FEBRUARY 16, 2021

Carbon County DRAFT Natural Resource Management Plan

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ACRONYMS

ACEC- Areas of Critical Environmental Concern

ACHP- – Advisory Council on Historic Preservation

AF- Acre Feet

AML- Appropriate Management Level

APHIS – Animal and Plant Health Inspection Service

ARPA – Archeological Resources Protection Act

AUM- Animal Unit Month

BBL – Blue barrels

BCF – Billion cubic feet

BGEPA- Bald and Golden Eagle Protection Act

BJFTA – Bankhead-Jones Farm Tenant Act

BLM- Bureau of Land Management

BMP-Best Management Practice

BOCC- Board of County Commissioners

BOR- Bureau of Reclamation

BST- Billion short tons

CAP-SSE-- Community Assistance Program – State Support Services

CCA – Candidate Conservation Agreements

CCSM- Chokecherry Sierra Madre

CCWP – Carbon County Weed and Pest

CDT- Continental Divide Trail

CE/CX – Categorical Exemption/ Categorical Exclusion

CEQ- Council on Environmental Quality

CWA – Clean Water Act

CWPP- Community Wildfire Protection Plan

EA- Environmental Assessment

EIS- Environmental Impact Statement

EPA- Environmental Protection Agency

ERMA- Extensive Recreation Management Area

ESA- 1973 Endangered Species Act

ESD- Ecological Site Descriptions

FAST – Fixing America's Surface Transportation Act

FDQA – Federal Data Quality Act

FEMA- Federal Emergency Management Agency

FERC- Federal Energy Regulatory Commission

FHWA- Federal Highway Administration

FLAP – Federal Lands Access Program

FLPMA- Federal Land Policy and Management Act of 1976

FLTP – Federal Lands Transportation Program

GGRB- Greater Green River Basin

GHG- Greenhouse Gas

GLO - General Lands Office

GPC—Groundwater Pollution Control

HAs- Herd Areas

HMAs- Herd Management Areas

IRA- Inventoried Roadless Area

LSRCD – Little Snake River Conservation District

LSRCD NRMP- Little Snake River Conservation District Land, Water, and Natural Resource Management Plan

LUP- Land Use Plan

LWC- Lands with Wilderness Characteristics

LWCF- Land and Water Conservation Fund Act of 1964

MBCD- Medicine Bow Conservation District

MBCD LRNRMP- Medicine Bow Conservation District Long Range and Natural Resource Management Plan

MBRNF- Medicine Bow-Routt National Forest

MBTA- Migratory Bird Treaty Act

MCF- Million Cubic Feet

MOA - Memorandum of Agreement

MOU - Memorandum of Understanding

MST- Million Short Tons

MUSY- 1960 Multiple Use Sustained Yield Act

NAAQS – National Ambient Air Quality Standards

NEPA- 1973 National Environmental Policy Act

NFHL – National Flood Hazard Layer

NFIP – National Flood Insurance Program

NFMA- 1976 National Forest Management Act

NHPA- National Historic Preservation Act

NISIMS- National Invasive Species Management System

NNL- National Natural Landmark

NPS- National Park Service

NRCS – Natural Resource Conservation Service

NRMP- Natural Resource Management Plan

NWR – National Wildlife Refuge

OAA-1897 Organic Administration Act

OHV – Off-Highway Vehicle

OMB - Office of Management and Budget

PFC—Proper Functioning Condition

PILT- Payments In Lieu of Taxes

PRPA- Paleontological Resource Protection Act

PSA- Pipeline Safety Act

REE- Rare Earth Elements

RMP- Resource Management Plan

RNA- Research Natural Area

ROD- Record of Decision

RSGA- Rock Springs Grazing Association

RTP – Recreational Trails Program

SAR- Search and Rescue

SERCD – Saratoga-Encampment-Rawlins Conservation District

SERCD LRLU NRMP – Saratoga-Encampment-Rawlins Conservation District Long Range Land Use and Natural Resource Management Plan

SGNC- Species of Greatest Conservation Need

SIC- Standard Industrial Classification

SIP- State Implementation Plan

SFM- Saratoga Forestry Management

SRMA- Special Recreation Management Area

SWAP – State Wildlife Action Plan

TMDL- Total Maximum Daily Load

TWE – TransWest Express

UAA- Use Attainability Analysis

USACE – US Army Corps of Engineers

USFS- United States Forest Service

USFWS – United States Fish and Wildlife Service

USGS- United States Geological Survey

USRS- United Stated Reclamation Service

W&WP- Water & Wastewater Program

WDEQ – Wyoming Department of Environmental Quality

WEQA – Wyoming Environmental Quality Act

WFRHBA- Wild-Free Roaming Horses and Burros Act

WGFD – Wyoming Game and Fish Department

WOGCC – Wyoming Oil and Gas Conservation Commission

WOTUS- Water of the United States

WQD—Water Quality Division

WSA – Wilderness Study Area

WSEO- Wyoming State Engineers Office

WSFR – Wildlife and Sport-Fish Restoration

WSGS – Wyoming State Geological Survey

WSGWG- Wyoming Sage Grouse Working Group

WSHPO- Wyoming State Historic Preservation Officer

WUI- Wildland Urban Interface

WWDC – Wyoming Water Development Commission

WWDO – Wyoming Water Development Office

WYDOT- Wyoming Department of Transportation

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CHAPTER 1: INTRODUCTION

1.1 PURPOSE

1.1.1 Natural Resource Management Plan

A Natural Resource Management Plan (NRMP or Plan) is a document prepared and adopted by a local government that federal agencies are required to review and consider when making decisions that may affect the local area. Locally elected governments and elected officials have far ranging and important responsibilities to their constituents, described by state statute as protecting their "health, safety and welfare" (Wyo. Stat. §§ 18-3-504(v); 18-5-208(a)). That responsibility includes specifically interacting with federal agencies on all federal issues impacting the local community and counties. Rural counties' socioeconomic well-being, health, safety, and culture is impacted by management of the surrounding federal and public lands. To give locally elected governments the strongest voice possible during "government-to-government" interactions, local governments can formally adopt "local land use plans" (LUPs) or NRMPs. These plans establish policy regarding the use and management of federal lands in local governments' jurisdiction and can influence the development and implementation of federal policies, programs, and decision-making that affect local communities. NRMPs are intended to help protect the local citizens' use of, and access to, federally administered lands and resources and to ensure the socioeconomic wellbeing, culture, and customs of a local community are adequately considered in federal decisions. (Budd-Falen, 2018)

This county NRMP serves as a basis for communicating and coordinating with the federal government and its agencies on land and natural resource management and use. Counties are particularly well-suited to understand the impacts of federal land management decisions on the local economy, custom, and culture. Under Wyoming statute, a County is deemed to have special expertise on all subject matters for which it has statutory responsibility including, but not limited to, all subject matters directly or indirectly related to the health, safety, welfare, custom, culture, and socio-economic viability of a County. (Wyo. Statute § 18-5-208(a))

These local LUPs do not regulate the use of private lands and do not constitute zoning. LUPs are generally associated with the planning document that counties use to determine zoning on private lands. An NRMP is a separate type of land use plan prepared by rural counties and conservation districts, containing policies relating to the management of federal and public land in the County and reflecting the local government's position on federal decisions concerning those lands. (Budd-Falen, 2018)

Local governments do not have jurisdiction over the federal government or federal lands. NRMPs cannot require federal agencies to take specific actions. However, federal agencies and departments are mandated by various federal statutes to engage local governments during decision-making processes on federal plans, policies, and programs that will impact the management of land and natural resources within a community and ultimately affect the local tax base and lives of local citizens. Federal agencies are required to coordinate and consult with local governments and give meaningful consideration to policies asserted in written plans

prepared and adopted by local governments concerning the management of federal lands in their area. (Budd-Falen, 2018)

1.2 STATUTORY REQUIREMENTS AND LEGAL FRAMEWORK

Federal agencies are required to identify and analyze the impacts to local economies and community cultures when making decisions. NRMPs outline the present economic and cultural conditions and desired future conditions of a county and demonstrate how those conditions are tied to activities on adjoining federal lands. The plan establishes the local government's preferred policies for the planned use, management, conservation, protection, and preservation of natural resources on the federal and public lands within its jurisdiction. The goal of an NRMP is to protect private property, the local tax base, and local custom and culture. An adopted NRMP is a critical tool that allows a local government to have a substantive impact on federal decisions, plans, policies, and programs. A written plan can play a key role in the success of a local government engaging the federal government. (Budd-Falen, 2018)

Required engagement between federal agencies and local governments takes the form of "consistency review" under the National Environmental Policy Act (NEPA) and the Federal Lands Policy and Management Act (FLPMA), the requirement for "coordination" under both FLPMA and the National Forest Management Act (NFMA), engaging local governments acting as a "cooperating agency" under NEPA, and a State Governor's consistency review process.

The National Environmental Policy Act

The National Environmental Policy Act (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 makes a decision for almost any action that may have an environmental impact, NEPA compliance is required. Some courts have even required agencies to follow NEPA when the agency spends a small amount of money on a project or program when they are not the lead agency. See *e.g., Citizens Alert Regarding the Environment v. United States Environmental Protection Agency*, 259 F. Supp.2d 9, 20 (D.D.C. 2003). On July 15, 2020 the Council on Environmental Quality announced major regulation reforms to NEPA, including new rules trying to clarify what is a "major federal action." *See* 85 F.R. 43304 (July 16, 2020). The CEQ regulations define a "Major Federal Action" as "an activity or decision subject to Federal control and responsibility" 40 C.F.R. § 1508.1(q). However, those activities and decisions are limited to those decisions that are discretionary or in which the federal government has sufficient control and responsibility over the outcome of the project. *See id*. This means that those projects that the government has a minor role in are not included. Further, minor actions that do not typically do not have a significant effect on the human environment (such as allowing certain range improvements on a grazing allotment) are categorically exempt from NEPA. 40 C.F.R. § 1508.1(d).

NEPA requires that agencies undertake an environmental analysis to determine whether a federal action has the potential to cause significant environmental effects. If a proposed action has been classified by an agencies' procedures as a categorical exclusion because it does not individually or cumulatively have a significant effect on the human environment, then no further

environmental analysis is needed (40 C.F.R. § 1501.1). If a categorical exclusion does not apply to a proposed action, then the federal agency must prepare an Environmental Assessment (EA) to determine whether the proposed action will have a significant impact on the quality of the human environment. If a proposed major federal action is determined to significantly affect the quality of the human environment, federal agencies are required to prepare an Environmental Impact Statement (EIS). The regulatory requirements for an EIS are more detailed and rigorous than the requirements for an EA. There are several ways local governments can participate in the NEPA process depending on the level of analysis, type of federal decision, level of commitment of the local government, and the goals of the local government.

First, local governments can use these plans as part of the federal agency's "consistency review" process. Under this provision, if the federal agency receives a local plan while writing an EIS or EA, 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)). For local governments to take advantage of consistency review requirements, a written and adopted local Plan is required. With a written Plan, this analysis happens even when the local government does not know about the pending decision or action if the LUP was provided in advance to the reviewing federal agency.

NEPA requires that copies of comments from state or local governments accompany the EIS or EA throughout the review process (42 U.S.C. § 4332(2)(c)). As there is no requirement for federal agencies to discuss the inconsistencies of a proposed action with comments from state or local governments, written comments submitted by a local government not tied to a formally adopted NRMP require less rigorous analysis than those tiered to an adopted NRMP.

Local governments can participate in the NEPA process as a "cooperating agency" (40 C.F.R. § 1508.5), an action separate from NRMP review. If a local government believes that a proposed federal action will impact the local government, and the local government wants to be involved in the analysis and decision-making process at its inception, the government may request "cooperating agency status" to the deciding federal agency. "Cooperating agency status" allows local governments to work with federal agencies throughout the development of a federal plan or proposal, including before public feedback is solicited. It does not require a written land use plan prepared by local governments. Should a local government request cooperating agency status for a particular agency proposed action (for example, the designation of critical habitat for a listed threatened or endangered species), the local government can, at the request of the lead agency, participate in drafting portions of the relevant NEPA document. 40 C.F.R. § 1501.6(b)(3). This can involve identifying appropriate scientific data, assisting with alternative development for the proposed federal action, and ensuring that the discussion of impacts to the local economy or the local citizens is accurate. An NRMP, while not required, can aid this analysis. Cooperating agency status can be reserved for more significant federal decisions likely to have a larger impact on a community and is not required for every federal action.

Pursuant to NEPA, an applicant for cooperating agency status must be a locally elected body such as a conservation district, board of supervisors, or a County commission; and possess "special expertise." A local government's special expertise is defined as the authority granted to a local governing body by state statute.

Participation in federal processes as a cooperating agency can be expensive, time-consuming, and cumbersome and may be particularly challenging for communities with limited resources. An NRMP ensures that the federal agency addresses the County's policies for virtually every federal decision without the burden of cooperating agency status.

The National Forest Management Act

The National Forest Management Act (NFMA) governs the U.S. Forest Service (USFS) and requires the agency to "coordinate". The NFMA requirements are as follows:

> *[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.

The Federal Land Policy and Management Act

The Federal Land Policy and Management Act (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 that the BLM must:

> *To the extent consistent with laws governing the administration of the public lands, coordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of the State and local governments within which the lands are located […] by considering the policies of approved State and tribal land resource management programs* (43 U.S.C. § 1712(c)(9)).

Such coordination is to be achieved by:

- To the extent practicable, the BLM must stay apprised of local land use plans.
- The BLM must assure that local land use plans germane to the development of BLM land use plans are given consideration.
- To the extent practicable, 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. (43 U.S.C. § 1712(c)(9))

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: "Land use plans of the Secretary [of the Interior,] 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." (43 U.S.C. § 1712(c)(9))

In other words, FLPMA requires both "coordination" and "consistency review." 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 (Bureau of Land Management, 2012). Pursuant to FLPMA's consistency review requirement, 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 (43 U.S.C. § 1712(c)(9)).

National Park Service

The National Park Service (NPS) was established by the Organic Act in 1916 to manage 14 national parks and 21 national monuments. The Preservation of Historic Sites Act of 1935, the Wilderness Act of 1964, and the Wild and Scenic Rivers Act of 1968 all contributed to the evolution of the NPS and how the agency managed park land. NEPA and the Endangered Species Act (ESA) of 1969 and 1973 increased the complexity and prevalence of science in park management. Throughout this time span the NPS had grown to solely oversee all the nation's parklands, this included parks previously held by the War Department, the national monuments previously managed by the Forest Service, and the parks which resided in Washington D.C. The National Park Omnibus Management Act of 1998 increased accountability and improved management for multiple NPS programs. This legislation required that the NPS receive authorization from Congress prior to studying potential areas for addition the National Park System (NPS, n.d.-b).

In accordance with Executive Order 13352, the NPS is required to carry out its natural resource management responsibilities in a cooperative manner that considers the interests of individuals "with ownership or other legally recognized interested in land and other natural resources". NPS is also expected to accommodate local participation in Federal decision-making. (Executive Order 13352, 2017)

Governor's Consistency Review Process

FLPMA also requires that the BLM provide for a governor's consistency review as part of their land use planning process (43 C.F.R. § 1610.3-2(e)). State governors are entitled to an additional and entirely separate review of BLM land use plans, revisions, and amendments; this provides an opportunity to identify any inconsistencies with state or local plans. If a governor's comments result in changes to the plan, the public notification of these changes is required. The governor may also refer to policies in the NRMP in their review of the proposed federal action.

1.3 CARBON COUNTY NATURAL RESOURCE MANAGEMENT PLAN PROCESS

1.3.1 Plan Organization

This plan considers the current conditions of federal resources, county objectives for each resource, and how the county would like to see those objectives achieved. For all federal resources in the county, this plan addresses the following:

- **Resource Assessment and Legal Framework.** Includes background and detailed information on the resource, including qualitative as well as quantitative information. The assessment includes an evaluation of the importance of the resource to the county, location, quality, and size, as well as a map of the resource, where appropriate. The Resource Assessment relies on the best data available at the time of publication. The Resource Assessment addresses the question, "What is the state of the resource now?" This section does not describe how the county interprets or proposes to use a particular resource or topic. This section describes how federal agencies are interpreting federal laws, guidance, and handbooks.

- **Resource Management Objectives**. Describes general goals in the form of broad policy statements regarding the use, development, and protection for each resource. Resource Management Objectives address the question, "What does the county want for and from this resource?"

- **Priorities**. Describes specific priorities on how to achieve the county's Resource Management Objective for each resource. Priorities tier to Resource Management Objectives for each resource and address the question, "How would the county like to see its objectives achieved?" The general agreement or disagreement with the interpretation described in the Resource Assessment section should be used as the defining direction for the priority statements.

1.3.2 Process

Consistent with Wyo. Stat. § 9-4-218(a)(viii)(D) and in accordance with Wyo. Stat. §§ 16-4-401 through 16-4-408, the County, with assistance from an appointed steering committee, has guided the development of the draft document, including objective and priority development. A public meeting was held on December 8, 2020, to inform the public of the purpose and intent behind the plan and ask for public input to the plan while still in the drafting phase.

The amended 2012 Carbon County Comprehensive Land Use Plan along with the 2017 Medicine Bow Conservation District Long Range Plan, 2017 Saratoga-Encampment-Rawlins Conservation District Long Range Plan, and 2015 Little Snake River Conservation District Long Range Plan were referenced in the development of this plan. A steering committee comprised of seven people guided the development of the draft document, including objective and priority development. See Appendix B for a list of steering committee members.

The draft document was released for public comment for 30 days beginning on February 15, 2020. Written comments received during the public comment period were incorporated into the final plan as appropriate. Public meetings were held during the public comment period on March 3 and March 4, 2021, giving the public the opportunity to participate and contribute to the plan as well as ask questions regarding the plan. The public meetings were held virtually with viewing locations in Rawlins and at the Conservation District Offices in Baggs, Medicine Bow, and Saratoga. Public comments received during the public comment period can be found in Appendix C. The final plan was presented to the Carbon County Board of County Commissioners for final adoption in April 2021.

This plan is based on criteria developed by the Office of the Governor of the State of Wyoming in consultation with the counties, consistent with Wyo. Stat. § 9-4-218(a)(viii)(B).

1.3.3 Amending the Natural Resource Management Plan

This plan can be amended following the same process for public involvement and adoption as described in the previous section. It is recommended to review the plan every five years.

1.3.4 County Expectations for Natural Resource Management Plan

While the statutes and regulations outlined above spell out the legal requirements of federal agencies in their duties in dealing with local governments, Carbon County (County) recognizes that part of this land use planning process is to develop a solid working relationship with the federal agencies operating in Carbon County. The County also recognizes that "coordination," "cooperating agency status," and "consistency review" require actions on behalf of both federal agencies and local governments. To that end, the County commits to the following actions:

1. Within 30-60 days of the date of adoption of this plan, the County will inform the federal agencies of the date, time, and location of their regularly scheduled Commissioner meetings with an open invitation for federal agency personnel to attend such meetings if there are proposed decisions or issues to discuss. At minimum, the County would like a quarterly update on the following topics:
    a. Minerals
    b. Wildlife
    c. Livestock grazing
    d. Invasive species management
    e. Road improvements
    f. Any proposed changes to access of public lands
    g. Any decisions that may affect water quality, water rights, or obligations to current interstate water compacts
    h. Proposed land exchanges or purchases
    i. An update on all permits or management decisions awaiting a final decision from the agency, including the length of time the permittee has waited on a decision and proposed timelines for the agency to make those pending decisions
2. Within 30-60 days of the date of adoption of this plan, the County will transmit a copy of this local Natural Resource Management Plan to federal and appropriate state agency

offices operating within Carbon County for their consideration as part of any consistency review that is required pursuant to federal statute. Those agencies include:

a. Bureau of Land Management – Rawlins Field Office (Rawlins, WY)
b. Bureau of Land Management - Lander Field Office (Lander, WY)
c. Bureau of Land Management – Wyoming State Office (Cheyenne, WY)
d. U.S. Forest Service – Brush Creek/Hayden Ranger District (Saratoga, WY)
e. U.S. Forest Service – Medicine Bow-Routt National Forests, Thunder Basin National Grassland (Laramie, WY)
f. U.S. Fish and Wildlife Service - Region 6 Office (Lakewood, CO)
g. Bureau of Reclamation – Wyoming Area Office (Casper, WY)
h. Environmental Protection Agency (EPA) – Region 8 Office (Denver, CO)
i. Wyoming Governor's Office (Cheyenne, WY)
j. Wyoming Department of Environmental Quality (Cheyenne, WY)
k. Wyoming Game and Fish State Office (Cheyenne, WY)
l. Office of State Lands and Investments (Cheyenne, WY)
m. Wyoming Oil and Gas Conservation Commission (Casper, WY)
n. Wyoming Department of Agriculture (Cheyenne, WY)

3. Within 30-60 days of the adoption of this plan, the County will contact the above listed agencies offices to determine a protocol for informal communication that should occur so that each is apprised of proposed actions, issues and concerns as early as possible.
4. In a timely manner, the County will review NEPA documents to determine if they will request "cooperating agency status" and will consider entering into Memorandums of Understanding (MOU) or Memorandums of Agreement (MOA) as appropriate. The County reserves the right to negotiate an MOU or MOA on a case-by-case basis, although an MOU or MOA is not appropriate nor necessary in all cases.

The Carbon County Commissioners invite and welcome all agencies to their monthly Commission meetings to give an update on any items that need discussed. The County Commissioner meetings are typically held on the first and third Tuesday of every month, the official schedule can be found on the Carbon County website[1] (**Note: website links can be found in Appendix A**). To assist in keeping an open line of communication and simplify coordination and scheduling between the County and the agencies, all correspondences between the agency and the County will be initially directed to a County point of contact. That point of contact will be identified to the agencies in a letter following the adoption of this Plan and agencies will be notified via letter within two weeks if a new County point of contact is assigned.

1.3.4.1 Resource Management Objectives (County Expectations):

A. Carbon County has an established relationship with local federal agencies in which the agencies regularly coordinate and allow the County to participate as a cooperating agency for any federal action as the County deems appropriate.
B. The Carbon County Natural Resource Management Plan (NRMP) is reviewed by the federal agencies while generating their land use plans to ensure that the proposed land use plan is coordinated with this NRMP to the greatest extent possible.

C. The federal agencies conduct a consistency review with the Carbon County Natural Resource Management Plan for every proposed National Environmental Policy Act decision the agency makes that may affect the County, the natural resources within the County, or its citizens.
D. Federal agencies consider the economic well-being and custom and culture of the County and its citizens when making decisions affecting natural resources within the County.

1.3.4.2 Priorities (County Expectations):

1. Federal agencies should inform the County of all proposed projects, decisions, and actions that may affect the County and allow the County to participate as a cooperating agency and coordinate with agencies at the earliest time in the planning process.
2. Federal agencies should give regular (where regular is defined as not less than quarterly) updates on the permit status for current and proposed projects within the County's jurisdiction and support reasonable timelines and explanations for issuance of delays from permitting agencies.
3. Federal agencies should achieve a sustainable land use balance between economic growth, energy development, recreation, agriculture, conservation use of lands, quality of life, the County's custom and culture, and the environment by coordinating with the County on all decisions.
4. Federal agencies should support traditional multiple land uses 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.
5. Federal agencies should, 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 shall encourage proper characterization and analysis of the area, recognizing the benefit of ecosystem services provided by working ranches adjacent to or near public lands.
6. Federal agencies in conjunction with the County should develop and promote use of resources for economic diversity that maintain quality of life and the County's custom and culture.
7. Federal agencies should maintain the culture of open access, multiple use, agriculture, and rural communities.
8. Federal agencies should promote projects that improve the health and sustainability of public lands within the County.
9. For any species on the Endangered Species Act list, the County should be apprised, at minimum, annually of the progress of population recovery objectives for each species.
10. A full analysis of the impact each alternative and subsequent "decision" will have on the local economy should be conducted by the federal agencies. If it is determined that the alternative will have significant negative impact on the local economy, the alternative/decision is not supported.
11. Federal agencies should inform and encourage those impacted by decisions to substantively participate in scoping process on a National Environmental Policy Act decision.

12. Federal agencies should give regular (where regular is defined as not less than quarterly) updates on the permit status for current and proposed projects within Carbon County's jurisdiction and support reasonable timelines and explanations for issuance of delays from permitting agencies.

1.4 CREDIBLE DATA

To the greatest extent possible, credible data should drive all land use planning decisions. In this plan, "credible data" refers to information that meets, at a minimum, the Federal Data Quality Act (FDQA). Credible scientific data is defined as rigorously reviewed, scientifically valid chemical, physical and/or biological monitoring data, collected in a timely manner under an accepted sampling and analysis plan's confirmed written approval by the federal/state agency, including quality control and assurance procedures and available historical data. (Law Insider, n.d.)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:

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), and
d) Integrity. (66 Fed. Reg. at 49718)

In addition to following the OMB guidelines, all federal agencies were 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 (Office of Management and Budget, 2004). This requirement does not specifically require outside peer review, but internal review.

Many federal agencies and some state agencies have respective handbooks that lay out their credible data standards. A list and links to these handbooks is provided below:

- BLM 1283 Data Administration and Management (Public) 2012[2]
- Bureau of Reclamation – Quality of Information[3]
- Environmental Protection Agency (EPA) - EPA Quality System Guidelines[4]

- U.S. Army Corps of Engineers (USACE) – Information Management Enterprise Data Management Policy Corporate Information[5]
- USFS – Forest Service Handbook 1909.12 – Land Management Planning Handbook Chapter 40 – Key Processes Supporting Land Management Planning[6]
- U.S. Fish and Wildlife Service (USFWS) – Data Standards[7]
- Wyoming Department of Environmental Quality (WDEQ) – WDEQ Standards[8]

1.4.1 Resource Management Objective (Credible Data):

A. Credible data has a universal meaning for all federal agencies and is the basis for all agency decisions that affect public lands in Carbon County.

