-road impacts. Timber roads were often left open, because they received little if any post-harvest use, and could act as migration corridors for wildlife. Impacts from septic systems, because so few existed, were not of concern in this area.

Natural/ Human Causes of Change Between Current/Reference Conditions

The number of homes continues to increase with many residents now residing in the area year-round, greatly increasing the amount of waste disposal and water use. In addition, past users consisted of those seeking solitude, which had very little impact on surrounding areas. Today, the area is highly used for recreation by off-road vehicle enthusiasts, increasing the number of user-created roads and re-opening previously closed roads.

5. Enhancement or Protection of Sage Grouse Habitat

Current Conditions, Patterns and Trends

Sage grouse are currently listed on the Utah Sensitive Species List as a Species of Special Concern. Both current and historic sage grouse leks are known to occur within the Pass Creek Watershed. However, sage grouse populations are declining due to sagebrush/grassland habitat loss to pinyon-juniper expansion, extensive grazing and dewatering of streams and

area springs. Mule deer, elk, antelope and Utah prairie dog also depend on once expansive sagebrush/grassland habitat and forage within the Pass Creek Watershed.

Vegetation diversity in

sagebrush/grassland areas is currently lacking, and many areas are dominated by more aggressive non-native grass species. Where the quantity and quality of habitat has declined, sage grouse populations are vulnerable to excessive natural predation and chick survival remains low.

Decadent sagebrush, with little understory vegetation, occurs throughout much of the Pass Creek Watershed.



Reference Conditions, Patterns and Trends

Historic records suggest that portions of all 29 counties in Utah provided adequate habitat for sage grouse (Mitchell, 2001). Expansive sagebrush/grassland areas, maintained by periodic fire were present prior to Euro-American settlement. Large fragments of habitat have been lost to agriculture and urban development.

Natural/Human Causes of Change Between Reference/Current Conditions

Habitat loss, fragmentation and degradation are the main causes of population decline in sagebrush communities. Vegetation range, pattern and structure have been further impacted through intensive grazing and fire suppression, allowing increased establishment of pinyon-juniper and decreased grass and forb production.

6. Enhancement and Protection of Utah Prairie Dog Habitat

Current Conditions, Patterns and Trends

Utah prairie dog was listed as endangered under the Endangered Species Act of 1973 as amended, due to a decline in colony size and numbers. The status was changed to “threatened” in 1984, where it currently remains. Utah prairie dog is found in only a 10-county

Utah prairie dogs are found throughout the Upper Sevier River basin.



area of southwestern Utah, and is the western-most prairie dog in the United States, and the one with the smallest range. While it is estimated that 95,000 Utah prairie dogs existed in the 1920’s, today only 5,000 or 6,000 remain in isolated populations throughout southwest Utah, including within the Pass Creek Watershed (Day, 2001).

Reference Conditions, Patterns and Trends

Prior to 1920, Utah prairie dogs dominated areas within Pine and Buckskin Valleys in Beaver and Iron Counties, as far north as Nephi, south to Bryce Canyon National Park and east to the foothills of the Aquarius Plateau. The main concentrations of colonies now occur only in eastern Iron County, western Garfield County, and along portions of the East Fork and the main stem of the Sevier River.

Natural/Human Causes of Change Between Current/Reference Conditions

Decreases in grass/forb type plant communities, coupled with pinyon-juniper expansion, and the introduction of a deadly plague have reduced the colony size of many remaining prairie dog populations, necessitating long-term recovery efforts. Lack of periodic fire, preventing maintenance of large grassland patches, and the removal of shrub cover and accompanying reseeding with non-native plant species, (such as smooth brome) have

reduced vegetation diversity and forage plant species diversity within historic prairie dog ranges. Currently coordinated efforts between private landowners, Bureau of Land Management, Division of Wildlife Resources and Garfield and Kane Counties are pursuing the creation of new Utah prairie dog habitat and the improvement of existing habitat, as well as developing Habitat Conservation Plans for various counties.

