Long Range Land Use and Natural Resource Management Plan

Saratoga-Encampment-Rawlins Conservation District
2017 – 2021

Adopted: February 15, 2017

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Conservation District
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Leanne Correll, SunAgri, LLC:	Consultant acting as the Long Range Land Use and Natural Resource Management Plan Project Manager. Built upon the foundation using the template to provide local facilitation with District Board and staff to develop policies, goals, objectives, and sought out the local support data from a wide variety of sources. Engaged other external partners and worked to address comments to see the plan through to adoption.
David "Tex" Taylor:	University of Wyoming Professor of Agricultural & Applied Economics provided Carbon County economic data and contributed to the socio-economic narratives.
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Karen Budd-Falen:	Developed guidance and provided a template to the Wyoming Association of Conservation Districts in her 2013 Memorandum. Additionally, she provided input and comments during the plan development.
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SARATOGA-ENCAMPMENT-RAWLINS
CONSERVATION DISTRICT

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1. Resolution of Adoption

SARATOGA-ENCAMPMENT-RAWLINS CONSERVATION DISTRICT

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Resolution of Adoption

Whereas, the Saratoga-Encampment-Rawlins Conservation District is empowered by Wyoming State Statute 11-16-122 (b) et seq. to adopt and implement water and soil conservation management policies;

Whereas, the Saratoga-Encampment-Rawlins Conservation District has sought out and received public involvement and input regarding the role of the Saratoga-Encampment-Rawlins Conservation District in the conservation and management of the District's natural resources and the plans and programs are carried out utilizing an open and collaborative planning process;

Therefore, be it hereby resolved by the Board of Supervisors of the Saratoga-Encampment-Rawlins Conservation District this 15th day of February, 2017 that the Board of Supervisors adopts the Saratoga-Encampment-Rawlins Conservation District's Long Range Land Use and Natural Resource Management Plan for 2017 – 2021.

Scott Kerbs, Member

Randy Arnold, Treasurer

Chris Williams, Secretary

Dan Mika, Vice-Chair

Arla Strasser, Chair

2. Introduction

The Saratoga-Encampment-Rawlins Conservation District (hereafter District) is one of thirty-four conservation districts in Wyoming operating as a legal subdivision of the state of Wyoming, Wyo. Stat. §§ 11- 16-102(a)(v), 11-16-113(c). Each conservation district is governed by a board of five locally elected supervisors who serve without pay. By Wyoming state statute three members are rural, one is urban, and one is designated as at large. They are elected to staggered four-year terms. Conservation districts are the only local government, charged specifically by state statute, with natural resource management. District supervisors serve as the grass roots representatives of private landowners and the general public providing leadership and direction in natural resource conservation programs. Accountability for meeting goals and objectives is documented in the District's Annual Plan of Work that specifically identifies Goals and Objectives for the year. The Annual Plan of Work is included in the yearly Annual Report. A copy of the District Annual Report can be obtained from the Office in Saratoga or downloaded from the website, http://www.sercd.org/ .

The primary purpose of this Long Range Land Use and Natural Resource Management Plan (hereafter Plan) is to be a guide to efficiently and effectively use the resources while protecting the environment. This updated five-year Plan will identify the District's policies to facilitate, protect, and preserve the utilization and conservation of natural resources on public lands. This plan was developed based on issues scoped to the public and was modified by the District Board and staff. District policies also identify their stance on natural resources impacted by regulations with the potential to impact private lands. These policies will support access to and wise use of natural resources on federal land; protect private property rights; protect and enhance the customs, cultures, and the economy; protect the tax base; assure the well-being of the people; and provide for the public health, safety, and welfare of the County citizens.

As required by the National Environmental Policy Act (NEPA), the Federal Land Policy and Management Act (FLPMA), the National Forest Management Act (NFMA) and other federal statutes, this Plan will be applied to federal regulatory frameworks that govern the management of public land in regards to the rangeland, soil, water, wildlife, air, energy and other resources. Federal law requires federal agencies to give meaningful consideration to policies asserted in plans developed by local governments, including counties and conservation districts. Adoption of this plan will strengthen the District's ability to achieve Cooperating Agency status, coordinate with federal land management agencies, our commitment to work within the NEPA framework, and will provide direction and policies for "consistency review purposes". Cooperating agencies assist the lead federal agency in development of Environmental Impact Statements (EISs). Therefore, a secondary purpose for the Plan is to compel federal agencies to consider local strategies and coordinate with District Board and staff as required by federal law, regulation, and policy.

The final purpose of this Plan is to identify issues and activities and serve as a broad outline identifying long range opportunities for the management and conservation of resources within the District for the next five years. It outlines the goals and objectives for the Districts' priority resource conservation areas. It will function as a practical guide for the planning and accomplishment of work by the District, its cooperators, and associated agencies.

The Plan is available for public inspection and filed with County registrar of rules (Carbon County Clerk). The Plan reflects input from the public, Federal and State agencies, organizations, county commissioners, and legislators.

2.1 Custom, Culture, and County History

Custom and culture describes the character of the citizens of the District through history and current practices.

Custom is a usage or practice of the people, which by long and unvarying habit, has become compulsory and has acquired the force of law with respect to the place or subject-matter to which it relates (Bouvier's Law Dictionary 1867). Culture is defined as the customary beliefs, social forms and material traits of a group; an integrated pattern of human behavior passed to succeeding generations (Webster's New Colligate Dictionary 1975).

> *Carbon County was organized in 1868. Prior to that, about 3,400 square miles in the center of the county were once part of the Republic of Texas and then part of the State of Texas until 1852.*

Carbon County was one of five original counties of the Wyoming Territory in 1868. The county has a rich, diverse history. Indians and then trappers, mountain men, railroad builders, ranchers, and miners appreciated the vast abundance of natural resources present. In the 1860s, emigrants were heading west through the area utilizing the Overland Trail that goes through the middle of the District. Hunting and fishing were prized in the area and throughout the 1870s sportsmen came from as far away as England and Scotland (Van Pelt, 2016). The first black-faced sheep were brought to the area in 1868 by a government trapper. The Red Desert, Great Divide Basin, and Rawlins, Wyoming became well-known for sheep production. In the 1880s, sheep and cattle ranches sprang up throughout the county. Logging began in the late 1860s when log ties from the mountains were floated down the North Platte River to supply ties for building the Union Pacific Railroad. Logging and timber production continued after the railroad was built to provide lumber for those who were settling the area and making it their home.

Figure 1 : Tie hacks in the Sierra Madras to deliver railroad ties for building the Union Pacific Railroad.

Photo Credit: *Bob Martin/Dick Perue Collection -Historical Reproductions by Perue*

The custom and culture of the District was developed through the tenacity of the early emigrants and settlers who developed the area, utilizing the natural resources available to develop economic stability for the residents of Carbon County and its local communities. Agriculture opportunities in the District were expanding in the late nineteenth century along with the population. With a need for research to improve production agriculture, a University of Wyoming Agricultural Experiment Station (AES) was developed close to Saratoga.

Figure 2 : Saratoga Experiment Farm in 1891

The Saratoga Experiment Farm, pictured in 1891, was one of the early day endeavors of the University of Wyoming's Agricultural Experiment Station and is no longer in existence.

Photo Credit: *Bob Martin/Dick Perue Collection - Historical Reproductions by Perue*

Figure 3 : Grain research at the Saratoga Experiment Farm

Photo Credit: *Bob Martin/Dick Perue Collection -Historical Reproductions by Perue*

Today the agricultural lifestyle remains a strong component of the District and the way of life for its residents. Expansion in energy development including oil, natural gas, and wind is a driving force in the economy and includes the possibility for growth in the current population of the area. Important to residents is the connection and access to the abundant natural resources in the area and the ability to engage in recreation, including both motorized and non-motorized activities. Maintaining traditional historical land uses – farming, livestock grazing, energy development, and recreation such as hunting and fishing, etc. – which all contribute to the economic viability of the area, is crucial to sustaining the District communities.

Hunting and fishing have always been a part of the history of the County. The Ute Indians lived off the game before any settlers arrived. The numbers have fluctuated with changes in forage resources and bad winters, but most years the herds of deer, antelope, and elk attract hunters from many states. Fishermen from all over the world come to fish Blue Ribbon streams.

Currently, agriculture within the District consists primarily of ranching. The predominant livestock operations are cow-calf and yearling. Other types of livestock are also present. Hay production consists of both alfalfa and grass hay with most irrigation provided by direct flow diversions from the North Platte River and its tributaries.

Local land users (agriculture, timber, recreation, and mining) are dependent upon the federal lands to varying degrees for commodity use and recreational enjoyment. Local economies derive a significant source of income from these public lands - from industry to agriculture to recreation.

2.2 Conservation District Background

The Saratoga-Encampment-Rawlins Conservation District was organized in 1945, under Wyoming Conservation District Law, by members of the ranching community. Its charge is to exercise responsibility for the conservation of soil, water, and natural resources within its boundaries. The current expanded District was formed in 1972 to take in all lands and people in an effort to address any natural resource issues people find important. The District is a microcosm of the State. It encompasses the same vast diversity of landscapes, wildlife and industry. The natural resource issues facing the District are just as diverse—wind energy and its impacts, preservation of open spaces, agriculture and its contribution to the economic stability of the District, cooperatively providing input to Federal agencies managing public lands for the purpose of multiple use, and conservation issues facing producers, recreationists and municipal users.

"Develop and direct programs to promote long-term conservation and enhancement of our natural resources while contributing to the economic stability of the District and its residents."
~Saratoga-Encampment-Rawlins Conservation District Mission Statement

The District has conducted more than 70 years of conservation work in central Carbon County. It is the largest of three conservation districts in Carbon County. The District partners with the other Carbon County conservation districts, Little Snake River and Medicine Bow, as appropriate and feasible. Even though the District's issues have become more complex over the years, the District mission remains the same: "Develop and direct programs to promote long-term conservation and enhancement of our natural resources while contributing to the economic stability of the District and its residents."

The District declares its interest in maintaining, protecting, and enhancing soil and water resources within the District, and where applicable, on related public lands. We intend to develop and direct programs to promote long-term conservation and enhancement of our natural resources while contributing to the economic stability of the District and its residents. Issues of concern connected to soil and water resources such as wildlife resources, vegetation resources, private property rights, and agriculture are included where feasible and appropriate.

2.3 General Description

The District runs the length of Carbon County from the Colorado State line north to the Natrona County, Wyoming line and occupies the center of Carbon County, Wyoming (Figure 4).

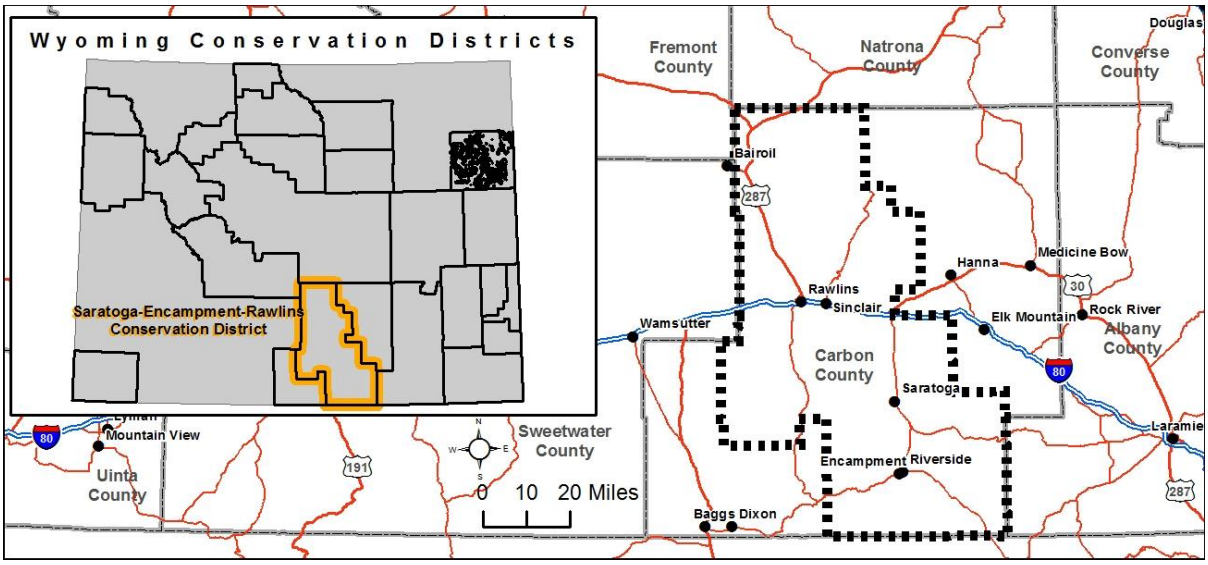

Figure 4: Saratoga-Encampment-Rawlins Conservation District

The District includes approximately 2.7 million acres. Of this total, approximately 37% is privately owned, 57% federally managed, and 6% owned by the State of Wyoming (Table 1).

Table 1: District surface ownership

Surface Ownership	Acres	% of Total Ownership
Bureau of Land Management	1,087,985	39.9%
Private	996,645	36.5%
Forest Service	431,126	15.8%
State	156,449	5.7%
Bureau of Reclamation	29,040	1.1%
Water	25,183	0.9%
U.S. Fish & Wildlife Service	1,468	0.1%
Total	2,727,897	100%

The historical development of the transcontinental railroad through Carbon County established the "Wyoming Checkerboard," with is a 40-mile wide band (20 miles either side of the Union Pacific Railroad line) of alternating sections of private and federal land. The disproportionate amount of federal land as well as the Wyoming Checkerboard in the District means that any change in federal land management policy also influences private land use decisions and these policy changes have an even greater effect on the District's economy.

Federal law, in particular, establishes national policies that focus on national interests, rather than local interests. While federal land use and planning decisions may create benefits for state and national citizens outside of the County, they may also transfer a disproportionate amount of the costs and responsibilities to local communities and citizens.

The surface ownership pattern, including the "checkerboard" land pattern, presents a unique set of land management challenges in the District (Figure 5**: District Surface Ownership**). Some of these challenges include the mutual dependency of the Bureau of Land Management, state, and private landowners when it comes to access, land uses, and land use decisions; water rights usage; and grazing rights. Although land may be privately owned, it may be included in a federally managed grazing allotment where the landowner/permittee is restricted as to how and when the private land can be grazed by a federal land management agency. Timely installation of rangeland improvements on private land is difficult if it needing installed within a federal allotment.

Federal agencies prefer to manage land in contiguous blocks and, from time to time, have proposed land exchanges in the Wyoming Checkerboard to create contiguous blocks of federal land. Land exchanges may not fully compensate the landowners and may reduce the total private land base in the District.

The Wyoming Eminent Domain Act, Wyo. Stat. 1-26-501 *et seq.*, authorizes the condemnation of land only for public use and only as set forth in state law. Nevertheless, it is possible that eminent domain power may be used to acquire land needed by private corporations for projects deemed to serve the public good, such as electrical transmission lines. *Bridle Bit Ranch Co. v. Basin Elec. Power Co-op*, 118 P.3d 996, 1011-16 (Wyo. 2005). Wyoming condemnation authority is not as extreme as the case of *Kelo v. City of New London*, 545 U.S. 469 (2005) which involved the use of eminent domain to pave the way for a private developer to build urban mixed-use housing and retail on the basis that the local government had determined this was in the city's best interests. Nevertheless, the power of eminent domain should be used sparingly, especially when the ultimate land owner is not a local or state government agency.

Ultimately, cooperative management and communication between the private landowner, Bureau of Land Management, and the State of Wyoming is necessary to foster successful land, water, and natural resource use. This use has both direct and indirect impacts on the local communities and the sustained health of these valuable resources.

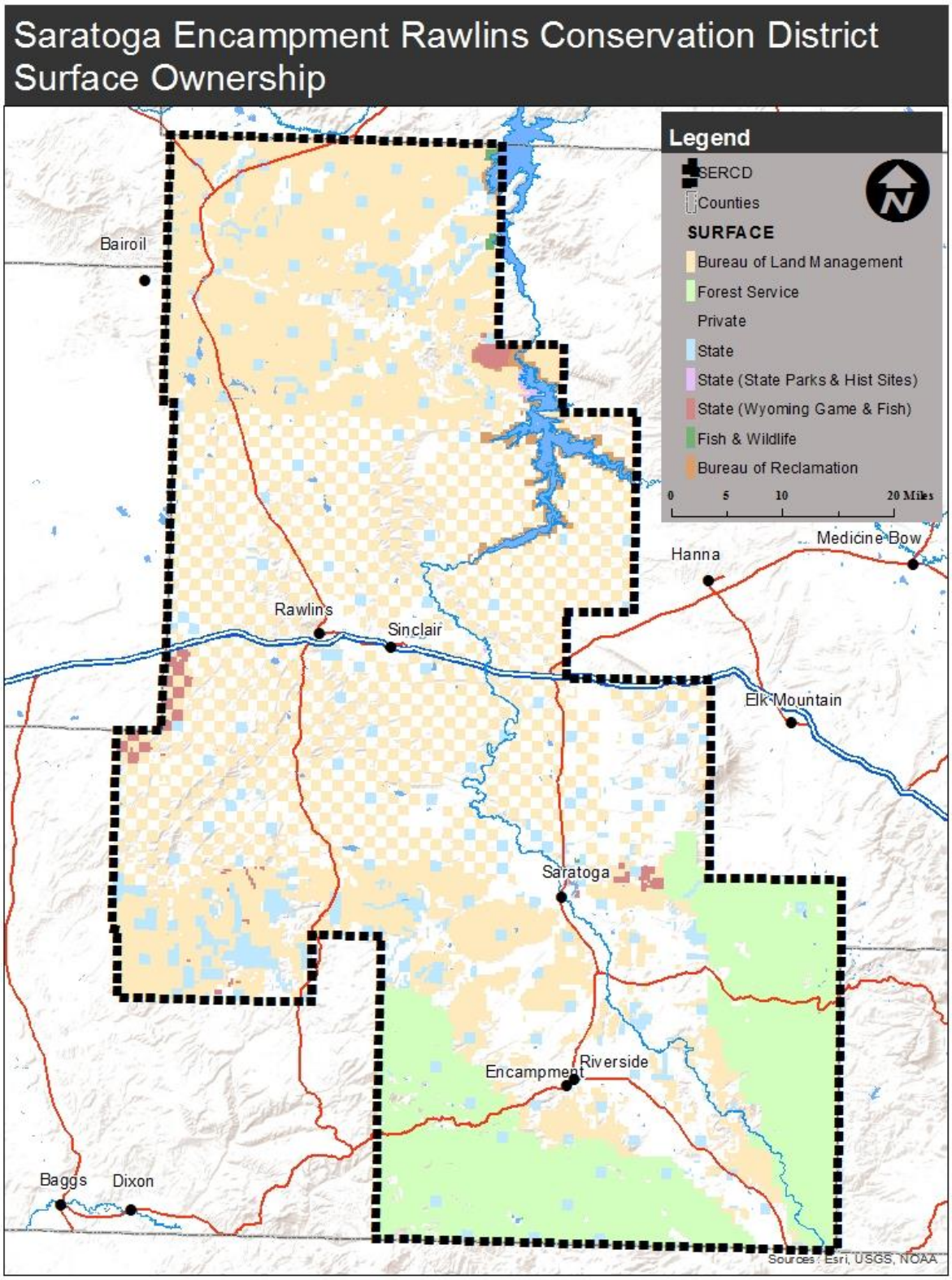

Figure 5: District Surface Ownership

2.4 Board of Supervisors (2017)

Arla Strasser – Chair
Dan Mika – Vice Chair
Chris Williams – Secretary
Randy Arnold – Treasurer
Scott Kerbs – Member
Dan Runner – Associate Member
Jim Miller – Associate Member
Jack Berger – Associate Member (2007 – 2016 Chairman)

2.5 Conservation District Staff (2017)

Joe Parsons – District Manager
Jean Runner – Office Manager, Education Coordinator
Garrett Pantle – Resource Specialist

2.6 Natural Resources Conservation Service Staff (2017)

Mark Shirley – District Conservationist
Clay Thompson – Civil Engineering Technician (serves District; based in Laramie)
Vacant – Soil Conservation Technician
Vacant – Rangeland Ecologist/Sage Grouse Initiative Coordinator (Shared position with District)

2.7 Environmental Conditions

Most of the District is quite arid, and the temperature and precipitation vary with elevation. Elevations range from the 12,000-foot alpine tundra of the Snowy Range to 5,800 feet at the extreme northern edge of the District near Pathfinder Reservoir. The vegetation ranges from alpine to desert and is a result of the climate and growing seasons. The wide range of temperatures and precipitation resulting from occasional violent summer and winter storms, usually coupled with strong winds, creates an environment that is often harsh and unpredictable. Temperatures are quite variable depending on elevation and slope. Recorded temperature extremes within the District are -46°F at Encampment and 100°F recorded at both Saratoga and Muddy Gap. In the mountains, temperatures can range from highs near 89°F to lows of -50°F.

Precipitation in the District averages about 10” annually. In the higher elevations of the Sierra Madre Mountains the precipitation averages over 52” annually. The majority of arable irrigated land in the District receives only about 12” to 18” annually, with most occurring at the lower end of that range. Strong winds, water availability, frost-free period or growing season, which is about 90 days per year, all limit plant growth.

There are seven 8-digit hydrologic unit (subbasin) watersheds in the District. The dominant watershed in the District is the upper North Platte River. Other watersheds that make up a significant portion of the District are the Great Divide Closed Basin, Sweetwater, and Pathfinder-Seminoe Reservoirs (see Watershed Map on page 69). Small portions of three other watersheds are also within the District boundaries.

The grasslands, sagebrush deserts, riparian corridors, forests, lakes, rivers, streams, and all the areas in between that provide us with room to roam, wildlife to view, and an opportunity to “get away from it all”, are natural resources that everyone values and appreciates. The District is committed to the enhancement, conservation and preservation of these resources that make this part of Wyoming special.

3. Land Use Planning Process and Legal Framework

Locally elected governments and elected officials have far ranging and important responsibilities to their constituents, described by state statutes as protecting their "health, safety and welfare." That responsibility includes specifically interacting with federal agencies on all federal issues impacting the local community, county or conservation district(s). To give the locally elected government the strongest voice it can have during this "government-to-government" interaction, local governments can adopt "local land use plans" or "resource plans" to set local policy regarding the use and management of federal lands and the adoptions of federal policies, programs, and other types of federal decision-making. These local land use policies are not zoning and do not regulate the use of private lands. This plan is intended to protect the local citizens' use of and access to federal and public lands and resources.

Federal agencies and departments are mandated by various federal statutes to engage local governments in federal decision-making processes related to federal plans, policies, and programs that will impact the local land use, management of natural resources, the citizens, and the local tax base. The *"Making A Difference in Federal Decision Making, Plans, Policies and Programs – Substantive Participation by Local Governments In Federal Agency Decision Making – Template and Procedures for Adoption of Local Land or Resource Plans"* was used extensively in the development of this Plan. As the Wyoming attorney author[1] notes:

> The adoption of a local land use or resource plan by a local government is a critical tool allowing a local government to have a substantive impact on federal decisions, plans, policies and programs. In fact, federal agency consideration of a local land use plan, resource plan or "officially adopted policy" plays a key role in the success of a local government engaging as a cooperating agency or with consistency review under the National Environmental Policy Act, coordination under the Federal Lands Policy and Management Act or the National Forest Management Act and in assisting in the Governor's consistency review process.

The National Environmental Policy Act (NEPA) requires all federal agencies to cooperate to the fullest extent possible with state and local governments. The District has taken an active role in developing working relationships with the various federal agencies through Memorandums of Understanding and seeking cooperating agency status on federal planning documents which impact the District.

Figure 6: A beaver slide stacker in use in the 1940s.

The team with the sweep is to the right of the stack. The plunger that pushes the hay up the beaver slide and over to the man stacking is not shown. Photo provided by Marion Berger.

[1] September 3, 2013 Memorandum, From Karen Budd-Falen, to Wyoming Association of Conservation Districts.

3.1 Local "Land Use Plan" Defined

When people think of local "land use plans," they typically have in mind the general planning document that counties use to determine zoning, public services and facilities, transportation, and the like. But these plans apply to land that is largely within the county's jurisdiction and are based upon specific state authorization. By contrast, many rural counties and conservation districts have also officially adopted a separate land use plan or natural resources management plan that contains policies relating to the surrounding federal land and reflects the local government's position on federal decisions. These local plans also describe the local economic or tax base as well as local "customs and cultures" which the federal agencies are required to consider. It is this second type of planning that is being undertaken by the District.

For those unfamiliar with local land use planning participation for federal decisions, the very idea may seem odd. Local governments do not have jurisdiction over the federal government, and local land use plans cannot require federal land managers to take specific actions. For example, a conservation district cannot dictate in its land use plan how many grazing animal unit months (AUMs) will be allocated for a given grazing allotment, or that wild horse populations shall be managed below appropriate management levels (AML) to provide more forage for livestock grazing. These decisions are within the authority of the federal agency. However, rural communities' socioeconomic wellbeing, health, safety, and culture can be strongly impacted by the management of the surrounding federal or public lands. Moreover, Wyoming law provides that conservation districts oversee the economic, social, general wellbeing of the people and resources that are within their jurisdictions, and provide for the ongoing stability and health of soil and water resources. The reasons a local government would go through a process to develop this land use plan is to ensure the local socioeconomic wellbeing, the culture and customs of the constituents, and natural resource health are considered in federal decisions.

3.2 District Statutory Authorities and Land/Natural Resource Planning Authority

3.2.1 Wyoming Conservation District Statutory Authority

Wyoming's Conservation Districts were created in 1941 and Wyoming Conservation District Law[2] is codified in Article 11, Chapter 16 of the Wyoming statutes (District Law). District Law describes, among other matters, the powers, purposes, and duties of a conservation district. The law clearly states that conservation districts are legal subdivisions of the state of Wyoming. Wyo. Stat. §§ 11- 16-102(a)(v), 11-16-113(c). In Wyoming, conservation districts are not "home rule" political subdivisions. Therefore, a conservation district's powers are limited by its statutes and they do not have any power other than that expressly granted by the constitution or statutes, as well as powers reasonably implied from the expressly granted powers.

District Law provides authority for conservation district land use or resource plans.[3] Wyoming Statute (W.S.) § 11-16-122(b)(xvi) gives conservation districts authority to:

> (xvi) Develop and implement comprehensive resource use and management plans for range improvement and stabilization, conservation of soil, water, and vegetative resources, control and prevention of soil erosion and for flood prevention or the conservation, development, utilization and disposal of water within the district, which plans shall include range management provisions and shall

[2] WY Stat § 11-16-122 Powers and duties of districts and supervisors thereof generally.

[3] Separately, Wyoming Conservation Districts have authority to develop long term strategic plans and watershed plans. See Wyo. Stat. §§ 11-16-103(b), 11-16-122(b)(v)(xvi)(xvii).

specify in detail the acts, procedures, performances and avoidances necessary or desirable to carry out the plans, including the specification of engineering operation, fence and stockwater developments, methods of cultivation, the growing of grass and other vegetation, cropping and range programs, tillage and grazing practices, and changes in use of lands.

(xix) Manage, as agent of the United States or any of its agencies, and enter into agreements with the United States or any of its agencies, or this state or any of its agencies, to effect cooperation with the United States or any of its agencies under United States Public Law 566 approved August 4, 1954, or amendments thereto, in connection with the acquisition, construction, operation or administration of any land utilization, soil conservation, erosion control, erosion prevention, flood prevention projects, conservation of water, water utilization, disposal of water in watershed areas and other water projects within its boundaries.

Also, W.S. § 11-16-122(b)(xxvi) empowers a conservation district to:

Make, amend and repeal rules and regulations not inconsistent with this act, to implement its purposes and powers.

W.S. § 11-16-103. Legislative declarations and policy provides the reasons the Wyoming Legislature Enacted Conservation District law are as follows:

(a) It is hereby declared that the farm and grazing lands of Wyoming are among the basic assets of the state; that improper land use practices cause and contribute to serious erosion of these lands by wind and water; that among the consequences which would result from such conditions are the deterioration of soil and its fertility and the silting and sedimentation of stream channels, reservoirs, dams, and ditches; that to conserve soil, and soil and water resources, and prevent and control soil erosion, it is necessary that land use practices contributing to soil erosion be discouraged and that appropriate soil conserving land use practices be adopted.

(b) It is hereby declared to be the policy of the legislature to provide for the conservation of the soil, and soil and water resources of this state, and for the control and prevention of soil erosion and for flood prevention or the conservation, development, utilization, and disposal of water, and thereby to stabilize ranching and farming operations, to preserve natural resources, protect the tax base, control floods, prevent impairment of dams and reservoirs, preserve wildlife, protect public lands, and protect and promote health, safety and general welfare of the people of this state.

3.2.2 The National Environmental Policy Act (NEPA)

The NEPA applies to “every major Federal action significantly affecting the quality of the human environment” (42 U.S.C. § 4332(2)(C)). The courts have interpreted this to mean that every time the federal government spends any amount of money for almost any action, NEPA compliance is required. There are several ways local governments can participate in the NEPA process, depending on the type of federal decision, the level of commitment of the local government, and the goal of the local government.

First, the local government can use its local land use or resource plan as part of the federal agency’s “consistency review” process. Under this provision, if the federal agency, in the course of writing an Environmental Impact Statement (EIS), receives a local land use or resource plan, the NEPA commands the federal agency to “discuss any inconsistency of a proposed action with any approved State or local plan and laws (whether or not federally sanctioned). Where an inconsistency exists, the [environmental impact]

statement should describe the extent to which the [federal] agency would reconcile its proposed action with the [local government] plan or law." (40 C.F.R. §§ 1506.2, 1506.2(d)).

The NEPA also requires that copies of comments by State or local governments must accompany the EIS or Environmental Assessment (EA) throughout the review process (42 U.S.C. § 4332(c)). All comments submitted must be attached to the Final EIS for a project and maintained as a part of the project record for all EAs (40 CFR 1503.4(b)).

Second, local governments can separately participate in the NEPA process as a "cooperating agency" (40 C.F.R. § 1508.5). Pursuant to NEPA, an applicant for cooperating agency status must both (1) be a locally elected body such as a conservation district board of supervisors; and (2) possess "special expertise." A local government's special expertise is defined as the authority granted to a local governing body by state statute. Wyoming statutes provide conservation districts the special expertise to "cooperate, including but not limited to representing the conservation district as a cooperating agency with special expertise as provided by the NEPA and in federal land planning implementation. . ." Wyo. Stat. § 11-16-122(b)(viii).

For example, Wyoming conservation districts have state statutory authority related to the conservation of soil and water resources, control and prevention of erosion, conservation, development, utilization and disposal of water, to stabilize the ranching or farming industry; preserve natural resources, protect the tax base, control floods, preserve wildlife, protect the public lands and protect and promote the health, safety and general welfare of the people of the State. See Wyo. Stat. § 11-16-103(b).

The District requests that all federal actions occurring within the District requiring NEPA documentation and processes include and invite the District to be a part of that process as a Cooperating Agency. The District at its discretion, within its authority and resources available will consider the federal invitation and respond in writing to those projects which we feel we can be a productive team member. In addition, Wyoming statutes also state:

> When representing a conservation district as a cooperating agency in matters related to the National Environmental Policy Act and in federal land planning, implementation and management actions, supervisors of a conservation district shall be deemed to have special expertise on all subject matters for which they have statutory responsibility as provided in W.S. 11-16-122, including but not limited to all subject matters directly or indirectly related to stabilization of the agriculture industry, protection of natural resources including but not limited to data and information, conservation of soil and water resources, control and prevention of soil erosion, flood prevention or the conservation, development, utilization and disposal of water within the district. W.S. § 11-16-135.[4]

Thus, Wyoming statutes clearly provide conservation districts the special expertise to act as a "cooperating agency" in the NEPA process.

3.2.3 Council of Environmental Quality (CEQ)

In conjunction with the enabling legislation, the District policy is to integrate to the maximum extent allowable the Council of Environmental Quality (CEQ) regulations for implementing the NEPA that pertain to local governments regarding coordination and in particular the Cooperating Agency directives noted in the Code of

[4] WY Stat § 11-16-135 (2016) . Special expertise of supervisors of conservation districts.

Federal Regulations (CFR) 1501.6. We include the CEQ language below to continually remind our federal partners of their responsibility.

§Sec. 1501.6 Cooperating agencies. a) The lead agency shall:

1. Request the participation of each cooperating agency in the NEPA process at the earliest possible time.
2. Use the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise, to the maximum extent possible consistent with its responsibility as lead agency.
3. Meet with a cooperating agency at the latter's request.

The District asserts it will:

> (xx) Act as representative for local groups in dealing with the United States or its representatives, in soil or water conservation matters under United States Public Law 566 approved August 4, 1954, or amendments thereto; [5]

3.2.4 Federal Land Policy and Management Act (FLPMA)

FLPMA, which governs the Bureau of Land Management (BLM), provides detailed requirements for "coordination" and "consistency" with local land use plans. With regard to the requirements for "coordination", FLPMA states (43 U.S.C. § 1712):

> To the extent consistent with laws governing the administration of the public lands, coordinate the inventory, planning and management activities for such lands with the land use planning and management programs of other Federal departments and agencies of the State and local governments within which the lands are located . . . considering the policies of approved State and tribal land resource management programs.

FLPMA both provides the directive that the BLM engage local governments in coordination, as well as specific instructions to the BLM as a means to accomplish "coordination." To achieve coordination:

- To the extent practical, the BLM must stay apprised of local land use plans (43 U.S.C. § 1712(c)(9)).
    - The BLM must assure that local land use plans germane to the development of BLM land use plans are given consideration.
    - To the extent practical, the BLM must assist in resolving inconsistencies between local and BLM land use plans.
    - The BLM must provide for the meaningful involvement of local governments in the development of BLM land use programs, regulations, and decisions. This includes early notification of proposed decisions that may impact non-federal lands.

Additionally, FLPMA requires BLM land use plans to be consistent with local land use plans, provided that achieving consistency does not result in a violation of federal law. FLPMA states: (43 U.S.C. § 1712(c)(9)).

> Land use plans of the Secretary [of the Interior, BLM] under this section shall be consistent with State and local plans to the maximum extent he finds consistent with federal law and the purposes of this Act.

In other words, FLPMA requires both "coordination" and "consistency review." According to BLM's (2012) "Desk Guide to Cooperating Agency Relationships and Coordination with Intergovernmental Partners," coordination should include both regularly scheduled meetings between the various local governments and BLM managers as well as inviting local BLM staff to local government meetings. FLPMA's consistency review

[5] WY Stat § 11-16-122 , (vii) (xvi)

requirement states that if a BLM land use plan is inconsistent with a local land use plan, the BLM owes an explanation of how achieving consistency would result in a violation of federal law.

Finally, FLPMA requires that the BLM also provide for a Governor's consistency review as part of the land use planning process (43 C.F.R. § 1610.3-2(e)).

3.2.5 The National Forest Management Act (NFMA)

NFMA, which governs the U.S. Forest Service (USFS), requires the agency to "coordinate". The NFMA requires:

> [T]he Secretary of Agriculture shall develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System, coordinated with the land and resource management planning processes of State and local governments and other Federal agencies (16 U.S.C. § 1604(a)).

The fact that the USFS is directed to "coordinate" with local governments implies, by its plain meaning, that the USFS must engage in a process that involves more than simply "considering" the plans and policies of local governments; it must attempt to achieve compatibility between USFS plans and local land use plans.

3.2.6 Governor's Consistency Review Process

State Governors are entitled to a separate consistency review of BLM and land use plans, revisions, and amendments as provided by FLPMA. Title 43 C.F.R. § 1610.3-2(e) provides an opportunity for the Governor to review all proposed plans to identify any inconsistencies with State or local plans. If the Governor's comments result in changes to the plan, the public should be re-engaged in the process.

3.3 The Need for Credible Data

To the greatest extent possible, data should drive all land use planning decisions. Unfortunately, we do not always have sufficient data, data at an appropriate scale, or timely data to use in analysis. For all references to "data" in this plan, we refer to information that meets, at a minimum, the Federal Data Quality Act (FDQA).

The FDQA directs the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility and integrity of information (including statistical information) disseminated by Federal agencies" (Sec. 552(a) Pub. Law. 106-554; HR 5658; 114 Stat. 2763 (2000)).

The OMB guidelines apply to all federal agencies and require that information disseminated by the Federal government will meet basic informational quality standards 66 Fed. Reg. 49718, Sept. 28, 2001; see also 67 Fed. Reg. 8452, Feb. 22, 2002).

This "standard of quality" essentially requires that data used and published by all Federal agencies meet four elements. These elements include (66 Fed. Reg. at 49718):

(a) quality
(b) utility (i.e. referring to the usefulness of the data for its intended purpose)
(c) objectivity (i.e. the data must be accurate, reliable, and unbiased)
(d) integrity

In addition to following the OMB guidelines, all federal agencies were also to issue data quality guidelines by October 1, 2002. 67 Fed. Reg. 8452.

In 2004, the OMB issued a memorandum requiring that, after June 15, 2005, influential scientific information representing the views of the department or agency cannot be disseminated by the federal government until it has been "peer reviewed" by qualified specialists (OMB, Final Information Quality Bulletin for Peer Review, Dec. 16, 2004). This requirement does not specifically require outside peer review, but internal review.

Further, the BLM and USFS should only use data that meet the minimum criteria described in their respective handbooks (BLM H-1283-1 Data Administration and Management (Public) and FS FSH 1909.12, Chapter 40, Land Management Planning Handbook – Key Processes Supporting Land Management Planning).

4. Plan Background

4.1 Basis for Plan Development

One of the keys to this Plan is the development of policy by constructing policy statements, which identify desired conditions for the District. Where appropriate, the Plan includes goals and objectives to provide more specific direction for the policy statements that will guide the development of yearly Annual Plans of Work for the District. If projects on federal land create significant impacts then mitigation will need to be developed to avoid, lessen, or offset those impacts. These planning items were developed to determine baseline conditions within the District, formulate objectives to guide work products, and to identify thresholds that indicate significant impacts.

The District purposely developed this plan in order to coordinate with federal land management planning and requests early notification of any opportunities for cooperating agency status by all federal agencies as a part of the National Environmental Policy Act (NEPA) process. When the District is participating in a NEPA process, the policy statements can be thought of as the "desired future conditions." These Plan components allow the District to guide and prioritize work while participating in the federal land planning and NEPA processes to the fullest extent. The District believes these planning components will work well with all Bureau of Land Management (BLM) and United States Forest Service (USFS) planning- level and project-level NEPA processes. The District asserts its interest and uses this Plan as a formal request to all federal agencies to be included as a Cooperating Agency.

4.2 Methodology and Public Process

The District encompasses 53.5% of Carbon County, Wyoming and is well represented by county demographic, statistical, and economic data. Data used throughout the Plan as local support data is mostly based upon county data which is more readily available than data specific to the boundaries of the District. Statistical information was gathered from many sources and GIS datasets. Specific information sources are identified throughout the Plan.