1.4.2 Priorities (Credible Data):

1. Federal and state agencies should include quantitative data in land use planning processes that meets credible data criteria, even if the data were not produced by a federal agency.
2. Federal and state agencies should use credible scientific data in all federal land use decisions.
3. Federal agencies should adopt a universal definition of credible data consistent with the Carbon County Natural Resource Management Plan and federal law.
4. Federal and state agencies should only use and consider data that meets the minimum criteria described in their respective handbooks when making land management decisions unless other criteria are agreed upon between the County and federal agencies.
5. Federal agencies should use the best available science when making management and enforcement decisions affecting public lands within the County.
6. Federal agencies should work with cooperating agencies in making sound natural resource decisions that are scientifically based, legally defensible, sensitive to resource health, and responsive to multiple-interest users.
7. Federal agencies should give greater weight to data submitted that meet credible data criteria compared to data that fails to meet the credible data criteria.

CHAPTER 2: CUSTOM AND CULTURE

2.1 COUNTY INTRODUCTION AND OVERVIEW

2.1.1 Carbon County History, Customs, and Culture

County Commissions in the State of Wyoming have been charged with responsibility for the preservation of the custom and culture of Wyoming counties in matters relating to NEPA and federal land planning. Since the customs, culture, and history of Carbon County are inseparably tied to the use of and access to land and resources managed by federal agencies, the Board of County Commissioners (Board) will use the policies set forth in this NRMP to represent the vital interests of the County in federal natural resource planning efforts.

Carbon County was one of five original counties established in 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 heading west through the area utilized the Overland Trail. Hunting and fishing were prized in the area, and throughout the 1870s sportsmen came from as far away as England and Scotland. The first black-faced sheep were brought to the area in 1868 by a government trapper. The Red Desert, Great Divide Basin, and Rawlins areas 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 settling the area. (Saratoga-Encampment-Rawlins Conservation District, 2017)

The custom and culture of Carbon County was developed through the tenacity of 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 communities. Agricultural opportunities in the County expanded 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 near Saratoga. (Saratoga-Encampment-Rawlins Conservation District, 2017)

Today the agricultural lifestyle remains a strong component of the County 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 provides for possible population growth in the area. Important to residents is the connection and access to 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 – that contribute to the economic viability of the area, is crucial to sustaining the communities within the County. (Saratoga-Encampment-Rawlins Conservation District, 2017)

Currently, agriculture within the County consists primarily of ranching. Most livestock operations are cow-calf and yearling cattle operations. 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 depend on federal lands to varying degrees for commodity use (agriculture, timber, recreation, and mining) and recreational enjoyment. Local economies derive a significant source of income from these public lands – from the mineral/oil and gas industry to agriculture to recreation. (Saratoga-Encampment-Rawlins Conservation District, 2017)

2.1.2 County Overview

Carbon County, named for its extensive coal deposits, is in south-central Wyoming, just north of the Colorado border (Figure 1). The County holds various mountain ranges including the Sierra Madres, Ferris Mountains, Freezeout Mountains, Haystack Mountains, Medicine Bow Mountains, Pedro Mountains, Seminoe Mountains, Shirley Mountains, and the Snowy Range. Elk Mountain in the Medicine Bow Mountains is the highest elevation in the County at 11,162 ft, the lowest elevation in the County is 6,168 ft. The North Platte River flows south to north through the County on the eastern side of the Continental Divide. The Encampment River and Medicine Bow River are major tributaries to the North Platte River. The Little Snake River flows east to west across the south-western portion of the County on the west side of the Continental Divide eventually flowing into the Yampa River in Colorado, which is a tributary to the Green River.

The settlement of present-day Carbon County began in the late 1840s, primarily by settlers using the Overland Trail, fur trappers, sportsmen, sheep and cattle ranchers, miners, and railroad developers (Carbon County, Wyoming | WyoHistory.Org, n.d.). Carbon County was formally established in 1868. Eventually Sheridan, Johnson, and Natrona counties were carved out of the original Carbon County.

The total population of Carbon County according to 2010 U.S. Census data is 15,885 persons. The population is largely rural, with about half the population living within the ten incorporated towns. The ten incorporated towns include: Baggs, Dixon, Elk Mountain, Encampment, Hanna, Medicine Bow, Rawlins, Riverside, Saratoga, and Sinclair. Unincorporated communities within the County include Arlington, Ryan Park, Leo, McFadden, Muddy Gap, Savery, Walcott, and Woodedge.

The third largest county in Wyoming, Carbon County spans over 5 million acres (7,964 square miles). Fifty-three percent of the land in Carbon County is federally owned, with the largest portions being held by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS), and small acreages held by the Bureau of Reclamation (BOR) and U.S. Fish and Wildlife Service (USFWS).

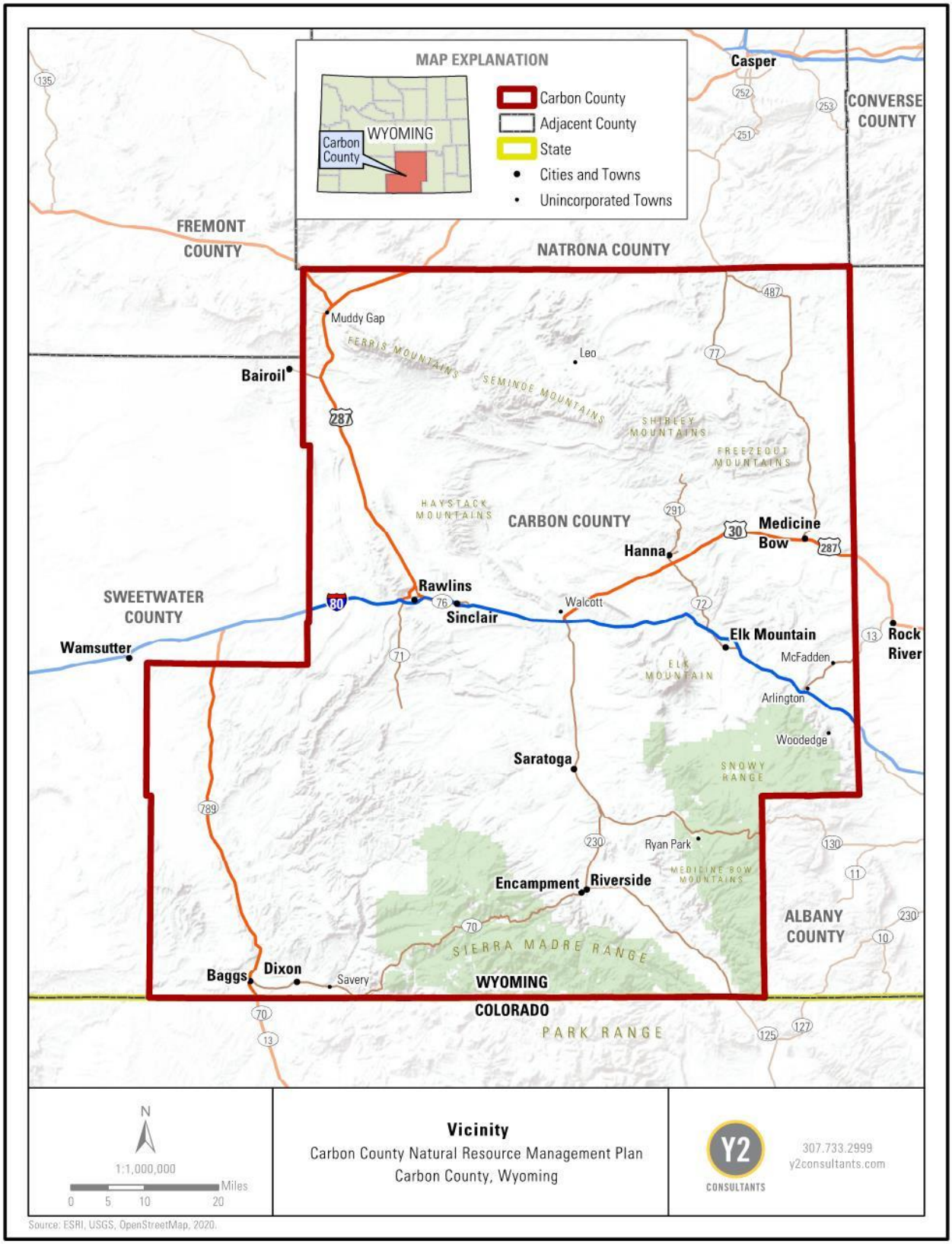

Figure 1. Vicinity map of Carbon County.

Table 1 and Figure 2 below show surface management within Carbon County.

Table 1. Surface management in Carbon County. (Headwaters Economics, 2020a)

Ownership	**Acres in County**	**Percent of County**
BLM	2,046,990	40%
Private	2,010,864	40%
USFS	626,963	12%
State	360,599	7%
BOR	41,559	1%
Water	37,914	1%
USFWS	2,223	<1%
NPS	1,617	<1%

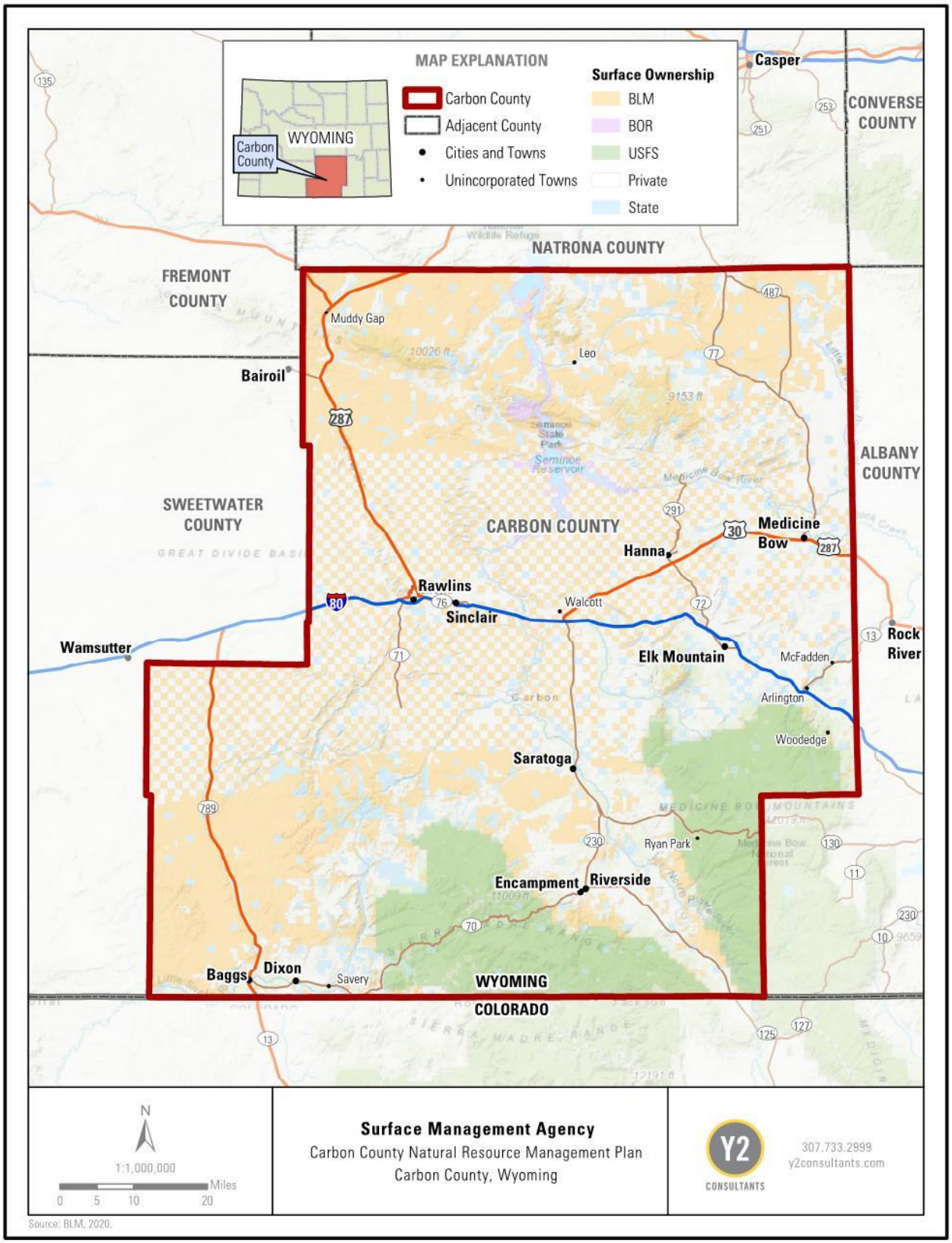

Figure 2. Surface management of lands within Carbon County.

2.2 CULTURAL/HERITAGE/PALEONTOLOGICAL RESOURCES

2.2.1 History, Custom, and Culture

Carbon County has a rich history that includes Native Americans, trappers, sportsmen, railroad workers, soldiers, ranchers, miners, and prisons. This varied history makes Carbon County a unique place for cultural, historical, and paleontological resources. Provided below is a short timeline on the history of Carbon County that has contributed to its present-day culture.

Large numbers of dinosaur fossils can be found near Como Bluff, east of Medicine Bow. Many dinosaur fossils have been found in the Morrison Formation at Como Bluff and most are considered exceptionally preserved. Four types of sauropods have been found at Como Bluff including plant-eating Apatosaurus, Diplodocus, Camarasaurus, and Barosaurus. (Carbon County Visitors Council, n.d.)

It is generally agreed upon that humans were living and hunting within the areas of Carbon County around 12,000 years ago. Carbon County was inhabited by Ute, Shoshone, Crow, Arapaho, Cheyenne, and Lakota (Sioux) Native American tribes. Trappers who worked in the Sierra Madres in the early 1830s held a rendezvous, known as the Grand Encampment, at the base of the mountains of the upper North Platte River Valley. (Van Pelt, 2014)

By the 1860s, more emigrants started heading west following the Overland Trail across what is now southern Wyoming. Due to hostility with Native Americans, Fort Halleck was built in 1862 at the foot of Elk Mountain to serve as a base for soldiers to protect settlers journeying west. (Van Pelt, 2014)

In 1867, General John A. Rawlins, chief of staff of the United States Army and a civil engineer, surveyed land with Grenville M. Dodge, chief engineer of the Union Pacific Railroad. Fort Steele was established in 1868 to protect the advancing transcontinental railroad where it crossed the North Platte River. Railroad ties for the new railroad were supplied by woodcutters working on Elk Mountain and in the Grand Encampment Valley, logs were floated down the North Platte to supply the Union Pacific Railroad. (Van Pelt, 2014)

In the 1880s, sheep and cattle ranchers began moving into Carbon County and establishing ranches, many around the present-day town of Saratoga. Livestock were moved in using the railroad. Many sheep ranchers ran their herds on the ranges of the Red Desert and the Great Divide Basin and Rawlins became well-known for sheep production. The Pick Ranch, located near Saratoga, was one of the first large cattle ranches in the area. (Van Pelt, 2014)

In 1886, the Territorial Legislature appropriated $75,000 for the building of a state penitentiary in Rawlins. In 1901, the state prison, constructed of locally quarried sandstone, began housing prisoners. Male prisoners formerly incarcerated in the Wyoming Territorial Prison in Laramie arrived by train, while women prisoners began arriving in 1902 and serving their sentences in a separate ward. The penitentiary in Rawlins has been a mainstay of the community's economy since. The modern-day Wyoming State Penitentiary opened south of Rawlins in 1980. The prison

includes the North Facility which can hold 780 inmates and the South Facility which opened in 2001 and is used for maximum security. (Van Pelt, 2014)

In 1922-1923, the Producers and Refiners Corporation built Parco, an oil refinery and model company town five miles east of Rawlins, now known as Sinclair. Uranium was discovered in Carbon County in the 1950s and in 1960 underground and open-pit mines began producing ore. (Van Pelt, 2014)

The value of cultural, historical, and paleontological resources is difficult to quantify. However, there is intrinsic value of each resource for its contribution to the shaping of our current civilization, culture and lifestyle. Though hard to measure in the economy, the value brought to the County by its rich history, cultural resources, and subsequent tourism is important.

2.2.2 Resource Assessment and Legal Framework

Carbon County's traditional lifestyle has centered on agricultural pursuits and resource-based industries for generations. Preservation of the remaining historic sites is important to maintain and preserve the cultures of historic and present Carbon County inhabitants. Historic preservation of property enhances economic values and provides the basis for heritage tourism. The County is concerned with protecting these resources that have intrinsic value based on their age, heritage, or other intangible significance. These resources also highlight the unique character of the local setting and may contribute toward attracting businesses and tourism.

Historic and Archeological Resources

Many historical and cultural resources are sensitive and protected by law. There are two acts that primarily protect these historic and archeological resources. The National Historic Preservation Act (NHPA) was passed in 1966 and authorized the Secretary of Interior to maintain and expand a National Register of Historic Places. This act established policy for the protection and preservation of sites (e.g., districts, buildings, structures, and objects) that are placed on the National Register of Historic Places. The Register of Historic Places is managed by the National Park Service. Under NHPA, federal agencies are required to evaluate the effects of actions on any designated 'historic properties' and follow the regulations set by the Advisory Council on Historic Preservation (ACHP) (36 C.F.R. § 800). (National Preservation Institute, 2020)

For listing in the National Register, a property or site must usually be at least 50 years old and have historic significance within one or more of the four criteria for evaluation. The criteria relate to a property's association with important events, people, design or construction, or information potential. The National Register criteria recognize these values embodied in buildings, structures, districts, sites, and objects. The four criteria are as follows:

- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that

represent a significant and distinguishable entity whose components may lack individual distinction; or

- That have yielded or may be likely to yield, information important in prehistory or history. (Wyoming SHPO, n.d.)

The Secretary of the Interior has the ultimate decision-making authority when deciding whether a site is listed in the National Register. However, local governments, including counties, can significantly influence the process. Local governments certified by the State Historic Preservation Officer (SHPO) are entitled to prepare a report stating whether a site nominated in its jurisdiction is, in its opinion, eligible for listing in the National Historic Register (see NHPA Section 101(c).

Perhaps most influential on federal actions, Section 106 of the National Historic Preservation Act (NHPA) grants legal status to historic preservation in federal planning, decision making, and project execution. Section 106 applies when two thresholds are met: 1) there is a federal or federally licensed action, including grants, licenses, and permits; and 2) that action has the potential to affect properties listed in or eligible for listing in the National Register of Historic Places.

Section 106 requires all federal agencies to consider the effects of their actions on historic properties. The responsible federal agency must consult with appropriate state and local officials, Indian tribes, applicants for federal assistance, and members of the public and consider their views and concerns about historic preservation issues when making final project decisions.

Effects are resolved by mutual agreement, usually among the affected state's SHPO or the Tribal Historic Preservation Officer (THPO), the federal agency, and any other involved parties. The ACHP may participate in controversial or precedent-setting situations.

In 2014 the act was amended, and the codified law was moved from Title 16 to Title 54 and retitled the Historic Preservation Act. However, the substance of the act remained the same, so the listing criteria for placement of sites in the National Historic Register and the requirements under Section 106 remain.

Currently Carbon County has 46 sites listed in the National Register (Wyoming SHPO, n.d.). The sites are listed in Table 2 and additional information about the site can found online here[9] (all website links can be found in Appendix A and are denoted in the text with a superscript number).

Table 2. National Register Historic Sites located within Carbon County.

National Register Historic Site	**Site Owner**
Boston-Wyoming Smelter Site	Private
Bridger's Pass	Federal
Brush Creek Work Center	Federal
Butler Bridge	Local
Carbon Cemetery	Private
Como Bluff	State, Federal, Private

Divide Sheep Camp (Niland's Cabins)	Federal
Downtown Rawlins Historic District	Federal, Local, Private
Duck Lake Station Site (Duck Lake Station)	Federal
Elk Mountain Bridge	Local
Elk Mountain Hotel (Mountain View Hotel; John S. Evans Hotel; Grandview Hotel Bridger St.)	Private
Ferris-Haggarty Mine Site	Private
First State Bank of Baggs	Private
Fort Fred Steele	Private
Fort Halleck	Private
Fossil Cabin	Private
France Memorial United Presbyterian Church	Private
Garrett Allen Prehistoric Site	Federal, Private
George Ferris Mansion	Private
Hanna Community Hall	Local
Headquarters Park Historic District	Federal
Hotel Wolf	Private
Hugus (Shively) Hardware	Private
Jack Creek Guard Station	Federal
Jim Baker Cabin	State
JO Ranch Rural Historic Landscape	Private
Medicine Bow Union Pacific Depot	Local
Midway Stage Station Site	Federal
Muddy Creek Archaeological Complex	Private
Parco (Sinclair) Historic District	State, Private
Pick Bridge	Local
Pine Grove Station	Private
Platte River Crossing	State
Rawlins Residential Historic District	Private, Local
Rock Creek Stage Station Historic District (Arlington)	Private
Ryan Ranch	Private
Sage Creek Station Site	Federal
Saratoga Masonic Hall	Private
Site 32 SL-O (Salt Lake-Omaha) Intermediate Field Historic District	Federal
Stockgrowers Bank (Dixon Town Hall)	Local
Stone Wall Ranch	Private
Union Pacific Railroad Depot	Private
Virginian Hotel	Private
Washakie Station	Federal
Willis House	Private
Wyoming State Penitentiary	State

The Archaeological Resources Protection Act (ARPA) of 1979 provides regulations on the management of historic sites on federal land and the issuance of permits to excavate archeological discoveries.

Paleontological Resources

The Paleontological Resource Preservation Act (PRPA) was enacted in 2009, directing multiple federal agencies to establish comprehensive management plans for paleontological resources. PRPA applies to the USFS, BLM, BOR, NPS, and the USFWS. For information concerning each agency's plan regarding paleontological resources refer to their websites below. (Bureau of Land Management, 2016b; National Park Service, 2020)

- Forest Service, fossils and paleontology[10]
- Bureau of Reclamation, fossil resources[11]
- U.S. Fish and Wildlife Service, historic preservation[12]
- Bureau of Land Management, Paleontology[13]
- National Park Service, Fossils and Paleontology[14]

2.2.3 Resource Management Objectives (Cultural Resources):

A. Federal actions affecting cultural, historical, and paleontological resources are made in consultation with the County.
B. Any work toward a proposed new listing for the National Register of Historic Places is coordinated with the County.
C. Locations on the National Register of Historic Places are protected and contribute to the cultural education of the County and the economy.
D. Federal agencies consider a balance between preservation of cultural, historical, and paleontological resources with existing uses and property rights in coordination with the County.
E. Carbon County is the primary source in deciding the cultural importance of sites found within the County.

2.2.4 Priorities (Cultural Resources):

1. State and federal authorities should coordinate with the County and allow the County to participate in identification of sites with significant cultural resources in the County, make such sites known, and evaluate the significance of proposed land use actions and their impact on cultural resources.
2. Federal agencies should work with the County to evaluate the economic and cultural impacts associated with cultural resource identification and protection and weigh one against the other in a cost/benefit context based on the County's unique custom and culture.
3. Support making significant local cultural resources available for research and education and urge the protection of those cultural resources.
4. The County does not support excessive buffer zones around historical and cultural resources. Buffer zones should be determined on a case-by-case basis and shall not exceed one-quarter mile in width in most circumstances.

5. Discourage cultural resource recognition or protections of additional sites or structures on public land that have not played a significant part in creating the cultural, prehistoric, and historic fabric of the community.
6. Support private property rights as paramount for cultural, historical, geological, and paleontological resources thought to be on private lands.
7. Mineral development should be allowed to occur if reasonable and effective stipulations, conditions, and mitigation measures accompany decisions to issue mineral leases, permit drilling, or permit seismic activities in the area and are implemented to protect against damage to cultural and historic resources.
8. Drilling and seismic activities should not be disallowed merely because they are in the immediate vicinity of cultural resources if it is shown that such activities will not damage those resources.
9. Federal agencies should protect cultural, historical, and paleontological resources from theft and vandalism in coordination with the County sheriff.
10. Promote the cooperation between agencies and local governments to improve enforcement against and investigation of acts vandalism in order to deter future damage and vandalism.
11. Federal agencies should continue to share information with local museums and other learning institutions as more cultural, historical, and paleontological information becomes available.
12. The County supports preserving cultural, historic, and paleontological resources according to state and federal laws.
13. The County opposes public land management actions that restrict public access to cultural, historic, and paleontological resources, except as required by law or if restrictions are enforced to protect current uses on public lands.
14. The County favors management that makes cultural, historic, and paleontological resources available for educational purposes that can be enjoyed by the public.
15. The County should be consulted before exporting fossils or other cultural, historical, geological, or paleontological resources found on public lands within the County.

CHAPTER 3: LAND USE

3.1 LAND USE

3.1.1 History, Custom, and Culture

Public lands and the resources on them significantly influence the custom and culture of Carbon County. These lands comprise 53% of the lands within Carbon County and are an important resource to the County both for the livelihoods of its residents and the attraction of those traveling through. Carbon County has many uses on its public lands, from wildlife viewing, livestock grazing, and recreation to oil and gas drilling, mining, and wind energy development.

The relationship between the County and the agencies is key to ensuringresources are managed successfully and Carbon County's custom and culture of using public lands for multiple uses remains intact. The County and agencies have worked together in the past on resource management concerns and issues, and will continue to strengthen and build those relationships to ensure that all stakeholders are at the table when discussing resource management on public lands within Carbon County.

3.1.2 Resource Assessment and Legal Framework

3.1.2.1 Checkerboard Land Ownership

As Figure 2 above shows, much of the land in Carbon County is federally managed. There is a significant amount areas where land ownership is intermingled between two or more owners (often public land and private land) that results in a checkerboard pattern (often called checkerboard lands). Much of the checkerboarding occurred in the West due to railroad land grants in the 1860s and 1870s that granted the railroads every other section along a rail corridor (the railroads were given the odd numbered plots and the federal government kept the even numbered plots). This was the case for Carbon County as the Union Pacific Railroad was built in the northern half of the County through Rawlins. Over time, many of these railroad sections have been sold to other private landowners.