7. Noxious Weeds

Current Conditions, Patterns and Trends

Noxious weeds pose an increasing threat to native ecosystems, croplands and other plant communities within the Pass Creek Watershed. An increase in recreational vehicle use and increased

traffic on Highway

89 as well as

Highway 12, is

accelerating the

spread of noxious

weeds. Established

populations of

Russian knapweed

and whitetop are

already found along

many travel corri-

dors. Recreational

vehicles often act

as weed vectors,

transporting weeds

great distances from their initial source, and once established, reduce forage production

and compete with native plant and animal species for sunlight, moisture and nutrients.

Noxious weeds located within water drainages are also competing with native riparian

vegetation.

Russian knapweed, once established, is difficult to eradicate.



Reference Conditions, Patterns and Trends

Historically, limited populations of noxious weeds occurred within the watershed. Infested livestock feed most likely introduced noxious weeds to the area; however, most populations remained small or were outcompeted by native vegetation. Noxious weed establishment on disturbed sites, such as in livestock, agricultural or mechanical treatment areas (chainings) was typically noted, but with limited dispersal.

Natural/Human Causes of Change Between Current/Reference Conditions

Currently, trails and roads serve as the single-most common point of noxious weed invasion, providing channels for weeds to migrate into more remote rangelands, agricultural and forested areas (USDAFS, 2002). Horses (if utilizing infected hay), ATV's and other motorized and nonmotorized vehicles traveling in recreation and roaded areas, act as vectors for noxious weeds, making wide-spread control difficult. Movement by

recreationists from watershed to watershed (possibly serving to increase noxious weeds) may pose long-term problems for resource managers as well as area landowners.

8. **PJ, Sagebrush-Grasslands - Fuel Conditions, Vegetation Composition, Accelerated Erosion**

Current Conditions, Patterns and Trends

Pinyon-juniper encroachment into historic sagebrush/grassland communities has reduced ground cover, decreased grassland species diversity eliminated portions of prime mule deer and livestock winter range and increased wildfire risk in areas of high pinyon-juniper densities. In addition, many sagebrush areas are decadent, with even age classes of old individuals and excessive crown canopies. Surface erosion has increased due to little understory vegetation to help retain soil.

Reference Conditions, Patterns and Trends

Pinyon-juniper historically occupied rocky edges, outcrops and slopes within the watershed. Periodic, low intensity fires (10 to 30 years) helped maintain pinyon-juniper density and diversity, while preventing encroachment into other vegetation types. Mixed age classes of sagebrush, with less than 15% canopy cover were dominant prior to Euro-American settlement, and probably dominated the watershed. Patchy vegetation patterns, with several age and canopy classes of sagebrush and grasses, were present and maintained by periodic fire, approximately every 20-40 years.

Pinyon-juniper expansion is a concern to wildlife and land managers, as well as landowners, within the lower portions of the watershed. Increased surface erosion within this vegetation type greatly affects water quality.



Natural/Human Causes of Change Between Current/Reference Conditions

Competition for available moisture and high ungulate use have substantially reduced the grass-forb component in mature and old, dense pinyon-juniper stands. Pinyon-juniper distribution has also increased because of recent fire suppression efforts. Chainings were conducted in the 1960's and 1970's on private, forested and BLM lands to promote grass-forb communities; however, lack of additional disturbance, has allowed pinyon-juniper to re-establish on these sites.

9. **Wildlife Management in Agricultural Areas**

Current Conditions, Patterns and Trends

Wildlife damage to agricultural lands has increased steadily over the past decade. Deer and elk continue to impact area ranches throughout the entire watershed by competing with livestock for available forage, destroying fences, and depredating stored winter crops. Utah prairie dogs present problems in the Castle Creek and Big Hollow

subwatersheds, by destroying cash crops.

While mitigation measures such as landowner and control permits, fencing and actual dollar reimbursements offset some of the costs, wildlife continue to have an economic impact on private agricultural lands. Other concerns expressed from landowners include the impact to land development and use by the listing (endangered, threatened, etc.) of wildlife species such as Utah prairie dog and sage grouse, and the hesitation of

Projects like the Coyote Hollow habitat improvement project, protect riparian and rangeland areas from deer, elk and livestock, while providing access to water. Deer and elk may compete with livestock (and vice-a-versa) for the best available forage and water.



landowners to engage in habitat improvement projects which may further attract wildlife and result in subsequent damage to private lands and cultivated areas.