The District has an ongoing interest in understanding and documenting the local stakeholder key resource issues. This Plan considers survey and census information from 2008, more refined and specific special interest data regarding energy development from 2009, and discussion with Conservation District supervisors and staff throughout Plan development. The key resource issues addressed in this Plan are the result of wide-ranging public input and District priorities.

The District held two public meetings in 2008—one on May 28 in Saratoga and one on May 29 in Encampment—to garner public comments and concerns regarding potential impacts of energy development and other issues important to the District. During each meeting staff presented information about the

Encampment watershed study completed in 2008 and potential issues associated with energy resource development in similar communities. At the end of each meeting, a survey was distributed to attendees to gain input from both the public and local government officials. A total of 72 participants provided comments at the meetings; 54 respondents were members of the public, and 18 were local government officials. The survey was a census of local governments, including members of the Saratoga, Encampment, and Riverside Town Councils, the Carbon County Commissioners, and District members. In addition, the survey was published as an insert in local newspapers and a version of the survey was posted online. The public was encouraged to either return the survey via mail or submit the online version.

Survey respondents were asked to select their top ten issues of concern from a list of 31 and then to rank their choices in order of importance. These rankings were then used to identify those issues most important to all survey participants (see Appendix A). The 2008 survey respondents indicated an overwhelming acceptance of moderate-intensity energy development within the region. However, respondents also indicated concern about the protection of important social and natural resources within the study area. For summary purposes, scores across several topics from the survey are combined within an index for comparison among participants. Results indicated that water quality, socioeconomic impacts, working landscape preservation (grazing), and wildlife habitat were among the topics of primary concern.

In 2009 fifty participants answered questions on resource priorities and their interest in resource priorities (Figure 7). In general, the consistent key resource issues of working landscapes, wildlife, water quality and quantity topped each survey. Informal discussions with District staff support the survey information. The more recent data and discussions indicate a more cautious approach to energy development, particularly wind energy. The highest individual score on questions regarding wind energy supported the statement “wind energy should only be developed after consideration of natural resource conservation”.

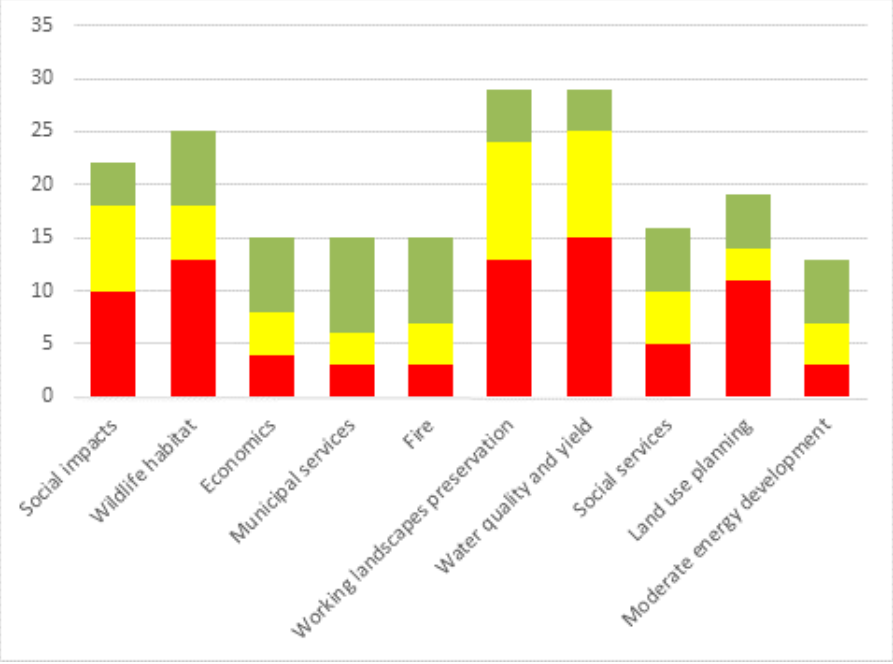

Figure 7: The importance of issues for 2009 survey participants. Red indicates issues rated as most important, yellow is somewhat less important, and green is of lesser importance.

5. Land Management Policies

This Plan is to provide the District guidance as it functions as a Cooperating Agency or during the coordination process with the Federal Agencies. We request the federal agencies to Communicate, Collaborate, Cooperate, and Consult with us, Carbon County, the various departments within the State of Wyoming, and the Governor's Office. Topics to address include rangeland health and wildlife habitat, fence, water and forage related conflicts, and to develop and implement long-term management strategies that resolve conflicts while maintaining healthy and sustainable rangelands and forests.

To develop broad issue based policies, this Plan recognizes those priority issues of concern within the following list of resource area categories. Current specific policies of the District are provided for each resource area, recognizing that significant programmatic overlap occurs. For example, education is a necessary component of all priority issues to varying degrees.

- Agriculture
- District Operations/Education
- Ecosystem Services
- Energy Development & Mining/Minerals
- Private Property Rights
- Socioeconomics
- Soils
- Vegetation – General
- Vegetation – Conservation Forestry
- Vegetation – Rangeland Management & Rangeland Health
- Water Resources
- Wildlife
- Wild and Feral Horse

5.1 Agriculture

5.1.1 Desired Conditions

Policy Agriculture #1: The District recognizes that agricultural land and subsequent operations are primarily responsible for the economic stability of the District and its residents both as an economic driver and as a conservation strategy. Therefore, the District, in agreement with Carbon County, works to retain ranching and agriculture as the preferred land uses in rural areas (Carbon County 2012).

Policy Agriculture #2: The District strives to maintain and enhance agriculture in the area, especially those working landscapes and hydrologic resources that provide economic, environmental, social, aesthetic, and wildlife values.

Policy Agriculture #3: The District encourages promotion of custom and culture – value opportunities, resources, and communities.

Policy Agriculture #4: The District incorporates the Carbon County Comprehensive Land Use Plan (2012) general agricultural land use goal from page 1 of the document: "retain ranching and agricultural as the preferred lands uses in rural areas."

5.1.2 Goals

A1. Encourage agriculture operation activities within the District to support continued agriculture operations and their sustainability.

A2. In conjunction with local, state, and federal planning partners, develop economically sustainable strategies to maintain working ranches. Federal planning-level and project-level NEPA documents

will encourage proper characterization and analysis of the area, recognizing the benefit of ecosystem services provided by working ranches adjacent to or nearby public lands.

5.1.3 Objectives

A1. Meet with federal planners to scope project- and planning-level projects.

A2. Request Cooperating Agency status and coordinate with agencies at the earliest time in the planning process.

A3. Provide cost-share funding for on-the-ground natural resource conservation Best Management Practice (BMP) projects.

A4. Encourage the use of conservation easements as one option for agriculture operation sustainability and maintaining open space provided by agriculture lands. Conservation easements are voluntary agreements that limit the amount and type of development on a property in perpetuity.

5.1.4 Local Support Data

Agriculture is the foundational building block of Wyoming, Carbon County, and the District. The value of the Wyoming agricultural sector for 2014 was about 50 billion dollars. Wyoming ranks 11th in the nation for total land in farms and ranches (USDA 2015). Carbon County ranked second in Wyoming for all cattle, 13th for all sheep, and first for other hay. The average rate for grazing cattle in Wyoming has gone from $14.80 in 2005 to $20.00 in 2014; compared to $13.70 to $18.20 on average in the eleven western states. The District is clearly an important contributor to Wyoming's agricultural economics.

The following information about the agricultural economy in Carbon County is compared to the State of Wyoming, which is a more meaningful comparison for land use economics than comparing Carbon County to the U.S. as a whole. The US Census of Agriculture for 2012 reports total market value of agricultural products sold including direct sales in Carbon County, Wyoming increased 31% from $59,842,000 in 2007 to $78,578,000 in 2012. Table 2 shows that, in Carbon County, the average farm size is about three times the size of the average farm in the state of Wyoming (Headwaters Economics 2016). The percent of land area dedicated to farming is about 2% smaller for Carbon County than for the state as a whole.

Table 2. Number and Average Size of Operations, Carbon County and Wyoming, 2012

Number of farms and ranches – Carbon County	319
Total acres in farms and ranches – Carbon County	2,374,154
Average size of farm or ranch in Carbon County	7,442
Average size of farm or ranch in Wyoming	2,587
Approximate Percent of Land Area in agriculture – Carbon County	47.0%
Approximate Percent of Land Area in agriculture – Wyoming	48.9%
Value of land and buildings (per farm)	$4,331,407
Source: 2012 Census of Agriculture	

In 2012, Carbon County had 319 farms and ranches, which was an increase from 2007 when there were 287. The total acres in farms and ranches increased by just over 9% yet the estimated market value of the land and buildings increased by 76%.

There is a great deal of interest in preserving ranches as working landscapes along with their rural communities. Planners, foresters, range conservations, ecologists, botanists, and hydrologists have given serious thought to the important balance of assembling a viable economic livelihood with an understanding and appreciation for the natural world. The District strives to put that concept into practice.

Table 3 shows that cropland and woodland makes up a smaller percentage of the total farmland in Carbon County than in the state as a whole, while rangeland makes up a bigger percentage of the total farmland.

Table 3. Percentage of farmland by type in 2014

	Carbon County	Wyoming
Cropland	5.4%	8.0%
Woodland	0.5%	1.4%
Land in Farmsteads & Buildings	0.8%	1.0%
Permanent Pasture & Rangeland	93.3%	89.6%

Table 4 shows that Carbon County has a lower percentage of farms engaged in crop farming, aquaculture and other products and a higher percentage of beef cattle ranching (Headwaters Economics 2016).

Table 4. Percentage of farms by what they produce in 2014

	Carbon County	Wyoming
Oilseed & Grain Farming	0.0%	3.5%
Vegetable & Melon Farming	0.0%	0.2%
Fruit & Nut Tree Farming	0.0%	0.2%
Greenhouse, Nursery, etc	0.3%	0.6%
Other Crop Farming	19.7%	26.4%
Beef Cattle Ranching & Farming	55.5%	37.2%
Cattle Feedlots	0.6%	0.6%
Dairy Cattle & Milk Production	0.0%	0.3%
Hog & Pig Farming	0.0%	0.8%
Poultry & Egg Production	0.0%	1.0%
Sheep & Goat Farming	2.5%	2.5%
Aquaculture & Other Production	21.3%	26.8%

“Ranch land generally looks natural and can maintain many ecological processes depending on size and practice” states Brunson and Huntsinger (2008). They go on to say “the public may view ranch land as akin to a park or preserve, with inherent public values that demand access and protection, while the rancher is equally if not more concerned about maintaining control of the property.”

Some of the most influential research on the ecological value of ranches has been by Richard Knight and colleagues (Maestas et al. 2001, 2003; Lenth et al. 2006) who found that ranches can be more significant for

protecting native biotic communities than even nature preserves. The size of the ranch can also contribute (Table 5).

Table 5. Farms by Size, Carbon County, 2007 and 2012

Size	2007	2012
1 to 9 acres	12	16
10 to 49 acres	35	36
50 to 179 acres	55	45
180 to 499 acres	30	31
500 to 999 acres	23	38
1,000 acres or more	132	153

Source: 2012 Census of Agriculture

The US Census of Agriculture defines land in farms and ranches as an operating unit that includes land owned and operated as well as land rented from others. There is one important exception, though. All grazing land, except land used under government permits on a per-head basis, is included as 'land in farms' as long as it is part of a farm or ranch. This means it is possible to be identified as a ranch or farm with fewer acres than are actually required to run the operation. Ranchers often need to move their grazing cattle, for example, to an allotment of public land on a seasonal basis. Even though they are using the public land for private livestock, the allotted public land is not included in their farm or ranch acreage total.

Brunson and Huntsinger (2008) describe working ranches as a "means of private rangeland conservation because they can safeguard ecosystem services, protect open space and maintain traditional ranching culture." Federal seasonal grazing leases are vital to the sustainability of many ranches in the District.

Table 6 shows that Carbon County farm wages are more competitive with Carbon County non-farm wages when compared to the state. Also, wages associated with animal production are 19% higher than for the state while crop production wages are 6% lower. These figures do not include farm proprietor income.

Table 6. Average annual wages in 2014 dollars

	Carbon County	Wyoming
Farm	$39,607	$32,796
Crop Production	$27,849	$29,438
Animal Production	40,230	$33,912
Non-Farm	$40,627	$46,564

Table 7 shows that farm employment in Carbon County, as a percentage of total employment, is similar to the state (Headwaters Economics 2016).

Table 7. Farm employment as a percentage of total employment for 2014

	Carbon County	Wyoming
Farm Employment	4.3%	3.5%
Farm Proprietors Employment	2.4%	2.6%
Non-Farm Employment	95.7%	96.5%

Figure 8. Farm proprietors as a percentage of farm jobs in Carbon County, 1970 to 2014 shows that farm proprietors, as a percentage of total farm jobs, has increased since 1970 in Carbon County (Headwaters Economics 2016). In 2014, over half of all farm jobs were farm proprietors, whereas in 1970 just over 30% of farm jobs were proprietors.

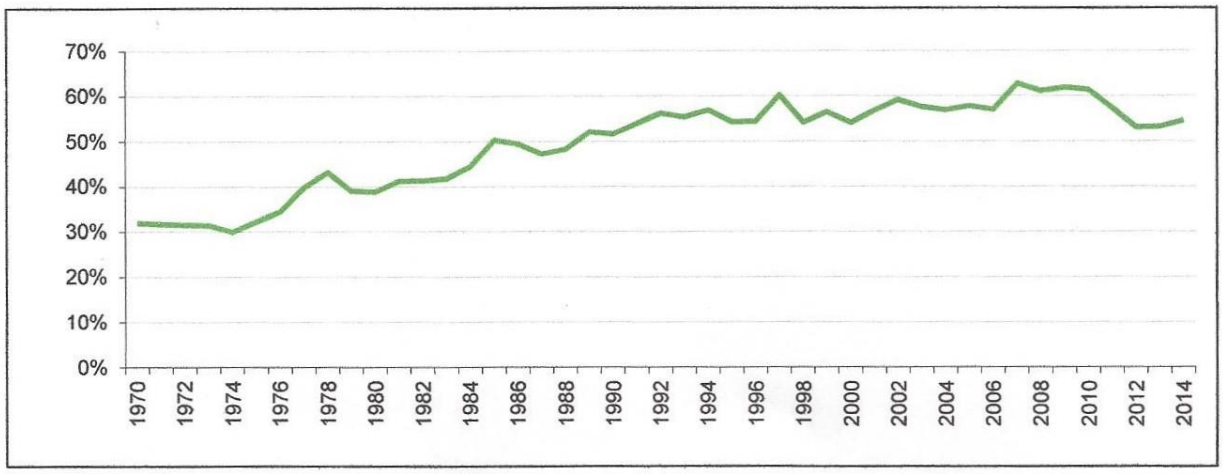

Figure 8. Farm proprietors as a percentage of farm jobs in Carbon County, 1970 to 2014

Figure 9 shows that Carbon County has a higher percentage of farm earnings as a percent of total earnings than does the state.

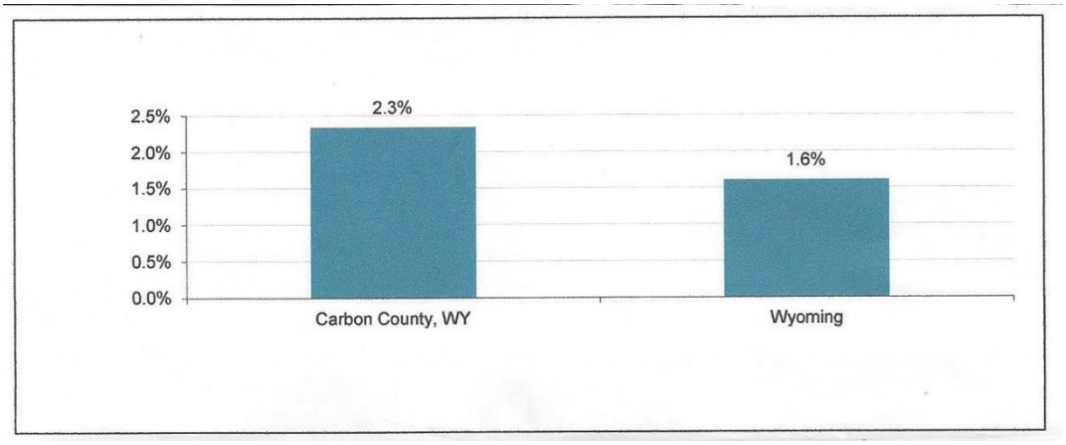

Figure 9. Farm earnings as a percent of total earnings in 2014 (Headwaters Economics 2016)

Figure 10 shows that employment in farming peaked for the state in 1983, hit a low point in 2006 and has almost recovered to 1970 levels by 2014. By contrast, Carbon County's peak employment in farming during this time period was in 1970, its low point was in 2006 and it has recovered some by 2014 but only to 60% of 1970 levels.

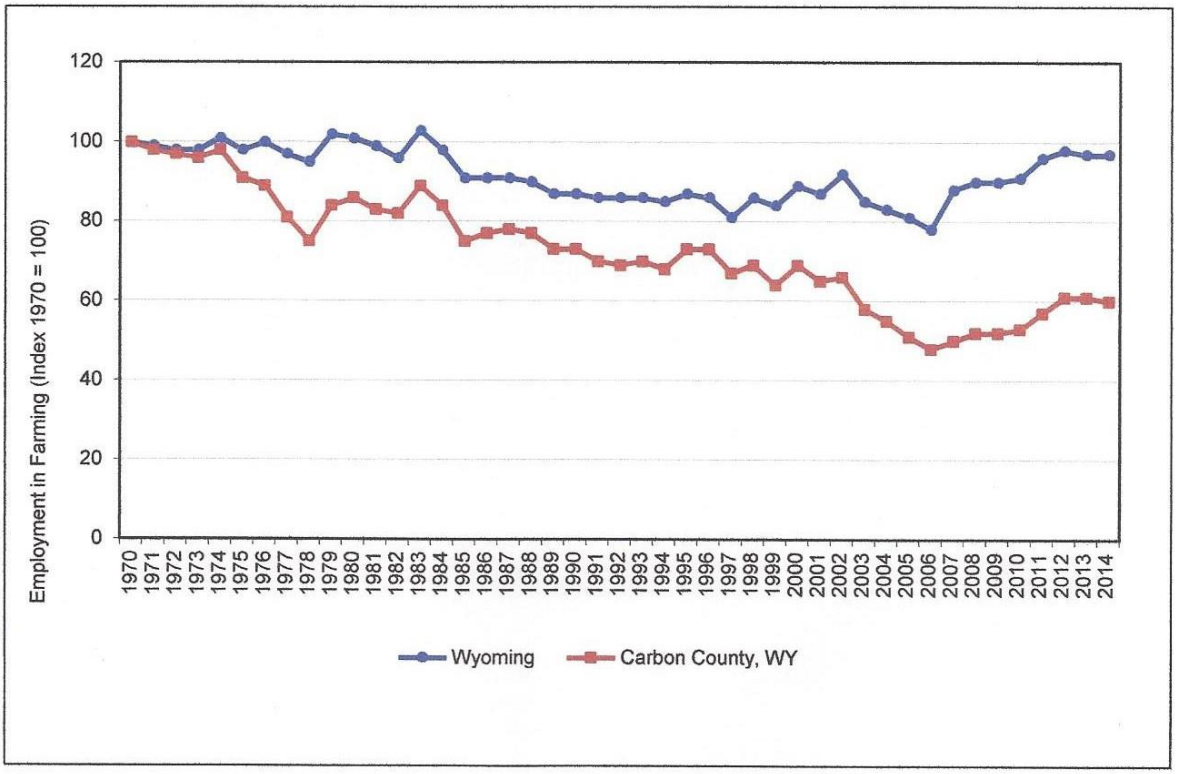

Figure 10. Trends in farming employment, 1970 to 2014 (Headwaters Economics 2016)

5.2 District Operations/Education

5.2.1 Desired Conditions

Policy District Operations/Education #1: The District supports agriculture and natural resource education in all schools within the District as it is important for everyone to know where their food is produced, understand the custom and culture of our area, and the role agriculturists play in natural resource conservation and food production.

Policy District Operations/Education #2: The District requests that all federal actions occurring within the District requiring NEPA documentation and processes include and invite the District to be a part of that process as a Cooperating Agency. The District at its discretion, within its authority and resources available will consider the federal invitation and respond in writing to those projects which we feel we can be a productive team member.

Policy District Operations/Education #3: The District will cooperate and consult with Cooperators and residents of the District, and the several public institutions/government agencies in the conservation of the water, soil, plants and wildlife resources in the District, within budgetary constraints.

Policy District Operations/Education #4: The District will provide technical and material assistance in an equitable fashion to the Cooperators of the District, within budgetary constraints.

Policy District Operations/Education #5: The District will review, analyze and comment, when possible, on all local, state and federal legislation, rules and regulations promulgated or revised that may have an effect on the District Long Range Land Use and Natural Resource Management Plan and our Cooperators.

5.2.2 Goals

DOE1. Maintain accountability of all public funds and provide professional service in a timely and responsible manner.

DOE2. Increase public awareness and understanding of local agriculture, successful conservation measures currently employed by local farmers and ranchers, and their efforts to be good stewards of the land.

DOE3. Continue to represent local interests in the planning and implementation efforts of local, state, and federal government agencies within the boundaries of the District.

DOE4. Facilitate efforts to participate in natural resource management planning in order to provide for the economic stability and to protect local customs and cultures.

DOE5. Support traditional multiple land uses as a means to maintain continuity in the local economy, and assure the sustainability of existing agricultural, recreational, and industrial interests while maintaining or improving the present environmental quality of life.

DOE6. Provide natural resource education opportunities that encourage awareness of natural resources to residents of all ages.

DOE7. Act as representative for local groups in dealing with the United States or its representatives, in soil or water conservation matters under United States Public Law 566 approved August 4, 1954, or amendments thereto.

5.2.3 Objectives

DOE1. Develop new funding strategies to promote on-the-ground conservation practices.

DOE2. Allocate staff and Supervisors' time to accomplish objectives.

DOE3. Fulfill Board's goals and objectives on natural resource issues.

DOE4. Participate in educational opportunities to gain knowledge and skills for resource issues and to provide current information to District residents.

DOE5. Expand self-funded and cost-share projects.

DOE6. Participate in the Local Work Group to address resource concerns and Natural Resources Conservation Service (NRCS) programs.

DOE7. Expand educational programs in schools, to organizations, and for cooperators/landowners.

DOE8. Use newspapers and brochures, local radio, and electronic media for dissemination of educational information to the public.

DOE9. Utilize the District website to inform and promote education programs.

DOE10. Work with educators to provide natural resource presentations which enhance their students' natural resource knowledge.

DOE11. Provide agriculture and natural resource education in public schools, with youth organizations, and in other venues where youth receive formal education.

DOE12. Provide educational opportunities to the general public on natural resource issues and topics through seminars, events, workshops, tours, and hands-on experiences.

DOE13. Recognize natural resource and agricultural success stories through District programs and local media.

DOE14. Promote the development and application of Best Management Practices (BMPs), both new and existing, for the improvement of natural resources.

DOE15. Provide guidance, information, and education to elected government officials and decision makers on conservation and natural resource management issues, and the impacts, and outcomes related to policies initiated by government.

DOE16. Insure that cooperators are made aware of technical assistance and funding programs that are available.

DOE17. Proactively, and with other entities, provide Cooperators with information regarding selection of appropriate varieties of trees for the intended use, the use of trees as windbreaks and living snow fences, proper techniques of tree planting and maintenance, irrigation systems, program funding, wildlife interactions, and sources of trees through the District website, printed materials, educational workshops, and such other methods as may be appropriate.

DOE18. Provide technical assistance, equipment, and cost share for tree planting projects

DOE19. Make trees, weed barriers, and other essentials available to the community

DOE20. Participate with Cooperators and government agencies in making sound natural resource decisions that are scientifically-based, legally defensible and sensitive to resource health and responsive to multiple-interest users.

DOE21. Provide comment(s), seek Coordination Status, seek to become a Cooperating Agency, and/or provide this land use plan for Consistency Review purposes as is appropriate for the District's purposes, for land use planning affecting the District in order to effectively represent and protect the District's natural resources, custom, culture, economy and general welfare.

DOE22. Comment on all policies impacting any area within the authority of Conservation Districts, within budgetary constraints.

DOE23. Review subdivision site areas and plans within the District and make recommendations on soil suitability, potential soil erosion during and after construction, potential flooding or wetland concerns to the Carbon County Commissioners/Carbon County Planning Office as clarified in 18-5-306 (a)(xii)(B)(b) of the Wyoming State Statutes.

DOE24. Maintain existing living snow fences.

DOE25. Identify, plan, coordinate, and install new living snow fences.

DOE26. Stay abreast of emerging issues – including energy conservation, alternative energy, threatened and endangered species, public land issues, payments for ecosystem services, and other conservation-district-related topics.

5.2.4 Local Support Data

It is important for the District to provide services within its statutory authority in a fiscally credible manner. The District continues to be a leader in Natural Resource issues to carry out its mission.

There is a disconnect between Americans and their food as reported in the results of two Nationwide surveys conducted by U.S. Farmers & Ranchers Alliance. Results show that 72% of consumers know nothing or very little about farming or ranching. There is a need for improved education of the general public about soil and water conservation and the benefits agricultural lands provide in the way of open space and ecosystem conservation.

The public does not have an adequate understanding of agriculture and the conservation measures that many farmers and ranchers already employ, since media attention is generally focused around negative stories. This lack of understanding has increased greatly during the past 50 years of increasing urbanization, as fewer and fewer people make their living directly from agriculture or have any connections to agriculture. The lack of understanding can lead to misperceptions about the industry and environmental impacts, and can contribute to the communications gap between the agricultural community and urban/environmental interests, reducing their ability to work together constructively to address current issues.

The custom and culture of the District was originally developed in the 19th century. It has been passed down through the succeeding generations and adapted to what we know today. It is important to continue educating and providing outreach to insure those living, working, and growing up in the District have the knowledge to understand how agriculture, logging, energy development, and urbanization are inter-related. It is through the maintenance of open spaces provided by agriculture that recreation and tourism, the number 2 industry in Wyoming, are thriving.

The resource production component includes the things you have or need to produce to retain or attain the desired quality of life. The quality of life the District strives for will be achieved by continuing to maintain and enhance sustainable and optimum production of renewable and non-renewable resources and to encourage and support the motive and means to enhance economic opportunity and education. The resource base component includes the people, land and community we live in and the services available, and what we will need to sustain and enhance our quality of life and forms of production. The District believes that through the efforts of cooperation and communication among the local people, our community will have a beneficial impact on sustaining a strong and viable multiple-use of our lands, including agricultural, industrial, mineral production, commercial, recreational and historical uses, which together will provide the continued ability to generate wealth and growth and needs of our community.

The District serves an important role by supplementing school natural resource education programs and through targeted community education. They strive to increase public awareness and understanding of local agriculture, successful conservation measures currently employed by local farmers and ranchers, and their efforts to be good stewards of the land, and how these practices can help the landowner's operations, while protecting local watersheds, and wildlife habitats. The District partners with other entities including Big Brothers Big Sisters, Big Shoulders Foundation, Brush Creek Ranch, Carbon County School Districts #1&2,

Medicine Bow Conservation District, Snowy Range Cattlewomen, Trout Unlimited, University of Wyoming Extension, and Wyoming Game & Fish Department for education and outreach.

5.3 Ecosystem Services

5.3.1 Desired Conditions

Policy Ecosystem Services #1: The District will ensure ecosystem services as defined and outlined by the National Agricultural Statistics Service Wyoming Agricultural Statistics report are analyzed to the full extent within all NEPA documents and subsequent actions.

Policy Ecosystem Services #2: The District supports "clustering" of new residential and commercial sites in or adjacent to areas currently zoned as residential or commercial in the District. Further, if a landowner chooses to convert areas currently zoned as "Ranching, Agriculture, Mining" to "Rural Residential Agriculture", the District concurs with the Carbon County Zoning Resolution statement that, "In all cases, agricultural uses shall have supremacy over residential uses." The District encourages the developer to consider all available options such as clustering development and the use of conservation easements to minimize erosion and soil loss, and create open space near clustered developments for agriculture/wildlife benefits.

Policy Ecosystem Services #3: The District, in agreement with Carbon County, wants to sustain scenic areas, wildlife habitat, and other important open spaces (Carbon County 2012).

5.3.2 Goals

ES1. The District becomes fully informed regarding federal land management agencies and their use of the ecosystem services concept.

ES2. The District becomes the information clearinghouse for information regarding the quantity, quality, and value of ecosystem services produced in the area.

ES3. The District is at the forefront for identifying and promoting markets for ecosystem services in the area.

ES4. The District conducts outreach to their constituents to build awareness for the value of the goods and services produced in the area.

5.3.3 Objectives

ES1. Take advantage of any training opportunities regarding ecosystem services, especially Forest Service and BLM trainings.

ES2. Coordinate with non-governmental organizations, the University of Wyoming, the state, and federal agencies to apply the ecosystem services concept to the District via the Federal Resource Management and Ecosystem Services Guidebook.

5.3.4 Local Support Data

Ecosystem services includes the multitude of benefits people obtain from ecosystems. Four broad categories of ecosystem services include: provisioning - such as the production of food and water; regulating – such as the control of climate and disease; supporting – such as nutrient cycles and crop pollination; and cultural – such as spiritual and recreational benefits. (Wikipedia contributors 2016). The concept is not new and acknowledgement of human dependence on the Earth's ecosystems. While modern ideas of ecosystem

services date back to the mid-1800s, it was not until the late 1940s that recognition of human dependence on the environment was promoted. The ecosystem services concept has continued to gain relevance in society and federal land use planning and management.

The District produces a suite of ecosystem services that benefit local, regional, and national populations. Most of these ecosystem services have not been brought to market and are often ignored or undervalued when accounting for the costs and benefits of various land uses (Costanza et al. 1997). The social and economic well-being and the quality of life of the local and regional communities are linked to the ecosystem services that flow from the District. The information obtained by the District acting as the clearinghouse could then be used to support natural resource decisions that sustain the economies, ecosystems, and customs and cultures of the area.

Federal land management agencies can apply the ecosystem services concept to meet mandates handed down from Congress and ecosystem services are being inserted into the federal land management regulatory framework. The USDA Office of the Chief Economist provides the following introduction to ecosystems services (USDAOCE 2015):

> Natural assets such as rivers, forests, grasslands and wetlands benefit society through the ecosystem services they provide, including water purification, air quality improvements, and flood protection, among other benefits. However, these services are frequently left out of resource management decisions because they aren't easily quantified or assigned a monetary value. As a result, society undervalues these environmental benefits, contributing to the loss of natural systems.

The National Environmental Policy Act of 1969, the Multiple-Use Sustained-Yield Act of 1960, and the Federal Land Policy and Management Act (FLPMA) at 43 U.S.C. 1701(a)(7) mandate that the BLM and Forest Service must compare the benefits and costs and the tradeoffs associated with various management alternatives and coordinate and consider the multiple uses of National Forest lands to best meet the needs of society. These mandates are supported by the application of the ecosystem services concept.

National Forest planning is directed by mandates from the Final Planning Rule of 2012 and the National Forest Management Act of 1976. These mandates require that the Forest Service provide for ecological sustainability and contribute to social and economic sustainability and comprehensively assess present and anticipated use, demand, and supply of benefits coming from public and private forests. Again, the ecosystem services concept is being used by the Forest Service to fulfill these mandates.

A white paper titled, "Application of an Ecosystem Services Framework for BLM Land Use Planning" (Smyth, 2015) suggests that the BLM has the legal authority to manage for the preservation and use of ecosystem services and that ecosystem services could be incorporated into resource management plans and decision making within the agency. Most pertinent to the District, this paper determined that, in the long term, the BLM could incorporate ecosystem service concepts into their calculations of the fair market value for use of public lands and their resources.

To support the application of the ecosystem services concept to federal land management planning, various federal agencies partnered with Duke University's Nicholas Institute to produce the Federal Resource Management and Ecosystem Services Guidebook (accessed 2015). This guidebook has paved the path for natural resource managers to begin implementing the ecosystem services concept in support of land management planning and decision-making.

Recognizing the utility of the ecosystem services concept in federal agency decision-making, on October 7, 2015 the Executive Office of the President issued Memorandum M-16-01, instructing all federal agencies to incorporate the ecosystem services concept into decision-making regarding federal planning, investments, and regulations.

The ecosystem services concept appeals to industries, governments, and non-governmental organizations as a way to account for the use of natural assets for sustaining human well-being. As a result, federal land management agencies continue to trend toward the ecosystem services concept in planning and decision-making, as evidenced by the background provided above.

The ecosystem services concept is relatively new and under-developed, with few well established terminologies, methodologies, and principles, but the recently released Federal Resource Management and Ecosystem Services Guidebook has paved the way for federal agencies to begin incorporating ecosystem services into their decision-making. The guidebook provides tremendous opportunity for District and other conservation districts to put ourselves at the forefront of applying the ecosystem services concept and for becoming clearinghouses of information regarding the local production and value of ecosystem services.

5.4 Energy Development & Mining/Minerals

5.4.1 Desired Conditions

Policy Energy #1: The District, in agreement with Carbon County, strives to achieve a sustainable balance between energy development, agriculture, and the environment (Carbon County 2012).

Policy Energy #2: The District supports energy development that is industry-self-supporting without governmental subsidies and with minimal impacts to the agricultural community.

Policy Energy #3: Social, cultural, and environmental impacts of energy and industrial mineral development shall be fully analyzed during all National Environmental Policy Act analyses.

Policy Energy #4: The District supports local, state, and federal agencies in requiring proper construction, maintenance, and reclamation of transportation corridors such as access roads, pipelines, transmission lines, etc. to prevent resource deterioration.

Policy Energy #5: The District supports obtaining an executed surface use agreement providing for compensation to the surface owner for damages to the land and improvements as provided in W.S. 30-5-405(a) for all oil and gas operations where a split estate between mineral rights and surface ownership exists. Further, the District directs that a surface use agreement is for the protection of the surface resources, reclamation activities, timely completion of reclamation of the disturbed areas, and payment for damages caused by the oil and gas operations.

Policy Energy #6: The District supports holding all energy development operators to a very high standard of reclamation success measured against criteria established by a cooperative agency process led by the permitting agency prior to project implementation.

Policy Energy #7: The District supports the setbacks and standards as set in the Carbon County Zoning Resolution OF2015 as the minimum acceptable distances for commercial wind energy conversion system projects.

5.4.2 Goals

E1. Energy development should occur in incremental phases to allow for impact analyses and adaptive management that will provide soil and water quality protection and intact vegetation and wildlife habitats over the long-term.

E2. Wind energy development projects should utilize the most up-to-date Wind Development Environmental Conflicts Map as developed by the Wyoming Game and Fish Department.

5.4.3 Objectives

E1. Implement a mitigation plan for energy projects that will not result in habitat loss and fragmentation or degradation of habitat values. The amount of mitigation should correspond to the quantity and quality of the habitat at risk.

E2. Co-locate new roads and utility rights-of-way to minimize ground disturbance associated with energy development. When co-location is not possible, locate new roads outside of important habitats.

E3. Encourage surface occupancy to already disturbed areas or edges of habitat, consistent with lease rights.

E4. Encourage locating wind farms on lands with high wind energy potential and low-value habitats where impacts on native plant or wildlife species will be minimal.

E5. Place linear facilities in or adjacent to previously disturbed corridors.

E6. Avoid locating wind energy projects within migratory corridors for birds or bats and designated crucial wildlife habitat.

E7. Protect water quality, aquatic habitat, and fish and wildlife habitat by conserving water bodies and associated wetland and riparian areas. Minimize disturbance associated with energy developments such as buildings, roads, and other structures.

E8. Evaluate potential cumulative effects in areas with multiple disturbances.

E9. Conduct a minimum of 12 months' pre-construction surveys for new developments, including:
- Big game surveys
- Migratory bird surveys
- Raptor nest surveys
- Bat surveys (resident and migratory)

E10. Conduct a minimum of 12 months' post-construction monitoring to assess displacement of wildlife. Monitoring should cover all seasons of operation.

E11. Reseed disturbed areas with native species to reduce impacts. Develop a weed management plan that prevents weed seed and aquatic invaders from being brought on site, and includes monitoring and treatment from pre-construction through operational phases.

E12. Educate citizens as to potential natural resource impacts of energy development.

E13. Educate landowners on their rights as they deal with split estate – surface ownership being different than mineral ownership. Assist landowners, if requested, in working to develop surface use agreements with mineral owners/leases.

5.4.4 Local Support Data

While energy development is an important component of Wyoming's economy, large-scale development often has impacts on the District's natural resources and wildlife populations. Given the effects that energy projects may have on area resources, it is essential that potential impacts are fully understood so that development may move forward while adverse effects are limited or avoided. This requires that the level of development be based on decisions founded through analyses using the best available science and data. In addition, future development should be considered along with existing development patterns (Figure 11) and with input from the public regarding desired level of expansion. The Wyoming Game and Fish Department (WGFD) and Wyoming Game and Fish Commission (WGF Commission) offer recommendations for alternatives for consideration by companies and jurisdictional agencies to ameliorate conflicts between energy development and wildlife resources. The reports containing these recommendations include *Recommendations for Development of Oil and Gas Resources Within Important Wildlife Habitats* and *Wildlife Protection Recommendations for Wind Energy Development in Wyoming*. An additional WGFD developed resource that should be used during all wind energy project analysis is a *Wind Development Environmental Conflicts* map (Figure 12).