Checkerboard land can pose challenges to access and ecological management, and cause unintended consequences to private, state, and public lands when management decisions are made. This landscape pattern can also lead to landlocked parcels for both public and private lands, as a parcel can be surrounded by other land ownerships. In many cases these checkerboard areas are managed together due to the inability to fence individual parcels. These areas can also be beneficial to private landowners in some cases where it reduces the impact and authority of the federal agencies as these small sections of public lands are often lower priority.

3.1.2.2 Conservation Districts

During the 1930s, the Dust Bowl made the need to conserve natural resources, particularly soil, very clear. The Soil Conservation Act of 1935 created the Soil Conservation Service, now termed the Natural Resource Conservation Service (NRCS), to develop and implement soil erosion control programs. In 1941, the Wyoming State Legislature passed an enabling act, which established conservation districts in Wyoming. Conservation districts were to direct programs protecting

local renewable natural resources. Wyoming now has 34 conservation districts in 23 counties. (WACD, n.d.)

Carbon County encompasses three conservation districts: The Medicine Bow Conservation District (MBCD) in the northeastern third of the County, the Saratoga-Encampment-Rawlins Conservation District (SERCD) spanning the center of the County, and The Little Snake River Conservation District (LSRCD) in the southwestern corner of the County (Little Snake Conservation District, 2015; Medicine Bow Conservation District, 2017; Saratoga-Encampment-Rawlins Conservation District, 2017).

3.1.2.3 Bureau of Land Management

The BLM manages approximately 40% (2 million acres) of the land in Carbon County. This includes most of the unincorporated County. Most of Carbon County is included in the High Desert District Office and includes a field office in Rawlins. The Rawlins Field Office encompasses 3.5 million acres, including all of Carbon County except the very northwest corner which is managed by the Lander Field Office. The Rawlins Resource Management plan was approved in a record of decision signed December 2008. The Lander Field Office portion encompasses approximately 38,406 acres within Carbon County. The Lander Field Office Resource Management Plan was approved in a record of decision signed in June 2014.

The BLM we know today was established in 1946 by combining the General Lands Office (GLO) and the US Grazing Service. In 1812, the GLO, responsible for all public land sales, patents, and entries, was established within Treasury Department to oversee disposition of ceded and acquired lands (Bureau of Land Management, 2016a). In 1934, the Taylor Grazing Act authorized grazing districts, regulation of grazing, and public rangeland improvements in Western states and established the Division of Grazing (later renamed US Grazing Service) within the Department of the Interior.

The Federal Land Policy and Management Act (FLPMA) is the BLM's governing document outlining the management responsibilities of the BLM to balance public access and multiple-uses with the protection and preservation of the quality of the lands and its resources (43 U.S.C. § 1732). FLPMA requires the BLM to administer public lands "on the basis of multiple use and sustained yield" of all resources. (FLPMA, 1976)

3.1.2.4 U.S. Forest Service

In 1876, United States forest management was formalized with the creation of the office of Special Agent within the Department of Agriculture for the purpose of assessing the quality and condition of US forests. In 1881, the Division of Forestry was added to the Department of Agriculture. In 1891, Congress passed the Forest Reserve Act allowing the President to designate western lands as "forest reserves" to be managed by the Department of the Interior. Western communities strongly opposed forest designations because development and use of "reserved lands" were prohibited. In 1897, Congress adopted the Organic Administration Act of 1897 (OAA) to protect the use of forest reserves for local citizens. The OAA declared that forest reserves would be created either to protect water resources for local communities and agriculture, and/or

to provide a continuous supply of timber. Thus, the purposes for which forests were to be used changed from the land being reserved from local communities to the land being used for economic development by local communities.

Responsibility for forest reserves was transferred to the Department of Agriculture with the Transfer Act of 1905 and the establishment of the US Forest Service (USFS). The Multiple-Use Sustained-Yield Act of 1960 (MUSY) requires that forests be managed for various non-timber uses (MUSY of 1960, 1960). This idea was further codified in the National Forest Management Act (NFMA) (16 U.S.C. § 1601(d)).

The USFS manages approximately 12% (626,129 acres) of the total land in Carbon County, all within the Medicine Bow-Routt National Forest (MBRNF). The MBRNF is divided into six ranger districts with only one of these districts in Carbon County, the Brush Creek/Hayden Ranger District Office in Saratoga, Wyoming. The MBRNF headquarters are in Laramie.

NFMA requires that each national forest and grassland be governed by a management plan. The Revised Land and Resource Management Plan (RMP) for the Medicine Bow National Forest was approved in 2003, the Routt National Forest has its own RMP and is in Colorado. Three amendments have been made to the Medicine Bow National Forest RMP and modify specific activities in the 2003 Revised Land and Resource Management Plan. These amendments include the Southern Rockies Lynx Management Direction Amendment (2008), Energy Policy Act (EPAct) of 2005 Section 368 Westside Energy Corridor Amendment, and Site-specific Amendment Travel Management – Eastern Snowy Range EA (2007).

3.1.2.5 Bureau of Reclamation

The Bureau of Reclamation (BOR) manages 1% (41,559 ac) of the land in Carbon County. The BOR manages the Seminoe Dam/Reservoir and the Kortes Dam/Reservoir.

The BOR began as the United States Reclamation Service (USRS) in 1902, as part of the United States Geological Survey (USGS). The USRS was established in accordance with the Reclamation Act to manage US water resources. In 1907, the USRS was separated from the USGS and designated as a separate agency within the Department of the Interior, the BOR (Bureau of Reclamation, 2018). The BOR is responsible for oversight and operation of irrigation, water supply, water storage, and hydroelectric power plant generation. The BOR was created to manage water projects and promote homesteading and economic development in the West. The mission of the BOR is “to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.” (Bureau of Reclamation - About Us, 2019)

3.1.2.6 U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) manages <1% (2,223 ac) of the land in Carbon County. Most of this land is associated with the Pathfinder Wildlife Refuge. The Pathfinder National Wildlife Refuge was established in 1909 and is comprised of 16,806 acres. Most of the refuge is in Natrona County but a few small segments lie within Carbon County. (USFWS, 2017) The

Saratoga National Fish Hatchery is located near atSaratoga, Wyoming and is also managed by the USFWS.

The USFWS is the oldest federal conservation agency in the U.S., with establishment in 1871. The USFWS is housed under the Department of the Interior (DOI) and helps ensure a healthy environment for people by providing opportunities to enjoy the outdoors and our shared natural heritage. They are the only federal agency whose primary responsibility is the management of fish and wildlife for the public. In 1940, a reorganization plan in the DOI consolidated the Bureau of Fisheries and the Bureau of Biological Survey into the USFWS. (USFWS, 2020a)

3.1.2.7 National Park Service

The NPS manages <1% (1,617 acres) of the land in Carbon County within the Como Bluff National Natural Landmark (NNL). The NPS was created in 1916 within the U.S. Department of the Interior, ten years after the first national monument was established. The NPS is governed by the National Park Service Organic Act, which delegated the roles of preserving the ecological and historical integrity of the land entrusted to their management while retaining public access and enjoyment of those lands to the NPS. Most lands under NPS control are designated as National Parks or Monuments by Congress, however in Carbon County the NPS manages the NNL. The NNL Program recognizes and encourages the conservation of sites that contain outstanding biological and geological resources. Como Bluff was designated a NNL in 1966 for its significant number of dinosaur fossils.

3.1.3 Resource Management Objectives (Land Use):

A. The basis for management of all public lands is multiple-use management and the management limitations identified in the land management agencies Resource Management Plan or Land Use Plan.
B. Impacts to state and private lands within Carbon County are minimized by considering the direct and indirect effects on private and state lands on a region wide basis rather than just federal lands.
C. Projects in mixed land ownership areas are coordinated and rely heavily on the input from neighboring private landowners.
D. Effective reclamation plans that protect existing uses is a primary requisite when approving projects in mixed land ownership projects.

3.1.4 Priorities (Land Use):

1. Federal agencies should conduct any National Environmental Policy Act analysis using multiple-use principles that take into consideration all the resources such as, but not limited to, agriculture, air, energy, mineral extraction, range, recreation, socioeconomics, timber, tourism, wildlife, and water.
2. The County shall be notified and allowed to participate as a cooperating agency on National Environmental Policy Act projects that may influence the economic stability of the County and its residents.

3. Federal agencies should support decisions that ensure the socioeconomic wellbeing of County citizens, maintain the culture and customs of the constituents, and consider natural resource health.
4. Federal agencies should consider the affects their decisions will make to neighboring private and state lands.
5. When an agency decision or proposed alternative will have a negative impact to the current use of neighboring lands, that proposed decision or alternative is not supported by Carbon County.
6. Federal agencies should coordinate with and accommodate reclamation needs of neighboring landowners whenever a project will affect neighboring lands.
7. Federal agencies should give regular (where regular is defined as not less than quarterly) updates on the permit status for current and proposed projects within Carbon County's jurisdiction and support reasonable timelines and explanations for issuance of delays from permitting agencies.

3.2 TRANSPORTATION AND LAND ACCESS

3.2.1 History, Custom, and Culture

The County itself relies on access to federal lands to fulfill its statutory mandate to protect the health, safety, and general welfare of the people within its jurisdiction. This includes, but is not limited to, fire protection, search and rescue, flood control, law enforcement, economic development, and the maintenance of County improvements.

Interstate 80 (I-80) runs east-west through the county. State Highway 287 runs from the northwest corner of the CC in a southerly direction turning east and south at Rawlins. Secondary Highway 789 runs south across the western portion of the County through Baggs and into Colorado. Wyoming Highway 130 (Snowy Range Road) runs 98.5-miles west from Laramie across the plains and rises over the Medicine Bow Mountains before turning north through the town of Saratoga and ending at I-80. Wyoming Highway 230 runs from 8 miles south of Saratoga south to Wyoming Highway 70 in Riverside where it turns east and continues to Laramie. Wyoming Highway 70 (Battle Pass) is 57.6 miles long and runs from Riverside west to Baggs over Battle Pass. Wyoming Highway 220 runs 73 miles from Muddy Gap to Casper. Wyoming Highway 487 is 71.6 miles long and runs from Medicine Bow to Casper. The Union Pacific has railroad track paralleling I-80 from Rock Springs through Rawlins and east to Walcott. The mainline then leaves the Interstate corridor and follows Highway 30/287 east through Hanna and Medicine Bow.

These Interstates, highways, county roads, and railroads all allow products and services to move throughout the county, state, and nation. Tourists travel through the County on the interstate and state highways to various destinations including Yellowstone National Park an d to get across the State. There is also a significant amount of oil and gas traffic utilizing these corridors to convey production from across the County. Agricultural products are also heavily transported across the County and state using the network of roads. County roads are extremely important for moving agricultural products and industrial products for the mining and oil/gas industries.

It is vital to the sustainability of the livestock industry in Carbon County that grazing areas, and the stock trails that connect them, be open and accessible. Livestock "trailed" from one grazing area to another must access the grazing areas on either end of that process, as well as lands in between. Historical use of stock trails and grazing areas has fluctuated over the years, depending on market prices, and weather conditions, but the need for access availability has remained constant.

3.2.2 Resource Assessment and Legal Framework

Congress, as the constitutional manager of federal lands, has made it clear through natural resource statutes that the public must have use of and access to federal lands. It is vital to the County's interests and performance of duties that full and complete access to the federal lands continue.

The BLM and USFS both have specific provisions they must follow when considering the closure of roads and trails. A requirement of these provisions is that such activity be conducted in coordination with the County prior to such action being taken (43 CFR subpart 8364; 36 CFR part 212). Road closures have occurred in the County by both federal and state agencies without prior coordination, despite requirement by federal law for coordination prior to a final decision. This has caused economic harm and impacted citizen and visitor enjoyment of the County's natural resources.

It is understood that the federal definition of "roadless" means there are no road improvements present. An "improved road" is not limited to mechanically improved but includes roads made passable by regular use. The term "maintained road" is not limited to roads that are maintained annually. Rather, it refers to roads that are maintained as needed to continue their use.

The Taylor Grazing Act provides for the establishment, maintenance, and use of stock driveways within established grazing districts. 43 U.S.C. § 5315. The National Trails Systems Act defines the standards and methods by which additional trails may be added to the system including scenic, historic, and recreational trails. NEPA requires federal projects and land use decisions, including opening and closing of roads, to go through an environmental review process. The Wilderness Act of 1964 prohibits motor vehicles in wilderness areas except in emergency situations or when there is a possible management need.

The Land and Water Conservation Fund (LWCF) Act of 1964 was permanently reauthorized in March 2019 and "…supports the protection of federal public lands and waters – including national parks, forests, wildlife refuges, and recreation areas – and voluntary conservation on private land. LWCF investments secure public access, improve recreational opportunities, and preserve ecosystem benefits for local communities." The Great American Outdoors Act, signed in August of 2020, secured permanent funding for the LWCF. (Department of the Interior, 2020; US Department of the Interior, 2015)

Through the Fixing America's Surface Transportation (FAST) Act, the Recreational Trails Program (RTP) was reauthorized and "provides funds to the States to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses"

(Office of Federal Lands Highway, 2018). The LWCF and RTP can be reliable sources for funding through grants and loans.

There are a variety of road types that occur on public lands. The following are definitions from the BLM on different classifications of roads:

- Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.
- Primitive Road: A linear route managed for use by four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standards.
- Trail: A linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.
- Designated Roads and Trails: Specific roads and trails identified by the BLM (or other agencies) where some type of motorized vehicle use is appropriate and allowed either seasonally or yearlong. (BLM, 2006)
- Temporary routes (roads): Short-term overland roads, primitive roads, or trails authorized or acquired for the development, construction, or staging of a project or event that has a finite lifespan (definition from BLM Instruction Memorandum 2007-176[15]).
- Logging road: Any new or existing road that is mechanically shaped where the road will be specifically used to facilitate the management or harvesting of timber. (USFS, 2000)

Federal Highway Administration

The Federal Highway Administration (FHWA) is an agency within the US Department of Transportation and was created in 1966.

> *The mission of FHWA is to enable and empower the strengthening of a world-class highway system that promotes safety, mobility, and economic growth, while enhancing the quality of life of all Americans.* (Office of Federal Lands Highway, 2018)

Under this mission, the FHWA provides resources to municipalities across the nation and in the form of indirect and direct methods. Indirectly, the FHWA provides valuable research and design guidance on numerous topics to push the industry towards a safer, efficient, and holistic network. Directly, the FHWA provides grants to the local Department of Transportation divisions to facilitate project design and construction based upon merit. These grants are distributed through the Federal Highway-Aid Program.

Alongside the FHWA, numerous programs were created under the Federal Lands Highway Division to specifically service certain groups and were reauthorized under the FAST Act (established 2015). These programs are:

- Federal Lands Access Program (FLAP) (established 2011): “established in 23 U.S.C. 204 to improve transportation facilities that provide access to, are adjacent to, or are located within, Federal lands. The Access Program supplements State and local resources for

public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators" (Office of Federal Lands Highway, 2018).

- Federal Lands Transportation Program (FLTP) (established 2011): "established in 23 U.S.C. 203 to improve the transportation infrastructure owned and maintained by federal land management agencies including NPS, USFWS, USFS, BLM, US Army Corps of Engineers (USACE), BOR, and independent federal agencies with land and natural resource management responsibilities"(Office of Federal Lands Highway, 2018).
- Nationally Significant Federal Lands and Tribal Projects Program (NSFLTP) (established 2015): "…provides funding for the construction, reconstruction, and rehabilitation of nationally significant projects within, adjacent to, or accessing Federal and tribal lands. This program provides an opportunity to address significant challenges across the nation for transportation facilities that serve Federal and tribal lands" (Office of Federal Lands Highway, 2018).
- Emergency Relief for Federally Owned Roads (ERFO) (established 2015): "established to assist federal agencies with the repair or reconstruction of tribal transportation facilities, federal lands transportation facilities, and other federally owned roads that are open to public travel, which are found to have suffered serious damage by a natural disaster over a wide area or by a catastrophic failure" (Office of Federal Lands Highway, 2018).

The Wyoming Department of Transportation (WYDOT) can work directly with any of the above programs to help secure funding and has done so annually. Through the FLAP program alone, Wyoming has secured $73.3 million spread across 16 projects from 2013 to 2022.

Bureau of Land Management

BLM land is enjoyed by the public for numerous recreational activities. The BLM must follow various federal laws regarding the management of transportation and travel on public lands including provisions in FLPMA. The National Trails Systems Act defines the standards and methods by which additional trails may be added to the system including scenic, historic, and recreational trails. The BLM is required to coordinate inventory, planning, and management activities with the County. (43 U.S.C. § 1712) (FLPMA, 1976)

United States Forest Service

According to the Multiple-Use Sustained-Yield (MUSY) Act of 1960, USFS lands in the County are to be managed for multiple-use and sustained-yield uses including, but not limited to, agriculture (farming, irrigation, and livestock grazing); recreation (motorized and non-motorized transport and activities such as hunting, fishing, water and land sports, hiking); industry (mining, power production, oil and gas production/exploration, and timbering); intangible values (historical and cultural sites, access to open space, aesthetic values, and conservation); and weed, pest, and predator control. (16 U.S.C. § 529529)

The USFS is directed to coordinate the preparation of Travel Management Plans with the County (36 C.F.R. § 212).

The responsible official shall coordinate with appropriate Federal, State, county, and other local governmental entities and tribal governments when designating National Forest System roads, National Forest System trails, and areas on National Forest System lands pursuant to this subpart. (36 C.F.R. § 212.53)

Designations of National Forest System roads, National Forest System trails, and areas on National Forest System lands pursuant to §212.51 may be revised as needed to meet changing conditions. Revisions of designations shall be made in accordance with the requirements for public involvement in §212.52, the requirements for coordination with governmental entities in §212.53, and the criteria in §212.55. (36 C.F.R. §212.54)

United States Fish and Wildlife Service

The USFWS and the FHWA work together through the FLTP to improve public access to wildlife refuges and waterfowl production areas. The USFWS Transportation Program's goals are to protect wildlife, enhance man's role in his environment, and to provide visitors with high quality, safe recreational experiences oriented toward wildlife. (USFWS, 2017)

The USFWS has produced both National Long-Range Transportation Plans (LRTPs) and Regional LRTPs including roadway design guidelines and other guidelines when developing infrastructure through conservation lands (US Fish and Wildlife Service, 2018).

Revised Statute 2477

Revised statute 2477 (R.S. 2477) provided that "the right of way for the construction of highways over public lands, not reserved for public uses, is hereby granted." The Act of July 26, 1866, § 8, ch. 262, 14 STAT. 251, 253 (1866) (formerly codified at 43 U.S.C. § 932). Congress enacted a grant of rights-of-way over unreserved public lands for the construction of highways. The grant was originally section 8 of the Mining Act of 1866, which became section 2477 of the Revised Statutes; hence the grant is commonly referred to as R.S. 2477.

The grant is self-executing and an R.S. 2477 right-of-way comes into existence "automatically" when the requisite elements are met. *See*, *Shultz v. Dep't of Army*, 10 F.3d 649, 655 (9th Cir. 1993). One hundred and ten years after its enactment, R.S. 2477 was repealed with the passage of the Federal Land Policy and Management Act of 1976 ("FLPMA"), 43 U.S.C. § 1701 et seq. *See*, 43 U.S.C. § 932, repealed by Pub. L. No. 94-579, § 706(a), 90 STAT. 2743, 2793 (1976). Even though FLPMA repealed R.S. 2477, FLPMA explicitly preserved any rights-of-way that existed before October 21, 1976, the date of FLPMA's enactment. *See*, 43 U.S.C. § 1769(a) (stating that nothing "in this subchapter shall have the effect of terminating any right-of-way or right-of-use heretofore issued, granted, or permitted."); *see also*, 43 U.S.C. § 1701, Savings Provision (a) and (h). Therefore, R.S. 2477 rights-of-way which were perfected prior to October 21, 1976 are valid even after the repeal of R.S. 2477.

The courts have clearly established that the states have the proprietary jurisdiction over rights-of-way within their state. *Colorado v.* Toll, 268 US 228, 231 (1925). This jurisdiction and control over rights-of-way through public lands must be actively ceded by the state (or counties as arms

of the state) to the federal government or curtailed by Congress. *US v. Garfield County*, 122 F. Supp.2d 1201, 1235 (D. Utah 2000) *citing Kleppe v. New Mexico*, 426 US 529, 541-46 (1976). Congress has yet to overturn R.S. 2477 or wrest control over the determination of what is a valid R.S. 2477 right-of-way. Thus, the question of whether an R.S. 2477 is established and the scope of the right-of-way is a matter of state law. *See U.S. v. Garfield County*, 122 F.Supp.2d at 1255; *Sierra Club v. Hodel*, 848 F.2d 1068, 1080 (10th Cir. 1988).

The repeal of R.S. 2477 "froze" the scope of the R.S. 2477 right-of-way. Thus, the scope of the R.S. 2477 right-of-way is limited by the established usage of the route as of the date the repeal of the statute. *Southern Utah Wilderness Alliance v. Bureau of Land Management*, 425 F.3d 735, 746 (10th Cir. 2005, as amended 2006). In relation to the roads at issue here, this scope would be access to, and between private land sections.

Coordination between the government agency and the holder of the R.S. 2477 right-of-way is a necessity. The courts have clearly stated that both the holder of the dominant and servient estate must exercise their rights to not interfere with the other. *SUWA*, 425 F.3d at 746 *citing* Hodel, 848 F.2d at 1083. Thus, there must be a system of coordination between the federal agency and the holder of the R.S. 2477 right-of-way whenever there may be an action that may affect the rights or use of the other. *Id*. Further, the courts have also clearly demarcated that use of an R.S. 2477 right-of-way is a question of scope on a case-by-case basis, considering state law, that will allow for the use that is reasonable and necessary for the type of use to which the road has been put until 1976. *Id*. This, however, does not mean that the road had to be maintained in precisely the same condition it was in on October 21, 1976; rather, it could be improved "as necessary to meet the exigencies of increased travel," so long as this was done "in the light of traditional uses to which the right-of-way was put" as of repeal of the statute in 1976. *Hodel*, 848 F.2d at 1083.

As discussed earlier, an R.S. 2477 grant is self-executing, and the right-of-way comes into existence "automatically" when the requisite state law elements are met. *See*, *Shultz v. Dep't of Army*, 10 F.3d 649, 655 (9th Cir. 1993). Thus, adjudication of R.S. 2477 rights is not a prerequisite to their existence unless the agency contests the existence of the grant. In cases where the federal agency contests the existence of an R.S. 2477 right-of-way, a claim against the United States would need to be made under the Quiet Title Act (28 U.S.C.A. § 2409a). The Quiet Title Act provides that the United States may be named as a party defendant in a civil action to adjudicate a disputed title to real property in which the United States claims an interest, other than a security interest or water right. 28 U.S.C.A. § 2409a(a). In such an action, a plaintiff must demonstrate with particularity the nature of the right, title, or interest which the plaintiff claims in the real property, the circumstances under which it was acquired, and the right, title, or interest claimed by the United States. 28 U.S.C.A. § 2409a(d).

3.2.3 Resource Management Objectives (Transportation):

A. Full and open access to Carbon County federal lands for purposes such as safety, health, and welfare of Carbon County is maintained and expanded where possible.

B. Roads are maintained and expanded for economic uses, such as agriculture, mining/oil and gas industries, energy industries, communication infrastructure, and recreation where possible.
C. Current and future designated motorized and non-motorized access to public lands is maintained.
D. Transportation corridors (Interstate80, state highways, and county roads) are maintained to ensure efficient movement of products (agricultural, industrial, other supplies) across the County, State, and Nation.
E. Federal agencies coordinate with Carbon County to maintain the safety and availability of public roads within their jurisdiction.
F. All federal agencies' travel management planning efforts are coordinated with the County.

3.2.4 Priorities (Transportation):

1. The County supports a designation of all currently used trails, rights of ways, and roads as open.
2. No road, trail, or R.S. 2477 right of way shall be permanently closed unless public safety or health demands its closing and the proper analysis, disclosure, and procedure, in consultation with the County, is completed prior to closure.
3. The County should be notified in advance of any planning process or activity that has the potential to restrict or eliminate access from federal to state or private lands and allow the County to initiate coordination and cooperation to resolve any potential conflicts with the County's objectives, principles, and policies, prior to acting.
4. Federal agencies should work with the County to reopen roads and trails that were closed by an agency without specific coordination with the County. It is expected that federal/state agencies will reopen access routes that restrict the County's ability to perform its duties or conflict with County policy. If access routes in conflict with County policy are not reopened by federal/state agencies, said agency should provide a written explanation within 60 days for why County policy is not being followed.
5. Historic stock trails should be designated in all applicable planning documents as valid access routes for the purpose of trailing livestock between grazing areas.
6. All formally established public roads and rights-of-ways should be considered valid transportation routes unless formally decommissioned, even if not presently maintained.
7. The County considers any permanent or long-term (greater than one year) road closure a major federal action affecting the human environment. Thus, a road on federal lands may not be permanently closed until a full NEPA analysis has been completed, including public review and coordination with the County. Should the federal agency believe that a road closure falls under a categorical exemption/exclusion (CE/CX), the County shall be consulted before completing the CE/CX.
8. The County should be notified of any temporary road closures.
9. The County considers all stock trails to be R.S. 2477 roads and these roads cannot be abandoned unless abandonment is explicitly established by the County.
10. The County supports converting old logging roads to recreational use.

11. Federal land managers should properly and proactively manage landslides near roads to prevent/minimize new movement, especially where landslides could disrupt public transportation or threaten public safety.
12. Access to forest products via logging roads should be ongoing and access to these sites should be through an open roads and cross-country travel system.