Reference Conditions, Patterns and Trends

Unrestricted hunting of predators as well as big game hunting, resolved most wildlife/landowner conflicts. Adequate winter and summer deer and elk ranges were maintained by periodic fire, further eliminating potential deer/elk conflicts.

Natural/Human Causes of Change Between Current/Reference Conditions

Restricted hunting, the demand for increased quality hunting opportunities, stricter compliance with fish and game laws, and the desire for wildlife viewing opportunities have resulted in an increase in deer and elk numbers from early settlement conditions. Drought and subsequent changes in vegetation composition within the watershed may temporarily decrease elk and deer numbers; however, these same conditions may cause deer and elk to seek additional forage opportunities on private agricultural lands, where adequate feed is available. Competition for available forage from domestic livestock has decreased range conditions in some areas, further contributing to wildlife depredation on cultivated lands. Available habitat for deer, elk and Utah prairie dog has been lost through pinyon-juniper and mixed conifer encroachment into sagebrush/grasslands, aspen and open meadow areas.

Pass Creek Key Issues Identified

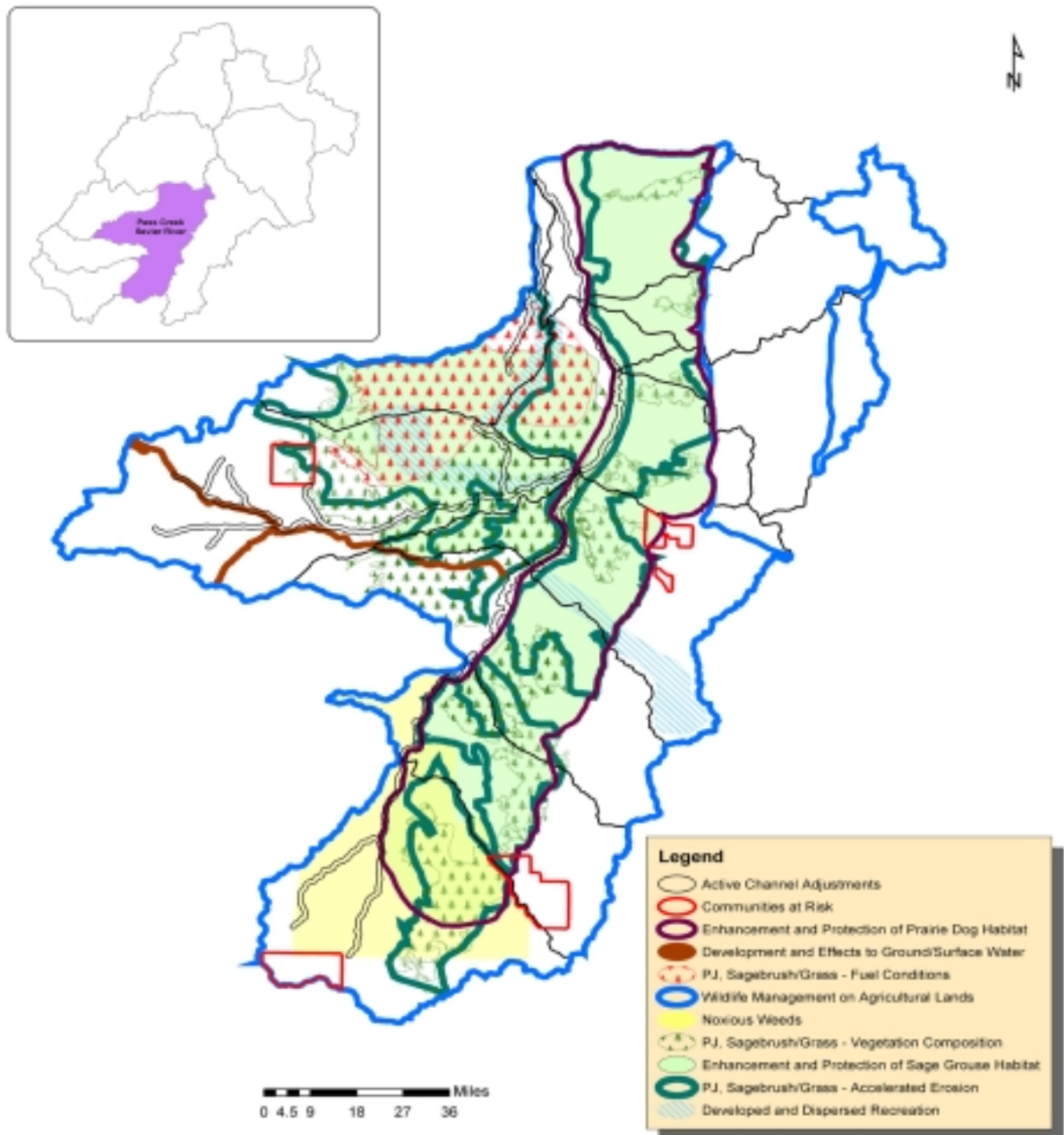


Fig. 4-21. The 11 key issues identified for the Pass Creek Watershed (as discussed in the 9 narratives) represent input from agriculture, fire, human uses, hydrology, species and habitat, and vegetation technical advisory committees (TACs).

	Peterson Wash-Sevier River	Casto Wash	Red Canyon	Graveyard Hollow	Hillsdale Sevier River	Pass Creek	Proctor Canyon-Sevier River	Big Hollow-Sevier River	Pole Canyon-Sevier River	Castle Creek-Sevier River	Total for Pass Creek Watershed
Hydrology/Water Quality											
<i>Hydrology</i>											
Dewatering and altered flow regimes	H	NA	NA	NA	L	NA	M	NA	NA	L	L
Releases from Otter Ck. Res. may be causing bank erosion along E. Fork Sevier River	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diversion of water from Castle Creek to Deer Creek has caused severe channel degradation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diversions along the Sevier R. may be affecting sediment transport capacity and channel equilibrium	H	NA	NA	NA	M	NA	L	L	NA	M	L