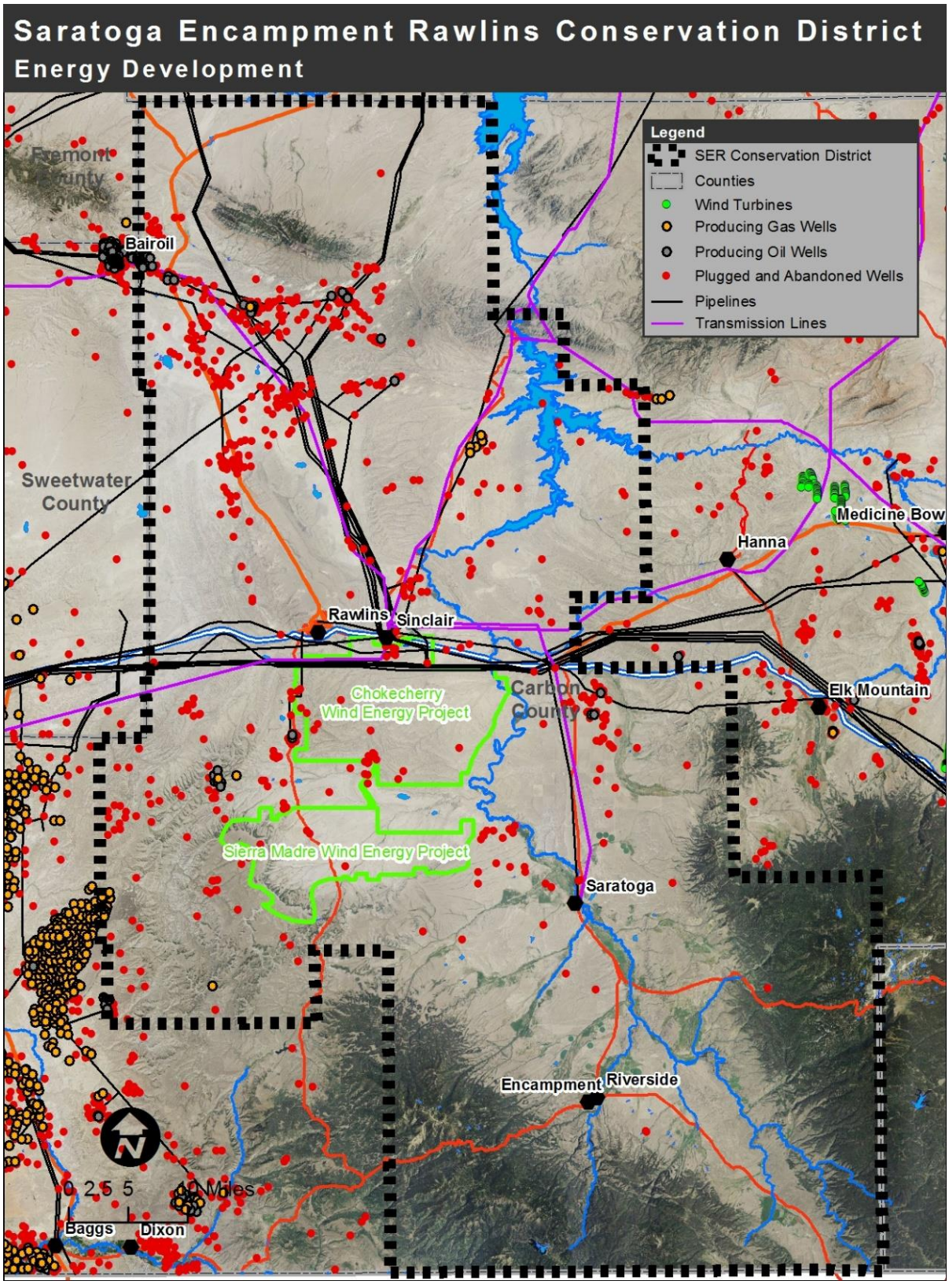

Figure 11: Existing energy development

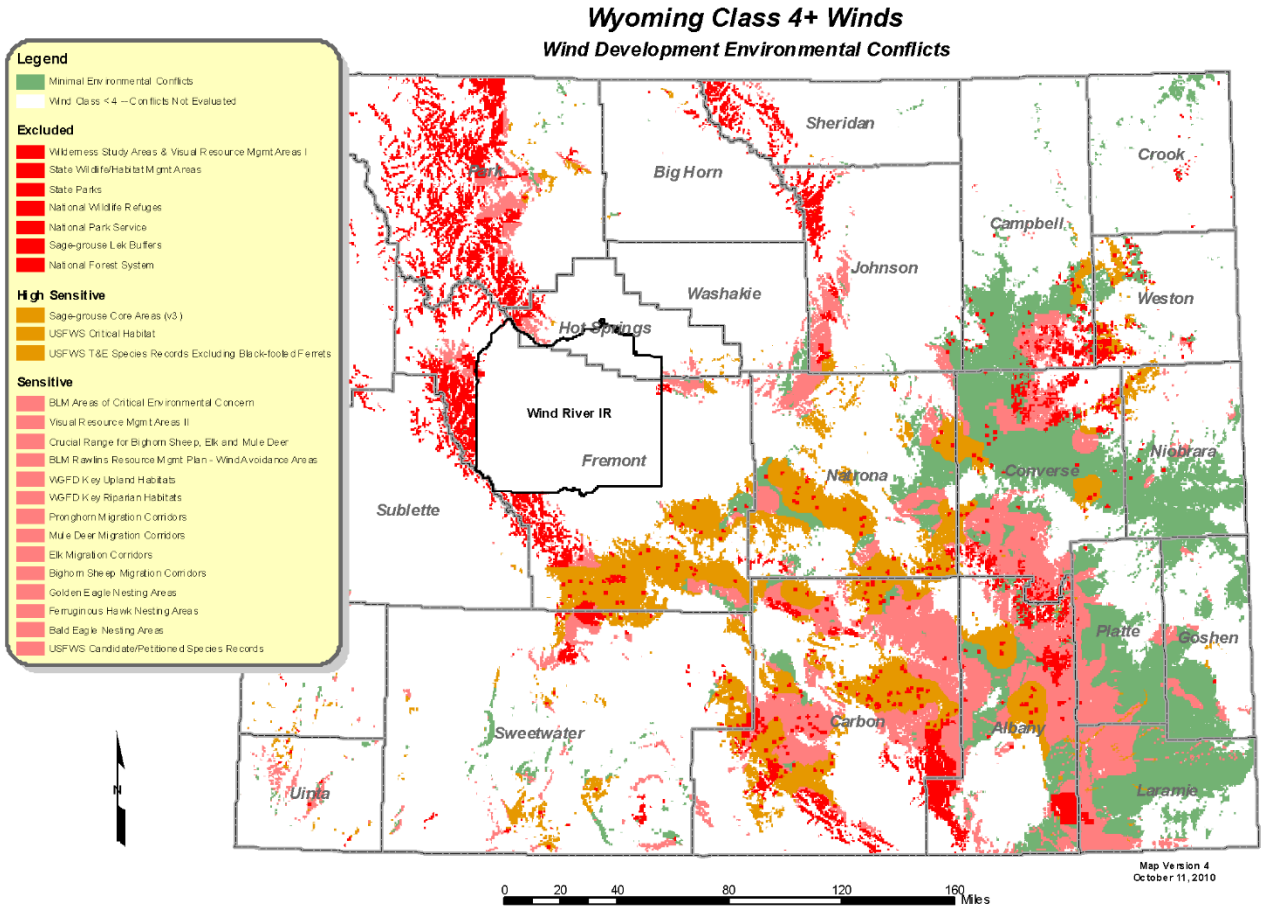

Figure 12: Wyoming Class 4+ Winds Wind Development Environmental Conflicts

Mineral ownership is heavily mixed within the District (Figure 13) and there is a substantial amount of private land with federally held mineral estate (split estate). Given this land pattern, it is critical to evaluate the effects of federal and local management actions across all ownerships.

The surface owner where oil and gas operations occur has the potential for significant impacts to their property if they do not also own the mineral rights. In this situation, there are very few options for the surface owner. Wyoming Statute (W.S.) 30-5-401 thru 30-5-410 includes provisions that the oil and gas operator and the surface owner shall attempt good faith negotiations to reach a surface use agreement for the protection of the surface resources, reclamation activities, timely completion of reclamation of the disturbed area, and payment for damages caused by the oil and gas operations. Additionally, W.S. 30-5-405 “Surface damage and disruption payments; penalty for late payment” outlines that these payments only cover land directly affected by oil and gas operations for damages sustained by the surface owner for loss of production and income, loss of land value, and loss of value of improvements caused by oil and gas operations.

It is vital not only for the surface owner to see that the oil and gas operator conducts reclamation activities for the protection of the surface resources but also for the conservation of the resource. Timely and successful reclamation is key in preventing wind and water soil erosion, degrading water quality, and reducing the quality of the habitat.

5.4.5 Mitigation

Work with federal and local agencies to identify and quantify impacts and then provide guidance in formulating alternatives and strategies to mitigate any identified adverse impacts.

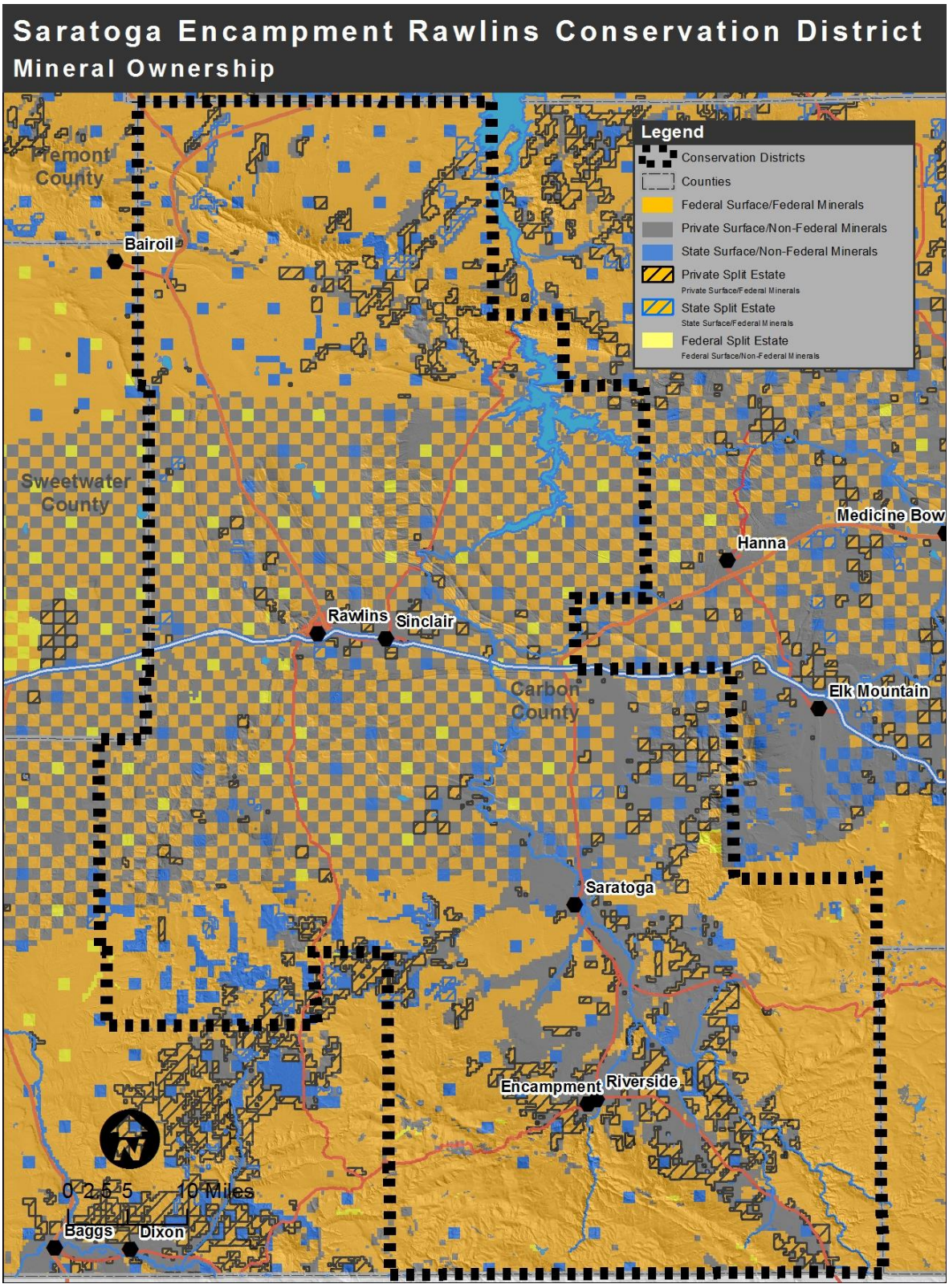

Figure 13: Mineral ownership

5.5 Private Property Rights

5.5.1 Desired Conditions

Policy Private Property Rights #1: The District will defend all Constitutional private property rights in local, state, and federal agency policies, regulations, rules, and actions.

Policy Private Property Rights #2: The District promotes compensation on all regulatory actions that would constitute a partial taking of any person's property, including but not limited to water rights, by any local, state, or federal agency and that the proposed action is modified to avoid the taking, either in whole or in part.

Policy Private Property Rights #3: The District will ensure that the local, state, and federal agencies respect procedural due process rights by providing adequate public notice and the opportunity for a hearing, including an evidentiary hearing, when granted by statute.

Policy Private Property Rights #4: The District supports providing legal remedies when federal or state governmental action operates to take property rights or some portion of the property right.

Policy Private Property Rights #5: The District supports federal and state agencies rejecting the submission of resource data that was collected while trespassing. Further, the District supports the prosecution of anyone guilty of trespassing to unlawfully collect resource data.

5.5.2 Goals

PP1. Maintain private property rights as they are vital to the health and welfare of the District residents.

5.5.3 Objectives

PP1. Comments on all projects will support and protect private property rights of District residents.

PP2. Educate and inform our collaborative partners about private property rights.

5.5.4 Local Support Data

Both the United States and Wyoming Constitutions provide protections to hold the ownership and protection of private property in high regard. Section 32 of the Wyoming Constitution addresses eminent domain and states "Private property shall not be taken for private use unless by consent of the owner, except for private ways of necessity, and for reservoirs, drains, flumes or ditches on or across the lands of others for agricultural, mining, milling, domestic or sanitary purposes, nor in any case without due compensation." Additionally, Section 33 compensation for property taken states "Private property shall not be taken or damaged for public or private use without just compensation." Private property rights include the right to exclude third parties and trespassing is illegal. Private property is also protected in Wyoming Statute (W.S.). W.S. §§ 9-1-33 states:

Private property shall not be taken or damaged for public or private use without just compensation.

Regulatory actions, such as designation of critical habitat under the Endangered Species Act or denial of surface access across federal land, operate to inversely condemn private property without providing just compensation.

Wyoming law also makes it unlawful to trespass to unlawfully collect resource data in W.S. §§ 6-3-414. Estimation and professional opinion has been challenged and replaced by the science of collecting repeatable and recordable data. Quantifiable credible data is necessary for all resource management decisions, which means scientifically valid collection of chemical, physical, and biological monitoring data collected under an accepted sampling and analysis plan, including quality control, quality assurance procedures and available historical data. Any resource data to be collected on private lands should only be done after contacting the landowner and obtaining written permission. The written permission documentation should include what will be collected, where the collection will occur, when the data will be collected (duration of the permission), how (the methods) the data will be collected, how the data in anticipated to be used, and who will have access to the data collected. All resource data collection should be done in cooperation with the landowner.

Refer to Section 3.3 " The Need for Credible Data" for more information.

5.6 Socio-economics

5.6.1 Desired Conditions

Policy Socio-economics #1: Achieve an economic balance between all the drivers of the local economy for all land uses in the District directly or indirectly pertaining to economic growth and quality of life.

Policy Socio-economics #2: Protect the custom and culture of the citizens of the District and to provide for community stability. The District promotes wildlife conservation, sustainability of healthy wildlife habitat and populations, and their contributions to the local economy.

Policy Socio-economics #3: Local, state, and federal agency plans or management recommendations shall include a socio-economic impact description (either brief or in-depth depending on the case needs) that addresses the effects on the District natural resources, economies, and health and welfare of the District citizens.

Policy Socio-economics #4: The District supports multiple use of our public lands and management that balances those uses for sustainable health.

Policy Socio-economics #5: The District supports impact assistance opportunities and funding (i.e. sewer, water, fire, law enforcement, emergency, etc.) as early in the industrial development process as possible.

5.6.2 Goals

SE1. Maintaining, or improving, working landscapes to facilitate the success of ranching in the area.

SE2. Increasing recreation opportunities to improve quality of life and improve economic diversity.

SE3. Develop and promote use of resources for economic diversity that maintain quality of life. In particular, maintain the culture of open access and multiple use.

SE4. Minimize impacts to tourism from energy development related disturbances and structures.

5.6.3 Objectives

SE1. Participate as a Cooperating Agency with special expertise as provided by the National Environmental Policy Act and W.S. 11-16-135 in federal land planning and implementation.

SE2. Promote projects that improve the health and sustainable management of our public lands.

5.6.4 Local Support Data

One major interest is to have federal agencies fully characterize the socioeconomic impacts of new projects both quantitatively and qualitatively—to describe differences and provide information to show significant differentiation. One of the greatest challenges facing local governments is to balance the revenue reductions from volatile mineral prices with the increased demand and cost for services. Cost increases for roads, schools, emergency services, and other government supported services continually rise and then rise exponentially during times of expanded industrial development. Many times, the increase in need for services precedes the increase in taxes and assistance to support the increased services.

The data in the following socioeconomic subsections form a baseline of information for evaluating the impact of plans and projects on socioeconomic indicators. IMPLAN input-output model and the Economic Profile System – Human Dimensions Toolkit (EPS-HDT) were used to develop this baseline (Headwaters Economics 2016; MIG Inc. 2012).

Both IMPLAN and EPS-HDT use counties as their basic unit of analysis. Therefore, some of the measures of socioeconomic indicators included here may differ from the measures for the District alone. Counties are a widely-used scale for collecting and publishing socioeconomic measures. Data sources that publish on this scale include the U.S. Bureau of Economic Analysis, the U.S. Census Bureau, the U.S. Department of Commerce, and the Wyoming Department of Revenue. Future comparisons of socioeconomic indicators in the District with similar areas are greatly facilitated by using this almost universal scale for data collection and analysis.

This socioeconomic profile of Carbon County provides a baseline of measures for the socioeconomic indicators of industry, employment, and income. It then provides more detailed measures of indicators for the timber, and tourism industry. The greater detail provided for these industries, which are vitally important to the customs, culture, and economy of the District, will be useful for project comparisons, especially when the goal is to maintain or enhance the sustainability, resilience, and diversity of the District's customs, culture, and economy.

Industry

In 2012, 125 industries contributed to a gross regional product of over $906 million in Carbon County (MIG Inc. 2012). The following industry measures of Carbon County are important in understanding the economic impacts of federal policy, land use planning, and implementation activities. For information on how Carbon County's industrial profile compares to the nation, see Appendix D.

Table 8 shows the percent employment by North American Industry Classification System category for Carbon County in 2014. The figures highlighted in yellow are higher than the U.S. comparison and those highlighted in grey are lower than the U.S. comparison.

Table 8: Percent employment by industry in 2014

Industry	Carbon County
Ag, forestry, fishing & hunting, mining	15.2%
Construction	6.0%
Manufacturing	9.7%
Wholesale trade	0.7%
Retail trade	10.2%

Industry	Carbon County
Transportation, warehousing, and utilities	10.1%
Information	1.2%
Finance and insurance, and real estate	3.8%
Professional, scientific, management, administrative, & waste management	4.4%
Education, health care, & social assistance	14.1%
Arts, entertainment, recreation, accommodation, and food	11.2%
Other services, except public administration	2.9%
Public administration	10.5%

Table 9 shows the top ten industries by economic output in Carbon County in 2012 and the employment, total compensation, and taxes generated by those industries (MIG Inc. 2012). The top ten industries suggest that Carbon County's economy is largely dominated by the production and export of goods, but that food services and drinking establishments and local non-residential construction are important components as well.

Table 9. Top ten industries by economic output in Carbon County

Industry	Employment	Output	Employee compensation	Tax on production and imports
Petroleum refineries	477.6	$4,643,241,211.00	$77,025,291.44	$15,649,678.23
Transport by rail	160.1	$70,661,590.58	$18,504,016.88	-$338,279.60
Extraction of oil and natural gas	136.2	$60,169,933.32	$16,626,474.38	$15,368,591.31
Cattle ranching and farming	213.4	$45,827,823.64	$3,871,478.56	$989,394.61
Food services and drinking places	696.5	$35,388,237.00	$10,833,662.03	$2,643,816.23
Construction of other new nonresidential structures	263.2	$35,137,992.86	$14,120,320.32	$251,958.58
Monetary authorities and depository credit intermediation activities	107.2	$34,545,398.71	$4,713,447.09	$685,657.20
Transport by truck	204.4	$31,652,894.97	$11,231,901.17	$524,239.84
All other crop farming	80.6	$28,224,992.75	$3,025,164.60	$1,186,506.15
Electric power generation, transmission, and distribution	42.0	$27,962,810.52	$4,036,916.26	$3,224,324.70

Employment

In 2012, there were 9,257 full and part-time jobs in Carbon County (MIG Inc. 2012). Table 10 shows the number of weeks worked per year and the number of hours worked per week in 2014 (Headwaters Economics 2016). The figures highlighted in yellow are higher than the U.S. comparison and those highlighted in grey are lower than the U.S. comparison.

Table 10. Weeks worked per year and hours worked per week for 2014

	Carbon County
Weeks worked per year:	
Worked 50 to 52 weeks	62.1%
Worked 27 to 49 weeks	11.9%
Worked 1 to 26 weeks	11.8%
Did not work	14.2%
Hours worked per week:	
Worked 35 or more hours per week	68.7%
Worked 15 to 34 hours per week	13.8%
Worked 1 to 14 hours per week	3.3%
Did not work	14.2%

Income

Table 11. shows the Carbon County per capita income in 2014 and the median household income (Headwaters Economics 2016).

Table 11. Per capita and median household income in 2014

	Carbon County
Per Capita Income (2014 $s)	$26,673
Median Household Income (2014 $s)	$56,933

Table 12. shows the levels of income for 2014 for Carbon County. The highest percentage of residents made between $50,000 and $74,999.

Table 12. Levels of income by percent of population in 2014

Income levels	Carbon County
Less than $10,000	6.1%
$10,000 to $14,999	4.1%
$15,000 to $24,999	9.1%
$25,000 to $34,999	9.4%
$35,000 to $49,999	14.3%
$50,000 to $74,999	20.3%
$75,000 to $99,999	15.2%
$100,000 to $149,999	16.4%
$150,000 to $199,999	3.6%
$200,000 or more	1.6%

Figure 14 shows the Gini coefficient for Carbon County and the U.S. The Gini coefficient is a summary value of the inequality of income distribution. A value of 0 represents perfect equality and a value of 1 represents perfect inequality. Figure 14 shows that Carbon County has lower income inequality than does the U.S. as a whole (Headwaters Economics 2016).

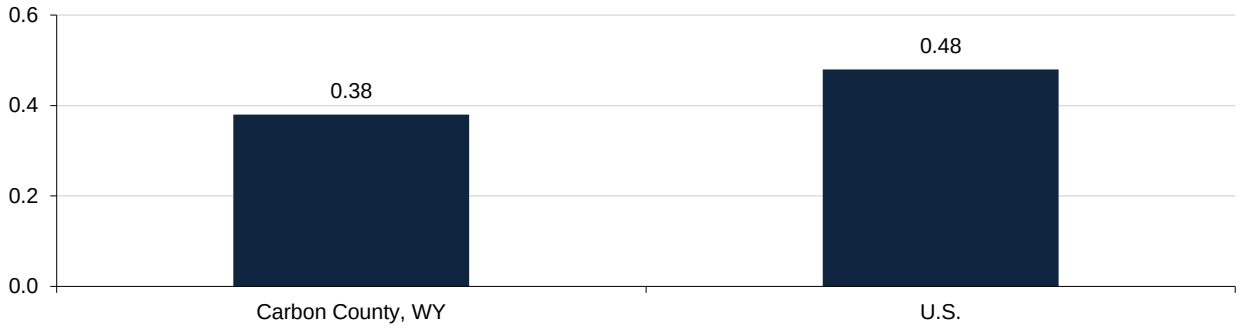

Figure 14: Inequality of income distribution in 2014

Table 13. shows the percent of the population below the poverty line for 2014 in Carbon County.

Table 13. Percent of people and families below the poverty line for 2014

	Carbon County
People below poverty	15.0%
Families below poverty	12.4%

Table 14 shows the percent of households receiving earnings by source for 2014. Carbon County has a higher percentage of labor earnings than the U.S. comparison and has a lower percentage for the remaining categories.

Table 14. Percent of households receiving earnings by source for 2014

	Carbon County
Labor earnings	84.7%
Social Security (SS)	24.8%
Retirement income	13.1%
Supplemental Security Income (SSI)	1.9%
Cash public assistance income	0.6%
Food Stamp/SNAP	9.2%

Table 15. shows that a higher percentage of Carbon County residents have mortgage costs that are less than 15% of their household income and a higher percentage with rents greater than 30% of their household incomes.

Table 15. Percentage of households by percent of income dedicated to housing costs for 2014

	Carbon County
Monthly cost <15% of household income	31.1%
Monthly cost >30% of household income	24.5%
Gross rent <15% of household income	18.5%
Gross rent >30% of household income	24.3%

Timber

The timber industry is important to the economic stability of the District and to the proactive management of the forests in the District. To sustain a viable timber industry, it is imperative for access to economically feasible quantities of timber. As timber prices, extraction expenses, labor costs, and other costs fluctuate, the parameters for being economically feasible also fluctuate. During any federal forest land use planning, it is imperative to do a thorough socio-economic analysis based on current (at the time of the planning) and projected figures for these parameters. Lack of proactive forest management and logging can lead to less than ideal environmental conditions as experienced over the last 30 years. If logging of the beetle-killed trees isn't done on in a timely manner, consequences include forest-user safety and lack of access by humans, livestock, and wildlife to name a couple.

The following information about the timber economy in Carbon County is compared to the State of Wyoming, which is a more meaningful comparison than comparing Carbon County to the U.S. as a whole. Figure 15 shows that Carbon County has a higher percent of total private employment in the timber industry than the state does as a whole.

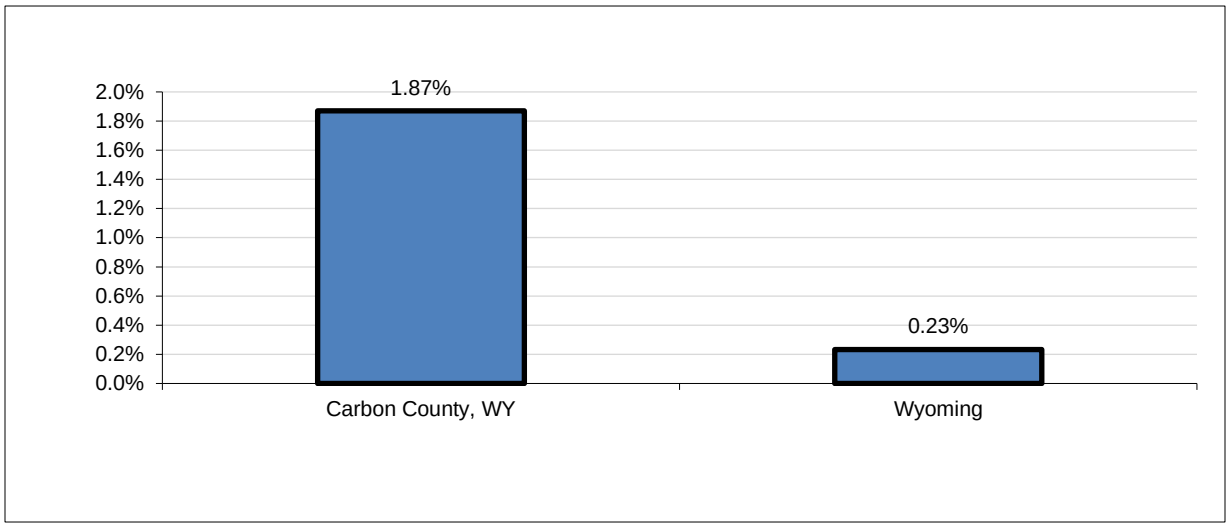

Figure 15: Percent of total private employment in timber, 2013

Figure 16 shows that employment in the timber industry in Carbon County has been volatile since at least the late nineties and was below one-half percent of total employment between 2003 and 2012. In 2013, private employment in the timber industry grew to almost 2% of all private employment in the County. The Saratoga sawmill closed in 2002 and reopened in 2012.

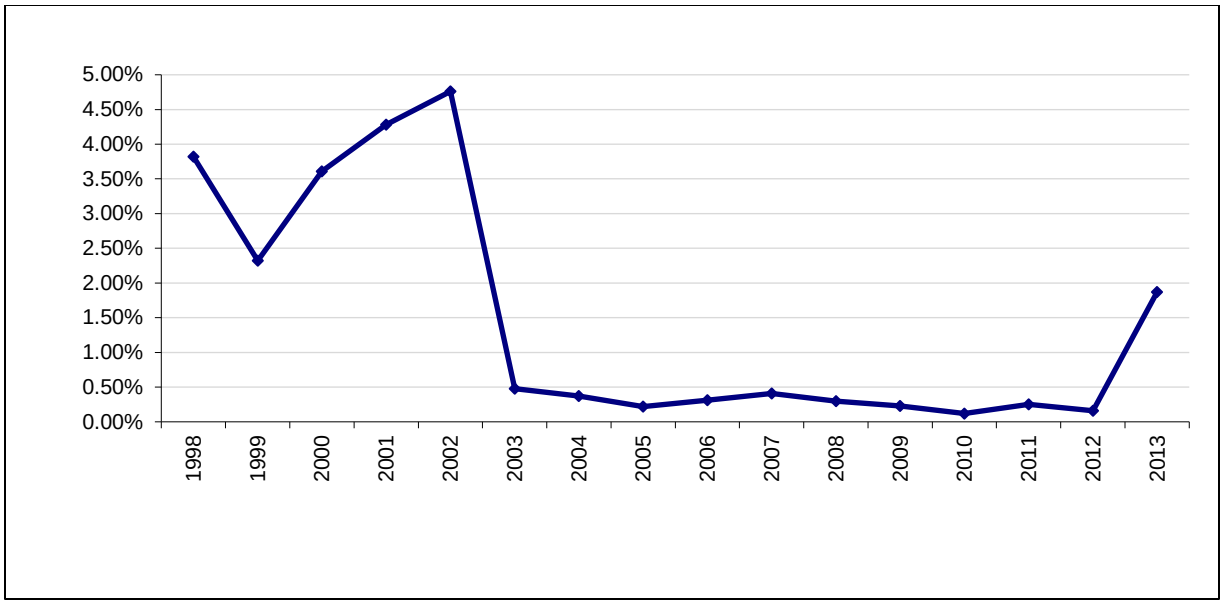

Figure 16: Trends in total private employment in the timber industry, 1998 to 2013

Figure 17 shows that both Carbon County's and Wyoming's timber industry employment have declined since the late 1990s, with the county's declining more precipitously in 2002 than the state as a result the Saratoga mill closure. As of 2013, both the county and the state employment in the timber industry were below 50% of 1998 employment levels in the timber industry.

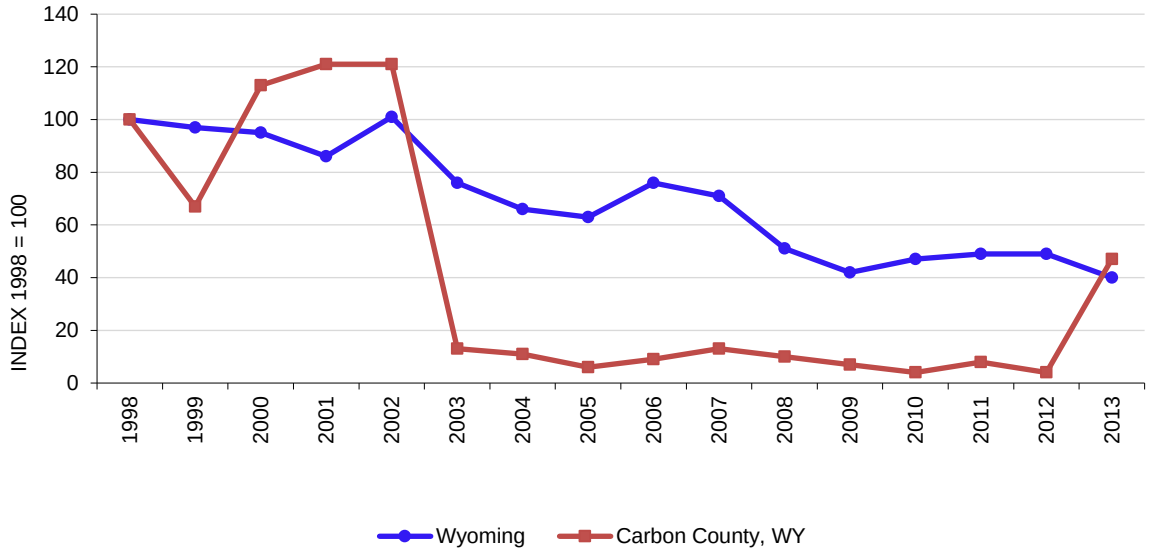

Figure 17: Trends in timber industry employment in Carbon County and Wyoming, 1998 to 2013

Figure 18 shows a precipitous decline in sawmill and paper mill jobs beginning in 2002. In 2012, sawmill and paper mill jobs began to rebound coinciding with the status of the Saratoga mill. Timber growing and

harvesting jobs reached a high in 2002 and were at their low point at the latest data point in 2013, at 5 jobs. Wood products manufacturing has hovered around zero jobs from 1998 through 2013.

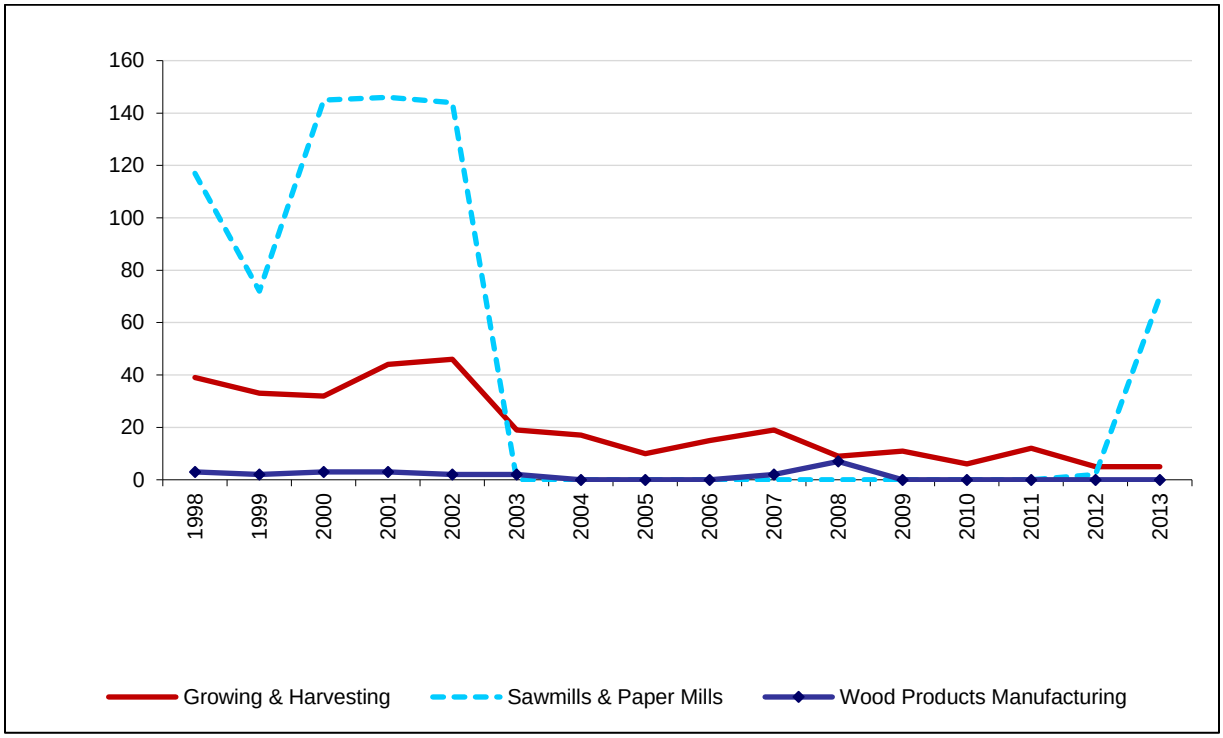

Figure 18: Jobs in the timber sector in Carbon County, 1998 to 2013

Table 16 shows that non-timber industry jobs were outperforming timber industry jobs in average annual wages in 2014 by about $6,000 per year. There was a $10,300 wage gap between timber and non-timber jobs at the state level.

Table 16. Average annual wages in the timber industry in 2014 dollars

	Carbon County	Wyoming
Timber	$34,467	$36,195
Non-Timber	$40,596	$46,443

Tourism

Table 17 shows the percent of total employment in Carbon County and Wyoming in 2013 associated with travel and tourism (Headwaters Economics 2016). Travel and tourism related employment makes up over one-quarter of total employment in the county. For the state, travel and tourism makes up less than one-fifth of total employment.

Table 17: Percent of total employment in travel and tourism for 2013

	Carbon County	Wyoming
Travel and Tourism Related	25.8%	18.6%
Retail Trade	6.3%	3.1%
Gasoline Stations	5.2%	1.7%

	Carbon County	Wyoming
Clothing and Accessory Stores	0.3%	0.8%
Miscellaneous Store Retailers	0.7%	0.7%
Passenger Transportation	0.0%	0.5%
Air Transportation	0.0%	0.5%
Arts, Entertainment, and Recreation	1.1%	2.0%
Performing Arts and Spectator Sports	0.1%	0.1%
Museums, Parks, and Historic Sites	0.1%	0.1%
Amusement, Gambling, and Recreation	0.9%	1.8%
Accommodation and Food	18.5%	13.0%
Accommodation	6.6%	3.8%
Food Services and Drinking Places	11.9%	9.2%
Non-Travel and Tourism	74.2%	81.4%

Figure 19 shows the monthly unemployment rate for Wyoming and Carbon County in 2014.The County and Wyoming had similar trends in 2014 and both show that unemployment dropped by about 1.5% during the summer. This suggests that employment is not as seasonal as one might think in Carbon County, where over one-quarter of the jobs are associated with travel and tourism.

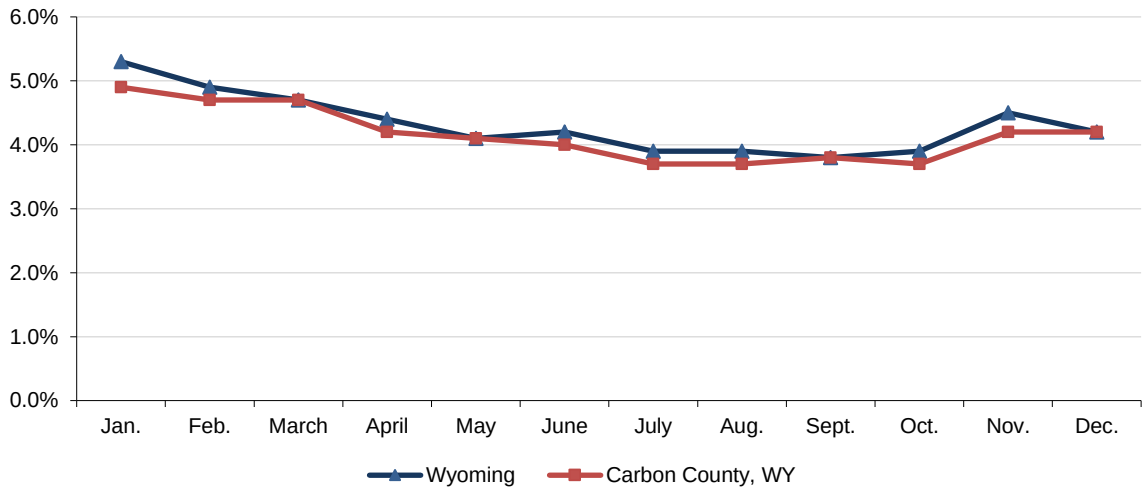

Figure 19: Unemployment rate by month for 2014 (Headwaters Economics 2016)

Table 18 shows the average annual wages for occupations by sector in Carbon County and the state. Of note is the relatively low average wages in the travel and tourism sector when compared to the average for all sectors or the average for the private sector. Also of note is the much higher wages in Carbon County for the arts, entertainment, and recreation sector and the amusement, gambling, and recreation sector. Lastly, miscellaneous store retailer wages are significantly higher in the state than in Carbon County.