3.3 SPECIAL DESIGNATION AND MANAGEMENT AREAS

3.3.1 History, Custom, and Culture

Most federal land use plans will contain one or more special designations that say the land will be managed with a particular focus to provide for public recreation or to conserve some significant resource. Special designation and management areas within Carbon County include Areas of Critical Environmental Concern (ACEC), Wilderness Study Areas (WSA), Wilderness Areas, Lands with Wilderness Characteristics (LWCs), Special Recreation Management Areas (SRMAs), Extensive Recreation Management Areas (ERMAs), Inventoried Roadless Areas (IRA), National Natural Landscapes (NNL), Research Natural Areas (RNAs), Wild and Scenic Rivers, and National Scenic and Historic Trails and Byways. Special designations may compete with the natural resource-based businesses that are important to the County's economy, like grazing and mining.

3.3.2 Resource Assessment and Legal Framework

Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACEC) are BLM-managed areas "where special management attention is needed to protect important historical, cultural, and scenic values, or fish and wildlife or other natural resources (BLM, 2016b). An ACEC may also be designated to protect human life and safety from natural hazards (BLM, 2016b). ACEC designations must go through the NEPA land use planning process. An ACEC designation may be revisited through subsequent land use planning, revision, or amendment. Figure 3 displays the ACECs within Carbon County.

Sand Hills/JO Ranch ACEC

The JO Ranch Rural Historic Landscape is part of the Sand Hills ACEC and is approximately 11,980 acres. The JO Ranch served as a sheep ranching operation from its establishment in 1885 into the 1990s. The ranch is listed in the National Register of Historic Places. (BLM, 2016e)

Blowout Penstemon ACEC

The Blowout Penstemon ACEC is approximately 29,150 acres. The management goal for this ACEC is to manage the endangered blowout penstemon (*Penstemon heydenii*) plant and its habitat. The blowout penstemon was discovered in Wyoming in 1996 by Frank Blomquist of the BLM Rawlins Field Office but identify of the species was not confirmed until 1999. Before this the species was only thought to be endemic to Nebraska. Blowout penstemon was listed as endangered under the ESA in 1987. (BLM, 2013)

Allowable actions within the ACEC may be restricted for more intensive management of blowout penstemon and its habitat under the Rawlins RMP. The ACEC is open to locatable mineral entry and closed to mineral material disposals. Motorized vehicle use is limited to designated roads and vehicle routes and surface disturbing activities are intensively managed in areas that contain habitat for the blowout penstemon in order to maintain and/or enhance habitat for the plant. (BLM, 2008)

The BLM intends for livestock grazing to continue in this area but a variety of conservation measures have been designed to minimize impacts to plants. These measures include: (BLM, 2013)

a. Requiring surveys for this plant or assuming species-presence, and implementing applicable conservation measures, including potentially the modification of operational plans, protection requirements related to seasonal use or occupancy restriction, facility design, etc.
b. Restoring, maintaining , or improving plant communities in grazing allotment to assist in the recovery of federal threatened and endangered species or the conservation of federally listed species of concern, and other state-designated special status species.
c. Placing mineral supplements, or new water sources (permanent or temporary), for livestock, wild horses, or wildlife at least 1.0 mile from known blowout penstemon populations.
d. Ensuring that straw or other livestock feed must be certified weed-free.
e. Not altering livestock grazing permits/leases in any allotment with pastures containing blowout penstemon populations, without coordinating adjustments with the USFWS.
f. Prohibiting biological control of noxious and invasive plant species in blowout penstemon habitat until the impact of the control agent has been fully evaluated.
g. Prohibiting herbicide treatment within 0.5 miles of occupied blowout penstemon habitat.
h. Prohibiting aerial insecticide treatments of malathion or carbaryl within 3.0 miles of occupied habitat.
i. Only using carbaryl bran bait or diflubenzuron Reduced Agent Area Treatments within 3.0 miles of occupied habitat.
j. Not applying carbaryl brain bait within 0.25 miles of occupied blowout penstemon habitat.
k. Not authorizing revegetation projects in known or potential blowout penstemon habitats without coordination with the USFWS.
l. Limiting the use of off-highway vehicles (OHVs) (with certain allowed exceptions for emergency situations, access to existing rights-of-ways, and maintenance of livestock fences) to designated roads and trails within 1.0 miles of known blowout penstemon populations.
m. Reclaiming existing roads near blowout penstemon populations that are not required for operations or maintenance or lead to abandoned projects.
n. Prohibiting BLM-authorized surface disturbing activities within 0.25 mile of known blowout penstemon populations.
o. Providing educational materials to authorized permittees in blowout penstemon habitat.

Additional information on the Blowout Penstemon ACEC can be found in the 2013 Blowout Penstemon Biological Opinion.[16]

Cave Creek Cave ACEC

The Cave Creek Cave ACEC is located on public land in the Shirley Mountains and covers approximately 240 acres. The principal vegetation type within the ACEC is limber pine with scattered stands of aspen and lodgepole pine. Cave Creek flows through the ACEC. Cave Creek Cave is used by recreational cavers, members of various cave grotto clubs, and students from the University of Wyoming as part of spelunking classes. However, other types of recreation also occur within the ACEC. The ACEC area is open to oil and gas leasing. (BLM, 2011)

Wilderness Areas and Wilderness Study Areas

The Wilderness Act of 1964 established the National Wilderness Preservation System to be managed by the USFS, NPS, and the USFWS. The passage of FLPMA in 1976 added the BLM as a wilderness management authority to the Wilderness Act. Wilderness Study Areas (WSAs) are places that have wilderness characteristics; (i.e.: untrammeled, natural, undeveloped, and outstanding opportunities for solitude or a primitive and unconfined type of recreation) which make them eligible for future designation as wilderness (BLM, 2016c). Wilderness areas and WSAs must have "wilderness character", which is described with four qualities:

1) The area must be untrammeled by man. Untrammeled refers to wilderness as an area unhindered and free from modern human control and manipulation. Human activities or actions on these lands impairs this quality.
2) The area must be natural. The area should be protected and managed to preserve its natural conditions and should be as free as possible from the effects of modern civilization. If any ecosystem processes were managed by humans, they must be allowed to return to their natural condition.
3) The area must be undeveloped. No human structures or installations, no motor vehicles or mechanical transport, or any other item that increases man's ability to occupy the environment can be present.
4) The area must offer solitude or primitive and unconfined recreation. People should be able to experience natural sights and sounds, remote and secluded places, and the physical and emotional challenges of self-discovery and self-reliance.

WSAs are established three different ways: they are identified by the wilderness review as required by Section 603 of FLPMA; they are identified during the land use planning process under Section 202 of FLPMA; or they are established by Congress. Wilderness areas are only designated by Congress.

Section 603(c) of the FLMPA requires that WSAs are managed so as not to impair their suitability for preservation as wilderness and strives to retain their primeval character and influence, without permanent improvements or human habitation (BLM, 2016c). However, the FLPMA also requires that mining, livestock grazing, and mineral leasing (e.g., grandfathered uses) continue in the manner and degree as they were being conducted in 1976. Therefore, to the extent that grazing was allowed in the wilderness prior to 1976, its use, specifically including allowing the

same number of livestock as existed in 1976, should be continued. Grandfathered uses are protected and must be maintained in the same manner and degree as they were being conducted on October 21, 1976, even if they impair wilderness characteristics according to *Rocky Mountain Oil and Gas Association v. Watt,* 696 F.2d 734, 749 (10th Cir. 1982). This requirement includes the authority to develop livestock related improvements. (*Utah v. Andrus*, 486 F. Supp. 995 [D. Utah 1979])

BLM Managed Wilderness Study Areas

Carbon County participated in the Wyoming Public Lands Initiative (WPLI) from 2017 – 2018. The WPLI was a voluntary, collaborative, county-led process that intended to result in one, multi-county legislative lands package broadly supported by public lands stakeholders in Wyoming. The ultimate goal of WPLI is a new federal law that governs the designation and management of Wyoming's WSAs and, where possible, addresses and pursues other public land management issues and opportunities affecting Wyoming's landscapes (WPLI, n.d.). Carbon County formed a WPLI Advisory Committee that provided recommendations for designation and management to the Carbon County Board of County Commissioners. Figure 3 shows the WSAs within Carbon County. It is important to note that a management or status change of these WSAs cannot change until Congress acts. The bill has been drafted but these areas will remain as their designated status until Congress takes action.

Bennett Mountain WSA

Bennett Mountain WSA encompasses 6,003 acres of BLM-administered land near Rawlins. This WSA is characterized by steep rock ledges and walls with several drainages. The WSA is predominately natural, with few human footprints. Motorized travel is strictly prohibited along with mineral entry. (BLM, 2017a)

The Carbon County WPLI Advisory Committee's recommendations were to designate to a special management area with the following management prescriptions:

- Permit motorized and mechanized vehicles only on roads and trails designated for motorized and mechanized vehicles, except as needed for administrative purposes and to respond to an emergency, or to develop/maintain grazing infrastructure.
- Prohibit construction of permanent or temporary roads except in response to an emergency (fires). Temporary roads must be reclaimed to Wyoming BLM policy.
- Continue existing grazing in accordance with applicable law following the Federal Land Policy Management Act of 1976 (FLPMA), the Public Rangelands Act of 1978, Taylor Grazing Act of 1934.
- Prohibit commercial timber harvest.
- Prohibit oil and gas, geothermal, coal, and other mineral leasing and new locatable mineral entry under the 1872 Mining Law as amended. Honor all existing valid mining claims.
- Maintain existing fire management.

Encampment River Canyon WSA

Encampment River Canyon WSA encompasses 4,547 acres of BLM-administered land near Encampment. The WSA is characterized by deep canyons and high rocky ridges. Of special mention are the sites contained within the Encampment River Canyon that are associated with early exploration and mining activities of regional historical importance. The Encampment River Trail parallels the WSA and provides access to the entire length of the river. The trail and entire WSA are closed to mechanized travel and the WSA is also closed to mineral entry. (BLM, 2017b)

The Carbon County WPLI Advisory Committee's recommendations were to designate the Encampment River Canyon Wilderness, except for 3.9 acres on the Encampment River that was recommended for removal from wilderness due to an irrigation ditch and ditch rights. The Committees also recommended to designate the Encampment River corridor as Wild and Scenic from the Colorado state line to the Odd Fellows Camp with the following management prescriptions:

- Manage area within existing WSA according to the Wilderness Act.
- Grazing shall continue according to Congressional Grazing Guidelines as set forth in BLM Manual 6340 – Management of BLM Wilderness, which states that "Where grazing of livestock has been authorized by a grazing permit or grazing lease for land within a wilderness, and the use was established before Congress established the wilderness areas, under Section 4(d)(4)(2) of the [Wilderness] Act it "shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the [administering agency]."
- Fire management and fuels treatment will be conducted as set forth in BLM Manual 6340 – Management of BLM Wilderness. In addition, there will be established a standing wildfire management plan that provides a quick response should any structures or property, including those at Odd Fellows Camp, adjacent ranches, or the towns of Encampment and Riverside be threatened by wildfire.
- The Encampment River corridor from the Colorado State line north to the Odd Fellows Camp shall be managed according to the Wild and Scenic Rivers Act of 1968 as set forth in BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management.

Ferris Mountain WSA

Ferris Mountain WSA encompasses 22,245 acres of BLM-administered land and one private inholding of 160 acres. Ferris Peak is the highest point in the Great Divide Basin at 10,037 feet and rises some 3,000 feet from the valley floor. Motorized travel is strictly prohibited along with mineral entry. (BLM, 2017c)

The Carbon County WPLI Advisory Committee did not provide recommendations for the Ferris Mountain WSA.

Prospect Mountain WSA

Prospect Mountain WSA encompasses 1,145 acres of BLM-administered land. The USFS's Platte River Wilderness forms the eastern boundary of the WSA. The North Platte River runs adjacent to the WSA. The WSA is closed to mineral entry and motorized travel is prohibited. (BLM, 2017d)

The Carbon County WPLI Advisory Committee's recommendations were to designate as wilderness within the existing WSA boundary with the following management prescriptions:

- Manage area within existing WSA according to the Wilderness Act.
- Provide 100 ft. buffer from the center line of Prospect Road for maintenance.
- Grazing shall continue according to Congressional Grazing Guidelines as set forth in BLM Manual 6340 – Management of BLM Wilderness, which states that "Where grazing of livestock has been authorized by a grazing permit or grazing lease for land within a wilderness, and the use was established before Congress established the wilderness areas, under Section 4(d)(4)(2) of the [Wilderness] Act it "shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the [administering agency]."
- Fire management and fuel treatment will be conducted as set forth in BLM Manual 6340 – Management of BLM Wilderness.

Medicine Bow-Routt National Forest Managed Wilderness Areas

Huston Park Wilderness

The Huston Park Wilderness is located on the Brush Creek/Hayden Ranger District. The Wilderness Area was designated in 1984 and has a total of 30,588 acres. The terrain of the area rises to an elevation of 10,500 feet and contains alpine bogs, spruce-fir, lodgepole pine, and aspen forests. (USFS, 2020d)

Encampment River Wilderness

The Encampment River Wilderness is located on the Brush Creek/Hayden Ranger District. The Wilderness Area was designated in 1984 with 10,124 acres and is the smallest wilderness area in Wyoming. The Encampment River flows through a narrow rugged canyon and varies from narrow, rushing rapids to calm, smooth stretches. (USFS, 2020c)

Savage Run Wilderness

The Savage Run Wilderness is located on the Laramie Ranger District. The Wilderness Area was designated in 1978 and has a total of 14,927 acres. Steep-sided canyons are located at low-elevations while rolling, plateau-like terrain can be found at higher elevations. The Savage Run Trail traverses the wilderness along Savage Run Creek. (USFS, 2020g)

Platte River Wilderness

The Platte River Wilderness mainly lies within the Medicine Bow National Forest but also includes a small portion within the Routt National Forest in Colorado. The area is in the Brush Creek/Hayden, Laramie, and Parks Ranger Districts. The Platte River Wilderness was designated

in 1984 and has a total of 23,492 acres (22,749 acres in Wyoming and 743 acres in Colorado). (USFS, 2020f)

Lands with Wilderness Characteristics

Section 201 of FLPMA requires the BLM to maintain, on a continuing basis, an inventory of all public lands and their resources and other values, which includes wilderness characteristics. It also provides that the preparation and maintenance of the inventory shall not, of itself, change or prevent change of the management or use of public lands. It does not address or affect policy related to Congressionally designated Wilderness or existing Wilderness Study Areas.

The BLM uses the land use planning process to determine how to manage lands with wilderness characteristics (LWCs) as part of the BLM's multiple-use mandate. The BLM will analyze the effects of:

- Plan alternatives on lands with wilderness characteristics, and
- Management of lands with wilderness characteristics on other resources and resource uses.

There are no designated LWCs within Carbon County. In the 2008 Rawlins BLM RMP the BLM elected to manage LWCs for multiple use and not for protection of wilderness character. This decision was due to the lands being unmanageable for wilderness character because of preexisting oil and gas leases. (BLM, 2008)

National Natural Landmarks

The National Natural Landmarks (NNL) Program recognizes and encourages the conservation of sites that contain outstanding biological and geological resources. Sites are designated by the Secretary of the Interior for their condition, illustrative character, rarity, diversity, and value to science and education. The National Park Service administers the program and works cooperatively with landowners, managers, and partners to promote conservation and appreciation of our nation's natural heritage.

Como Bluff NNL

The Como Bluff NNL is located in Carbon and Albany counties (NPS, n.d.-a). Como Bluff NNL was designated in 1966 and encompasses 1,617 acres. Como Bluff is one of the most significant Mesozoic vertebrate localities in the world. The first and best examples of Jurassic mammals, including the discovery of 80 new vertebrate species were found at this site. (NPS, n.d.-a)

Inventoried Roadless Areas

Inventoried Roadless Areas (IRA) are portions of National Forest that were identified in the USFS 2001 Roadless Area Conservation Final Environmental Impact Statement as lands without roads that are worthy of protection. Construction and reconstruction of roads is prohibited in roadless areas unless the USFS determines the road is necessary to protect public health and safety or otherwise meets one of the exceptions listed in the rule. These lands are to be periodically evaluated for potential designation as wilderness based on the availability, capability, and need for these areas to be designated as such. Characteristics of roadless areas include things such as

natural landscapes, high scenic quality, and traditional cultural properties. To help preserve the characteristics of IRAs, logging is greatly restricted.

IRAs exist in the Platte River Wilderness, Huston Park Wilderness, and the Encampment River Wilderness. There are over 800,000 acres of IRAs on the MBNF. A map of these areas can be found here.[17]

Research Natural Areas

Research Natural Areas (RNAs) are permanently established areas on USFS lands that maintain areas of natural ecosystems and areas of special ecological significance. RNAs serve as benchmarks for monitoring and evaluating the impacts of land management practices on lands with similar ecosystems, these areas provide sites for research into how ecosystems function, particularly in areas where ecological and evolutionary processes are functioning in a relatively natural state. RNAs provide protection for biological diversity. Acres within established RNAs are removed from the suitable timber base making timber harvest and fuel reduction treatments inappropriate. RNA requirements can be more restrictive than those for wilderness designation. (USFS, n.d.-b)

In the 2003 Medicine Bow Land Use Plan there were several areas that were designated as RNAs in Carbon County. Further information on RNA's in the area can be found here.[18]

Browns Peak RNA

Browns Peak RNA is 472-acres located on the Brush Creek Hayden District and is within the Bow River Geographic Area. The area is characterized by alpine fellfield, tundra, and willow habitats. Known occurrences of rare animals in the area include the brown-capped rosy finch, dwarf shrew, pygmy shrew, and Medicine Bow Mountain pika. Rare plants in the area include Golden saxifrage, black-head fleabane, Rocky Mountain snowlover, pygmy goldenweed, northern white rush, Rocky Mountain nailwort, Arctic harebell, alpine kittentails, and Dane's gentian. (USFS, 2003a)

Platte Canyon RNA

The Platte Canyon RNA is a 8,982 acre area on the Laramie Ranger District and within the Platte River Geographic Area. The main characteristics of this area include a mosaic of upland forest, woodlands, and shrublands, and a narrow riparian corridor in North Platte River Canyon. The RNA was selected as it hosts the following community types: Douglas-fire series, aspen series, narrowleaf cottonwood series, Rocky Mountain juniper series, big sagebrush series, antelope bitterbrush series, Idaho fescue series, thinleaf alder series, Booth's willow series, water sedge series, and bluepoint reedgrass series. The RNA provides habitat for boreal western toad, bald eagle, and peregrine falcon. (USFS, 2003a)

Savage Run RNA

The Savage Run RNA is 1,061 acres and is located on the Laramie Ranger District within the Platte River Geographic Area. The main characteristic of this area is that it is almost entirely covered by lodgepole pine but includes small pockets of subalpine fire-Englemann spruce/elk sedge, subalpine fire-Englemann spruce/grouse whortleberry phase Ross sedge, and lodgepole pine/elk sedge. It is likely that much of this area burned in the 2020 Mullen Fire. (USFS, 2003a)

Snowy Range RNA

The Snowy Range RNA is 734-acres and was established in January 1936 for the purpose of studying old-growth Engelmann spruce stands. It is located on the Laramie Ranger District within the North Fork Geographic Area. The area is comprised of Engelmann spruce and subalpine fire, lodgepole pine, and very small areas of grassland, shrubland, and lakes. (USFS, 2003a)

Potential RNAs

There are several potential RNAs that were proposed in the 2003 Medicine Bow Land Use Plan, further information on these areas can be found here.[19] Those RNAs are:

- Sheep Mountain (13,536-acres)
- Platte Canyon (11,856-acres) (expansion to current Platte Canyon RNA)
- Battle Mountain (1,319-acres)
- Ribbon Forest (4,350-acres)
- Savage Run (1,057-acres) (expansion to current Savage Run RNA)
- Ground Moraine (1,271-acres)
- Three Mile (8,844- acres)
- LaBonte Canyon (3,344-acres) (expansion to current LaBonte Canyon RNA)
- Standard Park (3,618-acre)
- Big Sandstone (4,6557-acres)
- East Fork Encampment River (2,244-acres)
- Cedar Pass (5,470-acre)
- Many Ponds (899-acre)
- Browns Peak (1,735-acre) (expansion to current Browns Peak RNA)

Special Recreation Management Areas/Extensive Recreation Management Areas

The BLM's land use plans may designate Special Recreation Management Areas (SRMAs) or Extensive Recreation Management Areas (ERMAs) to provide specific management for recreation opportunities, such as developing trailhead area for hikers, mountain bikers, or off-road vehicle users. Both SRMAs and ERMAs exist in Carbon County and the management goals and objectives for these areas can be found in the 2008 Rawlins BLM RMP.[20]

SRMAs are BLM administrative units where a commitment has been made to prioritize recreation by managing for specific recreation opportunities and settings on a sustained or enhanced, long-term basis. SRMAs are managed for their unique value, importance, and/or distinctiveness; to protect and enhance a targeted set of activities, experiences, benefits, and desired resource setting characteristics; as the predominant land use plan focus; to protect specific recreation opportunities and resource setting characteristics on a long-term basis.

ERMAs are administrative units managed to address recreation use, demand, or existing Recreation and Visitor Services Program investments; support and sustain the principal recreation activities and the associated qualities and conditions; and commensurate with the management of other resources and resource uses. There are two ERMAs designated within Carbon County, the Western ERMA and the Eastern ERMA. Descriptions of the management

goals, objectives, and management actions for these areas can be found in the 2008 Rawlins RMP[20] starting on page 2-25. The map depicting these areas can be found here.[21] Continental Divide National Scenic Trail SRMA

The Continental Divide National Scenic Trail (CDNST) SRMA spans approximately 600 acres with the federal portion of the trail being approximately 82 miles long and located within a one-quarter-mile corridor. The management goals for this area are to 1) manage to emphasize interpretative and educational opportunities and 2) ensure the continued availability of outdoor recreation opportunities associated with the CDNST. The area is to be managed for trail users to view the diverse topographic, geographic, vegetation, wildlife, and scenic phenomena that characterize the CDNST and to observe examples of human use of the natural resources. The management objectives and further management actions for this area can be found in the 2008 Rawlins RMP[20] starting on page 2-26. The map of the CDNST SRMA boundary can be found here.[22]

North Platte River SRMA

The North Platte River SRMA is a 5,060-acre area including the one-quarter-mile area on either side of the North Platte River. The management goal is to manage the area to ensure the continued availability of outdoor recreation opportunities associated with the North Platte and Encampment Rivers. The area is to be managed to provide high-quality recreational opportunities, especially for floating, fishing, camping, and sightseeing. Current public facilities and access will be maintained to support the values of the SRMA. The management objectives and further management actions for this area can be found in the 2008 Rawlins RMP[20] starting on page 2-27. The map of the North Platte River SRMA can be found here.[23]

Shirley Mountain SRMA

The Shirley Mountain SRMA is a 37,820-acre area. The management goal is to ensure the continued availability and diversity of outdoor recreation opportunities in the Shirley Mountains. The area is to be managed for retention and expansion. The management objectives and further management actions for this area can be found in the 2008 Rawlins RMP[20] starting on page 2-28. The map of the Shirley Mountain SRMA can be found here.[24]

Western ERMA

The Western ERMA is managed to consider recreation objectives during development involving surface disturbing or disruptive activity and should consider the Adobe Town Dispersed Recreation Management Area desired future condition during development involving surface disturbing or disruptive activity.

Eastern ERMA

The Eastern ERMA is to be managed to retain the quality of dispersed recreation opportunities and settings (with the exception of isolated development areas, such as coal mines or wind generation facilities) while meeting the above recreation objectives.

Scenic Byways

Scenic byways are designated byways by the USFS that provide opportunities to explore the beauty, history, and natural heritage of the National Forests. The byway system was created in

1987 and originally a total of 10 byways were designated nationally. Since then, the byway system has grown to include 138 National Forest Byways, each administratively designated by the USFS Chief. There are three scenic byways within Carbon County, the Snowy Range Scenic Byway, Battle Pass Scenic Byway, and the Seminoe to Alcova Backcountry Byway. These are depicted in Figure 4.

Snowy Range Scenic Byway

The Snowy Range Scenic Byway was one of the first scenic byways designated on National Forests and is a stretch of Wyoming State Highway 130 between the cities of Laramie and Saratoga. The 29-mile scenic byway is paved and crosses through spectacular alpine habitats. The byway rises from sagebrush and lodgepole pine forests below and offers views of rugged peaks reaching over 12,000 feet in elevation, crystal clear lakes, and gorgeous displays of native wildflowers in the spruce-fir forests and alpine areas of the high country. The byway is typically open from Memorial Day weekend through mid-October. (USFS, n.d.-c)

Battle Pass Scenic Byway

The Battle Pass Scenic Byway leads across the Sierra Madre Mountains from Encampment to Baggs. This scenic 28-mile stretch of highway 70 is open during the summer from Memorial Day weekend to mid-October. Several historic sites are located along the byway including the Battle town site and Edison Monument. Battle Pass is located along the Continental Divide. (USFS, 2020b)

Seminoe to Alcova Backcountry Byway

The Seminoe to Alcova Backcountry Byway is a 64-mile byway that goes near Alcova Reservoir, Pathfinder Reservoir, Seminoe Reservoir, and the Seminoe and Pedro Mountains. From the southern end, the byway starts at the town of Sinclair and follows County Road 351 north into Natrona County ending at Alcova. (BLM, n.d.-c)

Historic Trails

There are several historic trails and contributing segments that cross through parts of Carbon County within 66,370 acres of federal lands. These historic trails include the Overland Trail, Cherokee Trail, Rawlins to Baggs Road, and Rawlins to Ft. Washakie Road. The BLM's management goals for these historic trails are to preserve and protect the historic trails to ensure that they are available for appropriate uses by present and future generations; reduce imminent threats from natural or human-caused deterioration or potential conflict with other resource uses; and promote stewardship, conservation, and appreciation of historic trails. The objectives and management actions for the historic trails can be found in the 2008 Rawlins BLM RMP. (BLM, 2008)

The Continental Divide National Scenic Trail (CDT) runs south to north through the County, going right through Rawlins which is a gateway city for the CDT. Approximately 550 miles of the CDT run through Wyoming and 45.9 of those miles run through Carbon County. The CDT spans across the U.S. approximately 3,100 miles between the borders of Mexico and Canada. (Continental Divide Trail Coalition, n.d.; Wyoming Office of Tourism, 2018)

Wild and Scenic Rivers

The National Wild and Scenic Rivers System was created in 1968 to preserve naturally, culturally, and recreationally valued rivers. Rivers are designated for the National Wild and Scenic River System by Congress or, in certain situations, the Secretary of Interior. There are currently 408 miles of rivers and streams designated as wild and scenic in Wyoming. (National Wild and Scenic Rivers System, n.d.-b)

There are currently no rivers in Carbon County designated as wild, scenic, or recreational within the National Wild and Scenic Rivers System (National Wild and Scenic Rivers System, n.d.-a). The 2008 Rawlins BLM RMP identified seven segments within Carbon County that are eligible for inclusion in the Wild and Scenic River System. These segments are on Muddy Creek, Littlefield Creek, Cherry Creek, Bunker Draw, Encampment River, North Platter River, and Big Creek. The BLM manages the 2.51-mile Encampment River segment as suitable for inclusion in the National Wild and Scenic River System with the tentative classification of wild. (BLM, 2008)

The 2003 Medicine Bow Land and Resource Management Plan identified eight segments within Carbon County that are eligible for designation as wild, scenic, or wild and scenic. The segments inventoried for Wild and Scenic River eligibility include (NOTE: The segments with an asterisk (*) did not meet the USFS eligibility requirements for wild and scenic but they were included as proposed Wild or Scenic River in Alternative F of the Forest Plan.) (USFS, 2003b)

- North Platte River – 16.35 miles
- Encampment River – 11.7 miles
- North Fork Little Snake River – 9.36 miles
- West Branch North Fork Little Snake – 7.72 miles
- Roaring Fork Little Snake River – 3.73 miles
- Rose Creek – 0.89 miles
- *Big Sandstone – 14.0 miles
- *Solomon Creek – 4.0 miles

Further information on the Wild and Scenic segments inventoried can be found in Appendix E of the 2003 Medicine Bow Land and Resource Management Plan.