Loss of riparian veg. has resulted in reduced bank storage and summer streamflows	H	NA	NA	NA	M	M	M	M	M	M	M
<i>Hillslope Processes</i>											
Accelerated erosion on high elevation meadows	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Accelerated erosion in pinyon-juniper and sagebrush stands	H	M	M	H	H	H	M	M	M	M	M
Accelerated erosion associated with urban development	M	NA	M	NA	L	NA	NA	L	NA	NA	L
Accelerated erosion associated with roads	M	M	M	NA	M	M	M	M	M	M	M
Rill and gully erosion on hillslopes	H	M	M	M	M	H	M	M	M	M	M
Accelerated erosion associated with illegal ATV use	M	M	M	H	M	M	NA	M	M	M	M
<i>Riparian Vegetation</i>											
Lack of health composition of riparian veg, defined by the presence of late seral herbaceous plants and multiple age class distribution of appropriate wood plant species	H	L	M	M	M	H	M	H	M	M	M
<i>Water Quality</i>											
Summer home development and associated impacts (I.e., groundwater contamination, erosion, recreation, etc.)	M	NA	L	NA	L	NA	M	M	M	M	L
Accelerated erosion, grazing management, recreation use, roads	M	M	H	H	M	H	M	M	M	M	M
TMDL listed and potentially listed water bodies due to nutrients, sediment, phosphorous, DO, habitat alteration, or temperature	H	NA	NA	NA	H	NA	H	H	L	NA	M
<i>Channel Morphology</i>											
Active channel adjustments (vertical or lateral)	H	H	H	H	M	H	M	H	M	H	H
Accelerated bank erosion	H	H	H	H	M	H	M	H	M	M	M
Channelization	M	NA	NA	NA	NA	NA	M	NA	H	NA	L
Agriculture											
Animal Feed Operations	L	NA	NA	NA	L	NA	NA	NA	NA	NA	L
Water conservation concerns (Sprinkler vs. Flood Irrigation)	L	NA	NA	NA	M	NA	L	L	NA	L	L
Pasture Mgt.	L	NA	NA	NA	M	NA	M	M	NA	M	L
Fertilizer Usage and Impacts	L	NA	NA	NA	M	NA	L	L	NA	NA	L
Noxious Weeds	M	NA	H	NA	H	M	M	M	M	M	M
Wildlife Management in Agricultural Areas	H	M	M	H	M	H	H	H	H	H	H
Fire											
Communities at Risk	L	L	L	L	H	H	H	H	H	H	H
Fuel Conditions	M	M	M	H	H	H	H	H	H	M	H
Human Uses											
Development and Effects to Groundwater	L	L	H	L	H	L	H	H	M	M	M
Development and associated recreation uses to adjacent lands	NA	L	L	NA	L	L	L	L	L	L	L
Access Management	M	M	M	H	L	M	L	L	L	L	M
Developed and Dispersed Recreation	M	M	H	L	L	M	L	L	L	L	M