Table 18: Average annual wages by sector for 2014 and in 2014 dollars

	Carbon County, WY	Wyoming
All Sectors	$46,177	$46,480
Private	$46,886	$46,405
Travel & Tourism	$19,967	$19,032
Retail Trade	$21,499	$20,304
Gasoline Stations	$22,586	$20,927
Clothing & Accessories	Not available	$18,603
Misc. Store Retailers	$12,614	$20,357
Passenger Transportation	$0	$36,554
Air Transportation	$0	$37,254
Scenic & Sightseeing	$0	$19,719
Arts, Entertainment, & Rec.	$34,806	$20,654
Performing Arts & Spectator Sports	Not available	$28,827
Museums, Parks, & Historic Sites	Not available	$28,486
Amusement, Gambling, & Rec.	$34,806	$18,198
Accommodations & Food	$18,556	$18,260
Accommodation	$22,307	$23,228
Food Services & Drinking Places	$14,187	$15,384
Non-Travel & Tourism	$49,513	$53,123
Government	$44,273	$46,728

5.7 Soils

5.7.1 Desired Conditions

Policy Soils #1: The District supports and encourages work to complete, digitize, and publicize the soil survey for all lands within the District.

Policy Soils #2: The District requests that a county, state, and federal partnership be formed to fund a Natural Resource Conservation Service accepted Level III Soil Survey (digitized/published) for all lands within the District.

Policy Soils #3: The District supports maintaining the resilience of our soil resources and encourages practices that support soil health and reduce or eliminate soil loss.

Policy Soils #4: The District supports the use of ecological site descriptions developed by Natural Resources Conservation Service (NRCS) as the foundation for the inventory, evaluation, setting of monitoring objectives, and management of rangelands and forestlands.

Policy Soils #5: Until ESDs are developed and available, the District supports the use of soils and range site data to create site-specific objectives for livestock, wildlife, etc.

5.7.2 Goals

S1. Promote the conservation of soils.

S2. Work with NRCS and other state and federal partners to collect information and data to support District activities.

S3. Continue to work towards better understanding of soil health.

S4. Provide soil and reclamation information to energy development projects.

S5. Increase or stabilize soil organic matter percent (no net loss through wind or water erosion).

S6. For non-native pastures, encourage seeding mixes of legumes, grasses, and forbs to improve soil structure and build organic matter.

S7. In rangeland, encourage rangeland health monitoring and promote grazing systems that will build soil and rangeland health.

S8. Protect prime and statewide important lands in agricultural production.

S9. Help alleviate and control soil erosion, improve energy flow, improve the water and nutrient cycle within the District, and provide affordable trees to the public and educate them on their beneficial uses.

5.7.3 Objectives

S1. Assist in completing Carbon County Area Soil Survey.

S2. Assist in completing Ecological Site Descriptions for Carbon County soils.

S3. Support NRCS programs that provide for reduction in soil erosion.

S4. Proactively, and with other entities, provide Cooperators with information regarding selection of appropriate varieties of trees for the intended use, the use of trees as windbreaks and living snow fences, proper techniques of tree planting and maintenance, irrigation systems, program funding, and wildlife interactions through the District website, printed materials, educational workshops, and such other methods as may be appropriate.

S5. Participate in establishing reclamation criteria for projects on public and private lands, especially projects involving energy development and transmission lines.

S6. Support the use of tree plantings and the use of other plant materials to provide for improved natural resource conditions and community aesthetics within the District.

5.7.4 Local Support Data

One Natural Resources Conservation Service (NRCS) definition of soil health is "a state of a soil meeting its range of ecosystem functions as appropriate to its environment."[6] To facilitate soils meeting their range of ecosystem functions requires a combination of soil physical, chemical, and biological properties that are a stable reflection of the environmental forces that formed the soil, including the climate, parent material, topography, and vegetation acting over a long period of time. Disturbances to the fragile soils in the District can be very detrimental and reclamation success is limited mostly due to edaphic reasons. In other words, related to or caused by particular soil conditions, as of texture or drainage, rather than by physiographic or climatic factors.

Most natural resource work whether for agriculture, energy, or wildlife purposes begins with the evaluation of the soils to determine site potential. For Carbon County, the basic soil survey has not been completed and

[6] http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/soils/health/

only preliminary soil survey data is available (Figure 20). Some very general soil information is available. BLM has done some soils work in certain areas for specific projects but the information is not readily shared and does not necessarily correlate with the standard soils data compiled by NRCS. The lack of basic soil survey data creates project limitations for implementing BMPs.

While Ecological Site Description (ESD) information is available as "provisional" (NRCS 2015), the information given represents the lowest tier of documentation that is releasable to the public. It contains a grouping of soil unites that respond similarly to ecological processes. Basic base-line soils information is unavailable and these "provisional" ESDs are very general in nature. More detailed soils information is necessary for accurate analysis of disturbance impacts, reclamation, and rangeland health evaluations to name a few.

The uniform use of ecological site descriptions developed by NRCS should be used as the foundation for the inventory, evaluation, setting of monitoring objectives, and management of rangelands and forestlands. Ecological sites are the basic units of soils and associated plant communities and they provide the basis for setting vegetative management objectives, monitoring, and extrapolations of management impact to other areas.

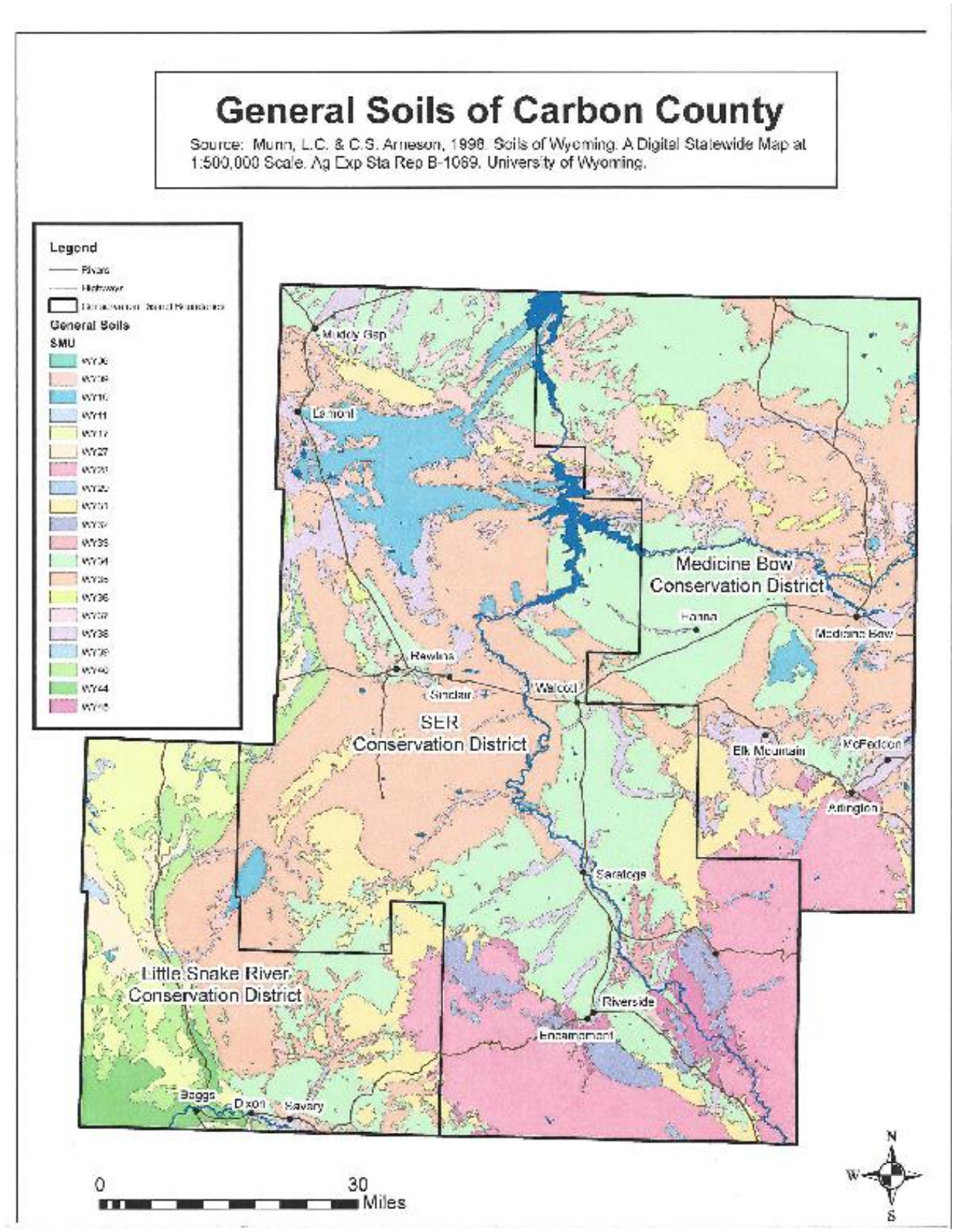

Figure 20: Preliminary Soils Data for Carbon County

5.8 Vegetation – General

5.8.1 Desired Conditions

Policy Vegetation - General #1: The District supports local, state, and federal land managers in proper management of forest and other public lands through Best Management Practices (BMPs) including, but not limited to, timbering, select cutting, fire management, and managed grazing practices for the prevention of catastrophic wildfires.

Policy Vegetation - General #2: The District supports the Wyoming County Commissioners Association's Wyoming Public Lands Initiative (WPLI) process to evaluate the four (4) Bureau of Land Management Wilderness Study Areas (WSA) in the District to determine appropriate future management and achieve final area designation or WSA release.

Policy Vegetation - General #3: The District supports continued use of livestock grazing wilderness and wilderness study areas.

Policy Vegetation - General #4: The District urges all federal land management agencies to apply wilderness area management techniques only to those lands officially designated as wilderness areas.

Policy Vegetation – General #5: The District supports participation as a cooperating agency in all proposals for special land use designations within the District.

Policy Vegetation – General #6: The District supports the historic access routes into special land use designated areas for consumptive uses such as hunting, grazing, and logging and for the maintenance of water developments, fences, or other infrastructure located within designated wilderness, wilderness study areas, areas of environmental concern and other special status areas.

Policy Vegetation – General #7: The District supports the continuation or reinstatement of prior existing lease rights in Wilderness Areas and Wilderness Study Areas as required by Federal Land Policy Management Act (FLPMA).

Policy Vegetation – General #8: The District supports and encourages historical uses on lands already designated as wilderness, wilderness study areas, areas of environmental concern, other special status areas, or areas inventoried as lands with wilderness characteristics.

Policy Vegetation – General #9: The District opposes any attempt to curtail the installment of necessary rangeland improvements in Wilderness or Wilderness Study Areas (i.e., fences and water developments) to maintain and encourage use of the prior existing rights in the area.

Policy Vegetation – General #10: The District supports and encourages accurate representation through on-the-ground mapping of roads, fences, rangeland improvement and any other anthropogenic influence in lands under consideration for Lands with Wilderness Characteristics or Wilderness Study Area designations and by not mapping around existing, known infrastructure such as roads or tanks.

Policy Vegetation – General #11: The District supports economic and environmental cumulative impacts analysis of existing and proposed designations of wilderness lands before any new areas are designated.

Policy Vegetation – General #12: The District supports the removal or release of all Wilderness Study Areas from consideration that contain non-wilderness characteristics, such as roads or active oil/gas wells, in a timely manner.

Policy Vegetation – General #13: The District supports special land use designations only when they are consistent with surrounding management and contribute to the sound policy of multiple use, economic viability and community stability.

5.8.2 Goals

V-G1. Encourage the use of best available science when making vegetation management decisions.

V-G2. Support cooperative effort with State, federal, and private land managers to enhance cooperative weed management efforts countywide coordinated with and primarily managed by the Carbon County Weed and Pest Control District.

V-G3. Supports and strongly encourages the control of noxious weeds and pests by owners, managers, and users of all lands including easements, right-of-way's, and municipalities.

V-G4. Maintain current Animal Unit Month (AUM) level for a "zero net loss of AUMs" in the District.

5.8.3 Objectives

V-CF1. Reduce the distribution of noxious weeds and aggressively treat new invaders.

V-CF2. Work to increase productivity of land to increase and/or maintain Active Preference AUMs to maximum sustainable levels on BLM and USFS managed allotments within the District.

V-CF3. Discourage the use of informal policies or unofficial classifications, such as lands with wilderness characteristics or mineral leasing closures, by federal agencies to withhold high energy potential areas from leasing or development. These practices violate FLPMA's requirement that public lands be managed in accordance with land use plans and that decisions to withhold public lands from mineral development must be evaluated in terms of the social and economic effects and reported to Congress.

V-CF4. Support the use of Conservation District staff time, when available, to support any mapping effort to document roads and range improvements throughout the District.

5.8.4 Local Support Data

The National Land Cover Dataset (NLCD) was analyzed to look at the vegetative cover and land uses in the District. The NLCD is a national dataset that is updated every five years and offers the District a simple way to track changes in vegetation and land use. NLCD data was analyzed from 2001, 2006, and 2011 for the District and the results are presented in Table 19.

The 33,000-acre reduction in the conifer cover class is most likely not a type conversion of forest to shrub/scrub, but more likely a forest stand re-initiation (mature forests being reset to seedlings). It is a result of the devastating pine beetle epidemic that severely impacted forested lands in the District over the past fifteen years.

Figure 22 and Figure 23 present NLCD data for 2001 and 2011 respectively and show reductions in forest cover on forested slopes of the Sierra Madres and the Snowy Ranges.

Table 19: District Acres by Land Cover Type

Land Cover	2001	2006	2011	Change in Acres from 2001 to 2011
Barren	14,367	15,523	14,383	16
Cultivated	716	740	740	24
Deciduous	50,210	49,575	49,569	-641
Developed, High	154	100	174	20
Developed, Medium Intensity	1,189	1,114	1,300	111
Developed, Low Intensity	5,028	4,746	4,709	-319
Developed, Open Space	14,078	14,465	14,502	424
Emergent Herbaceous Wetlands	30,925	32,271	31,184	259
Evergreen	385,786	386,360	352,689	-33,097
Hay/Pasture	66,946	65,773	65,736	-1,210
Herbaceous	295,296	294,467	292,458	-2,838
Mixed Forest	5,452	5,434	5,427	-25
Open Water	13,688	13,343	24,960	11,272
Shrub/Scrub	1,828,717	1,826,989	1,853,310	24,593
Woody Wetlands	20,954	22,609	22,367	1,413
Grand Total	2,733,508	2,733,508	2,733,508	

Figure 21 : Dragging the fields to remove shrubs.

Photo Credit: *Bob Martin/Dick Perue Collection -Historical Reproductions by Perue*

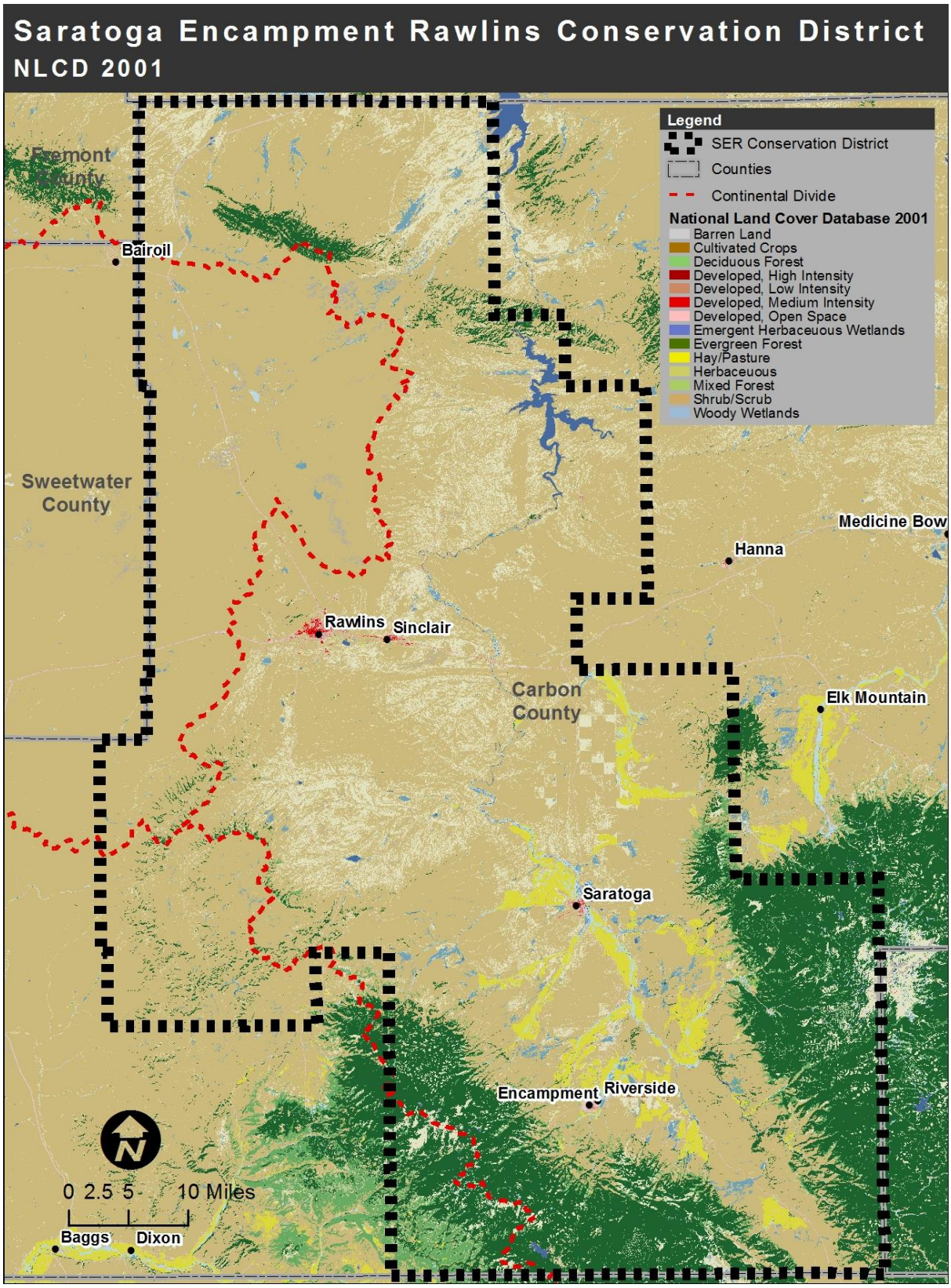

Figure 22: 2001 land cover by type

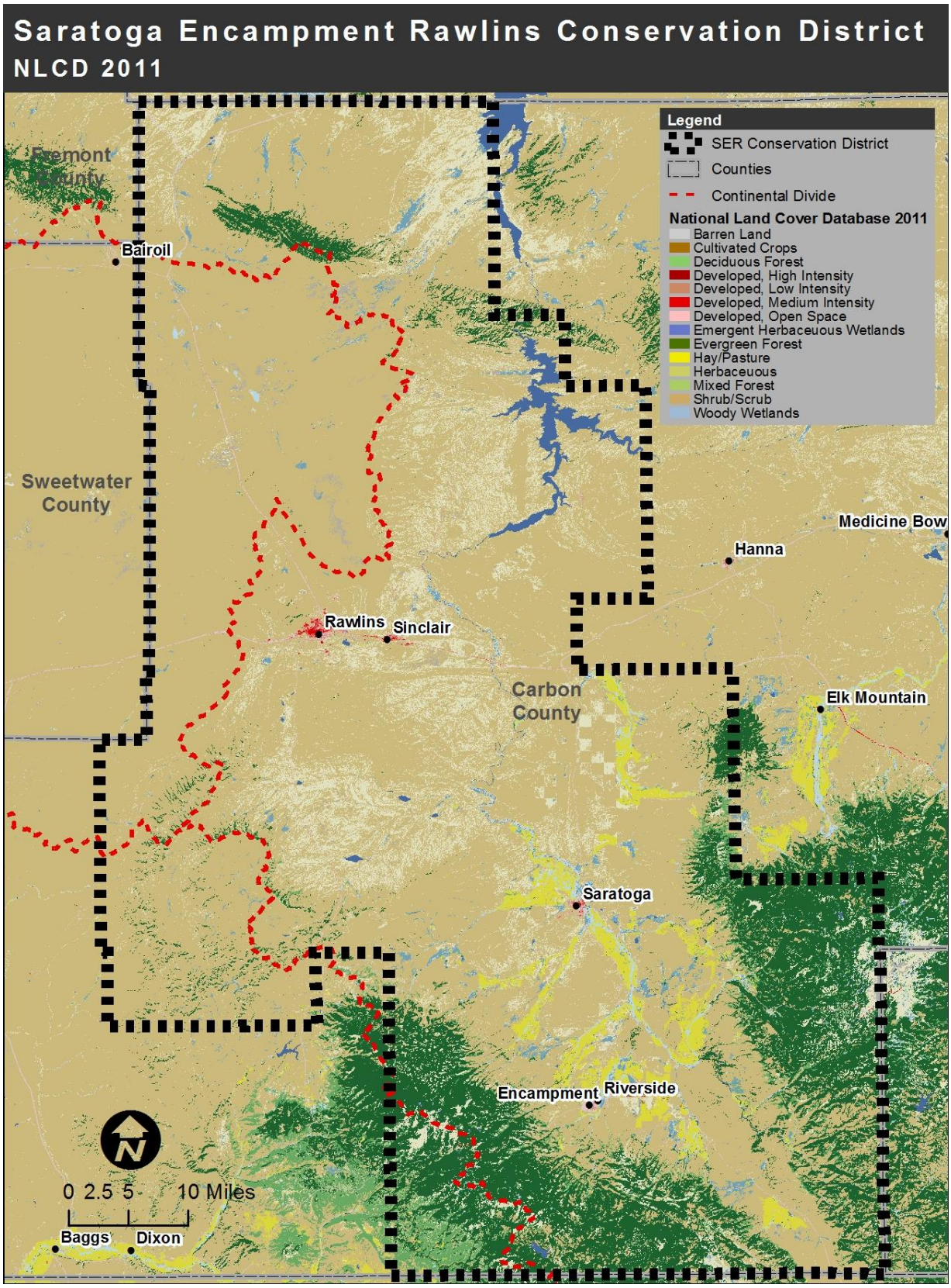

Figure 23: 2011 land cover by type

There has been a significant shift in the vegetation across the District since pre-European settlement. LANDFIRE's developed state-and-transition models were analyzed to represent pre-settlement reference conditions, and compared these to current conditions. The historic vegetative conditions were available spatially in the form of biophysical settings[7]. Each biophysical setting is described in a vegetation dynamics model, and includes a state-and-transition model representing pre-settlement reference conditions for each biophysical setting. Current vegetative conditions are presented as successional classes by each biophysical setting, the successional classes are described for each biophysical setting in the vegetation dynamics models.

For example, the most dominant biophysical setting (1.6 million acres) in the District, Inter-Mountain Basins Big Sagebrush Shrubland-Wyoming Big Sagebrush, shows a drastic departure from reference conditions. This departure is in the form of altered age class distribution. Table 20 presents a comparison of historic (reference) and current successional classes. There has been a shift to older (late open & closed development) stands of sagebrush and this is most likely due to wildfire suppression allowing shrub communities to succeed to later development conditions and not allowing areas to be reset to an early development stages.

Table 20: Successional Class Comparison for Inter-Mountain Basins Big Sagebrush Shrubland- Wyoming Big Sagebrush

	Early Development	Mid Development Open	Late Development Open	Late Development Closed	Uncharacteristic
Current	0.4%	0.0%	84.8%	8.5%	6.3%
Reference	20.0%	20.0%	30.0%	30.0%	0.0%

The less dominant biophysical setting, Inter-Mountain Basins Montane Sagebrush Steppe shows a similar buildup of later development stands (Table 21). The successional class is uncharacteristic for these rangeland types and is represented by vegetation communities that have been encroached upon by conifers or areas where non-native invasives have replaced the native grasses and forbs in the understory.

Table 21: Successional Class Comparison for Inter-Mountain Basins Montane Sagebrush Steppe

	Early Development	Mid Development	Late Development	Late Development Closed	Uncharacteristic
Current	4.8%	27.7%	56.4%	2.9%	6.3%
Reference	20.0%	20.0%	10%	10%	0.0%

Wyoming Natural Diversity Database[8] (WYNDD) supplied spatial data for the occurrences of special status plants in the District (Table 22). Figure 24 shows the spatial distribution for plants documented in the District.

[7] http://www.landfire.gov/national_veg_models_op2.php.
[8] http://www.uwyo.edu/wyndd/

Table 22: Special status plants

Agency	Type	Common Name	Scientific Name	# of WYNDD Occurrences
USFWS	Listed Endangered	Blowout penstemon	*Penstemon haydenii*	76
BLM	Sensitive	Cedar Rim thistle	*Cirsium aridum*	2
		Gibbens' beardtongue	*Penstemon gibbensii*	7
		Persistent sepal yellowcress	*Rorippa calycina*	45
		Rocky Mountain twinpod	*Physaria saximontana var. saximontana*	1
USFS	Sensitive	Alpine kittentails	*Besseya alpina*	5
		Bigelow's groundsel	*Ligularia bigelovii var. hallii*	17
		Broad-leaved twayblade	*Listera convallarioides*	4
		Colorado spiny aster	*Machaeranthera coloradoensis*	14
		Flatleaf pondweed	*Potamogeton robbinsii*	1
		Lance-leaved moonwort	*Botrychium lanceolatum var. lanceolatum*	5
		Large-leaf pondweed	*Potamogeton amplifolius*	1
		Marsh felwort	*Lomatogonium rotatum*	5
		Mingan Island moonwort	*Botrychium minganense*	1
		Narrowleaved bladderpod	*Lesquerella parvula*	3
		North Park beardtongue	*Penstemon cyathophorus*	30
		Oak fern	*Gymnocarpium dryopteris*	2
		Park milkvetch	*Astragalus leptaleus*	4
		Saffron groundsel	*Packera crocata*	2
		Showy whitlow-grass	*Draba spectabilis var. oxyloba*	2
		Slender-leaved lovage	*Ligusticum tenuifolium*	6
		Slender-leaved wild buckwheat	*Eriogonum exilifolium*	4
		Streambank groundsel	*Packera pseudaurea var. flavula*	5
		Western goldenweed	*Pyrrocoma crocea var. crocea*	13
		Western trillium	*Trillium ovatum ssp. ovatum*	40
Wyoming Game & Fish	NSSU (U), Tier 2	Devil's Gate twinpod	*Physaria eburniflora*	26

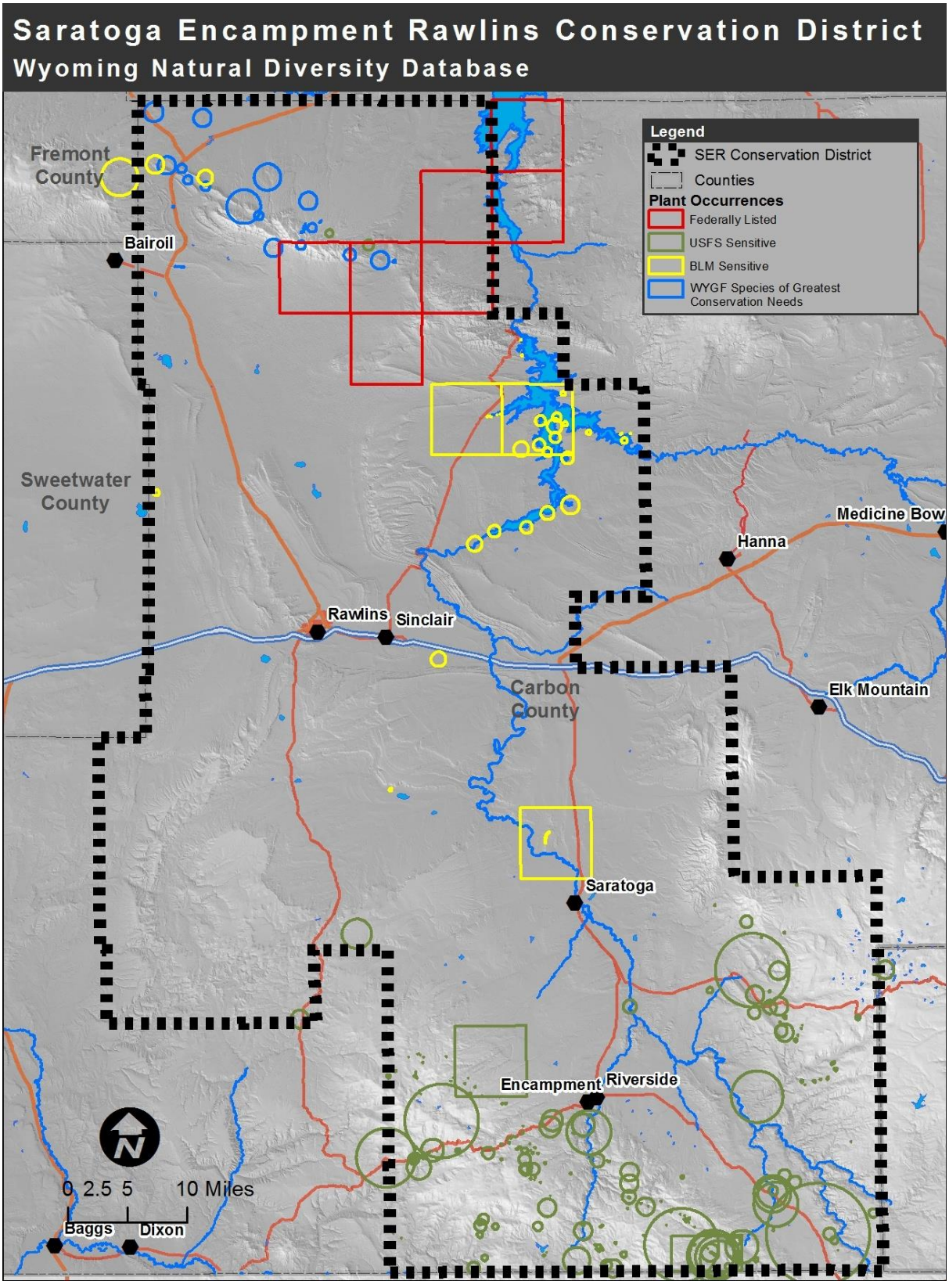

Figure 24: Known special status plant distribution within the District

5.9 Vegetation – Conservation Forestry

5.9.1 Desired Conditions

Policy Vegetation - Conservation Forestry #1: The District supports managing vegetation in a trajectory toward the historic range of variability for age class distribution, patch size, and vegetative composition. Manage for a mosaic of vegetative communities focusing on the Medicine Bow National Forest Historic Range of Variability for management of age classes as allowed per elevation, edaphic, and topographic influences.

Policy Vegetation - Conservation Forestry #2: The District insists active management of forested lands shall consider timber yield to maintain health of stands to provide wildlife habitat, minimize erosion of soils, and continue soil stability.

Policy Vegetation - Conservation Forestry #3: The District supports the multiple use mandate for management in the national forests and other public forests.

Policy Vegetation - Conservation Forestry #4: The District urges USFS to support salvage timber sales and other sales wherever stands of trees require this to maintain a healthy, viable forest and that reduce the amount of dead wood accumulation with National Forests.

Policy Vegetation - Conservation Forestry #5: The District supports the Secretary of Agriculture or Interior and their efforts to conduct fuel reduction treatments in the urban wildland interface within the vicinity of federal lands that are at risk from wildfire.

Policy Vegetation - Conservation Forestry #6: The District supports accelerated forest thinning at large scales to improve the water balance and resilience of forests and sustain the ecosystem services they provide.[9]

5.9.2 Goals

V-CF1. In conjunction with local, state and federal planning partners, develop strategies to help enhance vegetative conditions and to reduce the potential for large wildland fires. Encourage historic fire regime.

V-CF2. Enhance the vegetation across the District by attempting to restore historic vegetative patch size and age class distribution.

V-CF3. Expose aspen stands to periodic wildfire or manmade disturbance that mimics wildfire to remove competing conifers.

V-CF4. Reduce the risk of large scale wildfire via fuels treatments and controlled burning.

V-CF5. Encourage timber land managers to offer timely timber sales (post and pole, hazard tree removal, large scale logging operations, etc.) and forest products permits to help sustain the timber industry and ensure that forest conifer age classes are diverse and include both substantial amounts of seedling-sapling stands and mature stands.

[9] Robles MD, Marshall RM, O'Donnell F, Smith EB, Haney JA, et al. (2014) Effects of Climate Variability and Accelerated Forest Thinning on Watershed-Scale Runoff in Southwestern USA Ponderosa Pine Forests. PLoS ONE 9(10): e111092. doi:10.1371/journal.pone.0111092

5.9.3 Objectives

V-CF1. Meet with federal planners to scope project- and planning-level projects.

V-CF2. Request Cooperating Agency status in order to coordinate with agencies at the earliest time in the planning process.

V-CF3. Help prioritize areas where fuel treatments can be applied by referring to the District's Annual Plan of Work to minimize threats to local communities while maximizing the benefits to vegetative patch size and age class distribution.

V-CF4. Use the Vegetation Dynamics Models to help define the quality and quantity of successional classes by biophysical setting.

V-CF5. Use Natural Resources Conservation Service (NRCS) Ecological Site Descriptions as they become available to help define desired conditions by vegetation type.

V-CF6. Use future versions of LANDFIRE data to update and track the successional classes by biophysical setting.

V-CF7. Continue cooperative efforts with State Forestry, Forest Service, other agencies, and industry to address forest health issues as a result of the beetle epidemic.

V-CF8. Investigate economic development of forest resources.

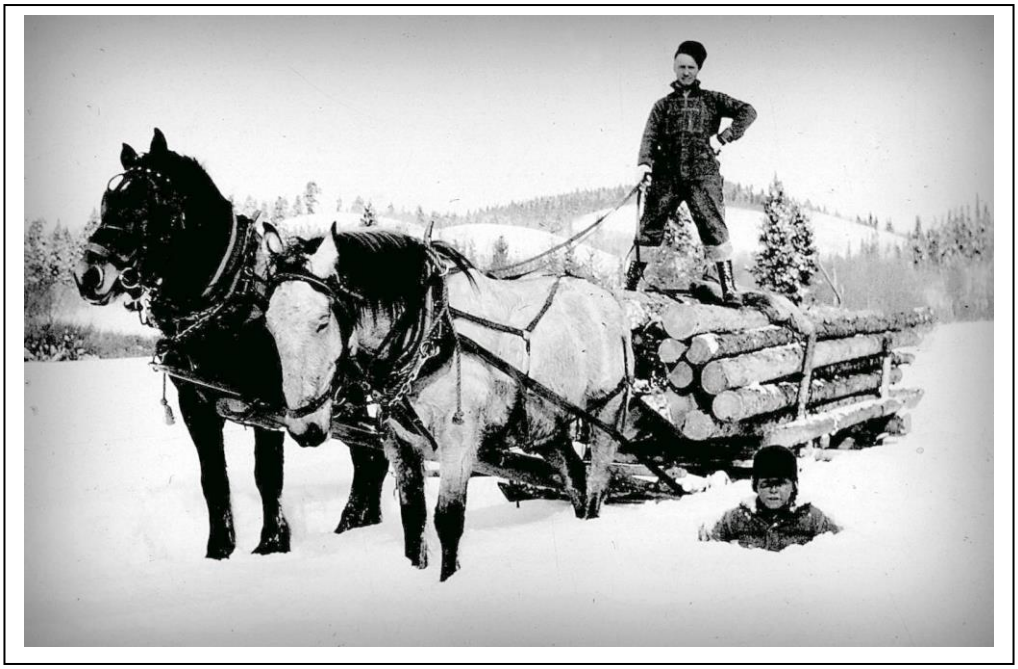

Figure 25 : Scott and Dick Barkhurst logging to build a house.

Photo Credit: *Bob Martin/Dick Perue Collection -Historical Reproductions by Perue*

5.9.4 Local Support Data

Conservation forestry encompasses those measures concerned with the protection and preservation of forest lands and resources. Modern challenges including invasive species, pests, and disease have taken their toll

on our forests. Conservation forestry includes any conservation-minded practice or activity on forested lands within the District. Using LANDFIRE's developed state-and-transition models, forested areas have experienced drastic changes when compared to historic conditions. LANDFIRE's vegetation departure, indicating how different current vegetation on a landscape is from estimated historical conditions, is based only on departure of current vegetation conditions from reference vegetation conditions. It relies on estimating historical range and variation of landscape patch dynamics. Table 23 presents a comparison of historic (reference) and current (successional) classes for the most dominant forested biophysical setting in the District, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland.

Table 23: Successional Class Comparison for Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland

	Early Development	Mid Development Closed	Mid Development Open	Late Development Open	Late Development Closed	Uncharacteristic
Current	1.4%	0.2%	1.3%	40.3%	56.5%	0.1%
Reference	15%	20%	15%	20%	30%	0%

Table 24 presents the same comparison but for the second most dominant forested biophysical setting, Rocky Mountain Lodgepole Pine Forest. Historically only 50% of the spruce-fir and 40% of the lodgepole pine stands were in a later development conditions and currently 97% of the spruce-fir and 63% of the lodgepole pine stands are late development. These lodgepole pine forests have had some areas reset to earlier development stages due to insect caused mortality, but still have a buildup of late development stands. Similar to the rangelands there has been a drastic shift to later developed stands.