Other Management Areas

Raptor Concentration Areas – Shamrock Hills

The Shamrock Hills Raptor Concentration Area is managed to maintain or improve habitat and protect the concentration of breeding and nesting ferruginous hawk species, as well as other bird species, including the mountain plover, sage sparrow, and Greater Sage-Grouse, and is crucial winter/year-long range for pronghorn. The area is approximately 18,400 acres. Further management actions and objectives for the area can be found in the 2008 Rawlins BLM RMP. (BLM, 2008)

Management Area – High Savery Dam and Reservoir Site

The High Savery Dam and Reservoir Site is managed to protect the area, support development of a fishery for Colorado Cutthroat and manage the area for recreation. The area is approximately 530 acres and is managed jointly with the Wyoming Water Development Commission (WWDC). Further management actions for the area can be found in the 2008 Rawlins BLM RMP. (BLM, 2008)

Research Area – Stratton Sagebrush Steppe

The Stratton Sagebrush Steppe Research Area is managed for scientific values within the area and provides opportunities for cooperative research while protecting the long-term research value. The area is approximately 4,613 acres. The area is closed to mineral material disposal, has limited motorized vehicle use to only designated roads and vehicle routes, is closed to oil and gas leasing, is designated as a fire suppression area, and allows livestock grazing that is managed to meet the objectives of the research area. (BLM, 2008)

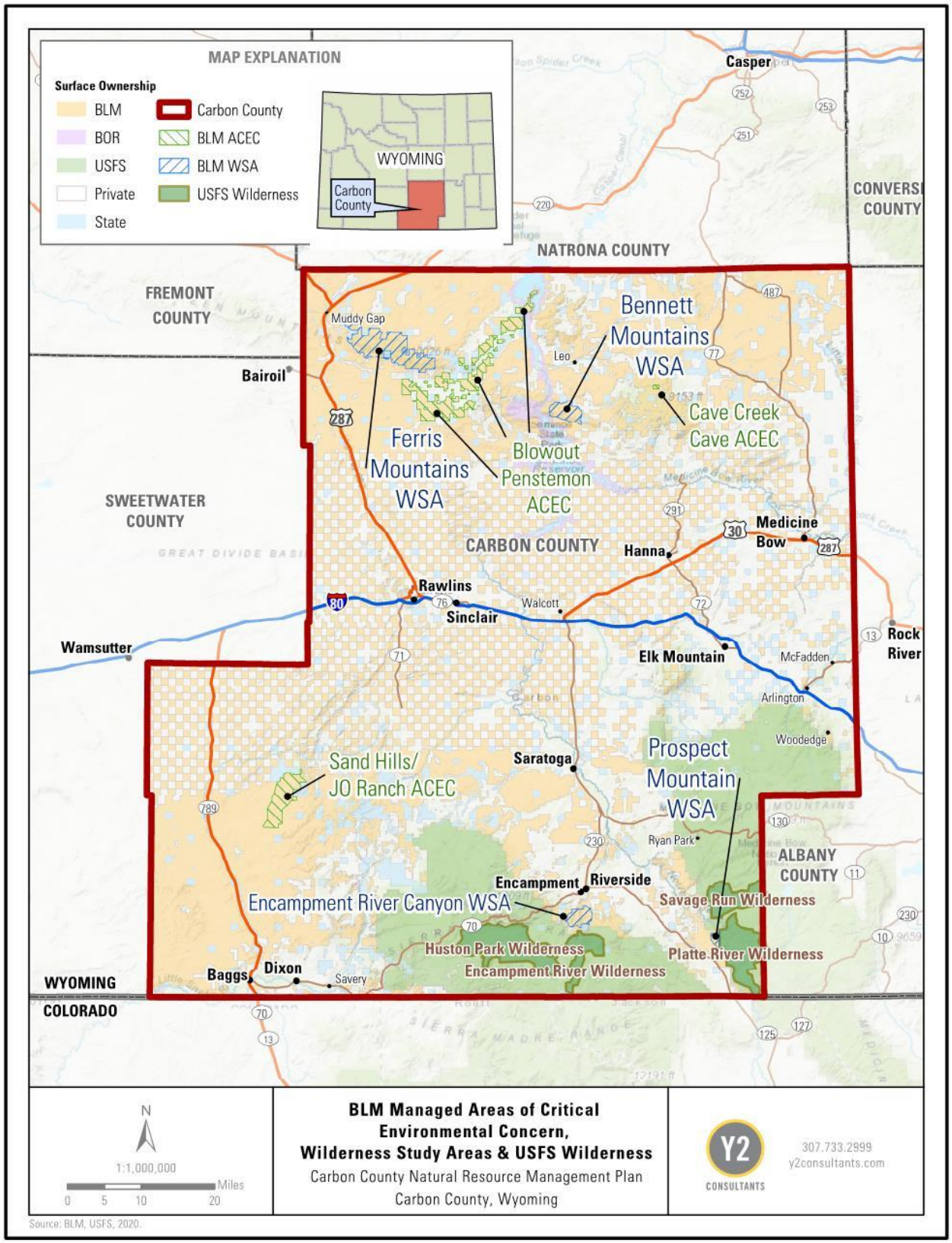

Figure 3. BLM Managed ACECs and WSAs in Carbon County.

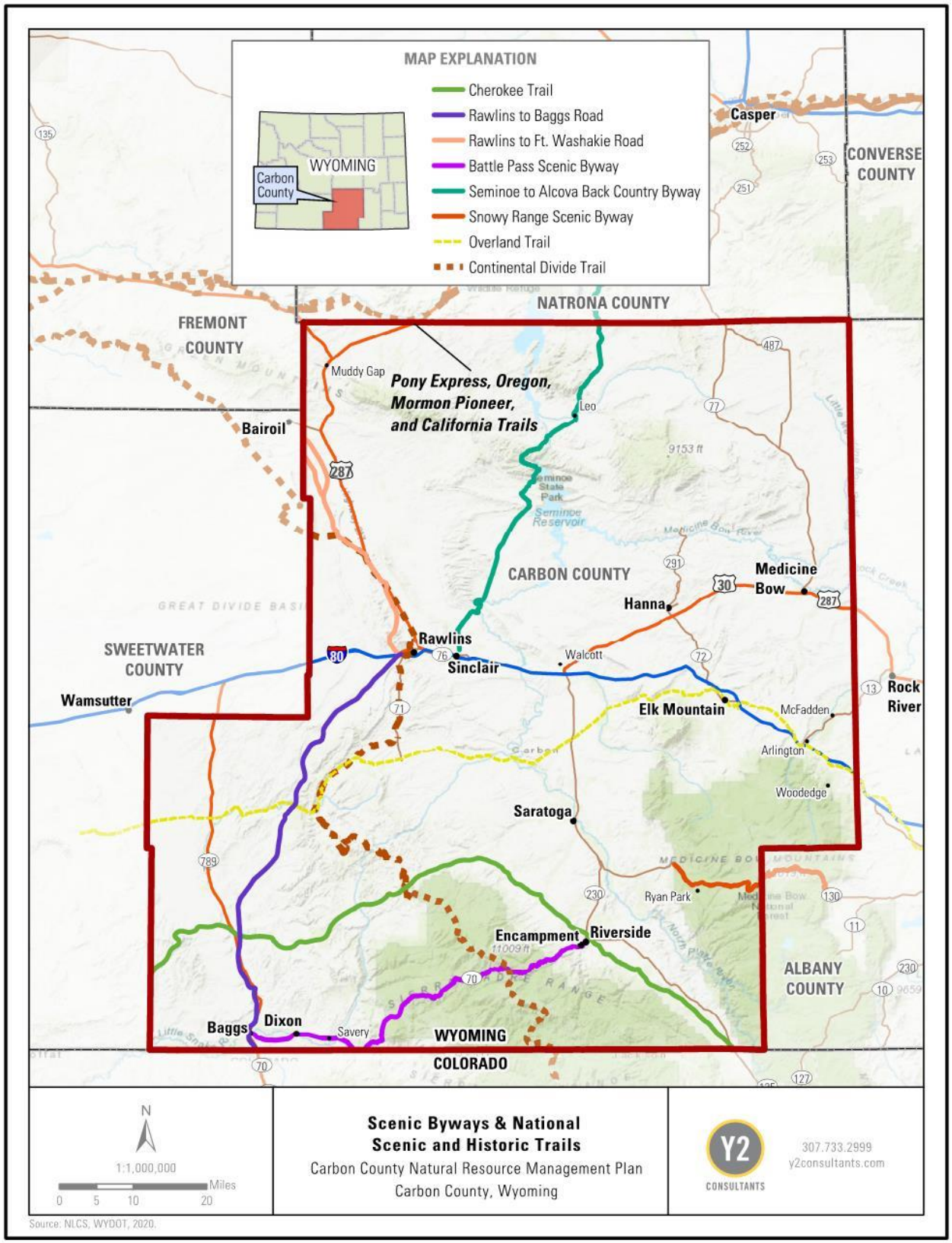

Figure 4. Scenic byways and National Scenic and Historic Trails within Carbon County.

3.3.3 Resource Management Objectives (Special Management Areas):

A. Coordination with Carbon County occurs for current management strategies on lands with current special designation or special management.
B. Extensive coordination with Carbon County occurs for any proposed special designation or special management areas.
C. Historic uses are maintained on lands already designated as Wilderness, Wilderness Study Areas, Areas of Critical Environmental Concern, other special designation areas, or areas inventoried as lands with wilderness characteristics.
D. Special land use designations are applied only when the management is consistent with surrounding management and contributes to the sound policies of multiple use, economic viability and county custom and culture.
E. The 2008 Bureau of Land Management Rawlins Field Office Resource Management Plan and 2003 U.S. Forest Service Medicine Bow National Forest Land Use Plan management continue to be implemented by the agencies and there is no expansion or creation of new special use areas.

3.3.4 Priorities (Special Management Areas):

1. Federal agencies responsible for making wilderness recommendations to Congress shall comply with their respective coordination mandates with the County when making wilderness determinations and developing wilderness inventories.
2. The Bureau of Land Management should coordinate with the County early and allow the County to participate as a cooperating agency whenever there is an Area of Critical Environmental Concern proposal on land managed by the Bureau of Land Management.
3. Proposals for Areas of Critical Environmental Concern designations shall strictly adhere to the relevance and importance criteria, and the Bureau of Land Management must demonstrate, using credible data, the need for an Area of Critical Environmental Concern designation to protect the area in question and prevent irreparable damage to resources, natural systems, or the economy of the local area.
4. Any Area of Critical Environmental Concern designation should address the reason for designation and not extend beyond the reason for designation.
5. Wilderness Study Area designations by Congress should be expedited to achieve a decision within 2-years from the proposal of the designation; should the designation not be made within this timeframe, the County requests that the area be returned to multiple use.
6. Management of special designation areas should be coordinated with the County and consistent to the maximum degree with the Carbon County Natural Resource Management Plan.
7. Federal agencies should allow for the use of herbicides to control noxious weeds in special designation and management areas.
8. The County supports continued use of livestock grazing in all special management or designation areas unless prohibited by law.
9. Federal land management agencies should apply wilderness area management techniques exclusively to those lands officially designated as Wilderness areas.
10. Historic access routes should be included in all special designation areas.

11. Prior or existing lease rights should continue or be reinstated in Wilderness Areas and Wilderness Study Areas as required by the Federal Lands Policy and Management Act.
12. Agencies should not 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.
13. On-the-ground mapping of the roads, fences, rangeland improvements, and any other anthropogenic influence in lands under consideration for lands with wilderness characteristics or wilderness study area designations should occur to ensure accurate representations of the area.
14. Economic and environmental cumulative impacts analysis should be conducted for all existing and proposed designations of any specially designated areas before any new areas are designated.
15. Wilderness study areas should be released or removed from consideration that contain non-wilderness characteristics, such as roads or active oil/gas wells within 2 years.
16. The County should be a cooperating agency on any future designation of any action to analyze any current or proposed special land use designation.
17. Wild and Scenic River designations should not occur that will economically harm existing uses within the County.

3.4 WILDFIRE MANAGEMENT AND COMMUNITY WILDFIRE PLANNING

3.4.1 History, Custom, and Culture

Wildfire is defined as an unplanned, unwanted fire that spreads rapidly and is difficult to extinguish. This includes accidental human-caused fires, unauthorized human-caused fires, escaped prescribed fires, and naturally occurring fires. Wildfires have had catastrophic effects in Carbon County, including severe damage to the County watershed, timber, grazing lands, wildlife habitat, and recreational activities that rely on healthy forests and rangelands (Figure 5).

3.4.2 Resource Assessment and Legal Framework

Proactive planning to respond to a wildland fire event is critical to the protection of Carbon County; its citizen's health, safety, welfare, and private property; and forest and rangeland health. A high degree of coordination between federal, state, and local agencies is necessary for management of wildfires. Some wildfires are suppressed immediately to prevent resource damage, but other fires are controlled to carry out specific land health objectives, such as habitat enhancement.

Many areas of Carbon County fall within a wildland urban interface (WUI). A WUI is an area where human made structures and infrastructure (e.g., cell towers, schools, water supply facilities, oil and gas pads, etc.) are in or adjacent to areas prone to wildfire. (U.S. Fire Administration, 2020) WUI areas are typically private forestlands that are within 500 meters of public forestlands. The 500 meters is used to identify the existing and potential WUI area because guidelines for defensible space necessary to protect homes from wildfire range from 40 to 500 meters around a home. Between 2000 and 2019 Carbon County experienced a 23.5% increase in land developed within the WUI. (Headwaters Economics, 2019)

Carbon County has a Community Wildfire Protection Plan (CWPP) that was last updated in 2016. The purpose of the plan is to identify at-risk communities, prioritize these communities based on fire risk, and make recommendations for reducing the chances of unplanned fire threatening these communities. The CWPP helps coordinate activities across jurisdictions and ownerships. It addresses the need for the restoration of fire-adapted ecosystems, and improved forest and rangeland health. (Carbon County CWPP, 2016) A copy of the plan can be found here[25] and at-risk communities can be foundon pages 39-43 of the WPP.

Carbon County has been greatly affected by wildland fire. Table 3 shows the fires over 100 acres that have occurred in the county since 2000.

Table 3. Wildfires that have occurred in Carbon County since 2000.

Fire Name	Year	Total Acres Burned	Acres in Carbon County
Blackhall	2000	611	611
Hell Canyon	2000	257	257
Bear Mountain South	2002	506	506
Sixmile	2003	200	200
Iron Draw	2010	175	175
McCarty	2010	229	229
Iron Draw	2010	175	175
McCarty	2010	229	229
South Pennock	2011	477	477
Ferris Mountain	2011	1588	1588
Willow	2012	566	241
Ferris	2012	2639	2639
Seminoe	2012	3516	3516
Cardwell	2012	186	186
Ferris	2012	7985	7985
West Battle Creek	2013	37640	101
Beaver Creek	2016	38394	2832
Broadway	2016	2121	2121
Snake	2016	2565	2565
Encampment River	2017	140	140
Ryan	2018	28243	25039
250	2018	162	162
Ryan	2018	28595	25322
Pedro Mountain	2019	23564	23564
Mullen Fire	2020	176890	64373

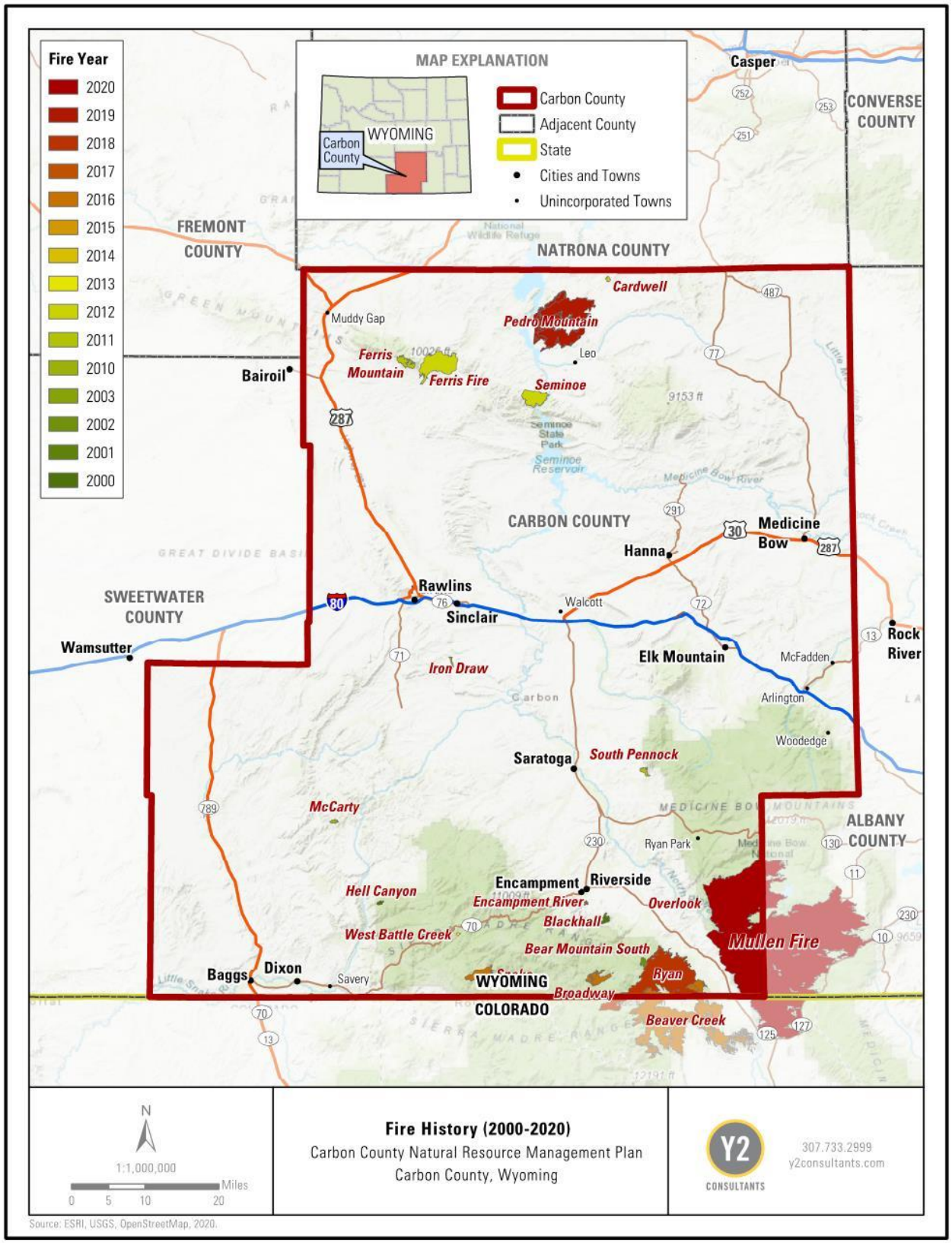

Figure 5. Wildfires within Carbon County more than 100 acres from 2000 to 2020.

3.4.3 Resource Management Objectives (Wildfire Management):

A. Wildfire management, wildfire, fuels, and fire rehabilitation are managed promptly and effectively using credible data, as defined above, in coordination with Carbon County.
B. Fire suppression efforts are implemented effectively as appropriately determined through full coordination, communication, and cooperation between federal, state, and local fire-suppression units.
C. Consultation and coordination with Carbon County occurs on all proposed changes and updates to Fire Management Plans for federal lands.
D. Multiple fuels management techniques are utilized to reduce fuels including but not limited to logging, grazing, vegetation treatments, etc.
E. Wildfire management is focused on wildfire urban interface areas and those at-risk communities described in the 2016 Carbon County Community Wildfire Protection Plan.
F. Post-fire resource objectives are coordinated with the County and applicable permittees.
G. In conjunction with local, state, and federal planning partners, strategies are developed to help enhance vegetative conditions, encourage historic fire regimes, and reduce the potential risk for large wildland fires via fuels treatments and controlled burning.
H. The Secretaries of Agriculture and Interior develop fire management policies and resource management plans that utilize and acknowledge the beneficial effects of planned grazing as a fuels management tool.

3.4.4 Priorities (Wildfire Management):

1. Federal agencies should incorporate local fire association plans into their fire suppression and control plans and support efforts of local fire departments in wildfire suppression activities.
2. Federal agencies should support the development of a Master Good Neighbor Agreement between federal, state, and local fire-suppression units.
3. Federal agencies should coordinate with the County and other agencies to implement insecticide and herbicide treatments, livestock grazing, biomass fuel removal and reduction, slash pile burning, and prescribed burning as proactive fire mitigation tools.
4. Federal agencies should utilize adaptive and flexible grazing management practices and include them in term permits to allow for management practices that will decrease fuel loads on the landscape, particularly in areas with heavy grass understory.
5. Carbon County encourages the use of the authorities granted under the Healthy Forests Restoration Act, Healthy Forests Initiative, and Good Neighbor Authority to expedite cross-boundary/agency planning, collaboration processes, and project implementation to treat and protect the resources of Carbon County economically and efficiently.
6. Federal agencies shall coordinate with local fire agencies.
7. The U.S. Forest Service shall adhere to all requirements set forth in the Cooperative Forestry Assistance Act, 16 U.S.C. § 2106, including:
    a. The effective cooperative relationships between the Secretary of Agriculture and the states regarding fire prevention and control on rural lands and in rural communities shall be retained and improved.
    b. Efforts in fire prevention and control in rural areas shall be coordinated among federal, state, and local agencies.

c. In addition to aiding state and local rural fire prevention and control programs, the Secretaries of Agriculture and Interior shall provide prompt and adequate assistance whenever a rural fire emergency overwhelms or threatens to overwhelm the firefighting capability of the affected state and rural area.

8. Federal agencies should implement the Department of Interior's Secretarial Order 3336-Rangeland Fire Prevention, Management, and Restoration and the County requires the Bureau of Land Management to comply with the order and all subsequent revisions, reports, and instructional memos.
9. The Bureau of Land Management should use their agency document *Earning Bridges: Strategies for Effective Community Relations Before, During and After Fire* to improve coordination between the Bureau of Land Management, State of Wyoming, Carbon County, local fire associations, and local stakeholders.
10. Carbon County supports and encourages temporary fire restrictions when done in coordination with the County based on fire hazard designations to minimize the potential for human-caused wildfires. Restrictions should be removed as soon as it is safe for work and recreation to resume on federal lands.
11. If grazing on federal lands is temporarily suspended due to fire, recommence grazing based on monitoring and site-specific rangeland health determinations and objectives rather than solely on fixed timelines.
12. Authorized livestock grazing should be returned to pre-fire levels when post-fire monitoring data shows established objectives have been met or have been achieved to an extent allowed by the site potential. The use of credible data should be used as previously defined to make these determinations.
13. Federal agencies should rehabilitate forests and rangelands damaged by wildfires as soon as possible to reduce the potential for erosion and introduction of invasive or noxious weeds.
14. Federal agencies should manage invasive and noxious weeds after wildland fire events as a way to reduce fire fuels on federal lands, using tools including (but not limited to) targeted livestock grazing; chemical, and mechanical controls that promote ecosystem health and as a management tool for vegetation manipulation.
15. Federal agencies should support the use of ongoing research and experimental options for developing new and alternative treatments for the management of invasive and noxious weeds after wildland fire events on federal lands.
16. Federal agencies should conduct surveys of lands affected by fire in a timely manner following a fire to identify invasive and noxious weed presence or potential.
17. Post-fire objectives should be consistent with site potential as defined in approved Desired Future Conditions or Ecological Site Descriptions. The County requires the use of credible data as previously defined to make these determinations.
18. The County promotes the prompt rehabilitation of forested lands whether those areas are harvested or affected by wildfire, including salvage logging operations.
19. The County supports exposing aspen stands to periodic fire or manmade disturbance that mimics wildfire to remove competing conifers.
20. Federal agencies should coordinate with the County on prioritizing fire suppression or control for resource management purposes.

21. Federal agencies should support natural forest regeneration where appropriate to accelerate carbon sequestration, but it should not be the only method considered.