Table 4-12. Issue ratings for all 10 Pass Creek subwatersheds, as identified by technical advisory committees (TACs). Issues highlighted in blue are addressed in detail in this section.

	Peterson Wash-Sevier River	Casto Wash	Red Canyon	Graveyard Hollow	Hillsdale Sevier River	Pass Creek	Proctor Canyon-Sevier River	Big Hollow-Sevier River	Pole Canyon-Sevier River	Castle Creek-Sevier River	Total for Pass Creek Watershed
Vegetation											
Sagebrush - Grass	H	H	H	M	M	H	H	M	H	H	H
Aspen	L	NA	NA	NA	NA	M	L	L	L	L	L
Grassland - Meadow	H	H	H	NA	H	M	H	H	H	H	H
Mixed Conifer - Mountain Fir	L	L	L	L	L	M	L	L	L	L	M
Oak - Mahogany - Mountain Shrub	L	L	L	M	L	M	L	L	L	M	M
Pinyon - Juniper	M	L	L	H	M	H	H	L	M	M	H
Ponderosa	L	L	M	L	L	M	L	L	L	L	M
Spruce - Fir	NA	NA	NA	NA	NA	L	NA	L	NA	NA	L
Tall Forb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Noxious Weeds	M	M	H	L	M	M	M	M	H	M	H
Species and Habitat											
<i>Priorities for Enhancement or Protection of:</i>											
Southwestern Willow Flycatcher Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Utah Prairie Dog Habitat	H	M	M	L	H	L	H	H	H	M	H
Bald Eagle Habitat	M	M	L	L	H	M	H	H	M	M	H
Spotted Bat Habitat	M	M	H	M	M	M	M	M	M	M	H
Townsend's Big-eared Bat Habitat	M	M	H	M	M	M	M	M	M	M	H
Flammulated Owl Habitat	NA	M	H	NA	L	H	L	M	NA	M	M
Three-toed Woodpecker Habitat	NA	NA	NA	NA	NA	NA	L	L	NA	NA	L
Northern Goshawk Habitat	L	H	H	L	M	H	M	M	L	M	M
Peregrine Falcon Habitat	M	M	M	L	M	L	M	M	M	M	M
Sage Grouse Habitat	H	H	M	H	M	H	H	M	H	H	H
Turkey Habitat	M	L	M	M	M	L	H	M	M	M	M
Deer Habitat	M	H	M	H	M	H	H	H	H	H	H
Elk Habitat	L	M	M	H	M	H	M	M	M	M	H
Pronghorn Habitat	H	H	M	H	M	H	M	M	L	L	H
Brian Head Mountain-Snail Habitat	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	L
Beaver Habitat	L	L	L	L	L	L	L	M	L	L	M
Boreal Toad Habitat	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	L
Bonneville Cutthroat Habitat	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	L
Riparian Areas	L	L	L	L	M	L	M	M	H	H	M
Fisheries Habitat	M	NA	NA	NA	H	NA	H	H	H	L	M

Table. 4-12 (cont).. Issue ratings for all 10 Pass Creek subwatersheds, as identified by technical advisory committees (TACs). Issues highlighted in blue are addressed in detail in this section.

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