Table 24: Successional Class Comparison for Rocky Mountain Lodgepole Pine Forest

	Early Development	Mid Development Closed	Mid Development Open	Late Development Open	Late Development Closed	Uncharacteristic
Current	3.3%	7.4%	26.1%	6.5%	56.4%	0.1%
Reference	20%	20%	20%	30%	10%	0%

Forests in the District have been the most drastically affected cover type. Western spruce budworm has decimated Douglas-fir stands and mountain pine beetle has killed much of the lodgepole pine component resulting in a homogeneous landscape of highly flammable fuels. In order to visualize the effects of these disturbances, the 2014 wildfire hazard potential (WHP) was analyzed. The WHP is a geospatial product produced by the Forest Service Fire Modeling Institute that can inform evaluations of wildfire risk or prioritization of fuels management needs across large landscapes. Figure 26 presents the 2014 WHP for the District. Moderate to high wildfire potential exists throughout the area but is most concentrated on the forested slopes of the Sierra Madres, Seminoe, and the Snowy Ranges.

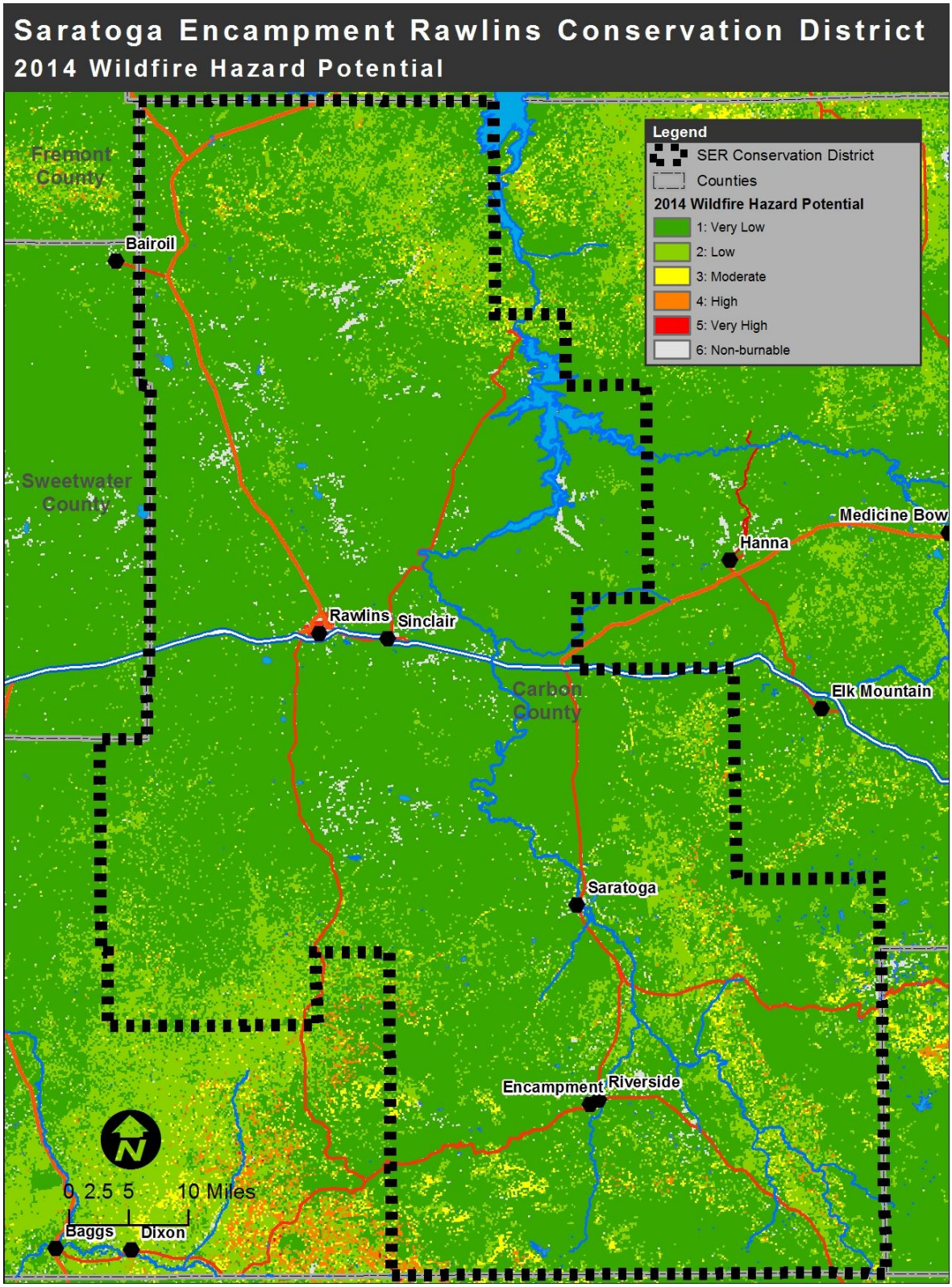

Figure 26: 2014 Wildfire Hazard Potential for the District based on model produced by the USDA Forest Service File Modeling Institute

5.10 Vegetation - Rangeland Management & Rangeland Health

5.10.1 Desired Conditions

Policy Range #1: The District support maintaining and improving existing conditions to promote optimum production of forage for continued ecosystem function.

Policy Range #2: The District supports private landowner rights to manage grazing.

Policy Range #3: The District supports rangeland monitoring and data collection in managing rangeland conditions based upon a cooperatively developed monitoring plan that clearly identifies rangeland goals and goal-appropriate monitoring methods.

Policy Range #4: The District recommends no loss of adjudicated preferential grazing rights, including but not limited to, active and suspended Animal Unit Months (AUMs) of state and federal lands while maintaining and improving the resource.

Policy Range #5: The District supports proper and appropriate livestock grazing practices as a tool for the sound management of private, state, and federal lands.

Policy Range #6: The District supports and strongly encourages the control of noxious weeds and pests by owners, managers, and users of all lands.

Policy Range #7: The District encourages the Secretaries of Agriculture and Interior to develop fire management policies that utilize and acknowledge the beneficial effects of planned grazing as a fire management tool.

Policy Range #8: The District supports the use of cooperative monitoring Memorandums of Understanding (MOUs) so that private or consultant data can be collected and approved by the land management agency if the land management agency is not able to get the data collected.

5.10.2 Goals

V-R1. Best Management Practices for the improvement and continued use of all rangelands and irrigated cropland to sustain agriculture productivity are implemented within the District.

V-R2. Successful reclamation of disturbed range and pastureland sites.

V-R3. Provide expertise and guidance to promote healthy rangelands.

5.10.3 Objectives

V-R1. Promote and encourage rangeland monitoring programs.

V-R2. Monitor established monitoring sites, install new transects, analyze data, and develop trends.

V-R3. Work to increase productivity of land to increase and/or maintain Active Preference AUMs to maximum sustainable levels on rangeland within the District including range improvements such as, but not limited to, water development and fencing.

V-R4. Provide technical expertise and incentives for landowners/developers to reclaim disturbed range and pastureland sites.

V-R5. Promote productive and sustainable range management through incorporation of Best Management Practices (BMPs), proven grazing principles, and improved grazing practices.

V-R6. Assist landowners in developing rangeland management plans.

V-R7. Sponsor Rangeland Health Assessment Programs (RHAP) with landowners and partners to develop and conduct a cooperative monitoring program.

V-R8. Work with agriculture producers and agencies to facilitate alternative and innovative methods for rangeland improvements.

V-R9. Provide educational opportunities for sustainable use of rangelands and new innovative methods for range/livestock management.

5.10.4 Local Support Data

The history of domestic livestock grazing in the Carbon County goes back almost 150 years, although native herbivores have grazed the area for centuries prior to that time. Settlers brought sheep into the area beginning in the late 1860s. Livestock production has been a critical component of the economy and lifestyle of the County, and proper grazing management can positively influence the ecosystem health. Proper utilization of the range resources in the District is vital to the economy of the local communities (see Section 5.1.4 for more economic support data).

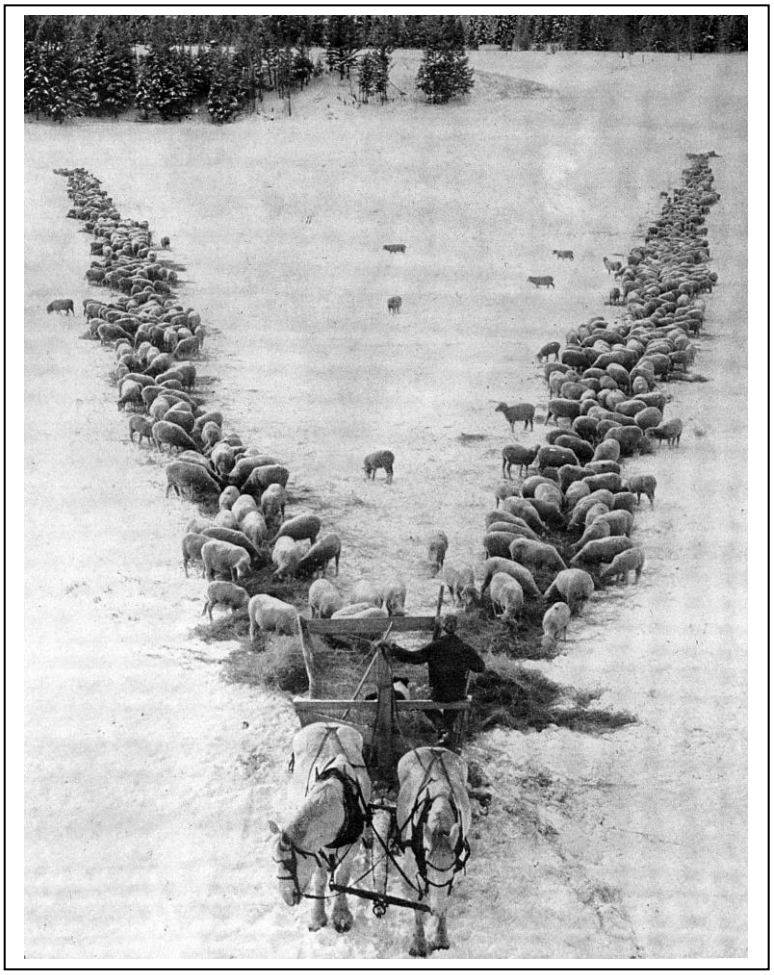

Figure 27 : Feeding sheep.

Photo Credit: *Bob Martin/Dick Perue Collection -Historical Reproductions by Perue*

Utilizing livestock grazing animal unit months (AUMs) on public lands is vital to sustainability for most of the ranching operations in the District. A recent study provides an economic analysis and projected economic consequences of federal land use policy changes with the potential reduction in Animal Unit Months (AUMs).

Torrel et al. (2014) found there were negative impacts from AUM reductions to ranching operations utilizing public lands for grazing. The Wyoming Ranch Model in the study revealed a greater negative impact from reducing spring grazing AUMS than reducing fall grazing AUMs. Spring forage was the most expensive to replace and generally had the highest economic value. Additionally, as the percentage of reduced AUMs increased the value of economic impact per AUM reduced also increased (Torrel et al. 2014).

The Taylor Grazing Act (TGA) of June 28, 1934, Pub. L. No. 482, 48 Stat. 1269 (codified as amended at 43 U.S.C. §§ 315-315r (1988)), was passed to protect grazing rights acquired before January 1, 1934, and to stabilize the livestock industry. The adjudication of forage on the federal lands occurred much like the adjudication of western water rights. Once the public lands were withdrawn from settlement and were declared suitable for grazing purposed, a local livestock operator could gain a preference to use those lands if he could prove (1) that he had base property located in the area and (2) that he had previously used the public lands for livestock grazing (Falen and Budd-Falen 1994). The Bureau of Land Management regulations define a grazing preference as "the total number of animal unit months of livestock grazing on public lands apportioned and attached to base property owned or controlled by a permittee or lessee." 43 C.F.R. § 4100.0-5 (1993). Pursuant to Forest Service regulations, strict ownership, rather than "ownership or control" of the preference, base property and livestock is required. 36 C.F.R. § 222.3(c)(1)(vi)(A) (1993). In other words, the preference is the amount of forage, calculated in AUMs, that can be used by the permittee or lessee on the federal lands during the grazing season (Falen and Budd-Falen 1994).

The BLM in Wyoming issued its Wyoming report identifying lands with "wilderness characteristics" in 1991. There were three Wilderness Study Areas (WSA) identified in the District, Encampment River Canyon, Ferris Mountains, and Prospect Mountain covering a total of 27,937 acres. One additional WSA identified is split between the District and Medicine Bow Conservation District, Bennett Mountain and is 6,003 acres. One of the four WSAs, 1145 acres, was recommended for release to multiple uses. Congress, with sole authority to declare wilderness or release these areas, has not acted on the recommendations of the report.

It is important for the Wyoming Public Lands Initiative to develop a locally-led, Wyoming-specific, legislative lands package to address designation, release, or other management for WSAs in Wyoming since it has been twenty-five years since the release of the Wyoming WSA report. On-the-ground conditions and economic drivers have changed since the time of the evaluation and report. Additionally, an analysis of impacts for a variety of management alternatives for each area is important in determining appropriate future management of each WSA. Managing areas as wilderness should only be applied to those lands specifically designated as wilderness as recommended by an updated locally-led effort.

It is vital to the economy of the District that wilderness areas and wilderness study areas continue allowing livestock grazing.

5.11 Water Resources

5.11.1 Desired Conditions

Policy Water Resources #1: Any new demands for water needed under the Platte River Cooperative Agreement in the habitat area in central Nebraska would need to come from non-traditional sources, i.e. cloud seeding, to protect the current water use system in the District and a should only occur once a policy, particularly dealing with low water years, is established after public input.

Policy Water Resources #2: The District opposes the use, sale or lease by the state, of any Wyoming basin water unless the water and storage needs of the affected basin(s) have been met and mitigated. Any sale or lease of water out of basin or out of state will be mitigated by storage, before the transaction is approved. Further, the District does not support trans-basin diversions.

Policy Water Resources #3: The District opposes interstate water transfers as they have adverse impacts on Wyoming water rights, existing commitments to maintain flows in the North Platte River system, and adverse impacts to future water development in Wyoming.

Policy Water Resources #4: The District will protect existing water rights and water uses within the District for long-term conservation and enhancement of our natural resources while contributing to the economic stability of the District and its residents.

Policy Water Resources #5: The District encourages and facilitates development of water storage facilities to meet Wyoming water needs.

Policy Water Resources #6: The District supports efforts to ensure Wyoming Water Law as it exists is adhered to in all cases. Further, the District wants to ensure historic and customary beneficial uses under Wyoming State Law do and should take precedence over any and all in-stream flow use designations.

Policy Water Resources #7: The District requires water quality monitoring as a part of all energy and right-of-way development projects to ensure groundwater and surface water quality is not degraded.

Policy Water Resources #8: The District supports Wyoming State Water Law and the state's right to administer all water. Further, the District is opposed to any federal government action which adversely affects state's rights where water law is concerned.

Policy Water Resources #9: The District supports private rights in the administration of riparian or wetland areas.

Policy Water Resources #10: The District does not support water right takings for any environmental or wildlife purposes. If such a taking does occur, just monetary compensation for the agriculture water rights taken should be paid.

Policy Water Resources #11: The District supports stream restoration projects that will provide long-term benefits for healthy aquatic habitat and watershed health.

5.11.2 Goals

WR1. Provide leadership to maintain or improve the quality of water within all watersheds in the District.

WR2. Strive to increase the efficient use of the District's waters through education, technical assistance, Best Management Practices (BMPs), and coordination.

WR3. Maintain, protect, and enhance water quality in the District to sustain the beneficial uses and ecological health of the watershed.

WR4. In conjunction with local, state and federal planning partners, identify, develop strategies, and participate in stream restoration projects to maintain and improve watershed conditions when appropriate.

WR5. Ensure proper grazing practices and stocking rates to help improve watershed conditions in rangeland settings.

WR6. During periods of drought or other emergencies, local, state, and federal agencies shall work closely with the District, the Wyoming State Engineer, and other local, state, and federal agencies to address availability of water for critical needs, including agriculture and municipal uses.

WR7. Water resources should provide for beneficial use and ecological health while mitigating, where possible, risk to public safety and property.

WR8. Participate in all Clean Water Act 303(d) listing/designation processes in the District.

5.11.3 Objectives

WR1. Establish minimum baseline water quality data requirements needed to meet water sampling protocols established by Wyoming Department of Environmental Quality.

WR2. Provide assistance on local water quality issues.

WR3. Conduct efforts to improve any waters listed on the 303(d) Impaired Waters List in order to remove them from the list.

WR4. Implement water quality monitoring on an as requested or needed basis.

WR5. Apply for grants or other funding to develop and implement stream restoration projects.

WR6. Maintain healthy rangelands and control soil erosion for productive watersheds.

WR7. Promote Best Management Practices to reduce non-point source pollution and water conservation.

WR8. Support water development projects that increase water quantities for beneficial use within the District, while conserving the traditional custom, culture, and economy of the area.

WR9. Recognize the importance of irrigation systems that make up a critical part of the water cycle within the District, support the implementation of irrigation Best Management Practices (BMPs).

WR10. Where appropriate, develop water quality data in support of District priorities and programs. The District will only recognize credible data which means scientifically valid collection of chemical, physical, and biological monitoring data collected under an accepted sampling and analysis plan, including quality control, quality assurance procedures and available historical data.

WR11. Work with local, state and federal government to encourage and support state control of water rights and to maintain opportunities for future water right allocations.

WR12. Provide cost-share funding for on-the-ground natural resource conservation BMPs projects.

WR13. Strive to maintain and improve the quality and quantity of the District's waters through education, technical assistance, BMPs and coordination.

WR14. Promote BMPs designed to reduce point and non-point source pollution.

WR15. Promote BMPs that maximize stream bank stability, habitat restoration, and riparian health.

WR16. Conduct water quality monitoring to determine potential impairments and monitor effectiveness of BMPs.

WR17. Identify potential water bodies for on-going and future water quality monitoring.

WR18. Promote water conservation through education and implementation of BMPs.

WR19. Support the investigation and development of water storage opportunities for both agricultural and municipal uses.

WR20. Participate in watershed studies and plans.

5.11.4 Local Support Data

Wyoming's first surface water laws were enacted in 1875. More comprehensive laws were adopted along with the state constitution in 1890. The Wyoming constitution states that all natural streams, springs, lakes, and other collections within the boundaries of the state are property of the State. Wyoming water law is contained in Title 41 of the Wyoming Statutes. It is founded on the doctrine of prior appropriation. The first person to put the water to a beneficial use has the first right, or "first in time, first in right" (Jacobs et al. 2003). Wyoming is a headwaters' state providing water to water users in Wyoming and many other states downstream. The first Wyoming groundwater laws were enacted in 1945 which was later amended and then repealed and replaced in 1958. Major amendments were made to the March 1, 1958 law in 1969.

The state engineer is the chief administrator of Wyoming waters. Prior to Wyoming statehood in 1890, a water right could be established by a procedure predicated on the use of water and the filing of a claim with territorial officials. Water rights with priority dates before 1890 are termed "territorial" water rights. After 1890, the only water to acquire a water right is by securing a permit from the state engineer through a specified procedure. To manage waters, the state is divided into four water divisions. The District are in Water District 1 based out of Torrington.

Water resources are vital to all District residences and the local economy. Both water quantity and water quality are of the utmost importance to the District. Conservation Districts are given specific statutory authority for water conservation and other water responsibilities per W.S. § 11-16-122(b)(xvi). The headwaters of many streams lie within the District. Surface waters in the District have far-reaching impacts both to the east and the west as the Continental Divide transects through the western side of the District. On the east side of the Continental Divide, the North Platte River flows from south to north through most of the District before entering Seminoe reservoir, the first reservoir on the North Platte River. Flooding is nearly a yearly concern for the residents upstream of Seminoe.

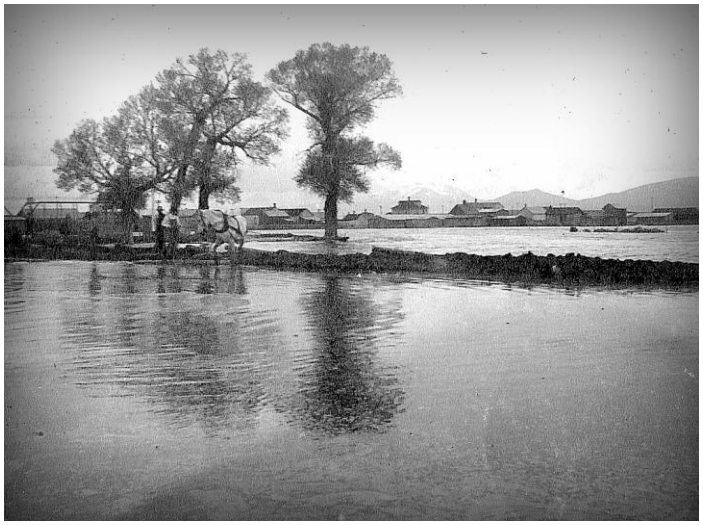

Figure 28: Building dikes with horse & slip to keep Saratoga from more flooding in the worst flood on record, 1917.

S&E railroad bridge on left looking northeast with Elk Mountain, Coed and Pennock Peak in background. 1917 flood completely covered what is now Veterans Island and where the Saratoga Inn was built. Photo from Yoakum/Pilot Family Album.

Photo Credit: *Bob Martin/Dick Perue Collection - Historical Reproductions by Perue*

The District intersects three 6-digit hydrologic units (basins), seven 8-digit hydrologic units (sub-basins, 4 on the east side of the Continental Divide and 3 on the west), 29 10-digit hydrologic units (watersheds), and 139 12-digit hydrologic units (sub-watersheds) as shown in Figure 30. Protection of water resources (water quality, yield, and supply) was identified as the most important issue in the Encampment Areas Watersheds Study Survey completed by the District in 2009 (SERCD 2009). The Encampment-area watersheds form the headwaters for the North Platte and Encampment Rivers, which provide critical surface water resources for local and downstream municipal, agriculture, tourism, and industrial purposes. The uplifted Sierra Madre and Medicine Bow Mountains surrounding the North Platte Valley are important recharge areas for the ground water aquifers, which provide domestic and stock water to many rural areas in Wyoming. Normal annual precipitation ranges from over 50 inches a year on the crest of the Sierra Madres to 10 inches or less in the vicinity of Rawlins.

Figure 29 : Feeding cows in the valley

A frosty morning feeding the cattle with a team and sled. Pitching the loose hay by hand was a time consuming chore. Now one person using a tractor with heated cab can feed several hundred head of cattle in a couple hours. Photo provided by Marion Berger.

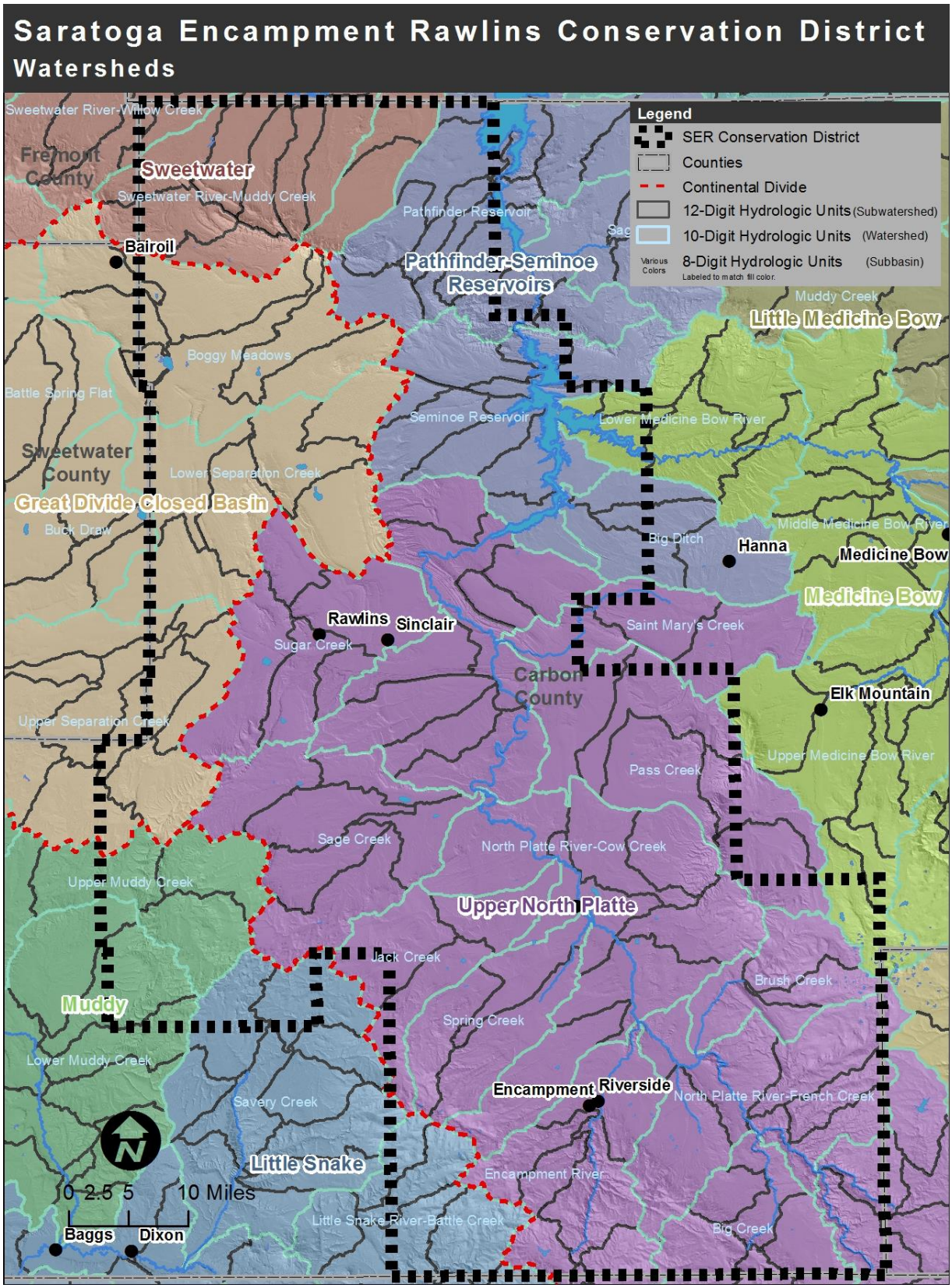

Figure 30: District Watersheds

Watersheds that are functioning properly have terrestrial, riparian, and aquatic ecosystems that capture, store, and release water, sediment, wood, and nutrients within their range of natural variability for these processes (USDA 2011). The District's goal is to have all watersheds within the District functioning properly.

Although snow is an important resource for tourism in the District, melting snowpack is the life blood for water users in the District and beyond. Figure 31 is a schematic of the surface aquifer return flow hydrologic cycle. Precipitation at the higher elevations flows down into streams, rivers, and through groundwater inflow. Water flowing on the surface travels much faster through the system and warms up both directly and indirectly from the sun. Groundwater inflow moves through the system much slower, stays cool, and surfaces through various means which provides a cooling effect for the surface water streams and rivers.

Many of the irrigated acres within the District utilize flood irrigation. Flood irrigation contributes water to the return flow portion of the cycle to aid in maintaining cool water return flows late in the summer. This method of irrigation is not only part of the custom and culture of the District, it is also vital to the conservation of the cool water fisheries in the District. Irrigation within the District is vital to provide stable agriculture operations, to maintain cool water return flows late in the summer, for the creation of artificial wetlands, and to benefit a wide variety of wildlife.

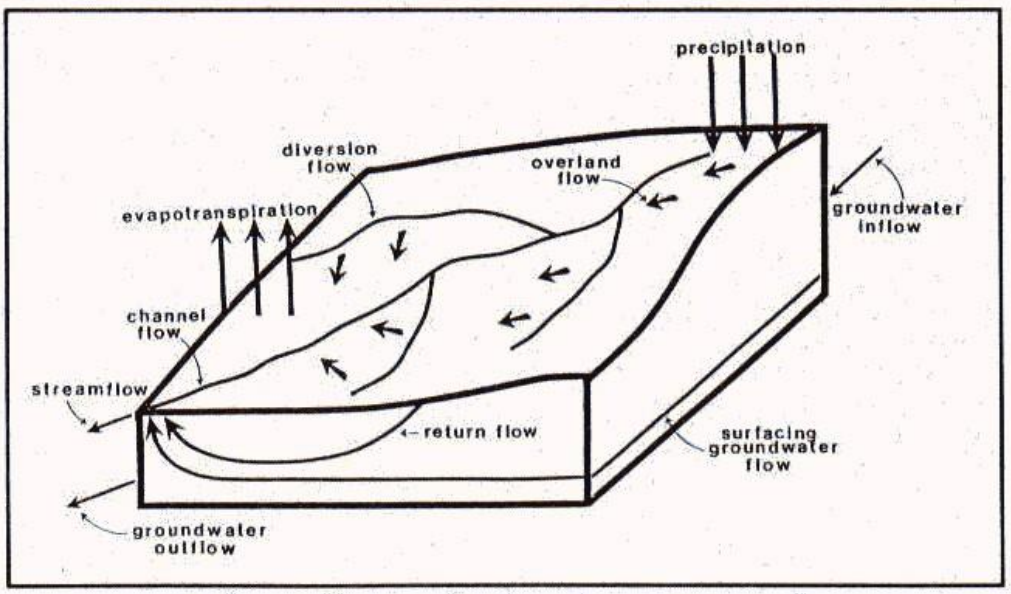

Figure 31: Surface aquifer return flow hydrologic cycle schematic

The Platte River Cooperative Agreement (PRCA) and endangered species which are downstream in Nebraska impact the amount of instream flow required in the North Platter River and therefore have significant impacts to the District water users. United States Fish and Wildlife Service (FWS) had originally identified that an additional flow of 417,000 Ac-Ft was needed in the habitat area in central Nebraska. During the first increment of the program, which expires in 2019, all three states in the PRCA and FWS agreed to provide 150,000 Ac-Ft of additional flows to the target area. In 2019, there is concern that more water will be requested beyond what was originally agreed. This could have negative impacts on District agricultural sustainability and local economies.

Figure 32 : Early Irrigator in the Platte Valley

Photo Credit: *Bob Martin/Dick Perue Collection -Historical Reproductions by Perue*

Figure 33: Irrigation Headgate near Brush Creek.

Photo Credit: *Bob Martin/Dick Perue Collection -Historical Reproductions by Perue*

Therefore, changes in water uses for federal, state, or local purposes that will potentially reduce the available water or adversely affect existing water rights should be carefully considered in relation to the effects on rangeland resources, soil, and water and the agriculture industry, as well as the history, traditions, and custom and culture of the County.

The Wyoming Department of Environmental Quality (WDEQ) and United States Environmental Protection Agency (USEPA) through the Clean Water Act have established water quality criteria to support designated uses; to evaluate whether water quality standards are met or if they are exceeded (303(d) List of Impaired Waters); and to establish goals for restoration plans such as total maximum daily loads (TMDLs). Streams in Wyoming and the District are assigned designated uses based on a classification system established by the WDEQ. Notably, the District contains numerous Class 1 waterbodies, which are "Outstanding Waters" that receive the highest level of water quality protection. Waterbodies within the District are also designated for either primary or secondary contact recreation use based on flow conditions and other factors related to recreational use. Different water quality standards will apply to different waterbodies, depending on their classification and associated designated uses (Figure 35).

WDEQ Water Quality Rules and Regulations identifies Class 1 waters as being waters specifically designated by the Environmental Quality Council considering “water quality, aesthetic, scenic, recreational, ecological, agricultural, botanical, zoological, municipal, industrial, historical, geological, cultural, archaeological, fish and wildlife, the presence of significant quantities of developable water and other values of present and future benefit to the people.” Class 1 waters include all surface waters located within the boundaries of national parks and congressionally designated wilderness areas as of January 1, 1999.

Primary contact recreation waters are those where recreational activities are expected to result in full body immersion in the water (e.g., swimming, water skiing, etc.) or a level of contact with the water equivalent to swimming (i.e., activities of similar duration, intensity, and exposure to the water as swimming) during the summer recreation season. Secondary contact recreation waters are those where recreational activities are not expected to result in full body immersion in the water or a level of contact with the water equivalent to swimming (e.g., wading, fishing, hunting, etc.). During the winter recreation season (October 1 through April 30), waters designated for primary contact recreation are protected for secondary contact recreation.

Wyoming's 2014 Integrated 305(b) and 303(d) Report prepared by the Wyoming Department of Environmental Quality describes present and past conditions for three District stream segments identified as having or previously having impairments or threats.

The headwaters of the Sage Creek watershed are located along the eastern edge of the continental divide within the northern foothills of the Sierra Madre Mountains. Sage Creek has a naturally high sediment load due to the highly erosive soils and the arid climate in the watershed. WDEQ placed a 14.7 mile segment of the creek on the 303(d) List for this elevated sedimentation in 1996 using data collected by WDEQ; a final report was not written for this study. Dam failures, road construction and historic grazing practices resulted in increased erosion and sediment loading to Sage Creek, especially in the lower portion of the watershed. In 1997, the District, in cooperation with land owners, BLM, WDEQ, NRCS and WGFD, initiated two Sage Creek Watershed Section 319 projects, which together included the entire Sage Creek watershed. Resulting BMPs consisted of short duration grazing, riparian and snowdrift fencing, off channel water development, improved road management, grade control structures and water diversion, and vegetation filtering. These BMPs were expected to reduce sediment loading from Sage Creek to the North Platte River. Monitoring data collected as part of these projects resulted in reduced sediment loading to the North Platte River and improved riparian and range condition within the Sage Creek watershed. Data indicate that the aquatic life other than fish and cold water fisheries uses are now fully supported on Sage Creek, and therefore it was removed from the 303(d) List in 2008. A USEPA Section 319 Nonpoint Source Success Story has been written for Sage Creek (Appendix C).

Haggarty Creek's headwaters are located along the continental divide within the Medicine Bow-Routt National Forest in the very western edge of the District. A 5.6 mile reach of Haggarty Creek had elevated levels of cadmium, copper, and silver and also placed on the 303(d) list in 1996. The listed reach of Haggarty Creek was from the Ferris-Haggarty Mine (FHM) downstream to the confluence with West Fork Battle Creek and the source was identified as the historical mining from the FHM. Total Maximum Daily Loads (TMDLs) were initiated by WDEQ and approved by USEPA in 2011.

Most recently, 1.8 miles of the Roaring Fork Little Snake River was added as a new 303(d) listing for copper in 2014. The Roaring Fork Little Snake River's (RFLSR) headwaters originate just inside the District's west boundary, within the Sierra Madre Mountains of southern Wyoming. Recent study results indicated that the cold water fishery and aquatic life other than fish uses on the identified reach of the RFLSR are not supported from the confluence with a tributary draining the Standard Mine downstream 1.8 miles to the confluence with an unnamed tributary; the cause and source of these impairments have been identified as elevated copper and hardrock mining, respectively. This segment was listed in 2014 and has a TMDL date of 2027.

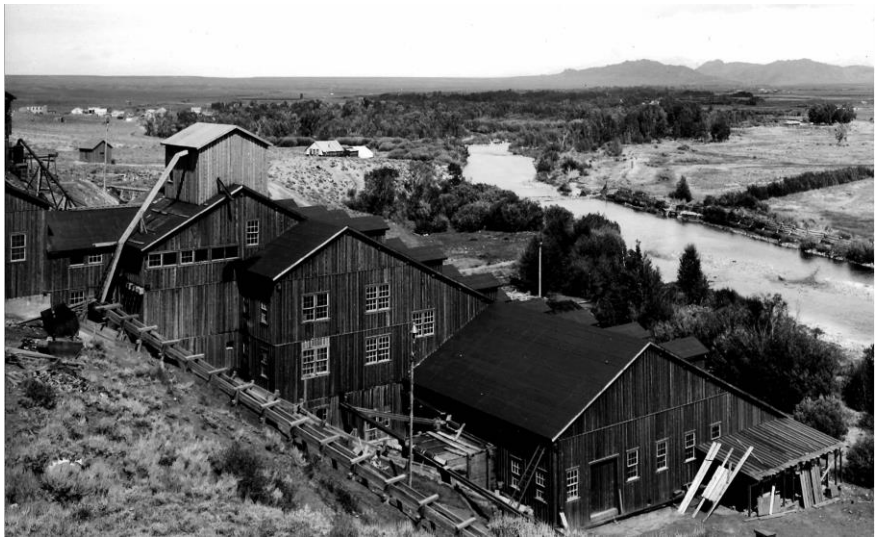

Figure 34: Part of the first copper smelter in the area was built in Riverside
This photo offers a grand view of the Encampment River, upper valley, Baggott Rocks and the Town of Riverside.
Photo Credit: *Bob Martin/Dick Perue Collection -Historical Reproductions by Perue*

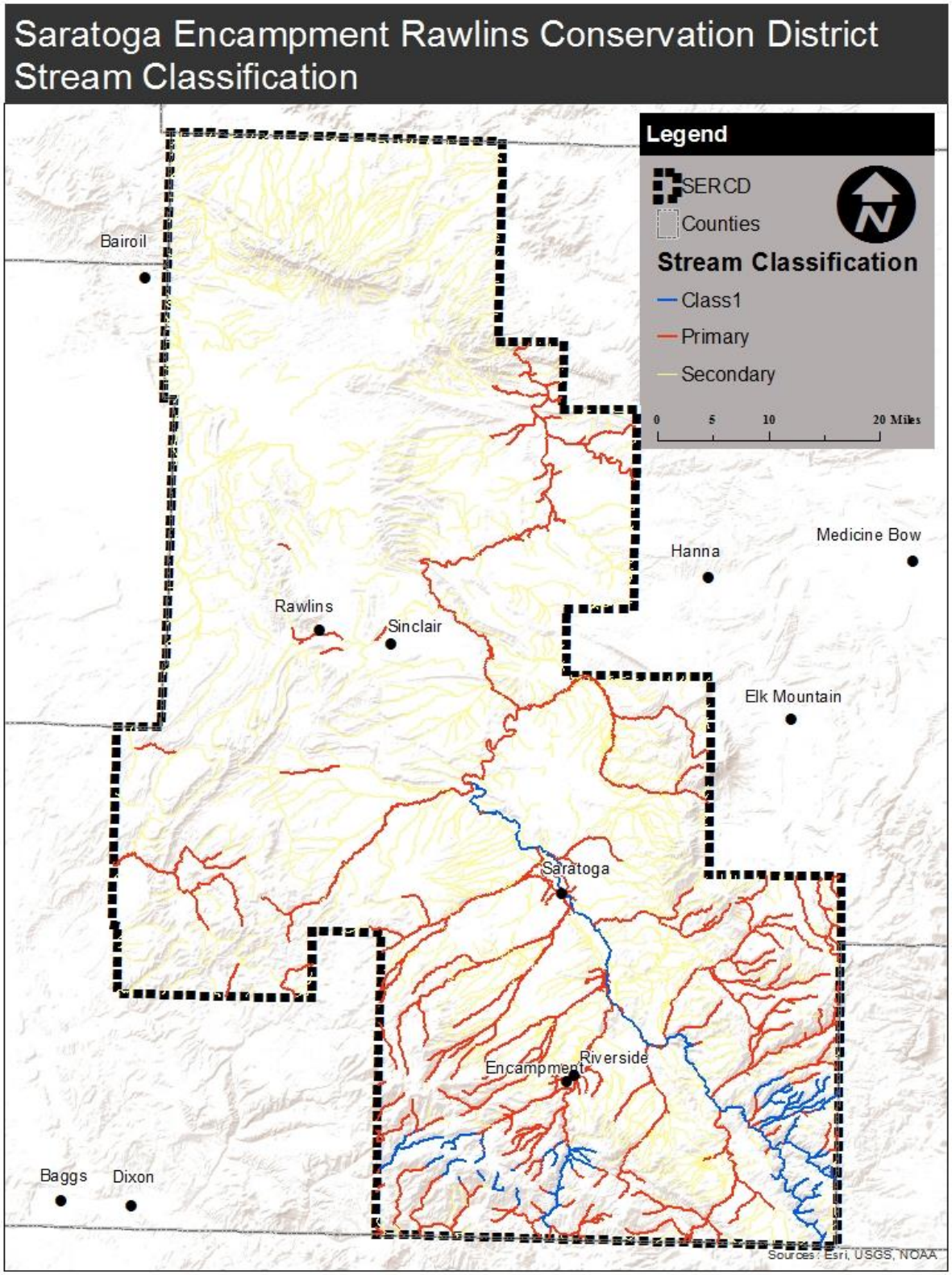

Figure 35: Stream Classifications

5.11.5 Mitigation

In order to promote and enhance watershed conditions, track vegetative and land use changes by sub-watersheds in the District. Work with federal, state, and local agencies to identify and quantify impacts and provide guidance in formulating alternatives and strategies to mitigate any identified adverse impacts.