3.5 FOREST AND RANGELAND MANAGEMENT

3.5.1 History, Custom, and Culture

Forest Management

The beneficial use of forest resources has always been a part of Carbon County's customs and culture. Early citizens relied on forest resources for timber for buildings, corrals, fences, railroad ties, and fuel. Logging occurred early in the history of Carbon County as timber crews began cutting lumber to build Fort Steele in 1868 and during that same time the first log ties were floated down the North Platte River to supply the Union Pacific Railroad. The Medicine Bow National Forest was established in 1902 and has been managed by the USFS since. Timber harvesting within the County historically paid for the maintenance of forest roads and allowed more public access and multiple use of the forests. Several sawmills were once operational in Carbon County but the shift in forest management to less logging and different polices shut most of the sawmills down and significantly reduced timber harvesting as an economic resource within the County. The sawmill in Saratoga has been part of that community since the 1940s and is the only sawmill still operational in the County. The sawmill provides over 100 jobs and contributes to the economic resources of the County. (Van Pelt, 2014)

Rangeland Management

The rangeland resources in Carbon County have also been heavily relied upon for livestock grazing, energy development, recreation, and other uses. In the early 1880s, sheep and cattle ranchers started to spring up throughout the County. Many sheep ranchers ran their herds on the ranges of the Red Desert and Great Divide Basin while cattle ranchers would utilize the lower elevation rangelands for spring and fall feed and move their herds into the more forested areas for summer. Energy development in the form of coal mining along with oil and gas development has also long occurred on the rangelands of Carbon County. The first coal mines in the County were started in the 1880s and to this day energy development continues to be a significant economic factor to Carbon County. (Van Pelt, 2014)

The Rawlins BLM Field Office and a small portion of the Lander BLM Field Office are the main land managers of public rangelands within Carbon County and have been since the BLM started in 1946.

3.5.2 Resource Assessment and Legal Framework

Forest Management

A healthy forest ecosystem provides employment, ecosystem services, and economic benefit for individuals and businesses in the County. Proper forest management ensures the protection of natural resources as well as human health and safety within the County by reducing risk in WUI areas and to communities at-risk to wildfire. Forest products also increase the economic potential within the County.

Forest Management includes proactive measures to maintain the health of forests, provide enhancement opportunities for forest succession, promote optimum timber species on forested areas identified in the Medicine Bow LRMP for forest products or maintenances and restoration considering the historic range of variability. Table 2-2[26] in the Medicine Bow LRMP describes the selected activities that are permitted or restricted according to management area prescriptions. (USFS, 2003a)

Harvesting of forest products still occurs within the County and includes firewood, posts and pole, Christmas trees, and commercial harvesting. Several timber sales contracts have been issued in recent years and fuels mitigation projects in the WUI are being conducted (USFS, 2018). In 2018, approximately 8,779,000 board feet came out of the National Forest in Carbon County, 500,000 board feet came off State lands, 2,000,000 came off BLM lands (Forest Industry Research Program, 2018).

Saratoga Forest Management (SFM), the sawmill in Saratoga, commercially harvests from the Medicine Bow National Forest and has been in the Saratoga community since the 1940s. SFM has a history of producing straight, strong, framing lumber from the high altitude lodgepole and Engelmann spruce forests within the area. It is the only company within the region that has the infrastructure necessary to provide large scale forest restoration on a commercially viable basis. SFM also provides much needed revenue through direct payment to federal, state, and municipal agencies to treat ecosystems devastated by fire, pathogens, or invasive species. SFM produces approximately 200,000 board feet per day. (Saratoga Forest Management, n.d.)

The Medicine Bow Landscape Vegetation Analysis Project (LaVA Project) was recently signed in August 2020. The LaVA project includes up to 288,000 acres of vegetation management in the next 15 years on the Medicine Bow National Forest under one decision. The LaVA Project was developed to respond to unprecedented landscape-level tree mortality from bark beetles and other forest health issues that have affected hundreds of thousands of acres across the forest since the 1990s. The LaVA project encompasses both Albany and Carbon counties with the project area stretching from the Colorado-Wyoming border north across the Snowy Range and Sierra Madre Mountain Ranges from approximately 25-miles west of Laramie to about 25 miles east of Baggs (USFS, 2020a). The ROD can be found here.[27]

Rangeland Management

Over 2 million acres in Carbon County are classified as rangeland. Most of the rangeland and riparian zones in the County support an understory or periodic cover of herbaceous or shrubland vegetation amendable to rangeland management principles or practices. The principal natural plant cover is composed of native grasses, forbs and shrubs that are valuable as forage for livestock, big game, other wildlife, and pollinators. Rangelands in the County consist of sagebrush steppe, small grasslands, desert shrublands, riparian zones, and wet meadows. The soil and climate of Carbon County make most of the land best-suited for grass and shrub production, rather than farming.

The BLM Rawlins and Lander Field Offices require public rangelands to meet or make substantial progress to meet standards, where were developed for Wyoming as the Wyoming Standards of Healthy Rangelands. A further explanation of these can be found in Section 9.2 Livestock Grazing.

There are a variety of threats associated with the health of rangelands including invasive species and encroachment of conifers and shrubs. The encroachment of conifers into rangeland can reduce rangeland diversity and productivity thus affecting wildlife habitat and grazing. The expansion of decadent and older age class sagebrush can also be harmful to rangelands as it affects diversity and productivity. Invasive species can outcompete native species reducing rangeland health. Invasive species can also create monocultures that cause an increase in fine fuel loads thus increasing the risk of fire. Intensive management of these vegetation communities will enhance and sustain multiple uses and increase rangeland productivity.

3.5.3 Resource Management Objectives (Forest Management):

A. Forest managers use the multiple use mandate for sustainable management of all national forests and other public forests.
B. All fire rehabilitation efforts are done in coordination with Carbon County on a case -by - case basis.
C. Forest resources are managed within Carbon County to benefit the economy of the communities, support a strong agriculture industry, and maintain recreational availability along with custom and culture in the County.
D. Forest management is conducted on a watershed level in cooperation, consultation, and coordination with landowners and land managers.
E. Forest management is prioritized in wildland urban interface areas and near high-risk communities.
F. Forests are actively managed to naturally optimize carbon sequestration.

3.5.4 Priorities (Forest Management):

1. Carbon County encourages federal policies that support the timber industry and its continued economic benefit to the citizens of Carbon County.
2. Forest management shall follow the mandates of the Organic Administration Act and adhere to the Multiple Use Sustainable Yield, as well as the National Forest Management Act, and the National Environmental Policy Act.
3. Forest management should support a coordinated timber harvesting and thinning method to promote forest health, reduce disease and insect infestation, reduce wildfire impacts, and prevent waste of forest products while supporting the economy of Carbon County for future generations.
4. Federal agencies should utilize livestock grazing and fuels management programs to promote forest health and reduce wildfire risk.
5. Federal agencies should promote the prompt rehabilitation of harvested forest areas and areas affected by wildfire, including salvage logging operations, when not in conflict with federal law.
6. Burning of firewood is part of the custom and culture and important to the economic welfare of Carbon County's citizens and should be maintained as an acceptable practice.

7. The County supports federal Payments in Lieu of Taxes to Carbon County.
8. Forest vegetation should be managed for a mosaic of vegetative communities, focusing on the Medicine Bow National Forest Historic Range of Variability, for a diversity of age class distribution, patch size, and vegetation composition as allowed per elevation, edaphic, and topographic influences.
9. Active management of forested lands should consider timber yield to maintain health of stands to provide wildlife habitat, minimize erosion of soils, and continue soil stability.
10. The U.S. Forest Service should support salvage timber sales and other sales wherever stands of trees require this to maintain a healthy, viable forest and to reduce the amount of dead wood accumulation with National Forests.
11. Carbon County supports the Secretaries of Agriculture and Interior and their efforts to conduct fuel reduction treatments in the wildland urban interface on federal lands that are at risk from wildfire.
12. Accelerated forest thinning should occur at large scales to improve the water balance and resilience of forests and sustain the ecosystem services they provide.
13. Aspen stands should be exposed to periodic fire or manmade disturbance that mimics wildfire to remove competing conifers.
14. The U.S. Forest Service timber land managers should 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 stand and mature stands.
15. Cooperative efforts with Wyoming State Forestry, U.S. Forest Service, other federal agencies, and industry should continue to address forest health issues because of the beetle epidemic and other natural catastrophic events (i.e., tornadoes, microbursts).
16. Federal agencies should support natural forest regeneration where appropriate to accelerate carbon sequestration, but it should not be the only method considered.
17. Federal agencies should coordinate with the County, Conservation Districts, and Wyoming Game and Fish Department on areas where conifer and/or sagebrush should be removed due to encroachment.
18. Federal agencies should conduct projects to remove conifers and/or sagebrush in areas where they have encroached to improve diversity of vegetation.

3.6 LAND EXCHANGES

3.6.1 History, Custom, and Culture

Land exchanges can be used to alter the checkerboard of federal and private land, allowing lands to be consolidated by ownership type and reducing the amount of federal land that is isolated from other public ground. This allows for a more uniform management of USFS and BLM lands and can create public access opportunities that were previously impossible due the landlocked nature of such parcels and the lack of easements on neighboring private lands. Land exchanges can also be used to allow community development or other purposes that provide great value to the public interest. Exchanges usually take two to four years, but the process can be extended considerably if complications arise with NEPA, land valuation, or ESA.

Several land exchanges between private and State lands have occurred within Carbon County in recent years which has allowed more public access to certain areas. In most cases, the surface ownerships are exchanged but the sub-surface mineral rights stay with the private landowner.

3.6.2 Resource Assessment and Legal Framework

Exchanging private land for public is one way that agencies can improve their management of public lands and allow public access to said lands. FLPMA granted the USFS and BLM power to conduct land exchanges with private property owners and established five requirements for the process:

- Acquisitions must be consistent with the mission and land use plans of the agency.
- Public interests must be served by the land exchange.
- An agency may accept title to non-federal land if the land is in the same state as the federal land for which it is being exchanged and the agency deems it proper to transfer the land out of federal care.
- The lands to be exchanged must be equal in value or equalized through the addition of a cash payment, but a cash payment may not exceed 25% of the total value of the federal land.
- Land may not be exchanged with anyone who is not a U.S. citizen or a corporation who is not subject to U.S. laws (BLM Handbook, 1-1, 1-2)

The process for land exchanges begins with a proposal (by an agency or private landowner) of an exchange by an agency to a private landowner. The proposal then goes through multiple analysis and review phases to assure its compliance with the laws and regulations controlling such an exchange. After the review process is complete, an agreement to initiate is signed by both parties which outlines the scope of the exchange and who will be responsible for what costs in the procedure. (USFS Guide to Land Exchanges)

The parties are expected to share equally in the costs of a land exchange, but specific requirements may vary between agencies. The USFS requires private landowners to pay for title insurance, advertising, hazmat cleanup, and land surveys at a minimum. The Forest Service usually pays for appraisals (USFS Handbook, 27-28). However, the BLM may share in some of these specific expenses if the total costs are apportioned in an equitable manner (BLM Handbook, 3-1 through 3-8).

Next, an appraisal must be done on each parcel to determine their respective values and assure that the properties are capable of being exchanged. At this point the agency and private landowner sign a formal exchange agreement binding them to the exchange. The plan is then subject to final review before being completed. During the exchange process NEPA review must also be completed. The exchange must follow NEPA procedures to determine environmental impacts of the exchange, including scoping, environmental assessment, notice and comment, and appeals. (USFS Guide to Land Exchanges)

The USFS can also perform land exchanges under Title III of the Bankhead-Jones Farm Tenant Act (BJFTA) for parcels situated in National Grasslands. These lands are commonly called "Title III Lands." Title III lands require the USFS to determine that an exchange will not conflict with the purposes of the BJFTA and that the values of the properties are "substantially equal." If the USFS can show through a determination of consistency that the exchange does not conflict with the purpose of the BJFTA, it "may be completed without a 'public purpose' reversionary clause." (USFS Handbook, 21)

Payments in Lieu of Taxes

Land exchanges or acquisitions that eliminate or decrease private lands can be harmful to the County because the federal government does not pay property taxes, but still may create a demand for services, such as fire protection and police cooperation. One way to offset some of these losses are Payments in Lieu of Taxes (PILT) administered by the United States Department of Interior. 31 U.S.C. §§ 6901-6907. The annual PILT payments to local governments are computed in a complex formula based on five variables 1) the amount of acres of eligible land in the county; 2) the population of the county; 3) the previous year's payments for all eligible lands under other payment programs from federal agencies; 4) any state laws requiring payments to be passed through to other local government entities (such as school districts); 5) any increase in the Consumer Price Index for the 12 months ending the preceding June 30th. Generally, federal lands eligible under PILT include acreage within the National Forest and National Park Systems, those managed by the Bureau of Land Management, and those affected by U.S. Army Corps of Engineers and Bureau of Reclamation water resources development projects. 31 U.S.C. § 6901. Individual county payments may increase or decrease from the prior year due to changes in computation variables and the amount allocated by Congress in its discretionary spending. 31 U.S.C. § 6902. Carbon County received $1,505,226.00 in PILT payments in 2020 (U.S. Department of the Interior, 2020). The Congressional Research Service offers an in depth look at PILT and the some of the issues surrounding the program, including, the uncertainty counties face regarding PILT funding because the funding is discretionary for Congress (Hoover, 2017).

3.6.3 Resource Management Objectives (Land Exchanges):

A. Land exchanges that are mutually beneficial to private landowners, federal agencies, and the public are completed in a timely and cost-efficient manner.
B. There is no net loss of private or state lands in exchange for federal lands within Carbon County.

3.6.4 Priorities (Land Exchanges):

1. Federal agencies should proactively identify potential land exchanges that will consolidate land ownership type and reduce federal land from being isolated from other federal lands.
2. Federal agencies should prioritize land exchanges in areas where there may be resource or management conflicts between federal managers and neighboring private or state landowners.
3. There should be no net loss of state or private land based on acreage and fair market value.

4. Voluntary land exchanges and/or other similar programs should be pursued as a primary way to encourage access to landlocked federal public lands as opposed to the use of eminent domain or other involuntary methods.
5. Federal agencies should attempt to consolidate and combine land exchanges when possible to reduce overall costs. However, such consolidations should not be at the expense of causing undue delay on smaller land exchange proposals.
6. Payment in lieu of taxes funds and other federal funding mechanisms should be used to offset any loss in tax income resulting from land exchanges or purchases from federal agencies.

CHAPTER 4: GEOLOGY, SOILS, MINING, ENERGY, AND AIR QUALITY RESOURCES

4.1 OVERVIEW

Mineral ownership is heavily mixed within the County (Figure 6) 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. Split estate is defined as a tract of land where title to the surface estate is separate from title to some or all the mineral rights. Split estates are common in the western United States because private land conveyed under the homestead or stock raising 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. Generally, and as set forth in Wyoming law, mineral rights often take precedence over other rights and the owner of the mineral estate has an overriding right to use the land to explore for and develop minerals. Many situations of split estate minerals in which the federal government owns the mineral estate originate back to the Stock Raising Homestead Act of 1916 in which the federal government reserved everything to the government besides what was necessary to farming and raising livestock. 43 U.S.C. §§ 291 and 299; *see also Watt v. Western Nuclear Inc.,* 462 US 36, 53-55 (1983). Thus, the federal government owns the minerals of any lands in which the patent is after 1916. 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.

The surface owner where oil and gas operations occur may experience 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.

For federal split mineral estates, the BLM manages all minerals owned by the federal government. Whenever an operator acquires a BLM lease to produce minerals from a split estate, they must negotiate a surface use agreement in good faith with the surface estate owner. (United States Department of the Interior and United States Department of Agriculture. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development) The surface use agreement is confidential but must provide enough information in a Surface Use Plan to allow for the BLM to conduct NEPA review of the project. If the operator is unable to negotiate a surface use agreement with the landowner, they may elect to file a bond with the BLM to cover compensation for damages to the surface estate. *Id.*

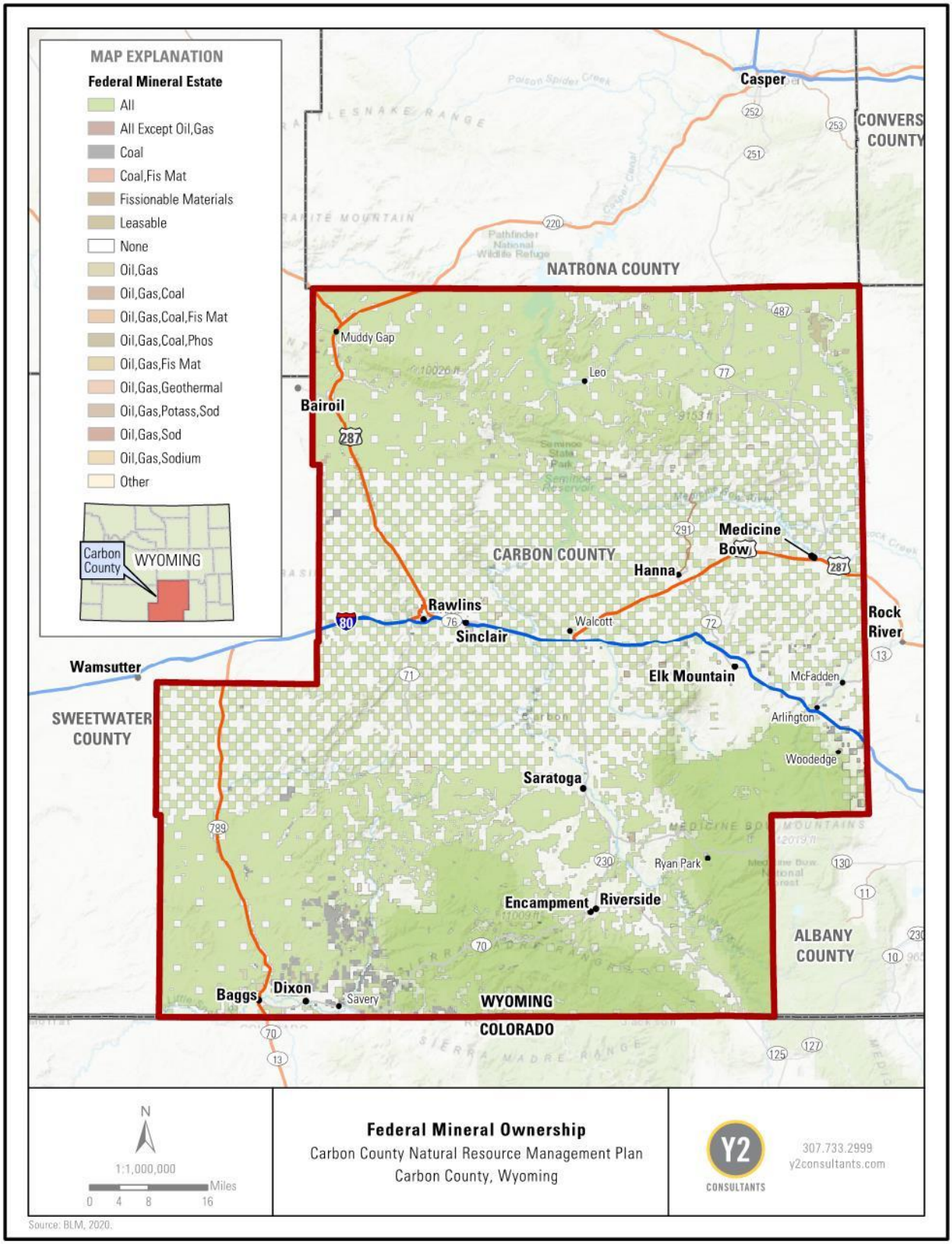

Figure 6. Federal mineral ownership within Carbon County.

4.2 GEOLOGY

4.2.1 History, Custom, and Culture

Carbon County has a rich geologic history. There are many locations throughout the County where geologic formations are visible and display the history of the area (Figure 7).

4.2.2 Resource Assessment and Legal Framework

The topography of Carbon County is generally characterized by plains and valleys transitioning into rugged uplifts. Exposed rocks in Carbon County range from Precambrian to Quaternary in age with the older Precambrian formations exposed in the uplifts. These Precambrian rocks are generally quartzite, conglomerates and shales. (Geology and Ground-Water Resources of the Rawlins Area, Carbon County, Wyoming, 1960)

The Sierra Madre Mountains, which cut through Carbon County, were formed by crustal folding in the late Cretaceous and early Cenozoic periods (the Laramide Orogeny). During the Eocene epoch, a shallow lake was formed southwest of the Sierra Madre and lake sediments were eventually transformed into marlstone and calcareous shales (Green River Formation). Along the shoreline of this lake the fluvial and deltaic Wasatch Formation was formed. Virtually all the strata in the river basin are sedimentary in origin.

The western edge of Carbon County is part of the Greater Green River Basin which hosts the Little Snake River Coal Field with coal bearing formations present in the Eocene, Paleocene and Cretaceous strata. (Shaffer et al., 2019)

Carbon County is also within the North Platte River basin. This basin has a long, complex history of sedimentation, erosion, and tectonic activity. The forces of the Laramide Orogeny are the most important in shaping the area's basic structures: synclinal basins and anticlinal mountains caused by uniform geologic events and processes. Generally, the region is made of broad, deeply eroded, granitic anticlines between which lie several synclinal basins, or parks, consisting of sedimentary deposits. The northernmost synclinal basin is North Park which is approximately 1,000 square miles in northern Colorado. North park is part of a larger structural basin bisected by the Rabbit Ears Range, the Never Summer Range, the Medicine Bow Mountains and the Sierra Madre Mountains. The latter two ranges and the Laramie Mountains extend into Wyoming, where they decrease in elevation and become buried by surrounding sedimentary deposits. This sedimentary granitic rock contact serves as the approximate boundary between the Southern Rocky Mountains and the Wyoming Basin. (The North Platte River Basin: A Natural History | WyoHistory.Org, n.d.)

4.2.3 Resource Management Objective (Geology):

A. Geological research occurs to promote the economic viability and the custom and culture of Carbon County.

4.2.4 Priority (Geology):

1. The County encourages geological studies to occur within in the County to assist with potential development of new mining and energy activities.

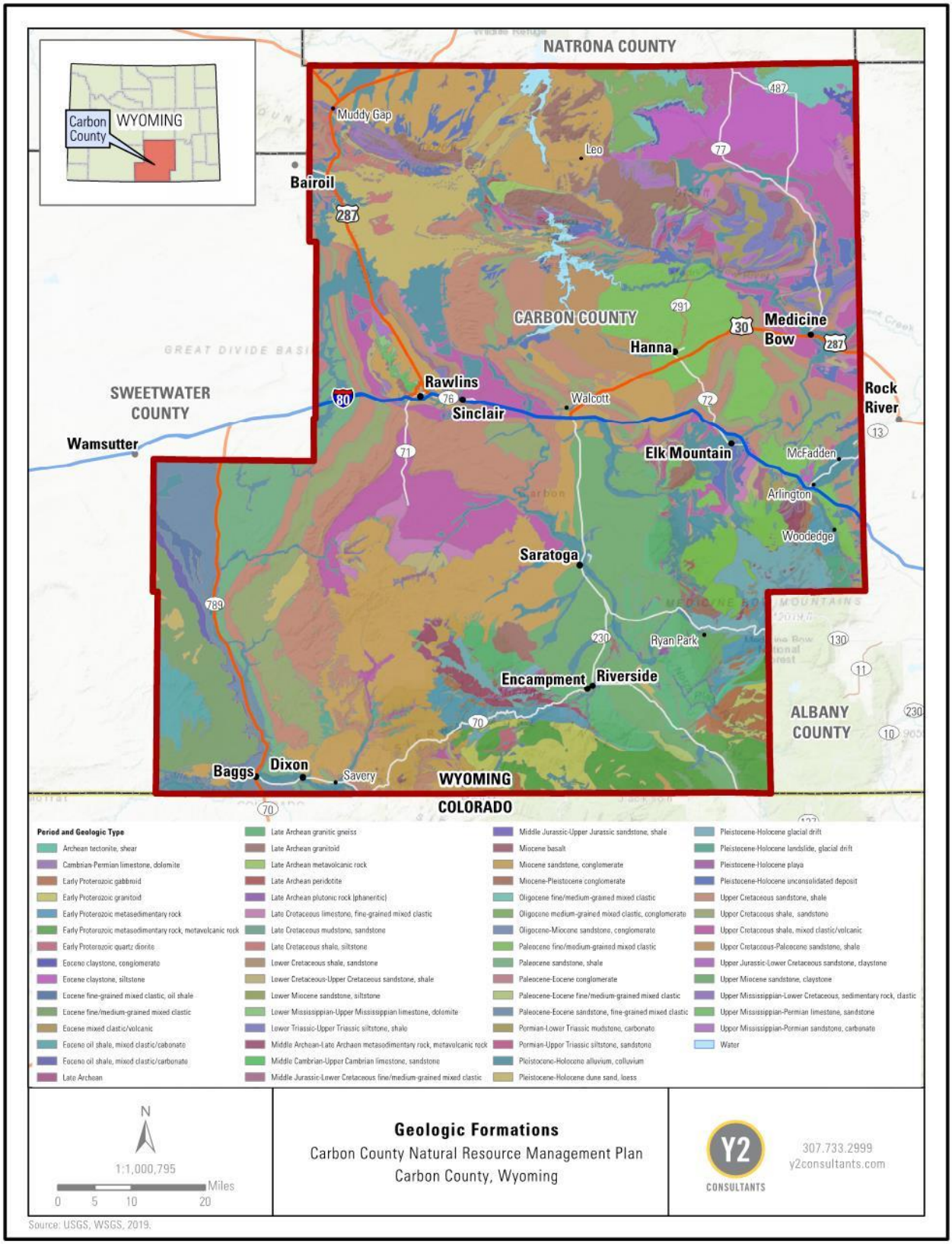

Figure 7. Geologic formations in Carbon County.