5.12 Wildlife

5.12.1 Desired Conditions

Policy Wildlife #1: The District promotes wildlife conservation, sustainability of healthy wildlife habitat and populations, and their contributions to the local economy.

Policy Wildlife #2: The District believes ecosystem management should be utilized when managing for wildlife species rather than implementing single-species management.

Policy Wildlife #3: The District supports the following 17 points, as adopted by the Western Coalition of Conservation Districts, as it pertains to the Endangered Species Act (ESA):

1. Provide full compensation to individual for current and long-term "takings". Take into consideration cost-benefit analysis and mitigate for adverse economic, social, and cultural needs of the human element (change Section 4(b)(2) of ESA.)
2. Consider and evaluate cumulative effects in accordance with the National Environmental Policy Act (NEPA). Single species management does not consider ecosystem needs and may be detrimental to the wellbeing of other organisms. (add to Section 4)
3. Focus on species recovery by improving ecosystem health instead of single species listing. Listing should be incentive based rather than regulatory (add to subsection (c) of Section 4 and a new statement to Section 4)
4. Seek scientific consensus and require mandatory non-governmental, no-biased peer review prior to the listing of any species.
5. Petitioners requesting endangered or threatened species designation should be responsible for costs incurred if a listing is determined to be unwarranted.
6. Require appropriate bonding by any petitioner for a proposed listing of a species. Bond to be forfeited if a species is determined not warranted to be listed. (add to Section 4(b))
7. Ensure agency regulations conform to ESA law. (ex. Adhere to critical habitat provision)
8. Allow states to design, control, and implement functionally equivalent, state-specific programs for endangered species recovery planning and critical habitat designation with federal funding.
9. Codify applicant status to make clear that permit applicants (consists of any individual seeking a federal permit or license) are provided the opportunity of direct involvement in the Section 7 process. (amend Section 6 and 7(a) and (d))
10. Allow implementation action of any project or activity already underway prior to completion and formal approval of a Recovery Plan (amend Section 7(a))
11. Direct the Secretaries of Agriculture, Commerce and Interior to streamline the ESA Section 7 consultation process through a tiered programmatic consultation at the national, state, and local level.
12. Eliminate the proposed listing of any sub-species. (Amend Section 3(16))

13. Not allow taxpayer funds to be utilized by non-government entities to sue the Government or others (add to Section 1 (c)(4) as new policy and amend Section 11 (9)(g))
14. Enhance the incidental take rules to reduce the need for civil violations penalties.
15. Expedite the delisting process. (add new subsection under Section 4)
16. Revise the "taking" definition to protect private and state property rights in conformance with the United States Constitution. (Section 3(19))
17. Provide for "safe-harbor" provisions to make the act more flexible and to encourage landowners to manage lands in a more "endangered species friendly" manner.

Policy Wildlife #4: The District opposes single species management which does not consider ecosystem needs and may be detrimental to the well-being of other organisms.

Policy Wildlife #5: The District supports Endangered Species Act (ESA) threatened and endangered species listings that are based on clear, convincing, peer reviewed, scientific data. Further, the Federal Government should be responsible for the financial burden imposed upon private landowners by the listing of threatened or endangered species and the associated critical habitat designations.

Policy Wildlife #6: The District supports the Wyoming Game and Fish Department being the sole agency responsible for managing all wildlife species in Wyoming not listed as threatened or endangered per the Endangered Species Act.

Policy Wildlife #7: The District supports proactive management of candidate and sensitive species to avoid further Endangered Species Act listing protections.

Policy Wildlife #8: The District encourages using livestock as a tool to improve wildlife habitat.

Policy Wildlife #9: The District supports the Wyoming Game & Fish Department's Ungulate Migration Corridor Strategy and the public process to protect and enhance habitats that are important to the custom and culture of the District and its residents. Finalized corridors and stopover locations should be considered during any habitat disturbance activity.

Policy Wildlife #10: The District supports the use of Wyoming's Bighorn-Domestic Sheep Management Plan as the basis for all management decisions impacting either Bighorn or domestic sheep.

Policy Wildlife #11: The District recognizes and supports the Wyoming Governor's Executive Order (2015-4) on Greater Sage-Grouse Core Area Protection in conserving greater sage-grouse and their habitats.

Policy Wildlife #12: The District supports the current U.S. Fish and Wildlife Service Policy period for issuing an Eagle Take Permit for Wind Energy Developers for no longer than five (5) years.

Policy Wildlife #13: The District does not support the Forest Service managing for species viability of wildlife on Forest Service managed lands as wildlife should only be managed by a wildlife management agency.

5.12.2 Goals

W1. Conservation and enhancement of wildlife and fishery habitats with the District.

W2. The District recognizes and encourages commitment to maintaining and improving the enhancement of wildlife habitat by incorporating concerns and proper management in the planning, programs and projects of the District.

W3. Best Management Practices should be adequate to support and maintain sensitive species.

5.12.3 Objectives

WFH1. Maintain cooperative efforts with federal and state wildlife agencies on their respective projects to avoid or mitigate adverse impacts to wildlife species and habitats.

WFH2. Promote the critical role agricultural producers have in providing habitat to wildlife within the District.

WFH3. Support wildlife habitat improvement and wildlife friendly fencing projects.

WFH4. Promote in-stream improvements for fisheries.

WFH5. Promote projects that improve the quality of riparian and upland habitats that support wildlife.

WFH6. Work with government agencies, local cooperators, and other interested parties in the management, maintenance and improvement of wildlife habitat, emphasizing voluntary and incentive based programs.

WFH7. Work to encourage the use of tools such as grazing, plantings, water development, fire, chemical application, and other best management practices to improve wildlife habitat.

WFH8. Partner with other entities sharing common goals for maintaining and enhancing habitats to support the coexistence of the current level of livestock grazing and current wildlife herd objectives.

5.12.4 Local Support Data - General

Wildlife resources on lands within the District are extraordinary and represent a national treasure in terms of opportunities to view and hunt. Wildlife habitats in the District occur on forested lands and rangelands and on federal, state, and private lands. There are challenges in sustaining these wildlife resources given ongoing activities which include timber extraction and fuels management, energy development, ranching, outdoor recreation, and residential development.

In general, wildlife in the State of Wyoming are managed by the Wyoming Game and Fish Department (WGFD). Wildlife species that are on the Endangered Species List as threatened or endangered are managed by the U.S. Fish and Wildlife Service (USFWS). The responsibilities of the WGFD are defined in Wyo. Stat. §. 23-1-103. The WGFD is charged with providing..."an adequate and flexible system for the control, management, protection, and regulation of all Wyoming wildlife." The WGFD *State Wildlife Action Plan 2010* and the WGFD *Strategic Habitat Plan August 2015*, are guiding documents for District habitat management projects and partnership priorities moving forward.

Habitat for 95% of all federally threatened and endangered flora and fauna is on private land in the United States, and 262 of these species (19%) survive only on private parcels (Wilcove et al. 1996). Figure 36 presents the federally listed, BLM sensitive, USFS sensitive, and State Game & Fish Department's Species of Greatest Conservation Needs (SGCN) wildlife species present in the District. This WYNDD had over 22,000 animal occurrences in the District dating back to 1850s. The WYNDD provided five Federally listed species, 29 BLM sensitive species, 45 USFS sensitive species, and 83 State SGCNs within the District. Appendix B provides a table of these listed and sensitive species.

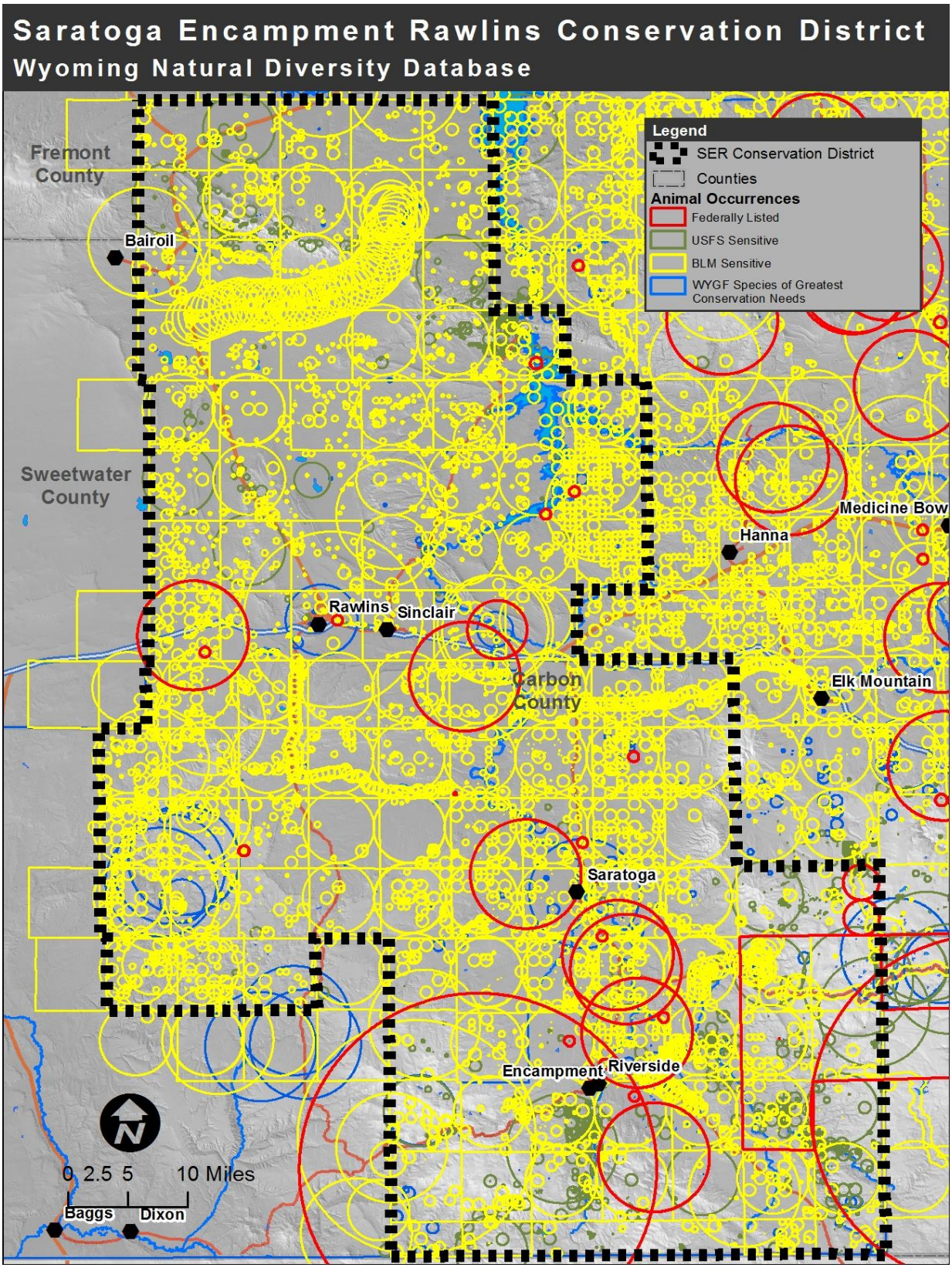

Figure 36: Federally Listed and sensitive wildlife species occurrences

5.12.5 Local Support Data – Fisheries and Aquatic Habitat

As discussed in the 'Water Resources' Section 5.11, both water quantity and quality are important to the residents of the District. Functioning rivers, streams, and watersheds are vital to the economic stability of the District through agriculture and tourism. Fish habitats in the District include perennial and intermittent streams, spring, lakes, and reservoirs. The WGFD has identified habitat priority areas in their *Wyoming Game and Fish Department Strategic Habitat Plan, August 2015* (WGFDSHP). They define 'Crucial Habitat Priority Areas' based on significant biological or ecological values. These are areas that need to be protected or managed to maintain viable healthy populations of terrestrial and aquatic wildlife for the present and future. 'Enhancement Habitat Priority Areas' represent those with a realistic potential to address habitat issues and to improve, enhance, or restore wildlife habitats. Enhancement areas are based on habitat issues such as water quality effects, water quantity limitations, lack of fish passage, loss of fish to diversions, or degraded habitat.

The District has one aquatic Crucial Habitat Priority Area, the Upper North Platte. The WGFDSHP selected the Upper North Platte watershed as it provides for a diversity and abundance of both aquatic and terrestrial wildlife habitats. The North Platte River and its tributaries provide a range of habitats and natural processes that support economically important wild trout populations. The area faces future threats from climate change and habitat fragmentation caused by residential and industrial energy development. Additionally, there are four Enhancement Habitat Priority Areas in the District including Big Creek Diversions, Douglas Creek Watershed, Encampment River Watershed, and North Platte River at Saratoga.

The District provides aquatic habitat for many native and non-native species. WGFD has a stream classification system first developed in 1961. It is intended to identify and rank the most important coldwater recreational fisheries and assess the relative potential impacts of proposed development projects to streams. As used today, Wyoming streams are ranked according to the number of pounds of trout per mile measured in the stream segment. Categories based on pounds of trout per mile are: Blue Ribbon (national importance) >600 pounds per mile, Red Ribbon (statewide importance) 300 to 600 pounds per mile, Yellow Ribbon (regional importance) 50-300 pounds per mile, Green Ribbon (local importance) <50 pounds per mile (Figure 37). The wild trout fishery of the North Platte River, Encampment River, and their tributaries are important to the economic stability of the District's communities.

Objectives for aquatic habitat include the following:

- Improve or maintain irrigation conveyance while promoting aquatic habitat quality.
- Increase the number of miles of healthy aquatic habitat through enhanced fish passage, stream bank stabilization, and stream habitat restoration.
- Partner on projects that enhance fish passage and stream habitat restoration.
- Identify and search out partners for projects that successfully restore stream habitat.
- Keep informed of warm water fisheries concerns in the District.

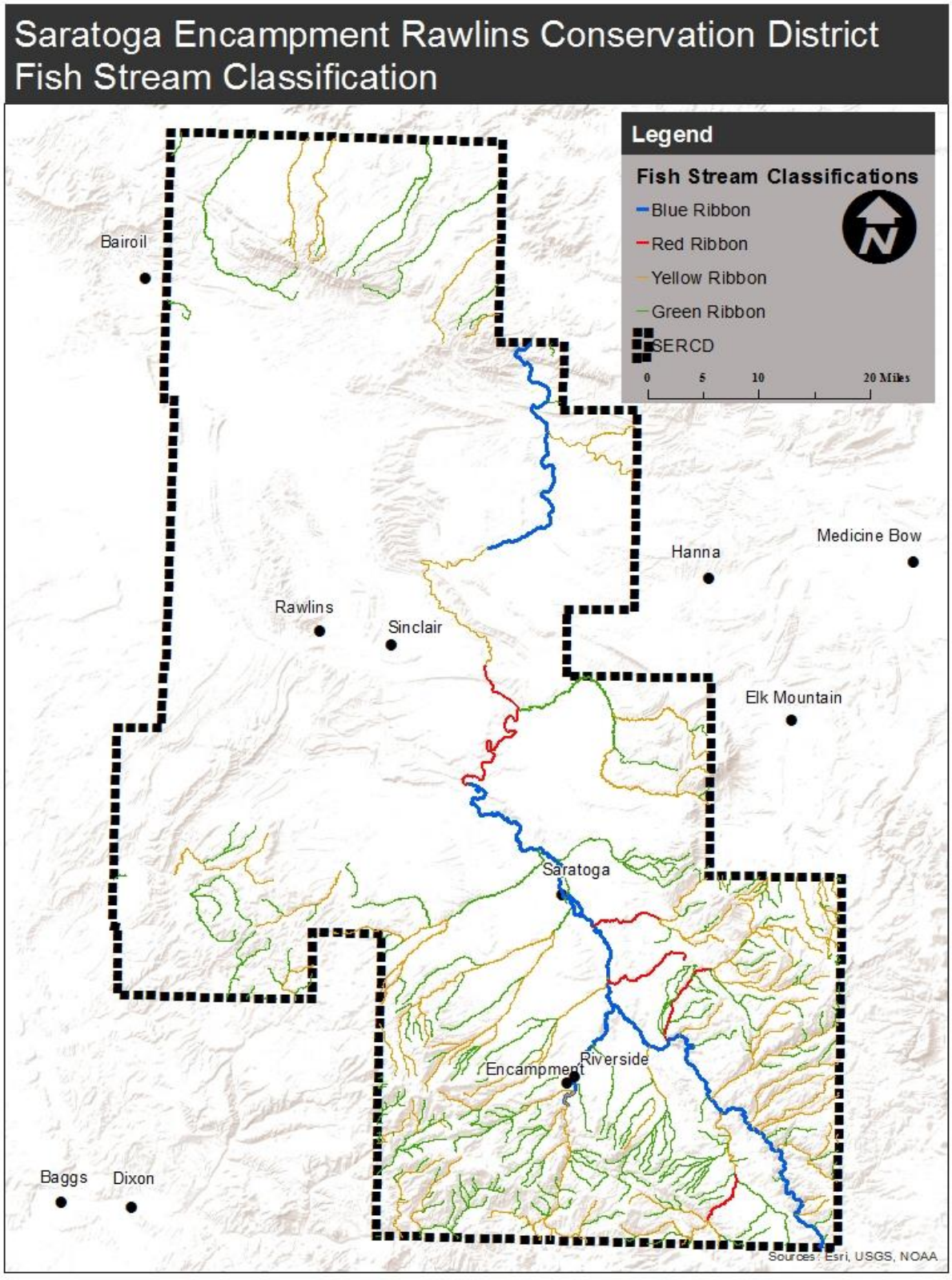

Figure 37: Fish Stream Classification

5.12.6 Local Support Data - Bats

Bats occur nationwide and consume vast quantities of insects. Many species of bats occur in the District. While challenges facing bats are many, wind energy projects create a local, substantial risk to bats. Nearly 90% of bat fatalities occur in late summer and early fall, during the peak of fall migration (Keeley et al. 2001, Erickson et al. 2002, Johnson 2005). Migrating and commuting bats often follow linear features in the landscape, and may be drawn to ridges where wind energy facilities are commonly located (Erickson et al. 2002, Kunz 2004). The physical characteristics of wind turbines might also attract bats. While the sonar that bats possess allows them to avoid collisions with wind turbines, the differences in air pressure caused by rapidly rotating blades, results in direct mortality to bats flying in close proximity. According to Johnson (2004), the overall average bat fatality rate for US wind projects is 3.4 fatalities per turbine per year. As more facilities with larger turbines are built, the cumulative effects of this rapidly growing industry may contribute to the decline of some bat populations. Because the current technology of wind generation has no solution to the problem, excessive bat mortality remains an issue.

Objectives for bats include the following:

- Wind generation sites are carefully located to avoid areas of known bat concentrations or bat foraging areas.
- Research and development is ongoing to identify measures needed to avoid or minimize bat mortality associated with wind farms.
- Support research and development efforts to develop more bat-friendly wind turbine designs.

5.12.7 Local Support Data - Burrowing Animals

Burrowing rodents including white-tailed and black-tailed prairie dogs, and several species of ground squirrels are considered *keystone species* in that they provide essential habitat for several at-risk species including burrowing owls, black-footed ferrets, and mountain plovers. Another group of burrowing animals important to habitats in the District is the gopher family (*Geomyidae*). The Wyoming pocket gopher is listed on the BLM, USFS, and Wyoming Game & Fish Department's Species of Greatest Conservation Needs list. Occupied prairie dog towns occur nationally at only ~2% of their historic range. Although prairie dog colonies provide essential habitat for several species of wildlife, they are often considered a pest on private lands and may complicate ranching and agricultural activities. Periodic disease outbreaks (i.e. plague) in prairie dog colonies further complicates long-term management issues. Challenges for prairie dogs and associated species include:

- Assuring that sufficient prairie dog colonies occur to avoid federal listing of burrowing owls and mountain plovers, and are compatible with the recovery of black-footed ferrets (currently designated as experimental, non-essential populations).
- Assuring that private landowners have both monetary incentives to either support prairie dog towns on private lands or control those prairie dog towns (including the use of rodenticides) when needed.

Objectives for prairie dogs and associated at-risk burrowing species include the following:

- Populations of prairie dog towns are closely monitored to determine long-term trends, disease outbreaks, and genetic connectivity between individual colonies.
- Work with private landowners to fund economic incentives to maintain prairie dog colonies, and/or have options for controlling prairie dogs colonies when those colonies are not desired.

- Populations of Wyoming pocket gophers are closely monitored to maintain sustainable populations to avoid a potential ESA listing.

5.12.8 Local Support Data - Migratory Birds

The United States has ratified international conventions regarding the protection of migratory birds. The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) implements the protective measures of these conventions. The MBTA prohibits "taking," which is the killing, possession, or transport of any migratory bird or its eggs, parts, or nests except as authorized by a valid permit. These actions may be permitted only for educational, scientific, and recreational purposes, and harvest is limited to levels that prevent overutilization. The list of the bird species protected by the MBTA is located in 50 CFR 10.13. Most of the bird species that occur in the District are protected under the MBTA.

Under the MBTA, permits can be issued by USFWS for the intentional take of specific birds and nests that have been identified prior to application for the permit; however, no permits can be issued for take that is incidental to the action being taken (i.e., incidental take). For example, if by constructing a livestock water development an active migratory bird nest is destroyed, the action would constitute an "incidental take" of the nest where the intent of the action was not to destroy the migratory bird nest but to construct a livestock water development. Therefore, taking the nest is incidental to constructing the development.

Objectives for migratory birds include the following:

- Work with USFWS to comply with the MBTA on all District projects.
- Help facilitate industry and local, state, and federal policy makers to identify new alternatives for mitigation.

5.12.9 Local Support Data - Mule Deer

The Platte Valley mule deer (*Odocoileus hemionus*) herd unit is managed by the Wyoming Game and Fish Department (WGFD). The once abundant deer herd went through a major decline in the late 1900s and has been the focus of collaborative efforts in recent years. Mule deer populations are slowly rebounding as a result of weather conditions and management actions including limited quota licenses, antlered only hunting licenses, and increased predator control.

The Platte Valley Habitat Partnership (PVHP) formed in May 2012 is a result of the Platte Valley Mule Deer Initiative (PVMDI) that the WGFD implemented in July 2011. "The PVHP was developed to establish effective partnerships in order to maintain and improve mule deer habitat throughout the Platte Valley. The PVHP is comprised of private landowners, concerned citizens, hunters, outfitters, members of the Saratoga-Encampment-Rawlins Conservation District and the staffs of the WGFD, Bureau of Land Management (BLM), University of Wyoming Extension, the U.S. Forest Service (USFS) and Non-Governmental Organizations (NGOs). One of the outcomes of the Partnership includes a comprehensive habitat management plan designed to be implemented collaboratively between all interested stakeholders." (WGFD 2013) These efforts in addition to the management actions help ensure the longevity of the species.

Habitat types within the Platte Valley vary from high elevation forests to sagebrush and desert shrub environments with irrigated croplands throughout the Valley floor (Figure 23). Wyoming big sagebrush is the

dominant habitat covering approximately 33% of the Valley, followed by lodgepole pine (19%), Mountain big sagebrush communities (9%), and irrigated croplands (7%).

The PVHP Mule Deer Habitat Plan offered the following information as the basis for mule deer considerations in the Platte Valley. "There are several key habitat components all mule deer require: food, cover, and water, and space. In addition to these components, their arrangement on the landscape is also important to be effectively utilized by mule deer. Seasonal migrations are common, with mule deer moving great distances from higher elevation summer ranges receiving more annual precipitation, falling mostly in the form of snow. Mule deer fawn production and survival is paramount to mule deer population stability and recovery. Efforts to improve habitat on summer and fall ranges are especially important to ensure maximum fawn production and survival is attained."

Habitat for mule deer is abundant in the District with 323,246 acres of crucial winter range and additional acres heavily utilized as stopover locations during migration. The distribution of mule deer crucial winter range, seasonal ranges, SUSPECTED migration corridors, and SUSPECTED stopover locations is shown in Figure 40. Adjustments to migration corridors and stopover locations may occur after public input is received and before being finalized as outlined in the Wyoming Game & Fish Department's Ungulate Migration Corridor Strategy process.

Challenges to managing mule deer habitat include:

1. Shrub Nutritive Quality
    a. Improve digestibility and protein content of browse
    b. Increase young age class of preferred browse species
2. Vegetation Production and Utilization
    a. Increase herbaceous production
    b. Increase shrub production
    c. Adequate size/scale of treatment to minimize impact of grazing ungulates
3. Species Diversity
    a. Increase diversity of plant types, ages, and sizes preferred by mule deer
    b. Increase desired forb cover/diversity
    c. Establish diverse shrub size, age, species, and density within that community type
    d. Increase native shrub and herbaceous cover in beetle kill and lodgepole stands
    e. Decrease/minimize invasive species
4. Species Density
    a. Increase density of species preferred by mule deer
5. Aspen Regeneration
    a. Create more young age class aspen stands
    b. Increase aspen density
    c. Increase aspen acreage
    d. Maintain healthy aspen stands
6. Riparian Habitat
    a. Improve stream health
    b. Increase stream stability
    c. Improve watershed hydrology
7. Animal Barriers and Disturbance

a. Increase wildlife-friendly fences
b. Decrease motorized disturbance

Objectives for maintaining mule deer, mule deer habitat, and maintaining healthy relationships with private landowners that support mule deer populations for part of the year include the following:

- Promote the critical role agricultural producers have in providing mule deer habitat within the District.
- Promote projects that improve the quality of mule deer habitats.
- Work to encourage the use of tools such as grazing, plantings, water development, fire, chemical application, mechanical treatments, and other best management practices to improve wildlife habitat.

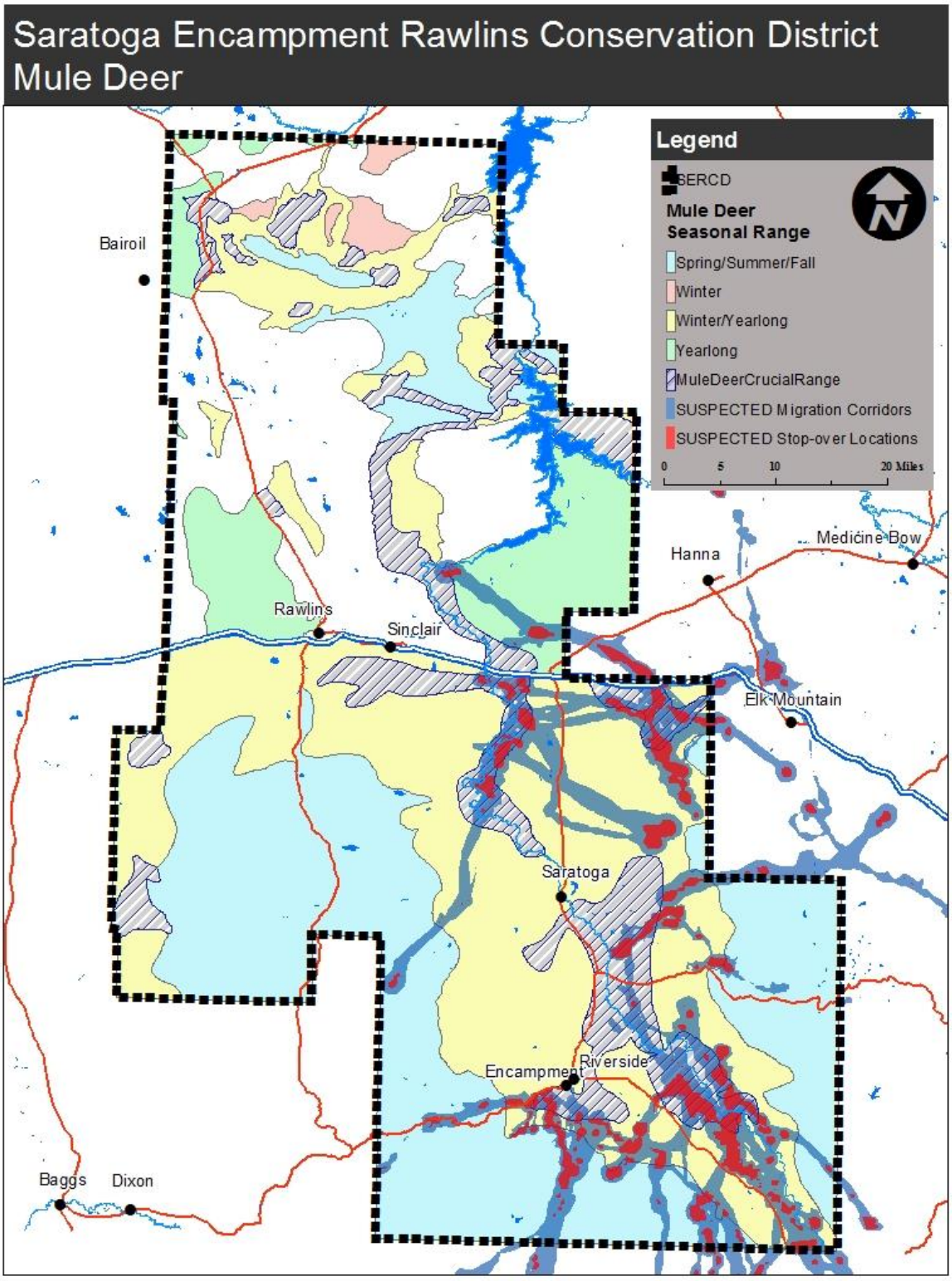

Figure 38: Mule deer crucial range, seasonal ranges, SUSPECTED migration corridors, and SUSPECTED stop over locations

5.12.10 Local Support Data - Other Big Game

Elk (*Cervus canadensis*), bighorn sheep (*Ovis canadensis*), moose (*Alces alces*), pronghorn (*Antilocapra americana*), white-tailed deer (*Odocoileus virginianus*), and mule deer (*Odocoileus hemionus*) reside within the District. Mule deer are discussed in Section 5.12.9. The Wyoming Game and Fish Department (WGFD) maps special habitat areas by herd unit for each big game species. Figures 37 through 41 display the WGFD seasonal range, crucial range, and parturition areas (birthing areas) where available for bighorn sheep, elk, moose, pronghorn, and white-tailed deer.

Habitat for Rocky Mountain elk is abundant in the District with 219,034 acres of crucial winter range and an additional 554,309 acres of winter range. As shown in Figure 38 and Figure 40 mule deer seasonal range overlaps that of elk to some degree. Moose occupy portions of seasonal elk ranges including wetlands and riparian habitats.

Bighorn sheep populations and domestic sheep populations have declined in Wyoming over the past hundred years. Conflicts and confrontation relative to interaction between bighorn sheep and domestic sheep escalated to the point where a meeting of interested parties was initiated in 2000. The Wyoming Bighorn/Domestic Sheep Interaction Working Group was created, met and at the initial meeting the diverse group of attendees agreed "It is the goal of the Wyoming Bighorn/Domestic Sheep Interaction Working Group to maintain healthy bighorn sheep populations while sustaining an economically viable domestic sheep industry in Wyoming." Additional meetings were held to cooperatively find resolution to bighorn/domestic sheep interaction issues. A Final Report and Recommendations was completed in September 2004. The report and recommendations are known and continue being implemented as "Wyoming's Sheep Plan".

Wyoming's Sheep Plan identified issues, developed recommendations, and research gaps. Part of the recommendations included identification of four bighorn sheep management area levels. These include:

- Bighorn Sheep Core Native Herds – largest bighorn sheep populations, highest priority for bighorn sheep management, none lie within the District;
- Cooperative Review Areas – areas of suitable bighorn sheep range where proposed changes in bighorn sheep management or domestic sheep use will be cooperatively evaluated, the District has two of these distinct areas – at the very south end and at the very north end of the District;
- Bighorn Sheep Non-Emphasis Areas – lowest priority areas for bighorn sheep management, no effort to prioritize/emphasize bighorn sheep unless agreed to by the working group, existing bighorn sheep populations will not be protected at the expense of domestic sheep grazing; and
- Bighorn Sheep Non-Management Areas – all areas are outside of identified management areas, bighorn sheep permitted to occur but not actively encouraged, wandering bighorn sheep with known, suspected or potential contact with domestic sheep should be captured/removed from the wild.

The WGFD identified 24,901 acres of crucial bighorn sheep range in the District. These areas lie within the Cooperative Review Areas identified by the Wyoming Sheep Plan.

The Snowy Range moose herd unit stretches across portions in the southern half of the District. Moose here descended from moose transplanted in Colorado and historically were not native to this area. Limited population monitoring has occurred on this herd unit. However, a noticeable increase in population has occurred since they were transplanted.

Pronghorn antelope and the sagebrush shrublands ecosystems they utilized are abundant in the District with 431,950 acres of crucial range identified by the WGFD. They eat a wide variety of plant foods and attain their highest population densities in the sagebrush shrublands ecosystems. These areas are also utilized for livestock grazing but dietary overlap is minimal.

Small numbers of white-tailed deer reside in riparian and agricultural areas along the North Platte River and lower elevation tributaries. White-tailed deer seasonal range is specified in the southern half of the District. As their population expands, so does their range.

Challenges to managing big game and the habitats on which they rely include:

- Assuring that forestlands contain a mix of both productive foraging habitat (meadows, seedling/sapling stands) and security (dense, mature stands somewhat removed from motorized access);
- Assuring that winter ranges in bunchgrass/sagebrush habitat are both productive and contain sufficient stubble heights to support elk through the winter;
- Assuring that elk that winter on private lands are managed within Wyoming Game and Fish Department objectives, and that elk/landowner conflicts are managed to minimize those conflicts;
- A rapidly changing forest ecosystem as a result of 30+ years of reduced logging and the subsequent forest die off from disease and insect infestations;
- Hunter access in areas of mixed private-public landownership significantly influences the ability to manage elk and other big game populations.
- Timing and amount of precipitation is the leading factor for crucial habitat quality and availability. Crucial habitat can determine winter mortality, health of the herd and recruitment.

Objectives for maintaining big game, their habitats, and maintaining healthy relationships with private landowners that support big game populations for part of the year include the following:

- Elk populations are consistently at 90% to 110% of Wyoming Game and Fish Department population objectives. When populations are outside of that range, Wyoming Game and Fish Department is coordinated with to manage the problem.
- Forested habitats contain a mix of age classes that provide both forage and elk security.
- Forested habitats include a mix of roaded and roadless lands, including opportunities for hunters to harvest animals in both roaded and roadless, and motorized and non-motorized settings.
- Grass and shrub communities on winter ranges are highly productive and managed to accommodate both wildlife and livestock to the degree possible.
- Energy development on crucial elk winter range is designed to avoid disturbance during winter periods and is concentrated to the degree possible to minimize disturbance at the landscape scale.
- Facilitate and ensure the cooperative review process occurs as provided in Wyoming's Sheep Plan Appendix M. For any proposed changes in bighorn sheep management or domestic sheep use, the proposed action will be cooperatively evaluated. This includes any domestic sheep grazing allotment.

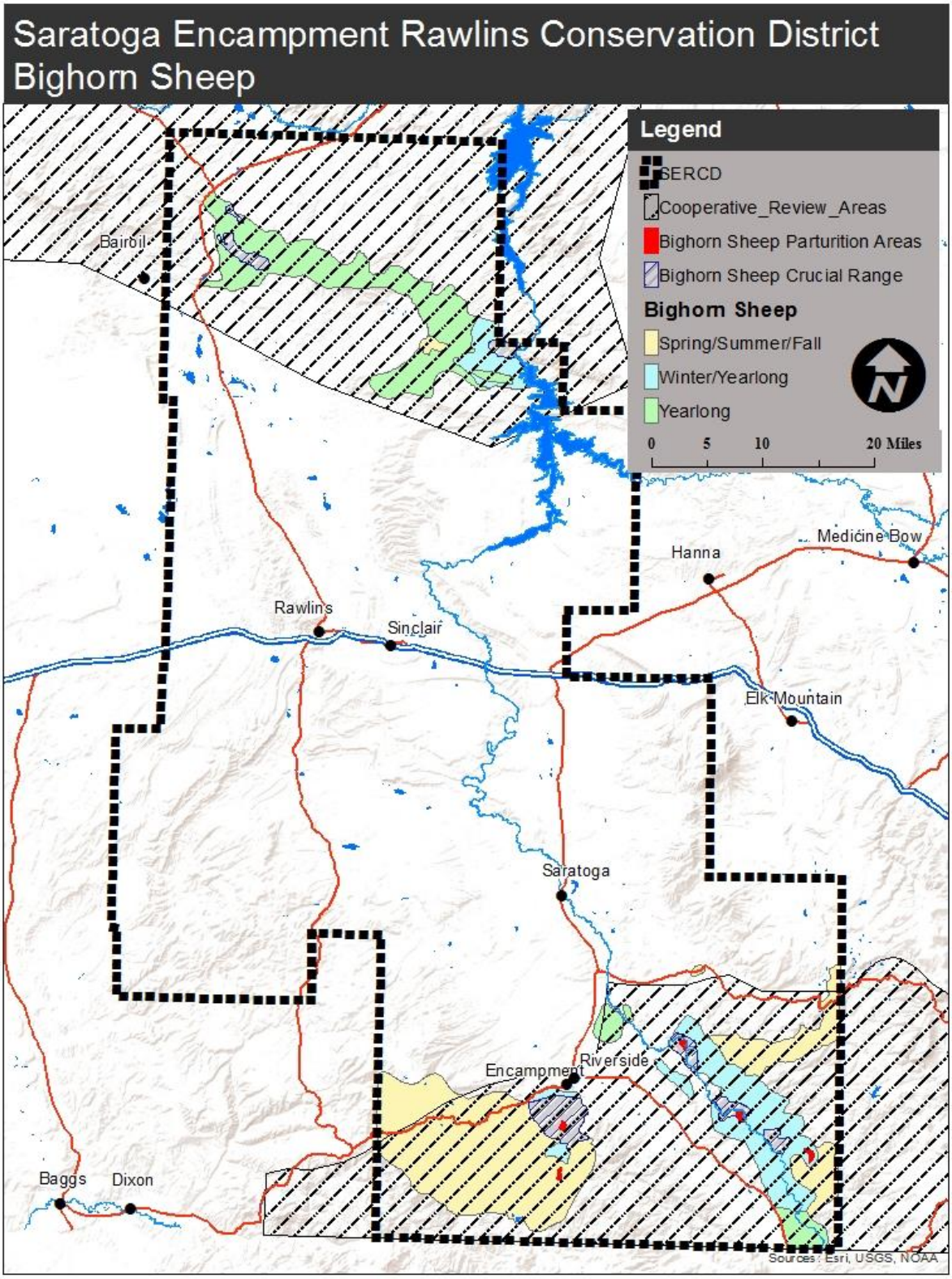

Figure 39: Saratoga-Encampment-Rawlins Conservation District bighorn sheep habitat

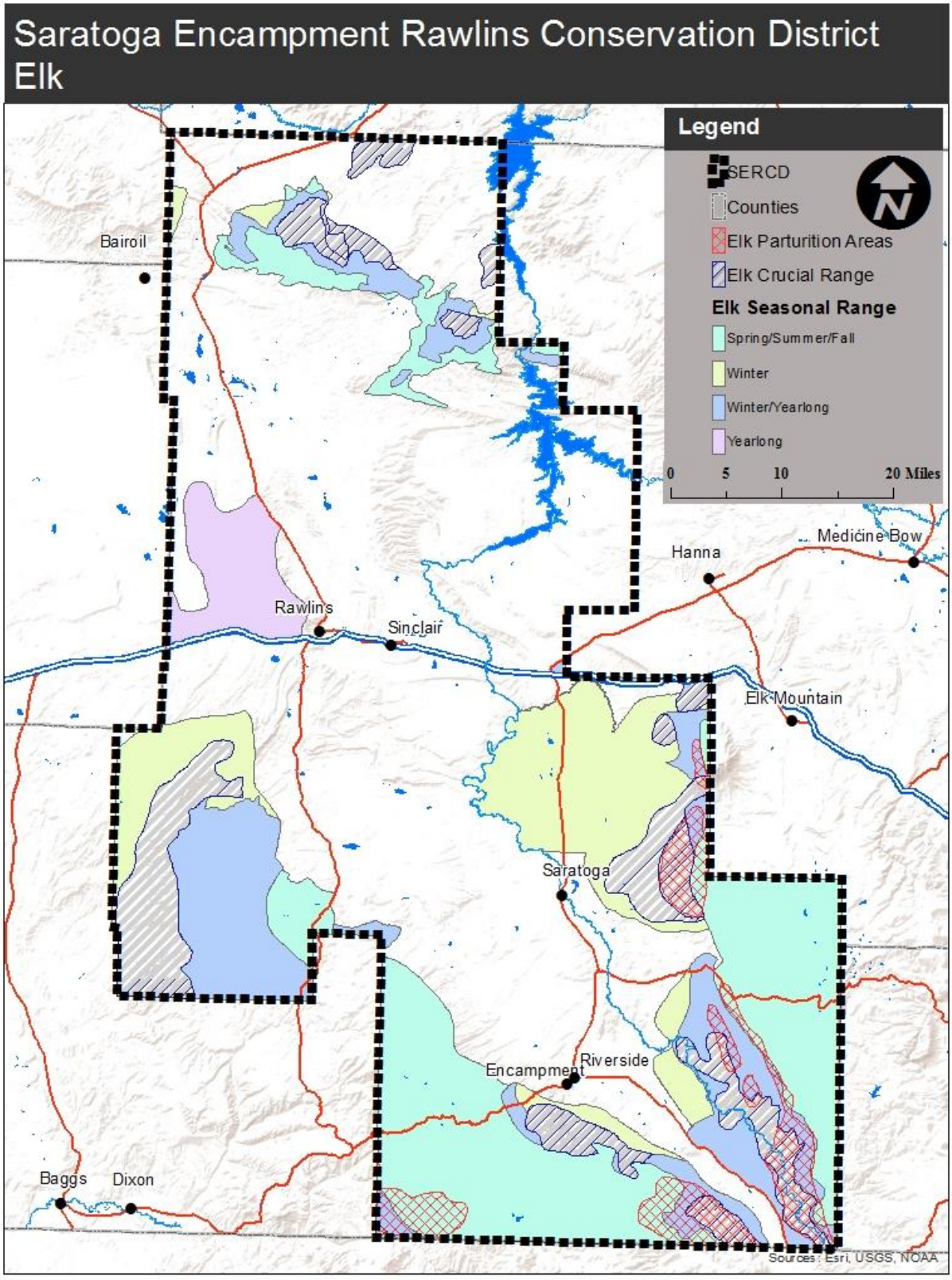

Figure 40: Saratoga-Encampment-Rawlins Conservation District elk habitat

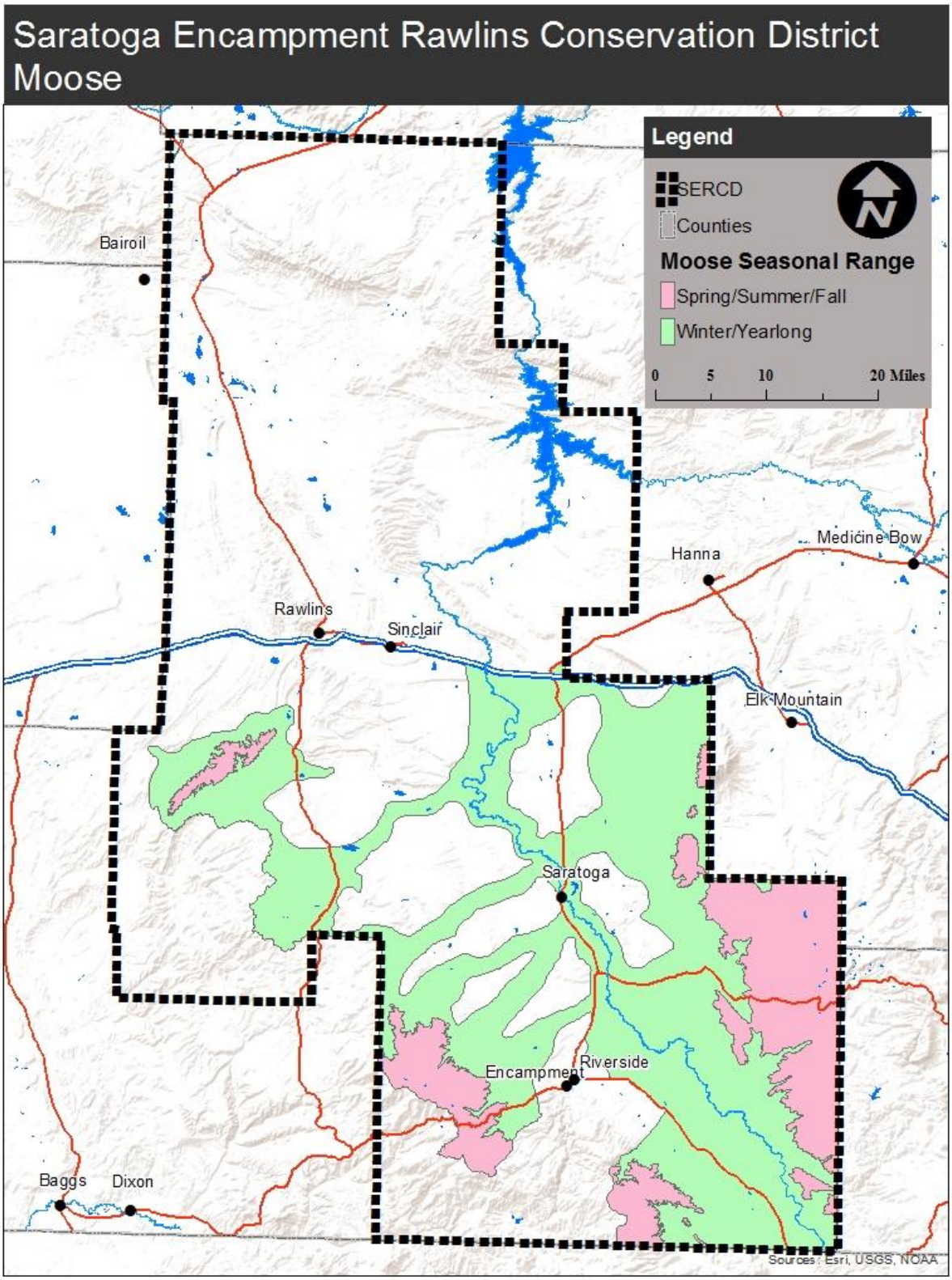

Figure 41: Saratoga-Encampment-Rawlins Conservation District moose habitat

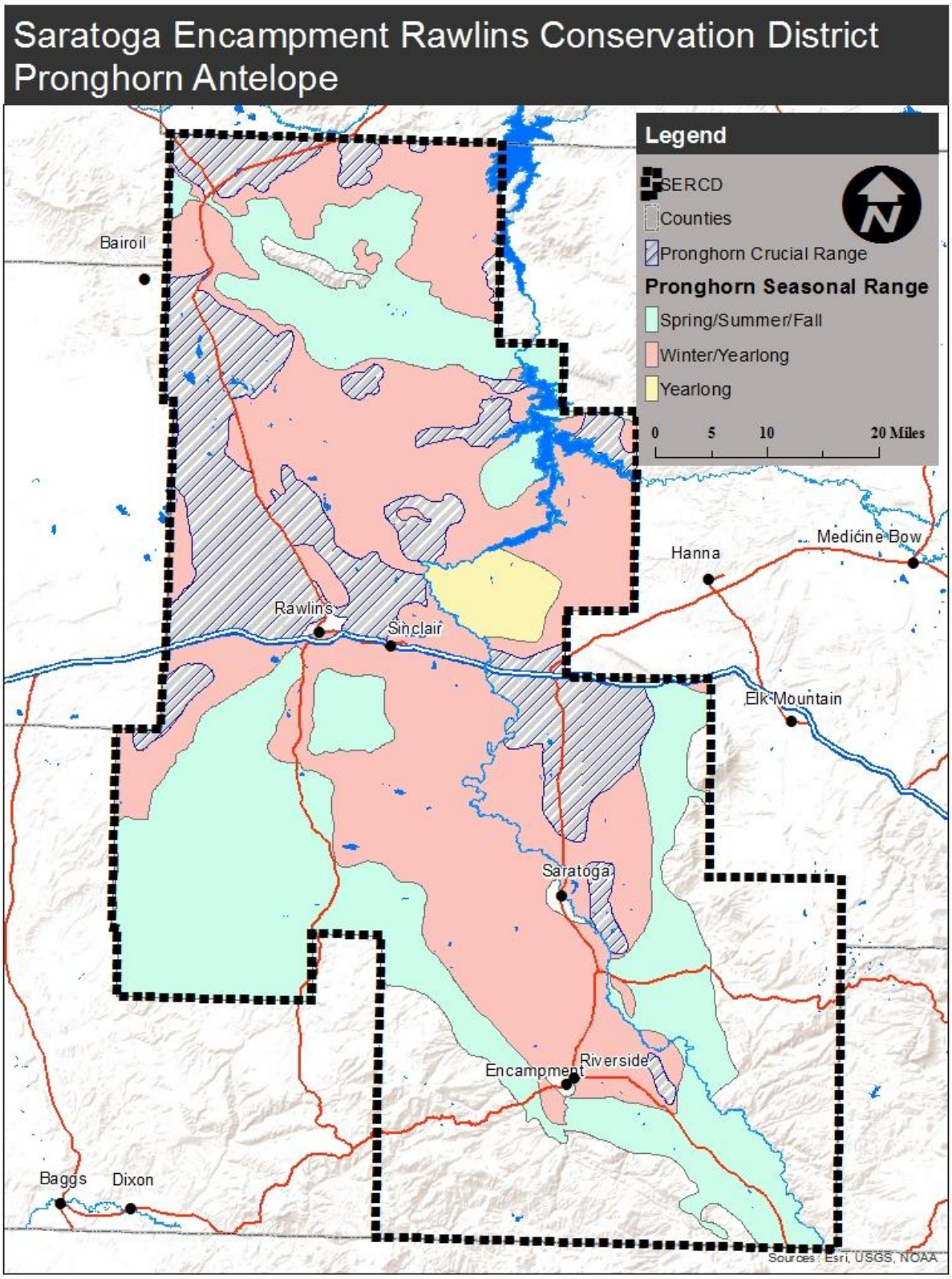

Figure 42: Saratoga-Encampment-Rawlins Conservation District pronghorn habitat

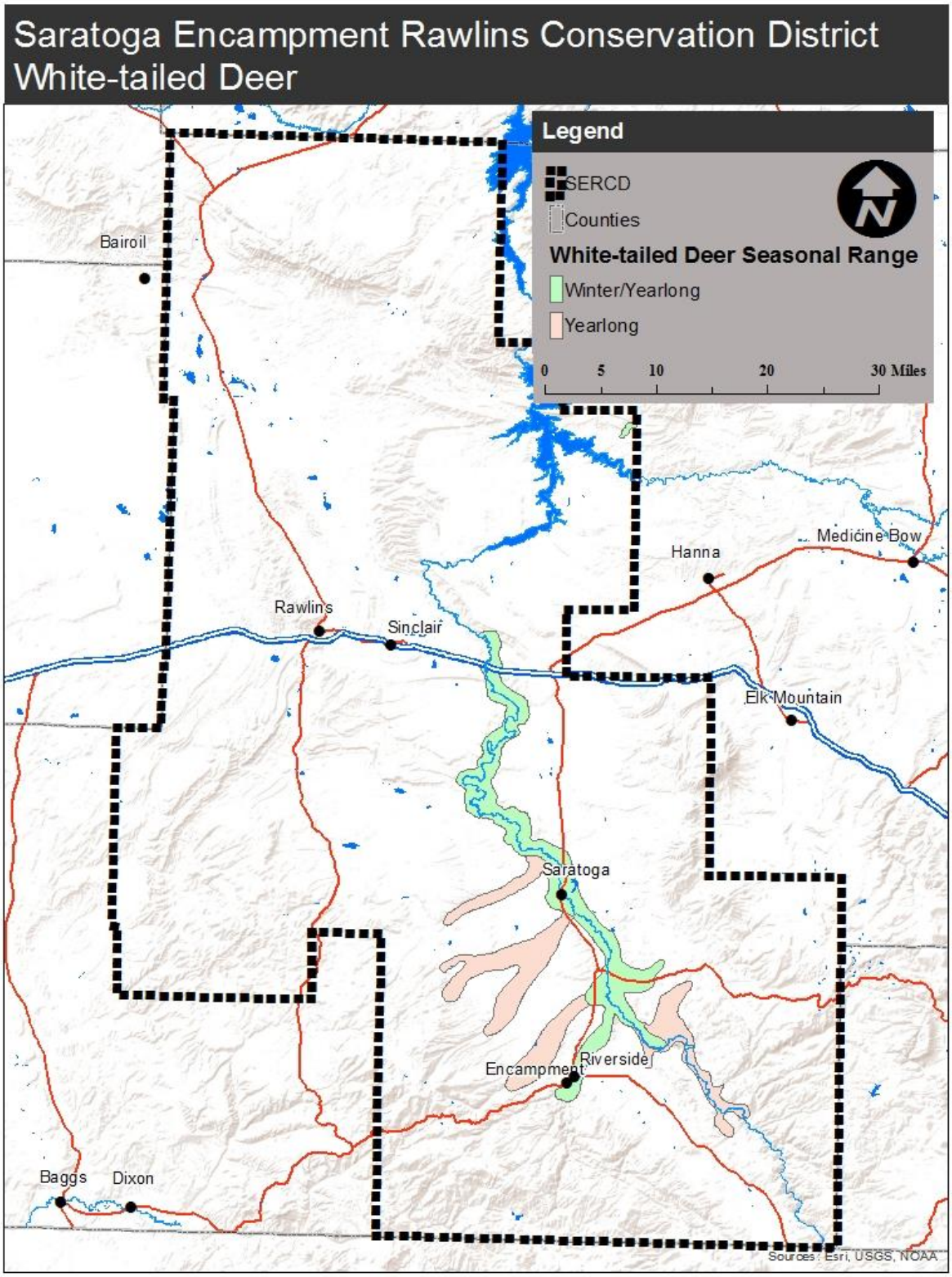

Figure 43: Saratoga-Encampment-Rawlins Conservation District white-tailed deer habitat

5.12.11 Local Support Data - Greater Sage-Grouse

To maintain and enhance greater sage-grouse populations and adequate sagebrush habitat, Wyoming developed and implemented a greater sage-grouse Core Population Area Protection strategy. An extensive process was used to identify areas where greater sage-grouse and their habitats would be most effectively conserved. The "Core Area" strategy was initiated in 2008 with updates in 2011 and 2015. Currently, Wyoming Governor's Executive Order (2015-4) on Greater Sage-Grouse Core Area Protection is supported by the District and being used as the basis for greater sage-grouse conservation. Habitat for greater sage-grouse is abundant in the District at 1,359,422 acres (Figure 44). Challenges to managing greater sage-grouse habitat include:

- Assuring that sagebrush communities contain a mix of dense, mature sage for nesting, over-wintering, and protection from predators, interspersed with young sagebrush and forb communities.
- Assuring that buffers applied to energy development activities meet the Governor's sage-grouse strategy, and are periodically reviewed as new research becomes available.
- Assuring that grazing strategies on both federal and private lands apply the best science and management practices to avoid conflict.

Objectives for maintaining the greater sage-grouse population include the following:

- Sagebrush communities contain an optimal mix of dense, mature stands of sagebrush to provide nesting and over-wintering habitat, and sufficient forb and young sagebrush stands to provide foraging opportunities for chicks.
- Wind energy development is located to minimize collision-related mortality.
- Population monitoring occurs at an intensity that is sufficient to detect effects from management actions, changes in habitat, effects of weather, and effects of predation.
- Population monitoring clearly shows that populations are stable and/or increasing.
- Changes proposed to federal grazing allotments include an economic assessment of the impacts of the change on private ranch viability in order to reduce the risks associated with loss of habitat through subdivisions and loss of working ranches.

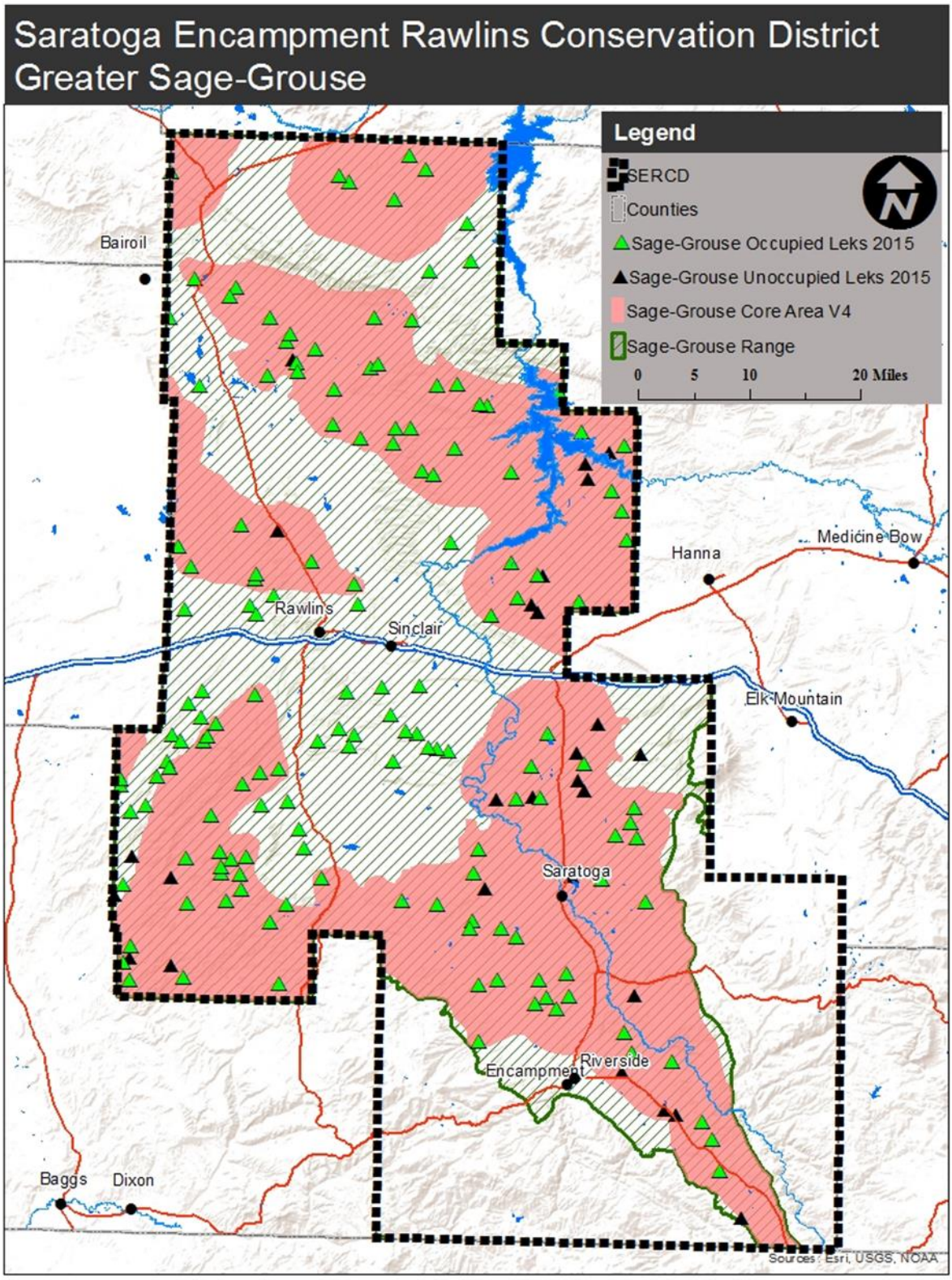

Figure 44: Greater sage-grouse Core Areas and lek status

5.13 Wild and Feral Horses

5.13.1 Desired Conditions

Policy Wild Horses #1: The District promotes the sustainability of healthy rangeland conditions and suitable wildlife habitat and insists the BLM manage wild horse populations to levels at or below Appropriate Management Level (AML) as identified for each Herd Management Area (HMA).

Policy Wild Horses #2: The District supports efforts to control the number of wild and feral horses on private, state, and BLM lands both in and out of established Herd Management Areas(HMAs) at such level that the BLM can manage the annual increase in population in a manner consistent with Wild Horse Management Section 2 of the Wild Horse and Burro Act which states, "When the Secretary determines on the basis of [information available to him] that an overpopulation exists on a given area of the public lands and that action is necessary to remove excess animals, he shall immediately remove excess animals from the range so as to achieve appropriate management levels. Such action shall be taken, [in a specified priority], until all excess animals have been removed so as to restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation."

Policy Wild Horses #3: The District opposes the reduction of any cattle or sheep AUMs in managing for rangeland health in allotments within any HMA unless wild/feral horses are at or below the AML for the HMA. Further, if drought conditions exist, the same percentage reduction is enforced on the number of wild/feral horses as is imposed on the cattle/sheep AUM reductions.

5.13.2 Goals

WFH9. Work with federal and state agencies to ensure BLM actively manages the Wild Horse and Burro program.

WFH10. Prevent further natural resource damage from wild horses.

5.13.3 Objectives

WFH1. Work with federal and state agencies, permittees, and private landowners to ensure up-to-date wild horse program information is kept and shared with the public.

WFH2. Engage in any proposed project in the District to protect from range and water resources degradation to occur as a result of wild horses.

5.13.4 Local Support Data

Under the Wild Free-Roaming Horse and Burro Act (WFRHBA), "wild free-roaming horses and burros" on BLM land are under the Secretary of the Interior's jurisdiction for the purpose of management. (16 U.S.C. § 1333(a)). That act requires that the Secretary and BLM must inventory and determine appropriate management levels (AMLs) of wild horses and burros, determine if overpopulation exists, and "shall immediately remove excess animals from the range so as to achieve AMLs" (16 U.S.C. §§ 1333(b) (1) and (2) and 43 C.F.R. § 4720.1)

Under WFRHBA, BLM is required to maintain wild horse and burro population levels "in a manner that is designed to achieve and maintain a thriving natural ecological balance" and to establish appropriate

management levels for the herd, considering the relationships with other uses of the public, and adjacent private lands (16 U.S.C. § 1333(a); 43 C.F.R. § 4710.3-1).

Wild horses, as they are now perceived, are not native to America's rangelands; they are feral animals. Their vulnerability to predators is limited and their population growth rate is high. BLM estimates the growth rate of the wild horse population in the Green Mountain and Stewart Creek Herd Management Areas to be 20 percent annually as BLM does for all their HMAs. Actual growth rates vary depending on condition of the horses and the condition of the natural resources on which they depend.

Although there is no federal statute requiring private land owners to allow wild horses to graze on their private lands, private landowners cannot remove the horses. The WFRHBA mandates that the BLM, once notified, must "immediately" remove excess wild horses from state and private land.

Portions of two Herd Management Areas (HMAs) (Figure 45) lie within the District boundaries. The Green Mountain HMA has an AML of 170-300 horses; April 2015 population inventory is listed at 1025 horses which is 342% over AML (BLM 2016). The Stewart Creek HMA has an AML of 125-175 horses; April 2015 population inventory is listed at 517 horses which is 295% over AML (BLM 2016). The last BLM gather on both of these HMAs was in November 2011.

"Estray" means any animal found running at large upon public or private lands, fenced or unfenced, in Wyoming whose owner is unknown in the territory where found or the owner of which cannot with reasonable diligence be found, or that is branded with two (2) or more brands the ownership of which is disputed, neither party holding a bill of sale. An estray includes any animal for which there is no sufficient proof of ownership found upon inspection. Wyo. Stat. §§ 11- 24-101(a)(ii)

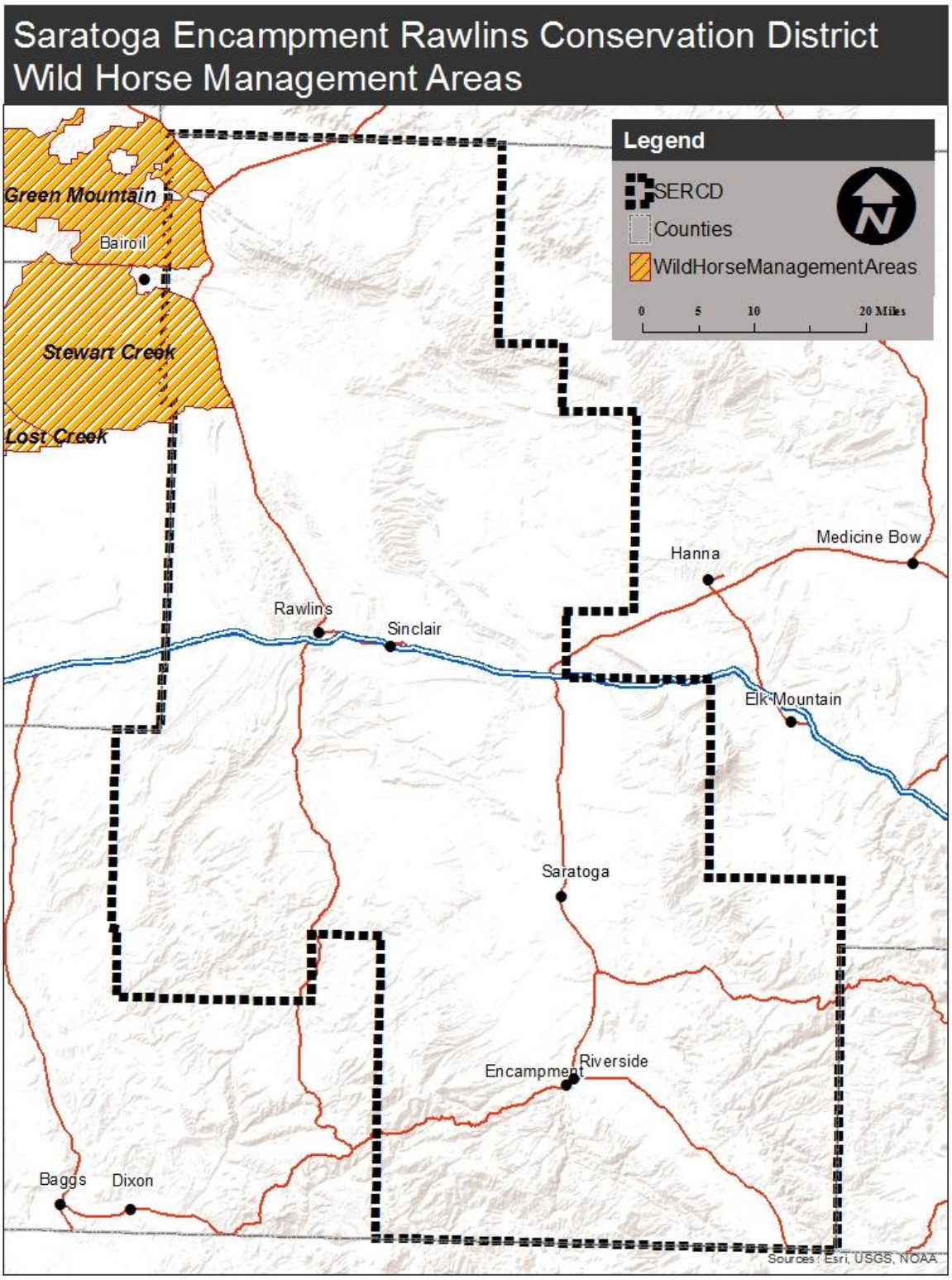

Figure 45: Wild Horse Herd Management Areas

6. Glossary of Terms

Access – A way of admittance, approach, entrance, passage, or ingress and egress.

Activity Plans – Allotment Management Plans ("AMPs"), Habitat Management Plans ("HMPs"), Watershed Management Plans ("WMPs"), Wild Horse Management Plans ("WHMPs"), and other plans developed at the local level to address specific concerns and accomplish specific objectives.

Agriculture – The art and science of growing crops and raising and breeding livestock. As per this Plan, activities which traditionally define agriculture in Carbon County include, but are not/ limited to, cattle and sheep ranching; hay, grain and other small and large grain crop production; and alternative livestock (domestic and wild).

Animal Unit Month (AUM) – The quantity of forage required by one mature cow and her calf (or equivalent, in sheep or horses, for instance) for one month. The amount of forage needed to sustain one cow, five sheep, or five goats for a month. In the United States, a full AUMs fee is charged for each month of grazing by adult animals if the grazing animal (1) is weaned, (2) is 6 months old or older when entering public land, or (3) will become 12 months old during the period of use.

Areas of Critical Environmental Concern (ACEC) – Defined as "areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards." 43 U.S.C. §1702(a).

Community Stability – Combination of factors to promote and sustain the viability of a community, including local economy, custom, and culture.

Conservation Plan – This term refers to situations when a state or states develop a management plan to protect a species that is proposed for listing under the ESA to persuade the USFWS not to list a species. The plan may be based on memorandum of agreement between federal and state agencies and may involve more than one state.

Cooperation – "[T]o act jointly or concurrently toward a common end." Black's Law 5th Ed. at 302.

Coordination – "[A]djusted to, in harmony with." *Id*. at 303.

Conservation Easement - Voluntary agreements that limit the amount and type of development on a property in perpetuity. The tool conserves the land's productive capacity and open character. Landowners continue to retain title to the property and all other rights of property ownership.

Consistency – "[H]aving agreement with itself or something else; harmonious; congruous; compatible; not contradictory." *Id*. at 279.

Consultation – A conference between two or more people to consider a particular question.

Core Area – The regions with the largest numbers of communal sage-grouse breeding grounds or leks and sage grouse as designated in the Wyoming Core Area Strategy.

Culture – The body of customary beliefs, social forms, and material traits including the traditions of racial, religious and social groups; their morals, knowledge, customs, religions, law, beliefs, superstitions and art.

Custom – As used in this Plan, custom is defined as the usage or practice of the people, which by common adoption and acquiescence, and by long and unvarying habit, has become compulsory, and has acquired the

force of a law with respect to the place or subject-matter to which it relates, and a habitual practice, more or less widespread, which prevails within a geographic or sociological area.

Customs – The way people implement their culture—the way they traditionally use the land, make a living and act toward each other. Customs are the visible and tangible manifestations of the shared beliefs that bind a group of people into a community. In law, customs consist of "long established practice or usage, which constitutes the unwritten law, and long consent to which gives it authority. Customs are general, which extend over a state or kingdom, and particular, which are limited to a city or district."

Disruptive Activities – Human activities that directly interfere with key biological processes such as breeding, and which will have measurable and long-term impacts.

Ecological Site – An area of land with specific physical characteristics that differs from other areas both in its ability to produce distinctive kinds and amounts of vegetation and in its response to management.

Economics – Pertaining to the development and management of the material wealth of a government or community.

Ecosystem Services – The multitude of benefits people obtain from ecosystems. Four broad categories of ecosystem services include: provisioning - such as the production of food and water; regulating – such as the control of climate and disease; supporting – such as nutrient cycles and crop pollination; and cultural – such as spiritual and recreational benefits. (Wikipedia contributors 2016)

Erosion – (v.) Detachment and movement of soil or rock fragments by water, wind, ice, or gravity. (n.) The land surface worn away by running water, wind, ice or other geological agents, including such processes as gravitational creep.

Flora – The wild plants of a particular region, district or geographical period; a description of such plants.

Forestland – Land that is now, or is capable of becoming, at least 10% stocked with forest trees and that has not been developed for non-timber use ("BLM"). As defined by the Forest Service is land that is at least ten percent covered with trees (Forested Landscapes in Perspective, 1998).

Forest Health – A measure of the robustness of forest ecosystems. Aspects of forest health include biological diversity; air and water productivity; natural disturbances; and the capacity of the forest to provide a sustaining flow of goods and service for people.

This term is often used to express a collection of concerns – with respect to the alleged deterioration in the forest conditions, including both current problems and (*e.g*. – insect and disease infestations, wildfires, and related tree mortality) and risks of future problems (*e.g.* – too many small-diameter trees) (overstocking), excess biomass in an unnatural mix of tree species in mixed stands.

General Habitat Management Areas – Sage-grouse habitat that is occupied (seasonal or year- round) habitat outside of priority habitat.

Grazing Management Practices – Grazing management practices include such things as grazing systems (rest-rotation, deferred rotation, etc.), timing and duration of grazing, herding, salting, etc. They do not include physical range improvements.

Guidelines (For Grazing Management) – Guidelines provide for, and guide the development and implementation of, reasonable, responsible, and cost-effective management actions at the allotment and watershed level which move rangelands toward statewide standards or maintain existing desirable conditions. Appropriate guidelines will ensure that the resultant management actions reflect the potential for the watershed, consider other uses and natural influences, and balance resource goals with social, cultural/historic, and economic opportunities to sustain viable local communities. Guidelines, and, therefore,

the management actions they engender, are based on sound science, past and present management experience and public input.

Habitat Conservation Plan – The USFWS will approve a plan to protect habitat for a species listed under the ESA located on private land. The habitat conservation plan allows private landowners to use or develop the land, even though the activities may adversely affect a listed species. The plan will also include a "takings permit" which will permit the incidental loss of habitat or potential harm to a listed species.

Habitat Fragmentation – An event that creates a greater number of habitat patches that are smaller in size than the original contiguous tract(s) of habitat.

Habitat Loss – The permanent or effectively permanent removal of habitat cover needed by a particular wildlife species.

Highway – Includes, but is not limited to, pedestrian trails, horse paths, livestock trails, wagon roads, jeep trails, logging roads, homestead roads, mine-to-market roads, alleys, tunnels, bridges, dirt or gravel roads, paved roads and all other ways and their attendant access for maintenance, reconstruction and construction.

Indicator – An indicator is a component of a system whose characteristics (e.g., presence, absence, quantity and distribution) can be measured based on sound scientific principles. An indicator can be measured (monitored and evaluated) at a site- or species-specific level.

Measurement of an indicator must be able to show change within timeframes acceptable to management and be capable of showing how the health of the ecosystem is changing in response to specific management actions. Selection of the appropriate indicators to be monitored in a particular allotment is a critical aspect of early communication among the interests involved on the ground. The most useful indicators are those for which change or trend can be easily quantified and for which agreement as to the significance of the indicator is broad based.

Land Designation – The classification of tracts of land by Congress or a land managing agency to recognize distinctive and unique characteristics or uses.

Lands with Wilderness Characteristics – Section 201 of the Federal Land Policy and Management Act (FLPMA) requires that resource inventories on public lands be maintained, including inventories of lands with wilderness characteristics. This inventory does not designate an area as a wilderness area or study area or determine management direction for these lands. The inventory does provide the most current resource data on BLM managed lands and assists in analyzing management action in these areas in the future. Lands with wilderness characteristics are inventoried based on four criteria:

1. Size. The area must be over 5,000 acres of roadless, contiguous BLM-managed lands, or areas smaller than 5,000 acres may qualify if it is practical to preserve and use them without damaging their current condition. In addition, roadless areas less than 5,000 acres that are connecting with lands that have been 1) formally determined to have wilderness or potential wilderness values, or 2) any federal lands already managed for the protection of wilderness characteristics (e.g. Wilderness Areas or Study Areas) may also qualify.
2. Naturalness. Must appear to have been affected primarily by the forces of nature and any work of human beings in the area must be substantially unnoticeable. Minor human impacts such as a water trough or fences may often be considered substantially unnoticeable.
3. Opportunities for Solitude or Primitive, Unconfined Recreation. The area must offer a visitor the chance to avoid evidence of other people or provide for outstanding opportunities for primitive and an unconfined type of recreation activity like hiking, fishing, etc. Solitude or outstanding primitive recreation opportunities do not have to be available in all portions of

the area. An area may possess outstanding opportunities through either the diversity of possible recreation opportunities in the area or the outstanding quality of one opportunity.