4.3 SOILS

4.3.1 History, Custom, and Culture

Healthy soils sustain plant communities, keep sediment out of streams, and dust out of the air. Land managers of public lands are mandated to manage soils and vegetation to ensure land-health standards are maintained and to safeguard sustainable plant and animal populations. (NRCS, 2018) Soil type dictates the vegetation within an area, which determines the area's uses, productivity, resistance to disturbance, and scenic quality.

Anthropogenic land disturbance and wildfire can influence soil quality. Soil issues arising from both anthropogenic and natural causes include erosion, drainage, invasive species, soil compaction, salination, and loss of vegetation. (NRCS, 2018)

The three Conservation Districts within Carbon County (MBCD, SERCD, and LSRCD) work to promote the conservation of soil and water resources within the district. (See 3.1 Land Use for more information).

4.3.2 Resource Assessment and Legal Framework

Soil Surveys

Soil surveys provide detailed information on soil limitations and properties necessary for project planning and implementation. Soil surveys document soil properties and distribution to monitor and understand the impacts of various uses. Most natural resource work whether for agriculture, energy, or wildlife purposes begins with the evaluation of the soils to determine site potential. There are five levels or "Orders" of soil surveys depending on the level of detail involved. Order 3 is typical for most public lands projects which do require onsite investigations by expert soil scientists for site specific project related activities or projects. (USDA: Soil Science Division Staff, 2017)

Soil survey reports, which include the soil survey maps and the names and descriptions of the soils in a report area, are published by the USDA NRCS and are available online through Web Soil Survey (NRCS, n.d.). The general soil map units for Carbon County are depicted in below in Figure 8 and data is from the USDA NRCS's Web Soil Survey application.

The basic soil survey for Carbon County has not been completed and only preliminary soil survey data and general soil information is available {Citation}. BLM has done some soils work in certain areas for specific projects, but the information is not publicly available and does not necessarily correlate with the standard soils data compiled by NRCS. The lack of basic soil survey data creates project limitations for evaluating site potential and 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 units 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 ESDs 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.

4.3.3 Resource Management Objectives (Soils):

A. A completed, digitized, and publicized soil survey for all lands within Carbon County is developed.
B. A partnership between county, state, and federal agencies is formed to fund a Natural Resource Conservation Service accepted Level III Soil Survey (digitized/published) for all lands within Carbon County.
C. Ecological site descriptions (as available) are the foundation for inventory, evaluation, setting of monitoring objectives, and management of rangelands and forestlands within the County.
D. The Natural Resource Conservation Service (NRCS) is the primary source for soils data and other soils data is used only when NRCS soils data is unavailable for a site and is approved by NRCS before determining it as an appropriate ESD.
E. Top soil is preserved and projects or actions disturbing top soil will have top soil reclamation and management plans.

4.3.4 Priorities (Soils):

1. Soil quality and health should be maintained and conserved through best management practices.
2. Ecological site descriptions should be completed and approved for Carbon County soils.
3. Until ecological site descriptions are developed and available, federal agencies should use soil and range site data to create site-specific objectives that inform management direction for livestock, wildlife, development, etc.
4. Federal agencies should use the Natural Resources Conservation Service ecological site descriptionsas they become available to help define desired conditions by vegetation type for all management actions.
5. Federal agencies should assist in maintaining the resilience of our soil resources and encourage practices that support soil health and reduce or eliminate soil loss.
6. Federal agencies should support and encourage the use of mechanical treatments, including livestock grazing, as key to site reclamation for soil health and biodiversity.
7. Drill mud should be removed from drill sites to designated waste sites.
8. Best management practices should be used for soil reclamation on all disturbed sites.
9. Top soil in Carbon County should be considered a non-renewable resource and conserved during any soil disturbing activity.
10. Top soil reclamation and management plans are required for all projects or actions that may disturb top soil in the County.

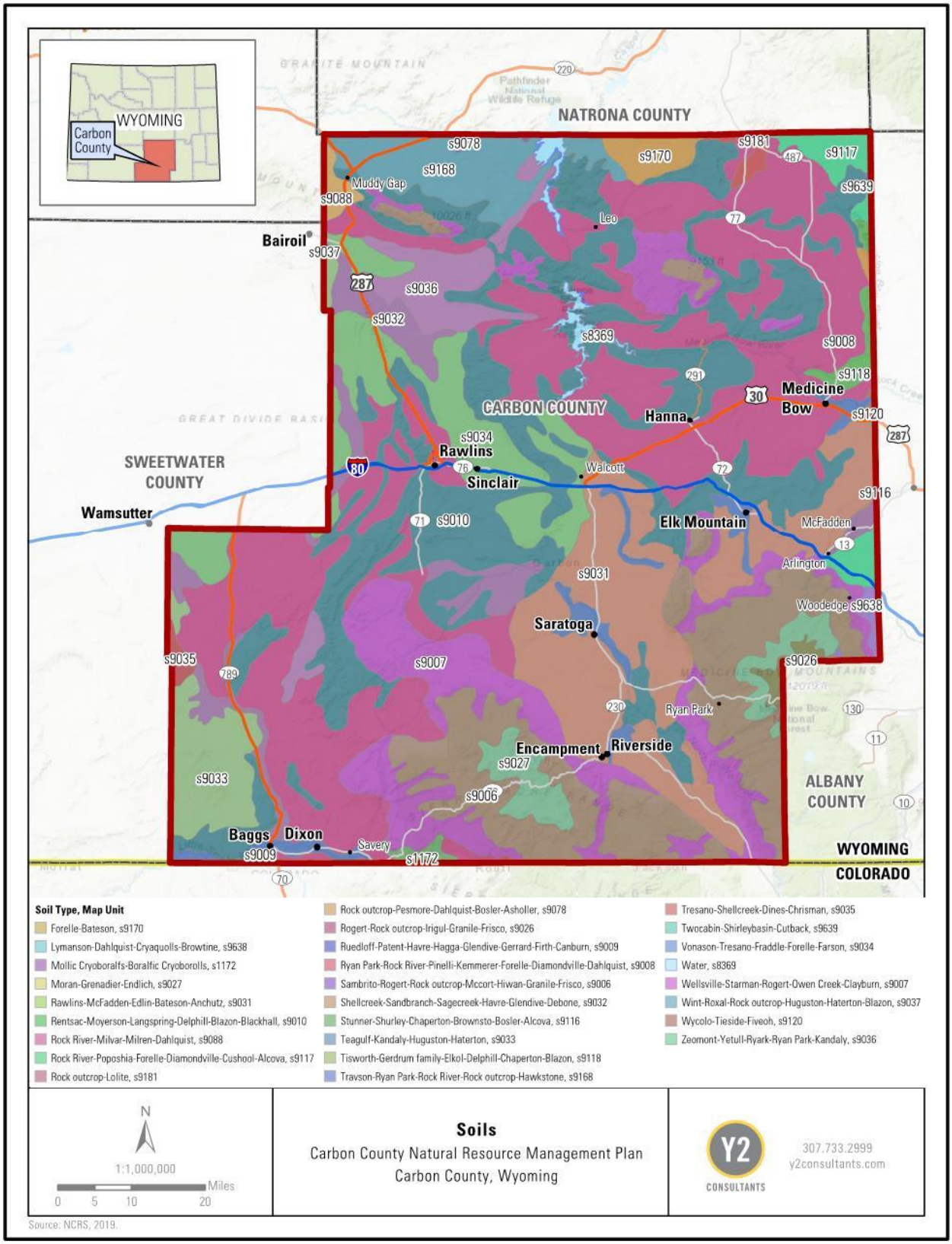

Figure 8. Order 5 soils survey mapped for Carbon County.

4.4 MINING & MINERAL RESOURCES

4.4.1 History, Custom, and Culture

Mineral production, namely crude oil and locatable minerals has been part of Carbon County's culture for over 100 years. Mining is one of the historical uses of federally managed lands, predating the establishment of the USFS and BLM. Maintenance of such use is statutorily compatible with multiple use principles. Carbon County contains deposits of uranium, copper, gold, silver, and iron. (Carbon County Economic Development Corporation, 2016)

Production of minerals, and associated economic and cultural activity, have historically waxed and waned with demand and pricing, but mining remains a significant portion of Carbon County's tax base.

4.4.2 Resource Assessment and Legal Framework

The County supports the extraction of all minerals in an environmentally responsible manner by providing infrastructure and services such as roads, bridges, medical services, and law enforcement. Entities such as the Wyoming Oil and Gas Conservation Commission (WOGCC), BLM, USFS, and Wyoming Department of Environmental Quality (WDEQ) are critical to the development of hydrocarbon reserves but can also potentially hinder the development of these resources. Improved relations with these agencies are a crucial element for increasing access to new reserves. To secure the economic longevity and prosperity of the County, these challenges and interface issues need to be efficiently addressed through consistencies and improved communication.

The Congressional Act of July 26, 1866, and the General Mining Act of 1872 granted all American citizens the right to go into the public domain to prospect for and develop minerals. Every mining law or act enacted since then has contained a "savings clause" that guarantees that the originally granted rights will not be rescinded. These laws are applicable in Carbon County. Carbon County's policies for mineral development are structured to increase the exploration, development, and production of mineral and energy resources within the political jurisdiction of the County. Through these relationships, the County plans to encourage development of mineral and energy production countywide where appropriate.

Carbon County is rich in many different minerals and mineable natural resources. Economics have impacted what resources have been mined to date. Carbon County has 37,735 records of mining claims on federal lands managed by the BLM. Of those 1,516 are active mining claims and 36,219 are closed mining claims. Open mining claims in the County peaked in late 1970s at around 6,000 claims open at one time. The number of open claims dropped in the mid-1980s and has continued to fluctuate below one thousand open claims since. (The Diggings, 2020)

The rare earth elements (REE) are a group of 17 metals with similar physical and chemical properties that include the lanthanide series elements plus scandium and yttrium. REE are considered strategic metals in the United States and are necessary for energy generation, transportation, data transmission, and national defense. (Sutherland, et. al. 2016) REE are a vital resource to industrialized societies worldwide.

A small amount of REE-bearing minerals was mined from a pegmatite in Carbon County during the 1950s (King and Harris, 2002). The Wyoming State Geological Survey (WSGS) recently investigated, analyzed, and produced maps showing there are deposits of REE in Carbon County. Development of REE in Carbon County would contribute to the diversification of the economy and benefit the national supply. There are two mapped REE districts that fall within Carbon County: The Southern Medicine Bow Mountains District and the Sierra Madre District. The map of REE for the state and Carbon County can be found here.[28]

Withdrawal

Federal lands can be withdrawn from mineral eligibility of development under the mining laws (30 U.S.C. Ch. 2). Mineral withdrawal prohibits the location of new mining claims. Withdrawal also may require that any preexisting mining claims in the area demonstrate that valuable minerals have been found before the withdrawal before any activities can commence on those preexisting claims. Withdrawal of minerals cannot prohibit the use of a valid existing right. A valid existing right exists when the mining claim contains the discovery of a valuable mineral deposit that satisfies the "Prudent Person" test, as defined in *Castle v. Womble. US v. Cole*, 390 U.S. 599, 602 (1968). To pass the "Prudent Person" test a person must demonstrate that "the discovered deposits must be of such a character that 'a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine." *Id*. However, these minerals cannot be considered "of common variety" to be a considered a valuable mineral under the mining laws. *See id*.; 30 U.S.C. § 611.

Congress can withdraw lands from new mineral claims or leases by passing legislation withdrawing said lands. *See* North Fork Watershed Protection Act of 2013. Additionally, FLPMA gives the Secretary of Interior the authority to withdraw federal lands. 43 U.S.C. § 1714. Secretarial withdrawals of over 5,000 acres may only last 20 years at most, but withdrawals may be renewed. 43 U.S.C. § 1714(c). The Secretary of Interior must inform Congress of any secretarial withdrawal of over 5,000 acres. *Id*. If both bodies of Congress adopt concurrent resolutions that they do not approve a withdrawal initiated by the Secretary of Interior l within 90 days of being notified, the withdrawal will be removed. *Id*. To allow for public involvement in the withdrawal process, public hearings and opportunities for public comment are required of all new secretarial withdrawals. 43 U.S.C. § 1714(h)

4.4.3 Resource Management Objectives (Mining & Mineral Resources):

A. Carbon County supports and encourages the extraction of mineral resources within the County while striving for a sustainable balance with other resources to achieve a high quality of life for County residents.
B. The County asserts its right to be a part of any regulatory process involving minerals which impacts its customs, cultural, and economic stability.
C. Carbon County endeavors to enhance and streamline coordination with all agencies involved in the regulatory process of mineral extraction as provided for by Federal and State law.
D. Future development of all minerals that may be valuable for the County occurs.

E. All mining and mineral exploration activities strive to protect the municipal water supply (Upper North Platte) within the County.

4.4.4 Priorities (Mining & Mineral Resources):

1. The permitting process for new activities within Carbon County should be efficient and timelines should follow Council on Environmental Quality National Environmental Policy Act guidelines to allow for more exploratory drilling and mining and improved access to reserves.
2. Partnerships with mineral industries, state agencies, federal agencies, and Carbon County should be established to increase and share knowledge of the mineral estate, and to develop and foster trust among partners.
3. Agencies should require that "public lands will be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands, including implementation of the Mining and Minerals Policy Act of 1970," as stated in the Federal Lands Policy and Management Act.
4. Federal agencies should give regular (where regular is defined as not less than quarterly) updates on the permit status for current and proposed projects within the County's jurisdiction and support reasonable timelines and explanations for issuance of delays from permitting agencies.
5. Local, state, and federal land use and management plans should contain a thorough discussion and evaluation of energy and mineral development, including the implications such development may have on surface land uses and the County economy. Additionally, all plans must demonstrate an understanding of the County's plans and policies and resolve any conflicts with the County's plans.
6. All exploration, development, and mining on federal lands in the County with mineral or energy potential shall be governed by adherence to all laws which pertain to mining and energy development and production.
7. All lands not lawfully withdrawn from mineral exploration and development shall remain available for mineral exploration. These lands should be developed in an orderly manner to accommodate exploration, development, and production. These activities will be performed in a manner consistent with the Mining and Mineral Policy Act of 1970.
8. State, federal, and County agencies shall protect the rights of access, occupation, and property of anyone prospecting and/or developing minerals within Carbon County as required by federal and state law.
9. Federal agencies should allow for simultaneous or sequential mineral development with other resource uses in accordance with multiple use management principles in Carbon County, giving precedence to established mineral rights in the development coordination process.
10. Federal agencies should encourage mining reclamation to use best management practices instead of requiring restoration to as near the same condition as original. Consider nonnative seeding where appropriate and beneficial for soil and land conservation.
11. Federal agencies should provide a justification to operators and the County when deferring lease applications.

12. In instances of split estate minerals, the agencies should ask for input from the surface owner and take the surface owner's requests into great consideration when developing a surface use plan.
13. There should be clear standards setting forth what is considered "good faith negotiations" when an operator is negotiating a surface use agreement with a surface user or owner as appropriate.
14. Federal agencies should work with local agricultural producers, Conservation Districts, and Carbon County to ensure mitigation is done properly and locally.

4.5 ENERGY RESOURCES

4.5.1 Oil and Gas

4.5.1.1 History, Custom, and Culture

Energy production has contributed to Carbon County's taxable income for over 100 years. The Sinclair Oil Refinery was built in the early 1920s and is still a major employer within the County. In the late 1970s, overall state oil production decreased, negatively impacting County revenue. This is illustrated in trending of countywide production records from the WOGCC. Carbon County was listed as one of the counties with the largest number of wells drilled nationally between 1980 and 2008, totaling around 2,530 wells. (Carbon County Economic Development Corporation, 2016)

In the last decade there have been developments in secondary and tertiary production methods that have made previously depleted fields economically feasible to re-produce and re-complete. From these advances there has been an increase in statewide oil production in the past decade. The County has seen fluctuating oil production over the past 35 years. Since the mid-1990s oil production trends have remained steady in Carbon County, varying between 1.1 and 1.7 million BBL (barrels) annually.

These trends in decline and growth are tied to existing economic conditions at the County, state, and national levels (Figure 9, Figure 10, and Figure 11).

Wyoming Oil Production for 1978-2020

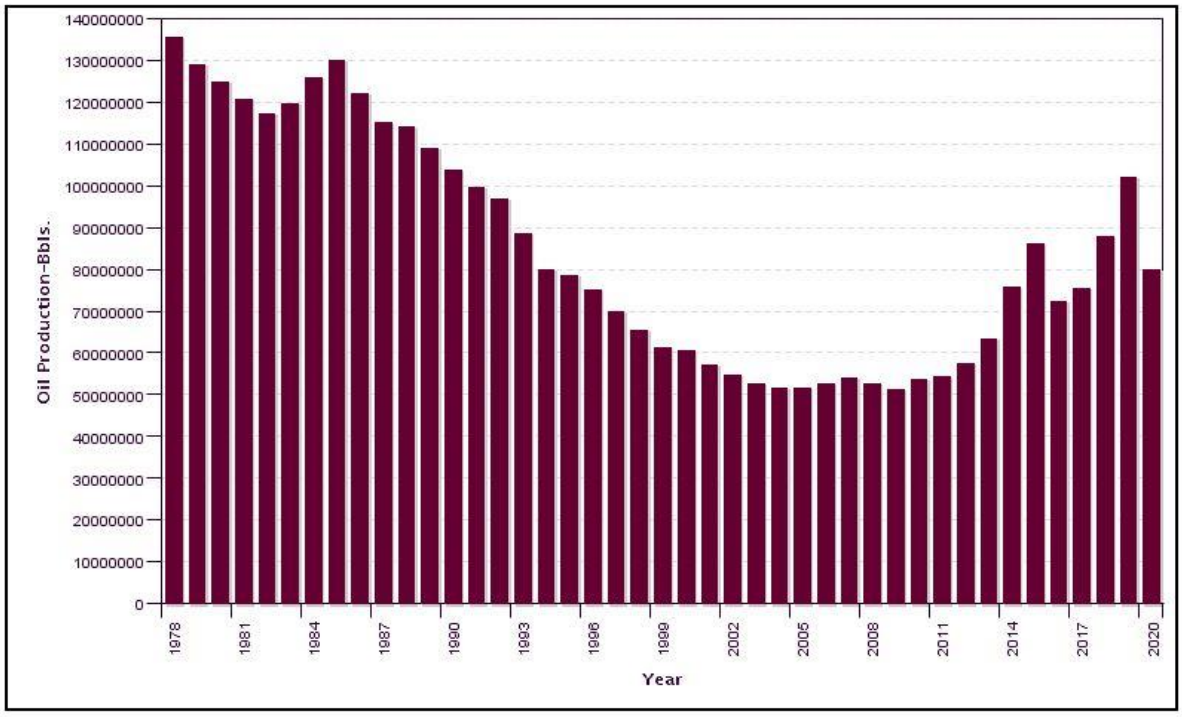

Figure 9: State of Wyoming Oil Production Trends (1978-2020). (WOGCC, n.d.-a)

Gas production increased in the County from the 1980s until 2009. In 1979 annual gas production was 14.7 million MCF (million cubic feet), by 2009 production had reached almost 129 million MCF. Since 2009 production has gradually declined, totaling 72 million MCF in 2019. (DrillingEdge, 2020)

Wyoming Gas Production for 1978-2020

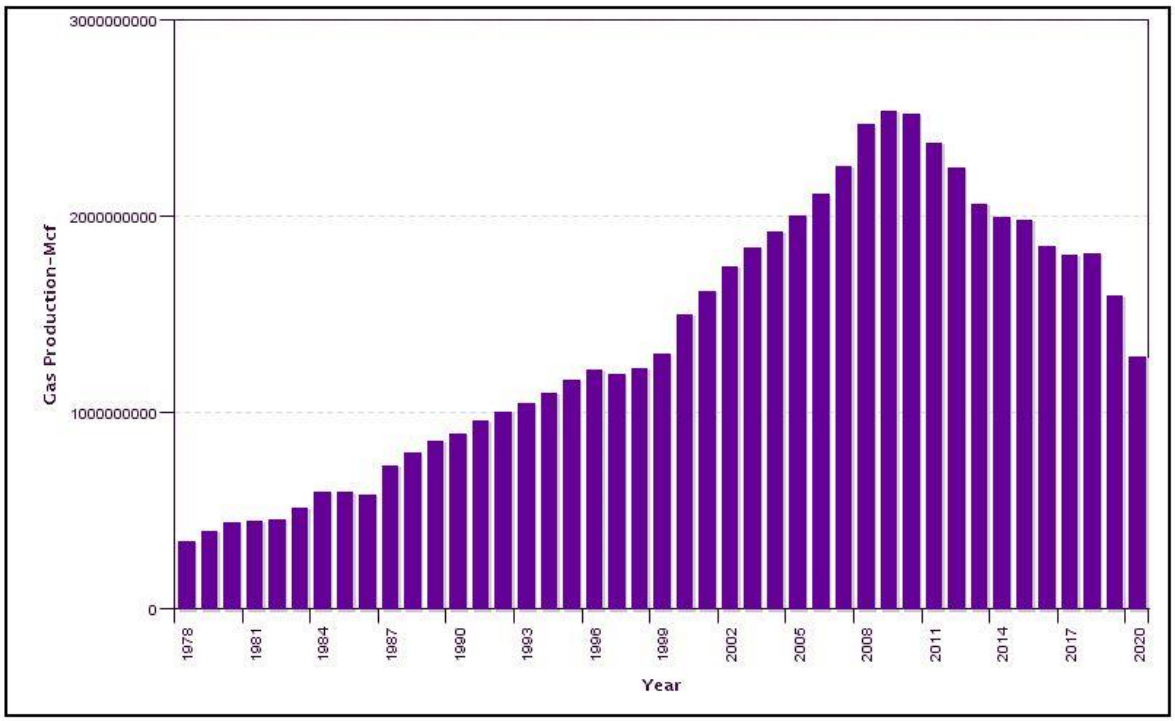

Figure 10: State of Wyoming Gas Production Trends (1978-2020). (WOGCC, n.d.-b)

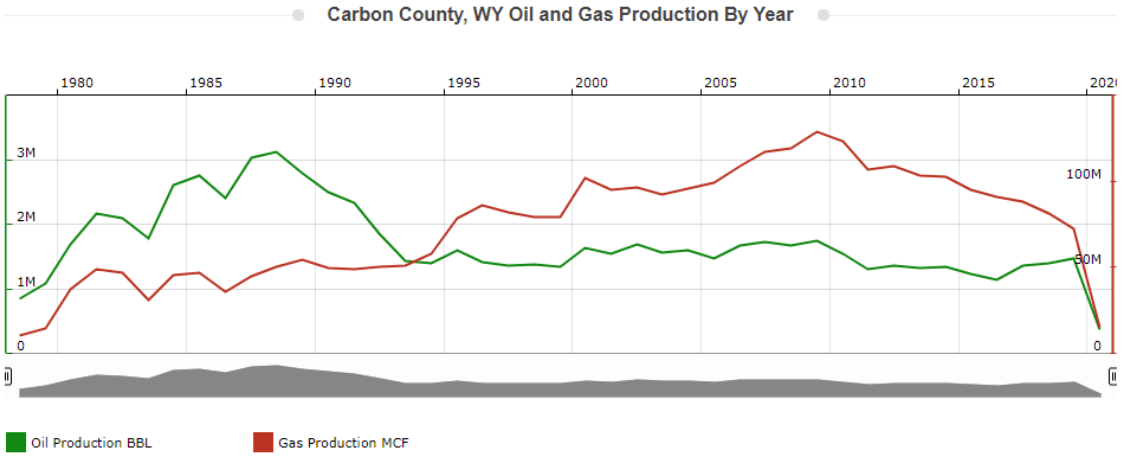

Figure 11. Oil and gas production in Carbon County from 1980 to 2020 (DrillingEdge, 2020).

4.5.1.2 Resource Assessment and Legal Framework

The extraction of oil from deposits is accomplished in three central phases of recovery: primary, secondary, and enhanced or tertiary recovery. Primary recovery relies on initial underground pressure to drive the product to the surface. As pressure falls, artificial lift technologies are used to bring the product to the surface. Occasionally the need for artificial lift is eliminated in the case of artesian, or over-pressured reservoir. Typically, only 10% of a reservoir's original oil in place is produced through primary recovery. Secondary recovery methods, such as water or gas

injection, can extend a field's productive life and result in the extraction of an additional 20-40% of the original oil in place. Enhanced oil recovery techniques offer the potential to produce 30-60% more oil. These techniques include thermal recovery, hydraulic fracturing, gas injection, or chemical flooding.

The production of natural gas is like that of oil. The primary phase of production is driven by initial reservoir pressure and decreases as this pressure and reserves in place are reduced. The production of gas can be augmented in a manner like that of oil. Enhanced or tertiary recovery of gas can be further augmented through the utilization of fracturing and other stimulation methods. Enhanced recovery methods are limited by costs and unpredictable effectiveness. These methods have improved drastically over the past decade allowing for more cost-effective and efficient recovery.

The Mineral Leasing Act of 1920, as amended, and the Mineral Leasing Act for Acquired Lands of 1947, as amended, give the BLM responsibility for oil and gas leasing on BLM, USFS, and other federal lands, as well as private lands where mineral rights have been retained by the federal government (split estates). The BLM is a multiple use agency and must balance the development of mineral resources in the best interest of the country. The BLM must manage for uses like livestock grazing, recreation, and development and conservation of wildlife habitat. The USFS regulates all surface-disturbing activities on USFS land, (30 US Code § 226 (g)). The USFS is the lead agency applying stipulations on leasing of USFS land and conducts environmental analysis for leasing and permitting activities on these lands. The Mineral Leasing Act makes the disposition of oil and gas in the form and manner provided by the Act a mandatory Act (30 U.S.C. § 181). Further, lease sales for each state where eligible lands are available must be held at least quarterly. (30 U.S.C. § 226)

Two major gas production projects in Carbon County are the Atlantic Rim and Continental Divide-Creston Projects. The Atlantic Rim Project Record of Decision (ROD) was released in 2007, permitting the development of 2,000 natural-gas wells over the 50-year life span of the project. The Atlantic Rim Project is projected to produce 1,350 billion cubic feet (BCF) of natural gas and approximately $958 million dollars in tax revenue and royalties (BLM, 2007). The Continental Divide-Creston Natural Gas Development Project ROD was published in 2016, permitting the drilling of nearly 9,000 additional wells west of Rawlins, near the Carbon County border (BLM, 2016a).