4. Supplemental Values. If size, naturalness, and outstanding opportunities criteria are met, then ecological, geological, or other features of scientific, educational, scenic, or historical values must be considered, but are not required to qualify as lands with wilderness characteristics. See full criteria descriptions at: http://blm.gov/6yjd

"Let it Burn" – A land management policy (and philosophy) that limits or ends fire suppression in order to reintroduce the role of natural wildfire into an ecosystem. This policy is most often used in wilderness areas, where the use of firefighting equipment and tools is generally prohibited, or in the more remote areas of the National Park System. It also substitutes wildfire for logging or grazing to recreate pre-settlement environments.

Litter – The uppermost layer of organic debris on the soil surface, essentially the freshly fallen or slightly decomposed vegetal material.

Management Actions – Management actions are the specific actions prescribed by the BLM to achieve resource objectives, land use allocations or other program or multiple use goals. Management actions include both grazing management practices and range improvements.

Memoranda of Understanding (MOU) – An instrument setting forth the terms of an informal agreement, most often between a state or local government and a federal agency to establish operational arrangements or information sharing. It may also regulate technical or detailed matters, such as terms for mutual maintenance of roads or other facilities. It is typically in the form of a single instrument and may not require ratification.

Memorandum of Agreement (MOA) – It is very similar to an MOU but will be worded as agreement rather than general understanding. Like an MOU, it will document an informal agreement between federal agencies, or divisions/units within an agency or department, or between a federal and state agency or unit of local government and will delineate tasks, jurisdiction, standard operating procedures or other matters which the agencies or units are duly authorized and directed to conduct.

Minerals – Naturally occurring homogeneous substances formed by organic or inorganic processes found on the surface or in the earth; deposits having some resource values such as coal, sand and gravel, precious and semi-precious metals, fossils and gemstones.

Multiple Land Use – Use of land for more than one purpose, for example, grazing of livestock, recreation and timber production. The term may also apply to the use of associated bodies of water for recreational purposes, fish and water supply. (UN).

Multiple-use – Multiple uses of the national forests means the "harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output." Multiple Use and Sustained Yield Act of 1960 (P.L. 86-517, June 12, 1960) as amended. Multiple use implies a sustained yield of outdoor recreation, range, timber, watershed and wildlife and fish values.

Multiple use of the public lands managed by the Bureau of Land Management means: "the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than

all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output." Federal Land Policy and Management Act, 43 U.S.C. §1702(c).

Multiple-use land – A combination of balanced and diverse resource uses that considers long term needs for renewable and nonrenewable resources including recreation, rangeland, timber, minerals, water shed and wildlife along with scenic, scientific and cultural values.

Multiple-use Management – The management of all of the various renewable surface resources of national forest lands, for a variety of proposes such as recreation, range, timber, wildlife and fish habitat, and watershed.

Non-Core Areas – Those areas outside of Wyoming's designated greater sage-grouse Core Areas but inside the greater sage-grouse habitat range.

No surface occupancy (NSO) – This term refers to a condition attached to a mineral lease which prohibits surface occupancy or development activities on the land. NSO is not a recognized term for other land uses or permits.

Objective – An objective is a site-specific statement of a desired rangeland condition. It may contain qualitative (subjective) elements, but it must have quantitative (objective) elements so that it can be measured. Objectives frequently speak to change. They may measure the avoidance of negative changes or the accomplishment of positive changes. They are the focus of monitoring and evaluation activities at the local level. Objectives may measure the products of an area rather than its ability to produce them, but if they do so, it must be kept in mind that the lack of a product may not mean that the standards have not been met. Instead, the lack of a particular product may reflect other factors such as political or social constraints. Objectives often focus on indicators of greatest interest for the area in question.

Open Space – Any parcel or area of land or water that is essentially unimproved and is set aside, dedicated or reserved for public or private use for the enjoyment or for the use and enjoyment of owners and occupants of land adjoining or neighboring such open space, provided that such areas may be improved with only those buildings, structures, streets, and off street parking and other improvements that are designed to be incidental to the natural openness of the land. An area of a lot either left in a natural state or receiving permeable vegetative landscape treatment such as ponds and lakes, either natural or manmade; and water features, grass shrubs, flowers, trees, ground cover, etc.

Prescribed burn – The deliberate use of fire to improve vegetation conditions or to reduce fuel loads in forests, grassland or rangeland areas.

Priority Habitat Management Areas – Areas that have been identified as having the highest conservation value to maintaining sustainable sage grouse populations. These areas include breeding, late brood-rearing, and winter concentration areas.

Public lands – The term "public lands" means "any land and interest in land owned by the United States within the several States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except-- (1) lands located on the Outer Continental Shelf; and (2) lands held for the benefit of Indians, Aleuts, and Eskimos." 43 U.S.C. §1702(e).

Range – Rangelands, forests, woodlands and riparian zones that support and understory or periodic cover of herbaceous or shrubby vegetation amenable to rangeland management principals or practices. Land on which the principal natural plant cover is composed of native grasses, forbs, and shrubs that are valuable as forage for livestock and big game. Any land supporting vegetation suitable for wildlife or domestic livestock grazing, including grasslands, woodlands, shrublands and forest lands.

Range Condition – The current productivity of a rangeland relative to what the land could naturally produce based on the site's soil type, precipitation, geographic location and climate.

Range Improvements – Range improvements include such things as corrals, fences, water developments (reservoirs, spring developments, pipelines, wells, etc.) and land treatments (prescribed fire, herbicide treatments, mechanical treatments, etc.).

Range Management – The art and science of planning and directing range use intended to use the sustained maximum animal production and perpetuation of the natural resources.

Rangeland – Land on which the native vegetation (climax or natural potential) is predominantly grasses, grass-like plants, forbs or shrubs. This includes lands revegetated naturally or artificially when routine management of that vegetation is accomplished mainly through manipulation of grazing. Rangelands include natural grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes and wet meadows.
The United States has 399 million acres *of non-federal rangeland, about 30% of all non-federal rural lands, according to the 1992 National Resources Inventory.* The BLM manages approximately 167 million acres of federal rangelands, and the Forest Service manages approximately 95 million acres of federal rangelands.

Rangeland Health – The degree to which the integrity of the soil and ecological processes of rangeland ecosystems are sustained.

Recreation – An action or lack thereof, which results in relaxation, entertainment, and is enjoyed by those who participate.

Rights-of-way – This term generally refers to "an easement, lease, permit, or license to occupy, use, or traverse lands" and such right may be created by federal or state statute, deed, contract or agreement, or permit. A right-of-way may also include: Any road, trail, access or way upon which construction has been carried out to the standard in which public rights-of-way were built within historic context. These rights-of-way may include, but not be limited to, horse paths, cattle trails, irrigation canals, waterways, ditches, pipelines or other means of water transmission and their attendant access for maintenance, wagon roads, jeep trails, logging roads, homestead roads, mine to market roads, and all other ways.

Riparian – An area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not have vegetation dependent on free water in the soil.

Riparian Area – An area along a watercourse or around a lake or pond.

"Riparian areas are ecosystems that occur along watercourses or water bodies. They are distinctly different from the surrounding lands because of unique soil and vegetation characteristics that are strongly influenced by free or unbound water in the soil. Riparian ecosystems occupy the transitional area between the terrestrial and aquatic ecosystems. Typical examples would include floodplains, stream banks, and lakeshores." USDA NRCS.

"Riparian areas have one or both of the following characteristics: 1) distinctively different vegetative species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. Riparian areas are usually transitional between [river or] wetland and upland." US FWS.

Riparian landscapes occur in the saturated soils along the streams of the County. Riparian or streamside areas are a valuable natural resource and impacts to these areas should be avoided whenever possible. Riparian vegetation plays an important role in protecting streams, reducing erosion and sedimentation as well as improving water quality, maintaining water table, controlling flooding, and providing shade and cover.

Significantly – This term is used in the National Environmental Policy Act regulations, 40 C.F.R. §1508.27, to define when a proposed action may significantly affect the human environment. Significantly as used in NEPA requires considerations of both context and intensity:

(a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Sagebrush Focal Areas – Areas identified by the USFWS that represent recognized "strongholds" for sage grouse that have been noted and referenced by the conservation community as having the highest density of sage grouse and other criteria important for the persistence of sage grouse.

Special Land Use Designations – Refers to the classification or designation tracts of land by Congress or a federal agency to recognize and protect distinctive or unique characteristics.

Designations by Congress are permanent and may include national monuments, national parks, national park preserves, national wildlife refuges, national recreation areas, national seashores, wild, scenic or recreation rivers, national forests and wilderness. The President may also establish national monuments, which are permanent unless modified by another President or Congress.

Federal law may delegate the authority to various federal agencies to make special land use designations. The Interior Department Secretary may designate wildlife refuges; the Bureau of Land Management through its land use plans may establish special recreation areas, areas of critical environmental concern, resource natural areas, and until 1991, wilderness study areas. The Forest Service through its land use plans establishes special interest areas and research natural areas.

There are more than 40 recognized special land designations exist nationwide. Pursuant to this Plan, multiple use is not a special land designation, rather it is a concept and management practice for most lands in Carbon County not assigned a special land use designation.

Species of Concern or Special Status Species – This term includes species that have been proposed for listing under the Endangered Species Act or have already been listed as threatened or endangered, as well as species that are on the candidate list published in the *Federal Register*. The term also includes any state-listed species or any "sensitive species" identified by the BLM State Director, which includes the above categories and might also include species undergoing downward trends due to changes in habitat capability or populations or which occupy specialized habitats.

Split Estate – A tract of land where title to the surface estate is separate from title to some or all of the mineral rights. Split estates are common in the western United States, because private land conveyed under the homestead or stockraising homestead acts reserved the mineral rights to the United States. Under common law, the mineral estate is dominant and can be developed over the objections of the surface owner. Modern laws and case decisions have modified the rule but still recognize the right of the mineral owner to develop the mineral estate, even when the surface owner objects. If the United States owns the surface, it will require the mineral owner to reclaim the surface, secure permits to build roads and other facilities and post reclamation bonds. If the surface is owned by a private landowner, then federal reclamation laws do not apply but state laws will.

Standards – Standards are synonymous with goals and are observed on a landscape scale. Standards apply to rangeland health and not to the important by-products of healthy rangelands. Standards relate to the current capability or realistic potential of a specific site to produce these by- products, not to the presence or absence of the products themselves. It is the sustainability of the processes, or rangeland health, which produces these by-products.

Surface disturbing activity – Refers to development activities that involve the removal of vegetation, topsoil, or overburden where there is a physical change to the surface, such as activities associated with mineral or energy development, rights-of-way, road construction or reconstruction. It does not include incidental disturbances associated with the construction, reconstruction, or maintenance of fences or corrals or stock tanks, livestock or wildlife grazing, or recreation uses.

Sustainable Yield – The yield from a renewable resource that can produce continuously at a given intensity of management.

Takings in context of Endangered Species Act – Includes harm to a protected species when an act actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. 50 C.F.R. §17.3.

Takings in context of property and right to compensation – A 'taking' of property is generally defined as to deprivation of the right of use and enjoyment of the property. The ownership of property is often described as a "bundle of sticks" which includes mineral rights, rights of access, rights to use the surface, and rights to use the fruits raised from the surface, such as crops or grass. When land use regulation by federal, state or local government interferes with one of those rights in the bundle of sticks, a taking occurs only if it deprives the owner of all of his bundle of sticks or "investment-backed expectations." More recent decisions will find a taking when the deprivation is total but temporary or when the deprivation precludes an essential element of the property right, such as the right to exclude others. Federal land agencies enjoy a much greater presumption of authority to limit the exercise of private property rights and successful takings cases more often involve disputes with a local government or state agency.

Terms and Conditions – Terms and conditions are very specific land use requirements that are made a part of the land use authorization in order to assure maintenance or attainment of the standard. Terms and conditions may incorporate or reference the appropriate portions of activity plans (e.g., Allotment Management Plans). In other words, where an activity plan exists that contains objectives focused on meeting the standards, compliance with the plan may be the only term and condition necessary in that allotment.

Trails – A trace is pathway made by passage of man-animal routing of extended travel. Vestiges of an established pathway by which man has persistently walked or trailed game or sought the easiest traverse of land establishing right-of-way access of natural law by horseback, travois, etc.

Undue and unnecessary degradation – This term applies to activities on public lands managed by the Bureau of Land Management which is required to ensure that surface activities do not cause 'undue or unnecessary degradation.' BLM defines those impacts as being greater than those that would normally be expected from an activity being accomplished in compliance with current standards and regulations and based on sound practices, including use of the best reasonably available technology.

Upland – Those portions of the landscape which do not receive additional moisture for plant growth from run-off, streamflow, etc. Typically, these are hills, ridgetops, valley slopes and rolling plains.

Waste – Refuse; worthless or useless matter.

Water – All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems and all other bodies of water above or below ground which are partially or wholly in the state, border on the state or are within the jurisdiction of the state. Private waters that do not combine or have a junction with natural surface or underground waters are not included (for example, and isolated farm pond that does not infiltrate to ground water or connect to surface water). All springs, streams and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State are subject to its jurisdiction.

Watershed – The total land area, regardless of size, above a given point on a waterway that contributes runoff water to the flow at that point. It is a major subdivision of a drainage basin. The United States is generally divided into 18 major drainage areas and 160 principal river drainage basins containing about 12,700 smaller watersheds. The entire region or land area that contributes water to a drainage system or stream, collects and drains water into a stream or stream system or is drained by a waterway (or into a lake or reservoir). More specifically, a watershed is an area of land above a given point on a stream that contributes water to the streamflow at that point. A region or area where surface runoff and groundwater drain to a common

watercourse or body of water. The area drained by a river or river system enclosed by drainage divides. An area of land that drains to a single water outlet. A watershed is also known as a sub-basin.

Weed – Any plant growing where it is not desired; a plant out of place, or unwanted plants, which, may be growing in a magnitude of situations.

> "**Declared weed**" – Any plant, which the board and the Wyoming Weed and Pest Council have found, either by virtue of its direct effect, or as a carrier of disease or parasites, to be detrimental to the general welfare of persons residing within a district. W.S. 11-5-102 (viii).

Noxious weed – A weed that is recognized as a threat to native plants due to its invasive character.

Wetlands – Permanently wet or intermittently water-covered land areas, such as swamps, marshes, bogs, muskegs, potholes, swales and glades. Areas that are inundated by surface or ground water with a frequency sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Wilderness Act of 1964 – Congress established the National Wilderness Preservation System to protect and preserve those areas deemed to be wilderness, which is defined as:

> A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value. 16 U.S.C. §1131(a).

Wilderness Area – Tracts of land designated by an act of Congress to be part of the National Wilderness Preservation System.

Wilderness Study Area or WSA – An area of land identified by Congress or a federal agency pursuant to Congressional direction to be evaluated for its suitability for designation by Congress as part of the National Wilderness Preservation System. With respect to public lands managed by the Bureau of Land Management, it refers to tracts of public lands determined to meet the definition of wilderness based on the wilderness inventory and review conducted by the Bureau of Land Management pursuant to Section 603 of the Federal Land Policy and Management Act, 43

U.S.C. §1782. A WSA typically meets the definition of wilderness in that it is "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." 16 U.S.C. §1131(c.).

> ***de facto* Wilderness Management** – Land management policy that is imposed without congressional direction or authority that mirrors or is similar to the management of areas designated by Congress as wilderness pursuant to the 1964 Wilderness Act. The management restrictions and prohibitions

include: the prohibition of construction of new roads; restriction or prohibition on reconstruction or maintenance of existing roads; prohibition of mining or mineral development; restrictions on activities that would require permanent structures or facilities, or restrictions on motorized vehicle use or the use of mechanical tools or means of travel.

Wildlife – Populations, variety, and distribution of birds, mammals, reptiles, amphibians, invertebrates and plants.

Woody – Consisting of wood plants such as trees or bushed– *i.e.* sage brush.

7. Glossary of Acronyms

AFO/CAFO	Animal Feeding Operation/Confined Animal Feeding Operation
ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level
AMP	Allotment Management Plan
APA	Wyoming Administrative Procedures Act
AUM	Animal Unit Month
BLM	United States Department of the Interior, Bureau of Land Management
BMP	Best Management Practice
CBM	Coalbed Methane
CCWP	Carbon County Weed and Pest
CEQ	Council on Environmental Quality
DPC	Desired Plant Communities
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA or USEPA	Environmental Protection Agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act or the "BLM Organic Act"
GIS	Geographic Information System
HMA	Herd Management Area
LRAC	Land and Resource Advisory Committee
LRUP	Land and Resource Use Plan
LWC	Lands with Wilderness Characteristics
NEPA	National Environmental Policy Act
NRA	National Recreation Area
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PVHP	Platte Valley Habitat Partnership
RMP	Resource Management Plan
SERCD or District	Saratoga-Encampment-Rawlins Conservation District
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS or FWS	United States Department of the Interior, Fish and Wildlife Service
USGS	United States Department of the Interior, United States Geological Survey
WACD	Wyoming Association of Conservation Districts
WDA	Wyoming Department of Agriculture
WDEQ or DEQ	Wyoming Department of Environmental Quality
WGFD	Wyoming Game and Fish Department
WSA	Wilderness Study Area
WSGA	Wyoming Stock Growers Association
WWDC	Wyoming Water Development Commission
WWGA	Wyoming Wool Growers Association
WYNDD	Wyoming Natural Diversity Database

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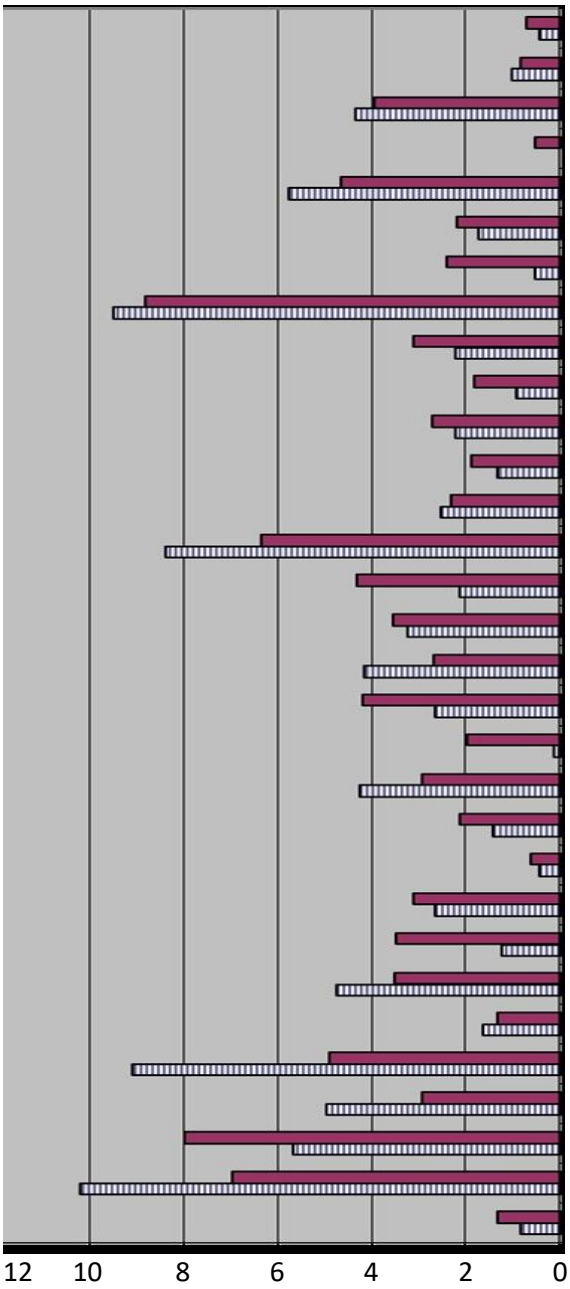
9. APPENDICIES

9.1 Appendix A: 2008 survey results

Percentage of total scores across all issues in the 2008 survey. Local government responses in white with hash marks, general public's responses in red.



Other
Aesthetics
Land Use Planning
Weeds
Social Service
Public Process
Wilderness
Water Quality & Yield
Vegetation Management
Threatened & Endangered Species
Roads
Riparian Areas
Restoration
Working Landscapes Preservation
Air Quality
Recreation (non-motorized)
Recreation (motorized)
Open Space Preservation
No Energy Development
Moderate Energy Development
Full Oil & Gas Leasing
Mining
Grazing
Fisheries
Fire
Tourism
Municipal Services
Economics
Wildlife Habitat
Social Impacts
Cultural

9.2 Appendix B: Species of Concern

The following table presents the federally listed wildlife species present in the District. The table also lists the BLM, USFS, and Wyoming Game & Fish Department's Species of Greatest Conservation Needs (SGCN). The SGCN species are ranked according to Native Species Status (NSS) classification system, the NSS rankings are described at http://www.uwyo.edu/wyndd/codes-and-definitions/state-status/index.html#WGFD_NSS. The number of WYNDD mapped occurrences are also provided by species. This WYNDD had over 22,000 animal occurrences in the District dating back to 1850s.

Agency/Type		Common Name	Scientific Name	# of WYNDD Occurrences
Federally Listed	Endangered - Nonessential Experimental Population	Black-footed Ferret	Mustela nigripes	23
	Listed Threatened	Canada Lynx	Lynx canadensis	7
	Listed Threatened	Grizzly Bear (two occurrences 1867 and 1870)	Ursus arctos arctos	2
	Listed Threatened	Piping Plover	Charadrius melodus	1
	Listed Threatened	Yellow-billed Cuckoo	Coccyzus americanus	1
BLM Sensitive		Bald Eagle	Haliaeetus leucocephalus	901
		Bluehead Sucker	Catostomus discobolus	5
		Brewer's Sparrow	Spizella breweri	1690
		Burrowing Owl	Athene cunicularia	83
		Colorado River Cutthroat Trout	Oncorhynchus clarkii pleuriticus	110
		Columbian Sharp-tailed Grouse	Tympanuchus phasianellus columbianus	56
		Eastern Clade Western Toad	Anaxyrus boreas - Eastern Clade	123
		Ferruginous Hawk	Buteo regalis	1078
		Flannelmouth Sucker	Catostomus latipinnis	4
		Fringed Myotis	Myotis thysanodes	10
		Great Basin Spadefoot	Spea intermontana	1
		Greater Sage-Grouse	Centrocercus urophasianus	6530
		Loggerhead Shrike	Lanius ludovicianus	160
		Long-billed Curlew	Numenius americanus	64
		Long-eared Myotis	Myotis evotis	48
		Mountain Plover	Charadrius montanus	112

Agency/Type	Common Name	Scientific Name	# of WYNDD Occurrences
	Northern Goshawk	Accipiter gentilis	250
	Northern Leopard Frog	Lithobates pipiens	30
	Peregrine Falcon	Falco peregrinus	21
	Pygmy Rabbit	Brachylagus idahoensis	123
	Roundtail Chub	Gila robusta	2
	Sage Thrasher	Oreoscoptes montanus	1041
	Sagebrush Sparrow	Artemisiospiza nevadensis	250
	Swift Fox	Vulpes velox	12
	Townsend's Big-eared Bat	Corynorhinus townsendii	11
	Trumpeter Swan	Cygnus buccinator	10
	White-faced Ibis	Plegadis chihi	43
	White-tailed Prairie Dog	Cynomys leucurus	298
	Wyoming Pocket Gopher	Thomomys clusius	28
USFS Sensitive	American Bittern	Botaurus lentiginosus	5
	Bald Eagle	Haliaeetus leucocephalus	901
	Bighorn Sheep	Ovis canadensis	1780
	Black Tern	Chlidonias niger	7
	Bluehead Sucker	Catostomus discobolus	5
	Boreal Owl	Aegolius funereus	13
	Brewer's Sparrow	Spizella breweri	1690
	Burrowing Owl	Athene cunicularia	83
	Chestnut-collared Longspur	Calcarius ornatus	13
	Colorado River Cutthroat Trout	Oncorhynchus clarkii pleuriticus	110
	Columbian Sharp-tailed Grouse	Tympanuchus phasianellus columbianus	56
	Eastern Clade Western Toad	Anaxyrus boreas - Eastern Clade	123
	Ferruginous Hawk	Buteo regalis	1078
	Flammulated Owl	Psiloscops flammeolus	3
	Flannelmouth Sucker	Catostomus latipinnis	4
	Fringed Myotis	Myotis thysanodes	10
	Grasshopper Sparrow	Ammodramus savannarum	14
	Gray Wolf	Canis lupus	1
	Greater Prairie Chicken	Tympanuchus cupido	1
	Greater Sage-Grouse	Centrocercus urophasianus	6530
	Hoary Bat	Lasiurus cinereus	43
	Lewis's Woodpecker	Melanerpes lewis	4
	Loggerhead Shrike	Lanius ludovicianus	160
	Long-billed Curlew	Numenius americanus	64

Agency/Type		Common Name	Scientific Name	# of WYNDD Occurrences
		McCown's Longspur	Rhynchophanes mccownii	113
		Mountain Plover	Charadrius montanus	112
		Mountain Sucker	Catostomus platyrhynchus	5
		Northern Goshawk	Accipiter gentilis	250
		Northern Leopard Frog	Lithobates pipiens	30
		Northern River Otter	Lontra canadensis	10
		Olive-sided Flycatcher	Contopus cooperi	38
		Pacific Marten	Martes caurina	65
		Peregrine Falcon	Falco peregrinus	21
		Roundtail Chub	Gila robusta	2
		Sagebrush Sparrow	Artemisiospiza nevadensis	250
		Short-eared Owl	Asio flammeus	12
		Southern Rockies Wood Frog	Lithobates sylvaticus - Southern Rockies	141
		Southern Rocky Mountain Pygmy Shrew	Sorex hoyi montanus	2
		Swift Fox	Vulpes velox	12
		Townsend's Big-eared Bat	Corynorhinus townsendii	11
		Trumpeter Swan	Cygnus buccinator	10
		White-tailed Prairie Dog	Cynomys leucurus	298
		White-tailed Ptarmigan	Lagopus leucura	2
		Wyoming Pocket Gopher	Thomomys clusius	28
		Yellow-billed Cuckoo	Coccyzus americanus	1
Wyoming Game & Fish	NSS1 (Aa), Tier 1	Black-footed Ferret	Mustela nigripes	23
		Bluehead Sucker	Catostomus discobolus	5
		Canada Lynx	Lynx canadensis	7
		Common Loon	Gavia immer	28
		Eastern Clade Western Toad	Anaxyrus boreas - Eastern Clade	123
		Flannelmouth Sucker	Catostomus latipinnis	4
		Roundtail Chub	Gila robusta	2
	NSS2 (Ab), Tier 2	Southern Rocky Mountain Pygmy Shrew	Sorex hoyi montanus	2
	NSS2 (Ba), Tier 1	Bald Eagle	Haliaeetus leucocephalus	901
		Colorado River Cutthroat Trout	Oncorhynchus clarkii pleuriticus	110
		Greater Sage-Grouse	Centrocercus urophasianus	6530
		Townsend's Big-eared Bat	Corynorhinus townsendii	11
	NSS2 (Ba), Tier 2	Southern Rockies Wood Frog	Lithobates sylvaticus - Southern Rockies	141

Agency/Type		Common Name	Scientific Name	# of WYNDD Occurrences
		Trumpeter Swan	Cygnus buccinator	10
	NSS3 (Bb), Tier 1	Wyoming Pocket Gopher	Thomomys clusius	28
	NSS3 (Bb), Tier 2	American Bittern	Botaurus lentiginosus	5
		Black Tern	Chlidonias niger	7
		Black-crowned Night-Heron	Nycticorax nycticorax	35
		Boreal Owl	Aegolius funereus	13
		Caspian Tern	Hydroprogne caspia	20
		Dwarf Shrew	Sorex nanus	3
		Forster's Tern	Sterna forsteri	10
		Fringed Myotis	Myotis thysanodes	10
		Long-billed Curlew	Numenius americanus	64
		Long-eared Myotis	Myotis evotis	48
		Long-legged Myotis	Myotis volans	58
		North American Wolverine	Gulo gulo luscus	3
		Pale Milksnake	Lampropeltis triangulum multistriata	2
		Peregrine Falcon	Falco peregrinus	21
		Pygmy Rabbit	Brachylagus idahoensis	123
		Smooth Greensnake	Opheodrys vernalis	10
		Snowy Egret	Egretta thula	19
		Virginia Rail	Rallus limicola	3
		Western Scrub-Jay	Aphelocoma californica	4
		White-faced Ibis	Plegadis chihi	43
	NSS3 (Bb), Tier 3	Pallid Bat	Antrozous pallidus	22
	NSS4 (Bc), Tier 2	Bighorn Sheep	Ovis canadensis	1780
		Bobolink	Dolichonyx oryzivorus	3
		Brewer's Sparrow	Spizella breweri	1690
		Chestnut-collared Longspur	Calcarius ornatus	13
		Columbian Sharp-tailed Grouse	Tympanuchus phasianellus columbianus	56
		Dickcissel	Spiza americana	1
		Grasshopper Sparrow	Ammodramus savannarum	14
		McCown's Longspur	Rhynchophanes mccownii	113
		Sage Thrasher	Oreoscoptes montanus	1041
		Sagebrush Sparrow	Artemisiospiza nevadensis	250
		Short-eared Owl	Asio flammeus	12
	NSS4 (Bc), Tier 3	Eastern Spiny Softshell	Apalone spinifera spinifera	1
		Hayden's Shrew	Sorex haydeni	1

Agency/Type		Common Name	Scientific Name	# of WYNDD Occurrences
		Sandhill Crane	Grus canadensis	241
	NSS4 (Cb), Tier 2	Little Brown Myotis	Myotis lucifugus	104
		Olive-backed Pocket Mouse	Perognathus fasciatus	5
		Pacific Marten	Martes caurina	65
		Swift Fox	Vulpes velox	12
		Western Small-footed Myotis	Myotis ciliolabrum	64
	NSSU (U), Tier 1	A Mountainsnail	Oreohelix	3
		Burrowing Owl	Athene cunicularia	83
		Ferruginous Hawk	Buteo regalis	1078
		Great Basin Spadefoot	Spea intermontana	1
		Great Gray Owl	Strix nebulosa	1
		Mountain Plover	Charadrius montanus	112
		Northern Goshawk	Accipiter gentilis	250
	NSSU (U), Tier 2	American Three-toed Woodpecker	Picoides dorsalis	139
		Brown-capped Rosy-Finch	Leucosticte australis	5
		Clark's Grebe	Aechmophorus clarkii	1
		Creeping Ancylid	Ferrissia rivularis	15
		Dusky Fossaria	Fossaria dalli	3
		Golden Fossaria	Fossaria obrussa	1
		Lewis's Woodpecker	Melanerpes lewis	4
		Northern Pygmy-Owl	Glaucidium gnoma	2
		Northern River Otter	Lontra canadensis	10
		Pewter Physa	Physa acuta	3
		Plains Gartersnake	Thamnophis radix	2
		Pygmy Nuthatch	Sitta pygmaea	7
		Tadpole Physa	Physa gyrina	4
		Valley Gartersnake	Thamnophis sirtalis fitchi	3
	NSSU (U), Tier 3	Fisher	Pekania pennanti	3
		Merlin	Falco columbarius	16
		Northern Leopard Frog	Lithobates pipiens	30
		Northern Many-lined Skink	Plestiodon multivirgatus multivirgatus	1
		Plains Box Turtle	Terrapene ornata ornata	1
		Pocket Pouch Fairy Shrimp	Branchinecta lateralis	3
		Yellow-billed Cuckoo	Coccyzus americanus	1

9.3 Appendix C: Sage Creek - Section 319 Nonpoint Source Program Success Story

Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY
Wyoming

Stakeholders Collaborated to Reduce Sediment in Creek

Waterbody Improved Excessive sediment degraded habitat and threatened aquatic life and coldwater fisheries uses in Sage Creek, prompting the Wyoming Department of Environmental Quality (WDEQ) to add it to the state's 1996 Clean Water Act (CWA) section 303(d) list. A diverse stakeholder group led by the Saratoga-Encampment-Rawlins Conservation District (SERCD) responded by implementing several best management practices (BMPs) designed to reduce sediment carried in overland flow. Sediment levels declined, and in 2008 WDEQ removed Sage Creek from the Wyoming CWA section 303(d) list of impaired waters.

Problem

Sage Creek is in the North Platte River Basin of southeastern Wyoming. The creek's headwaters are along the continental divide in the northern foothills of the Sierra Madre at an elevation of approximately 8,400 feet. The 263-square-mile Sage Creek watershed drains into the North Platte River near the town of Saratoga (Figure 1). WDEQ classifies Sage Creek as waterbody type 2AB; thus, it is protected for the designated uses of drinking water, coldwater game and nongame fisheries, fish consumption, aquatic life, recreation, wildlife, industry, agriculture and scenic value. The Sage Creek watershed produces naturally high sediment loads because of its highly erodible soils. Dam failures, road construction and historic livestock grazing practices have exacerbated the erosion, especially during precipitation events and the spring snowmelt runoff period (Figure 2).

SERCD collected data in 1996 indicating that excessive sediment degraded habitat and threatened the coldwater fishery and aquatic life designated uses along a 14-mile section of lower Sage Creek. The sediment traveled downstream, accumulating in reservoirs and requiring increased processing time and expense to municipal water treatment facilities. WDEQ considered the sediment load to also be a potential threat to the health of the North Platte River's coldwater game fishery. Therefore, WDEQ added Sage Creek to the state's 1996 CWA section 303(d) list for impairment to its coldwater fish and aquatic life (other than fish) designated uses.

Figure 1. Photo of lower Sage Creek near the confluence with the North Platte River.

Figure 2. Photo showing a high sediment load in Sage Creek after a storm event.

Project Highlights

In 1997 SERCD led a Sage Creek Watershed CWA section 319 project that brought together local landowners, the U.S. Bureau of Land Management, the U.S. Department of Agriculture's Natural Resources Conservation Service and the Wyoming Game and Fish Department. The partners implemented a series of BMPs and monitored the effect of those management changes by collecting sediment and macroinvertebrate samples. BMPs, which focused on restoring riparian habitat and reducing sediment inputs to the stream carried by overland flow, included using short-duration grazing, adding riparian and drift fencing, developing off-channel water sources, improving road management, adding grade-control structures, and using water diversions and vegetation as a sediment filters. The partners anticipated that the project would improve water quality in Sage Creek and reduce sediment loading from the creek to the North Platte River.

Results

Data collected as part of the CWA section 319 project show that the BMPs effectively mitigated the threats to the coldwater fishery and aquatic life (other than fish) uses. Specifically, riparian vegetation such as willows reestablished quickly, stabilizing stream banks and converting the stream channel from a wide and shallow configuration to one that is narrower and deeper. Such in-stream and riparian morphological changes translated into cooler water temperatures and increased stream power that better mobilizes fine sediment deposits on the streambed.

Measurements of suspended sediment in Sage Creek show a trend of decreasing concentration after implementing BMPs. Mean total suspended solids went from 529 milligrams per liter (mg/L) in 1998 to 80 mg/L in 2004. In addition, scientists collected post-project macroinvertebrate samples on the North Platte River above and below its confluence with Sage Creek using the Wyoming Stream Integrity Index and River Invertebrate Prediction and Classification System. Those data indicate that both locations are fully supporting their aquatic life (other than fish) designated use, and that the sampling location below the confluence has a trend of a slightly higher biological condition. That data prompted WDEQ to remove Sage Creek from the CWA section 303(d) list in 2008.

Partners and Funding

The project received a total of $126,149 through CWA section 319 performance partnership grants along with $88,148 of in-kind matching funds. That funding supported implementing BMPs and conducting effectiveness monitoring of the management changes. SERCD led the Sage Creek watershed CWA section 319 project, which was a cooperative effort among local landowners, the Bureau of Land Management, the Natural Resource Conservation Service and the Wyoming Game and Fish Department.

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Office of Water
Washington, DC

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9.4 Appendix D: Carbon County to U.S. Socio-Economic Data Comparisons

Many of the following industry measures of Carbon County are compared to measures of the U.S. as a whole. This allows the reader to see how Carbon County's industrial profile compares to the nation.

Table 8: Percent employment by industry in 2014

Industry	Carbon County	U.S.
Ag, forestry, fishing & hunting, mining	15.2%	2.0%
Construction	6.0%	6.2%
Manufacturing	9.7%	10.4%
Wholesale trade	0.7%	2.7%
Retail trade	10.2%	11.6%
Transportation, warehousing, and utilities	10.1%	4.9%
Information	1.2%	2.1%
Finance and insurance, and real estate	3.8%	6.6%
Professional, scientific, management, administrative, & waste management	4.4%	10.9%
Education, health care, & social assistance	14.1%	23.2%
Arts, entertainment, recreation, accommodation, and food	11.2%	9.5%
Other services, except public administration	2.9%	5.0%
Public administration	10.5%	4.9%

Table 10. Weeks worked per year and hours worked per week for 2014

	Carbon County	U.S.
Weeks worked per year:		
Worked 50 to 52 weeks	62.1%	55.1%
Worked 27 to 49 weeks	11.9%	10.3%
Worked 1 to 26 weeks	11.8%	9.2%
Did not work	14.2%	25.3%
Hours worked per week:		
Worked 35 or more hours per week	68.7%	56.7%
Worked 15 to 34 hours per week	13.8%	14.4%
Worked 1 to 14 hours per week	3.3%	3.6%
Did not work	14.2%	25.3%

Table 11. Per capita and median household income in 2014

	Carbon County	U.S.
Per Capita Income (2014 $s)	$26,673	$28,555
Median Household Income (2014 $s)	$56,933	$53,482

Table 12. Levels of income by percent of population in 2014

Income levels	Carbon County	U.S.
Less than $10,000	6.1%	7.2%
$10,000 to $14,999	4.1%	5.3%
$15,000 to $24,999	9.1%	10.7%
$25,000 to $34,999	9.4%	10.2%
$35,000 to $49,999	14.3%	13.5%
$50,000 to $74,999	20.3%	17.8%
$75,000 to $99,999	15.2%	12.2%
$100,000 to $149,999	16.4%	13.0%
$150,000 to $199,999	3.6%	5.0%
$200,000 or more	1.6%	5.0%

Table 13. Percent of people and families below the poverty line for 2014

	Carbon County	U.S.
People below poverty	15.0%	15.6%
Families below poverty	12.4%	11.5%

Table 14. Percent of households receiving earnings by source for 2014

	Carbon County	U.S.
Labor earnings	84.7%	77.9%
Social Security (SS)	24.8%	29.3%
Retirement income	13.1%	17.8%
Supplemental Security Income (SSI)	1.9%	5.3%
Cash public assistance income	0.6%	2.8%
Food Stamp/SNAP	9.2%	13.0%

Table 15. Percentage of households by percent of income dedicated to housing costs for 2014

	Carbon County	U.S.
Monthly cost <15% of household income	31.1%	19.6%
Monthly cost >30% of household income	24.5%	34.0%
Gross rent <15% of household income	18.5%	10.8%
Gross rent >30% of household income	24.3%	48.3%

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SARATOGA-ENCAMPMENT-RAWLINS

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