4.5.1.3 Resource Management Objectives (Oil and Gas):

A. Responsible extraction of oil and gas within the County continues while also maintaining a sustainable balance with other resources to achieve quality of life for County residents.
B. Carbon County is a part of any regulatory process regarding oil and gas which impacts its custom, cultural, and economic stability.
C. Private landowners (surface estate owners) are worked and coordinated with during development and reclamation of oil and gas areas.
D. All oil and gas developments in Carbon County reclaim the land reasonably back to its productivity using best management practices.

E. Lease sales for eligible lands in Carbon County are held at least quarterly.

4.5.1.4 Priorities (Oil and Gas):

1. The permitting process for new oil and gas drilling activities within Carbon County should be efficient and timelines should follow Council on Environmental Quality National Environmental Policy Act guidelines to allow for more exploratory drilling and improved access to reserves.
2. Federal agencies should pursue opportunities to encourage the nomination of more oil and gas leases for sale.
3. Federal agencies should prioritize approval of secondary and enhanced (tertiary) oil and gas recovery methods where possible (e.g., fluid, gas and steam injection) to extend the production life of a field, while maintaining air quality and available water quality and quantity for agricultural and domestic use.
4. The County encourages federal agencies to use advanced oil and gas production techniques to improve access to reserves in place.
5. The County encourages coordination among the various federal agencies to facilitate hydrocarbon production permits in a timely manner, as prescribed in federal law.
6. Federal agencies should support the use of enhanced oil recovery and the associated infrastructure (e.g., carbon dioxide pipelines, processing plants, steam flood facilities) necessary to support enhanced oil recovery production.
7. Federal agencies should support mitigation plans for energy projects that will minimize habitat loss and fragmentation or degradation of habitat values. The amount and location of mitigation should correspond to the quantity and quality of the habitat at risk and should be conducted locally.
8. Co-locate new roads and utility rights-of-way in existing corridors and where there has been previous disturbance to minimize new ground disturbance associated with energy development. When co-location is not possible, locate new roads outside of important habitats.
9. The County encourages surface occupancy of oil and gas development to already disturbed areas or edges of habitat.
10. Linear oil and gas facilities should be placed in or adjacent to previously disturbed corridors. Prevention of additional habitat fragmentation is encouraged.
11. Federal agencies should protect water quality, aquatic habitat, and fish and wildlife habitat by conserving water bodies and associated wetland and riparian areas. Minimize disturbance of these areas from associated energy developments such as buildings, roads, and other structures.
12. Federal agencies should conduct pre-construction surveys for a minimum of twelve months on important wildlife species for new oil and gas developments, including: big game surveys, migratory bird surveys, raptor nest surveys, Greater Sage-Grouse surveys, any known Endangered Species Act and sensitive species list surveys, and bat surveys (resident and migratory).
13. Federal agencies should conduct a minimum of twelve months of post-construction monitoring to assess displacement of wildlife and effectiveness of mitigation measures. Monitoring should cover all seasons of operation and should follow credible data criteria.

14. The County encourages mining reclamation to use best management practices and should consider the use of nonnative seeding where appropriate and beneficial for soil stability and conservation.
15. In instances of split estate minerals, federal agencies should ask for input from the surface owner and take the surface owner's requests into great consideration when developing a surface use plan.
16. There should be clear standards when setting forth "good faith negotiations" when an operator is negotiating a surface use agreement with a surface owner.
17. Baseline water testing should be completed before a proponent is issued a permit for development within the County.
18. Federal agencies should encourage oil and gas reclamation to use best management practices instead of requiring restoration to as near the same condition as original. Consider nonnative seeding where appropriate and beneficial for soil stability and conservation.
19. Federal agencies should work with local agricultural producers, Conservation Districts, and the County to ensure mitigation for oil and gas development is done properly and locally.
20. The Bureau of Land Management should continue holding lease sales and awarding leases for Carbon County lands on at least a quarterly basis as is required by the Mineral Leasing Act.

4.5.2 Coal

4.5.2.1 History, Custom, and Culture

Coal was discovered in Wyoming in 1843 by the Fremont Expedition. Coal mining began in the area in the 1860s. Wyoming's first coal town, Carbon, and Carbon County were both founded in 1868, named for the rich coal deposits. The first commercial mines began with the arrival of the railroads in the 1860s and were in Carbon and Rock Springs.

Through the 1860s and into the 1880s Carbon County boomed with seven nearby coal mines which fed the trains traversing the country. The town and surrounding area lasted until 1902. The Town of Hanna was founded in 1889 once coal was depleted at Carbon. Trains were diverted from the main line to Hanna to transport the coal. By 1892, the production of coal in the area made Carbon County the second highest coal-producing county in Wyoming. In the mid 1990's, coal was still at high production in the County and it was reported that production of coal in Carbon County was 2.6 million tons per year from surface mines and more than 1.6 million tons of coal from underground mines. (Van Pelt, 2014)

Coal production across Wyoming and in Carbon County has declined as U.S. coal-fired power plants have shut down and natural gas-fired and renewable-sourced electricity generation have increased. In 2019, approximately 24% of the nation's electricity came from coal with natural gas electricity source at 38%. (U.S. Energy Information Administration, 2020) However, Wyoming coal still remains in demand as it is considered clean burning due to most Wyoming coal being

sub-bituminous, which makes it an attractive choice for power plants because it has less sulfur and burns around 8,400 to 8,800 BTUs per pound. (Wyoming Mining Association, 2013)

4.5.2.2 Resource Assessment and Legal Framework:

There are substantial coal resources in Carbon County, however large portions of the Greater Green River Basin (GGRB) have not yet been formally assessed. The evaluation of the eastern portion of the GGRB, labeled as the Little Snake River coal field and the Red Desert area, was published in 2019. Within this area there are approximately 73.2 billion short tons (BST) of coal, 19.37 BST of which are recoverable with current technology. Coal reserves in this region total 167 million short tons (MST). (Shaffer et al., 2019)

Coal was once a large industry cornerstone in Carbon County and provided jobs to hundreds of people particularly around the Hanna area (Carbon County Economic Development Corporation, 2016). There are currently no operating coal mines within the County.

Dormant Commerce Clause

One issue arising recently is cities across the west coast enacting ordinances banning the export of coal from their ports. In 2016 the City of Oakland enacted such a ban, similar bans have been enacted in the city of Richmond and the state of Washington. Such bans bring up constitutional questions regarding the Dormant Commerce Clause. *See Levin v. City of Richmond*, 107 Fed.R.Serv.3d 1608 (August 27, 2020). The Dormant Commerce Clause of the Constitution prohibits states or local governments from unjustifiably discriminating against or burdening the flow of interstate commerce. U.S. CONST. art. I, § 8, cl. 3. The general purpose of the Dormant Commerce Clause is to avoid states from engaging in "economic Balkanization" or economic protectionism in which one state's industry or business is discriminated against in order to benefit the industry of another state. *Hughes v. Oklahoma*, 441 U.S. 322, 325 (1979).

There are four ways in which a local or state regulation may be a violation of the Dormant Commerce Clause. The first instance is when state or local law that "discriminates" against interstate commerce faces a "virtually per se rule of invalidity." *Philadelphia v. New Jersey*, 437 U.S. 617, 624 (1978). Thus, when a law explicitly discriminates or is applied unevenly to an out-of-state business in favor of an in-state business, the law is automatically unconstitutional. The second way a local law or ordinance may violate the Dormant Commerce Clause is when there is a non-discriminatory law which incidentally effects interstate commerce, but the burden on interstate commerce is clearly exceed the local benefits. *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970). In other words, when a law is evenly applied to everyone, but the law creates an immense burden on interstate trade with little benefit to the local community, it is unconstitutional. The third way a law can violate the Dorman Commerce Clause is if it has an impermissible extraterritorial reach. *Healy v. Beer Inst.*, 491 U.S. 324, 336 (1989). Simply put, if the practical effect of a statute controls the conduct of citizens within the borders of another state, the law is unconstitutional. *See id.* (ruling a law requiring beer and liquor sold in Connecticut to be the same price or less than beer and liquor sold in bordering states unconstitutional because the law has the practical effect of regulating markets outside of the state of Connecticut). Finally, a state or local law violates the Dormant Commerce Clause if it

interferes with the federal government's ability to speak with one voice when regulating commerce with foreign nations. *Japan Line, Ltd. v. Los Angeles Cty.,* 441 U.S. 434, 449 (1979). In turn, if a regulation has the practical effect of preventing Wyoming coal from being exported to other countries and jurisdictions, the Dormant Commerce Clause may very well make such laws illegal because it impermissibly regulates interstate commerce. *See State of Wyoming, Kansas, Montana, Nebraska, South Dakota and Utah's Motion for Leave to Participate as Amicus Curiae, Lighthouse Resources, Inc. v. Inlsee,* No. 3:18-cv-05005 (W.D. Wash., Motion and Brief Filed May 8, 2018).

4.5.2.3 Resource Management Objectives (Coal):

A. Coal-powered power plants are continued to be used as a clean and efficient source electricity in the County and United States.
B. Future research on clean coal technology is supported and conducted.
C. Carbon County coal is exported to other states and countries.
D. Coal is used for purposes other than energy development.
E. Affordable and reliable electricity is available and accessible to Carbon County without unnecessary regulatory impedances.

4.5.2.4 Priorities (Coal):

1. The County should be involved as a cooperating agency as early as possible in any federal agency action to downsize the coal industry in the County.
2. Federal agencies and state agencies should make the County aware of any decisions or actions that could limit, impede, or increase the cost of coal energy being brought into the County and allow the County to participate as a cooperating agency early in the process for all such decisions.
3. Federal agencies should support the continued responsible use of coal as an energy source and its transmission into the County.
4. Federal agencies should encourage implementation of new technologies to provide for cleaner, more efficient use of coal in the refinement process.
5. Federal agencies should support coal energy as the primary source of electric power until other sources become more economically feasible and more efficient.
6. Federal agencies should support the development and improvement of current and future infrastructure for the transmission of coal powered energy.
7. Energy generated from coal should be transmitted and stored in ways that limit risks to the environment and residents of the County.
8. Carbon County does not support any restrictions to the exportation of coal and considers any such restriction a violation of the Dormant Commerce Clause.

4.5.3 Uranium

4.5.3.1 History, Custom, and Culture

Uranium was discovered in the Shirley Basin in Carbon County in 1955 with production beginning in 1960 from both underground and open pit mines. Mining by in-situ leaching began in 1961. Uranium mining subsided in the County in the 1990s and has not been a viable operation since.

4.5.3.2 Resource Assessment and Legal Framework

Uranium mining does not currently occur within the County. However, uranium deposits are still present in the County and within the last year a uranium mine 30 miles north of Medicine Bow has had discussions about resuming mining operations using previously explored techniques with new technology.

Should it be approved, the Shirley Basin Uranium In-Situ Recovery Project could produce up to 2 million pounds of dried yellowcake uranium annually by injecting underground rock formation with a water-based solution designed to attract uranium. The proposed project is located at an open-pit uranium mine that was previously active from the 1960s to the 1990s.

4.5.3.3 Resource Management Objectives (Uranium):

A. Uranium is mined as a viable energy source when there is market and it is economically beneficial for the citizens of the County.
B. Future mining reclamation restores the land to allow for other multiple uses.

4.5.3.4 Priorities (Uranium):

1. Federal agencies should permit uranium mines within Carbon County.
2. Federal agencies should encourage mining reclamation to use best management practices instead of requiring restoration to as near the same condition as original.
3. Federal agencies shouldconsider nonnative seeding where appropriate and beneficial for soil stability and conservation.

4.5.4 Renewable Energy

4.5.4.1 History, Custom, and Culture

Wind

Carbon County's primary form of developed renewable energy is wind energy. Carbon County has some of the best wind resources in the country. The area produces Class 6 and 7 winds, which are the highest wind classes (Power Company of Wyoming, 2020). The County understands that the development of renewable energy is a component of energy infrastructure development. Wyoming does not have a renewable portfolio standard goal to generate a certain amount of the state's electricity from renewable energy (National Conference of State Legislatures, 2019).

Hydroelectricity

Carbon County also has two hydroelectric power dams, Seminoe and Kortes Dams. The Seminoe Dam was intended to expand irrigation and generate hydropower in central Wyoming. It is on the North Platte River and was constructed between 1936 and 1939. The dam stores water in the Seminoe Reservoir for irrigation and hydroelectricity generation. The Kortes Dam is located on the North Platte River north of the Seminoe Dam. Its main purpose was power generation with irrigation as a secondary purpose. The Kortes Dam was constructed between 1946 and 1951 and impounds the North Platte River for hydroelectric power. (BOR, n.d.-a, n.d.-c)

4.5.4.2 Resource Assessment and Legal Framework

Carbon County is supportive of the renewable energy opportunities within the County including wind, hydroelectric, and solar. The County's zoning regulations specifically discuss commercial scale energy facilities with the purpose to ensure that commercial scale energy facilities are placed in the appropriate locations and mitigate potential negative impact; to provide minimum design and development standards; and to provide consistent standard to ensure development. Through the County review process, important wildlife habitat can be identified and appropriate avoidance, minimization, and/or impact mitigation techniques may be required. Further information on the zoning regulations for commercial scale energy opportunities and zoning in Carbon County can be found here.[29]

Wind

Carbon County has approved 17 wind power projects with the total construction of over 1,000 wind turbines within the County. There are six wind projects that have been permitted through the County but never constructed, seven that have been permitted and constructed, and four wind projects that are currently permitted and under construction. Those projects permitted and constructed include Foote Creek Rim, Simpson Ridge, Seven Mile Hill, Rock River I, Clipper Wind Turbine, High Plains and McFadden Ridge, and the Dunlap Wind Energy Development Project. The projects currently approved and under construction include: Chokecherry and Sierra Madre Wind Energy Project, TB Flats Wind Energy Project, Ekola Flats Energy Project, and Foot Creek Rim I Wind Energy Project. Those approved wind energy projects are below in Figure 12. Wind energy rights are real property appurtenant to the surface estate W.S. 34-27-103(a).

The largest wind energy project in Carbon County is the Chokecherry and Sierra Madre Wind Energy Project. This project is anticipated to generate up to 3,000 megawatts of electricity with almost 900 wind turbines. The Chokecherry and Sierra Madre Wind Energy Project EIS was approved in 2012 and the EA for the project's infrastructure was finalized in 2014. Phase One EA of the project construction was approved in 2017, starting the development of the first 500 turbines. The EA for the second, and final, phase of the project was published in December of 2019, approving the development of an additional 396 turbines. (BLM, 2019b; Power Company of Wyoming, 2020)

The wind power industry is likely to continue growing in Carbon County due to the quality of wind resources available. New development of renewable energy in the County will be considered based on expanding existing available energy infrastructure.

The 2015 Carbon County Zoning Regulations[29] lay out siting and location standards for commercial scale energy systems regarding Greater sage-grouse. The regulation states:

No Commercial Scale Energy System shall be located within Greater Sage-Grouse Core Area Protection zones as defined by the State of Wyoming Executive Order 2015-4 or as amended, or the Sage Grouse Priority Habitat as defined by the BLM approved Resource Management Plan Amendment for Greater Sage Grouse. When the State of Wyoming Executive Order for Sage-Grouse Core Area Protection and the BLM approved Resource Management Plan amendment

for Greater Sage Grouse conflict, the more restrictive of the documents shall apply (Carbon County, 2015)

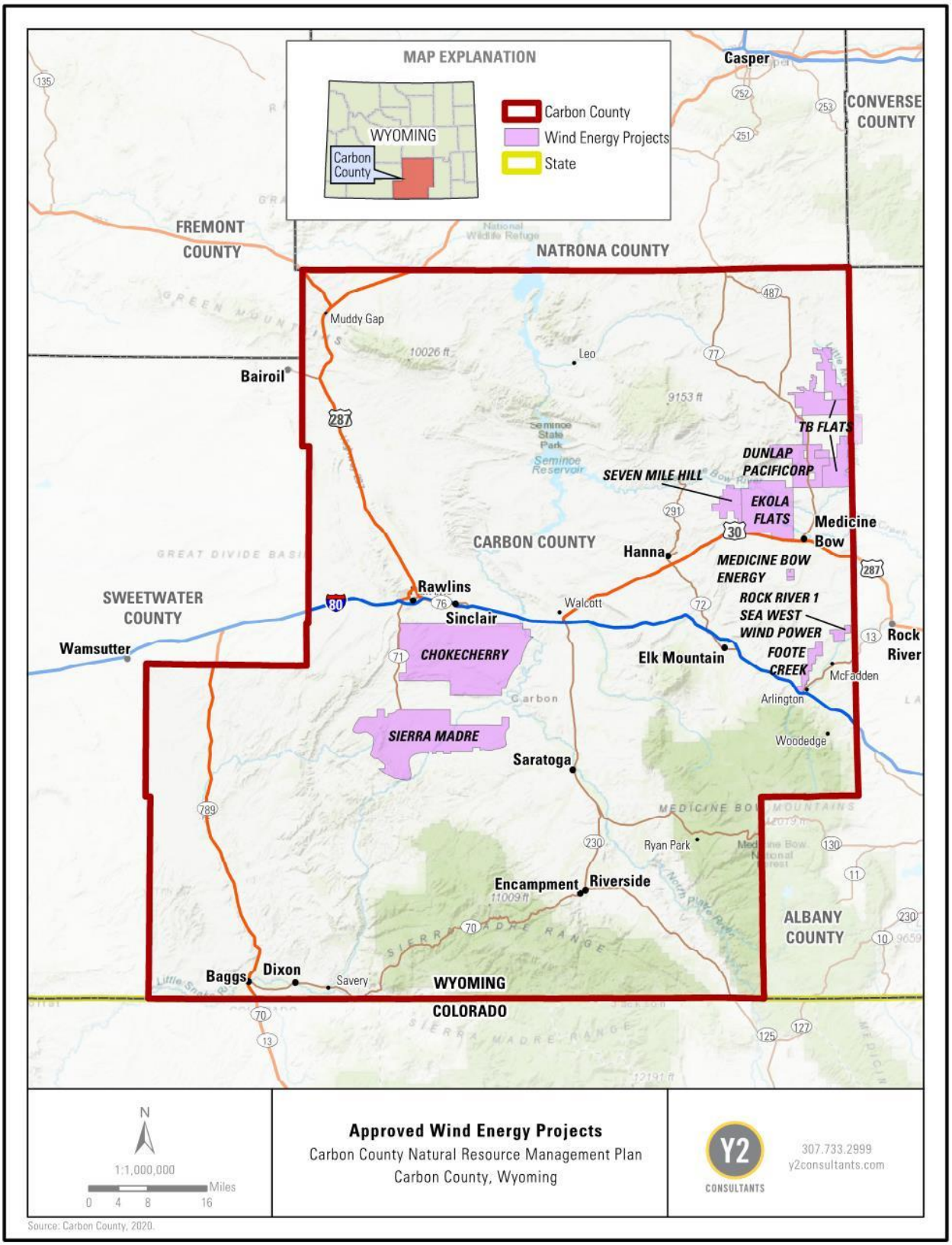

Figure 12. Approved wind energy projects within Carbon County.

Hydroelectricity

The Seminoe Dam created the Seminoe Reservoir which has a total capacity of 1.1 million acre-feet and provides storage capacity for the water to irrigate project lands. The power plant generates electric power and is located at the base of the dam. (BOR, n.d.-c)

The Kortes Dam is a much smaller dam and only provides storage for 4,700 acre-feet of water. The dam is constructed at the optimum location to develop the most head between Seminoe tailwater and Pathfinder high water surface elevation. (BOR, n.d.-a)

Solar

Carbon County is mostly sunny throughout the year with warm, mostly clear summers and cold, partly cloudy winters. While there currently are not any commercial solar energy projects in Carbon County, future potential exists. The State of Wyoming Sage-Grouse Executive Order 2019-3 does not recommend commercial solar energy development in sage-grouse core areas.

4.5.4.3 Resource Management Objectives (Renewable Energy):

A. Renewable energy, including, wind, solar, hydroelectric, etc. is developed within the County while striving for a sustainable balance with other resources to achieve quality of life for County residents.
B. All wind projects, regardless of when they were permitted, follow the current Carbon County and Wyoming State guidelines for decommissioning and abandoning wind turbines.
C. All renewable energy projects minimize habitat fragmentation, collocate disturbances with existing projects, following existing energy corridors, and conduct successful reclamation.

4.5.4.4 Priorities (Renewable Energy):

1. Federal and state agencies should give notice to Carbon County of any decisions or actions that could limit, impede, or increase the cost of renewable energy being brought into the County and allow the County to participate as a cooperating agency early in the process for all such proposals and decisions.
2. Federal agencies should evaluate the development of renewable energy in coordination with stakeholders.
3. Federal agencies should support renewable energy (i.e., wind, solar, hydroelectricity) as a means of economic diversification and to further develop energy infrastructure and energy independence without encumbering the underlying mineral estate.
4. Absent a conflict with federal law or federal agencies' written reclamation requirements, reclamation requirements should be permitted at the higher of the two standards (Carbon County or federal agency) if there are discrepancies before projects are approved.
5. Federal agencies should develop and determine reclamation standards for proposed actions in coordination with stakeholders.
6. When conflicting with other uses, renewable energy should be a lower priority than other multiple uses in Carbon County.

7. Wind and solar farms should be located on lands with high energy potential and low-value habitats such as previously disturbed lands or areas where impacts on native plant or wildlife species are minimal.
8. Federal agencies should discourage locating wind energy projects within bird, bat, pronghorn, and mule deer migration areas.
9. Federal agencies should be consistent with the Carbon County Zoning Regulations.
10. Federal agencies should encourage renewable energy reclamation to use best management practices instead of requiring restoration to as near the same condition as original. Consider nonnative seeding where appropriate and beneficial for soil stability and conservation.
11. Federal agencies should follow Carbon County Zoning Resolution Chapter 6.1.C limiting location of commercial scale wind or solar energy systems within sage-grouse core areas.

4.5.5 Corridors, Pipelines, and Transmission Lines

4.5.5.1 History, Custom, and Culture

Corridors

In 2005, Section 368 of the Energy Policy Act of 2005, directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate under their respective authorities' corridors on federal land in 11 western states (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities.

Pipelines

Pipeline infrastructure plays a crucial role in the development and transmission of hydrocarbons at the national, state, and County levels. It is crucial that these avenues for transmission can thrive and develop within Carbon County. Pipelines offer a safe and effective means for delivering large amounts of hydrocarbons across extended distances with minimal risk for spills (Global Energy Institute, 2013).

Due to the development of oil and gas within Carbon County there has been significant development of oil and gas transmission pipelines throughout the County, primarily along the east-west axis. These pipelines are mostly confined to a central corridor within the County, though a few oil and gas pipelines are located between Rawlins and the northwest corner of the County. The County has long been a proponent of pipeline development. (WSGS, 2020)

Transmission Lines

Transmission lines have been expanding within Carbon County and surrounding areas particularly as more renewable energy sources such as wind energy become more prevalent across the landscape (Figure 13). Many of these transmission lines have the purpose of transporting energy generated in the state to other states such as Arizona, California, Colorado, Idaho, Nevada, and Utah.

4.5.5.2 Resource Assessment and Legal Framework

Corridors

Carbon County lies within Region 4 of the Section 368 Energy Corridors. Within Carbon County there are several corridors that have been designated. They include:

- Rawlins Corridor (73-138)[30] – 25 miles of designated corridor
- Baggs Corridor (138-143)[31] – 23miles of designated corridor
- Shirley Basin Corridor (78-225)[32] – 28 miles of designated corridor
- Laramie Corridor (78-85)[33] – 7 miles of designated corridor

Pipelines

There is very little federal regulation of most pipelines. Permitting for interstate natural gas pipelines and interstate liquified natural gas (LNG) pipelines fall under Section 7 of the Natural Gas Act and are reviewed by the Federal Energy Regulatory Commission (FERC), which also gives pipeline companies their national condemnation authority. However, the Natural Gas Act does not regulate oil, natural gas liquid (NGL).

The federal government has explicitly avoided drafting regulations concerning pipeline land-use issues. "Congress has failed to create a federal regulatory scheme for the construction of oil pipelines and has delegated this authority to the states." *Sisseton-Wahpeton Oyate v. U.S. Dep't of State*, 659 F. Supp. 2d 1071, 1081 (D.S.D. 2009)("Generally, state and local laws are the primary regulatory factors for construction of new hazardous liquid pipelines."). Even for gas pipelines, the Federal Energy Regulatory Commission "FERC" requires gas pipeline companies to comply with state and local regulations as a condition of their federal certificates. *See NE Hub Partners, L.P. v. CNG Transmission Corp*., 239 F.3d 333, 339, 346 n. 13 (3d Cir.2001) (concluding that field of natural gas regulation was occupied by federal law, but that FERC required gas company to comply with local regulations through conditions in certificate). Thus, unless pipelines cross federal lands and trigger NEPA review, interstate pipelines remain mostly unregulated by the federal government.

One aspect of pipelines that is federally regulated outside of federal lands is pipeline safety. In 1994, Congress passed the Pipeline Safety Act "PSA," 49 U.S.C. § 60101–60137, recodifying without substantive changes the Natural Gas Pipeline Safety Act of 1968 and the Hazardous Liquids Pipeline Safety Act of 1979. Among other things, the PSA expressly preempts state law concerning "safety standards for interstate pipeline facilities or interstate pipeline transportation" and delegates the authority to draft pipeline safety regulations to the Pipeline and Hazardous Materials Safety Administration (PHMSA). 49 U.S.C. § 60104(c).

However, regulations that concern a county's purview (the general welfare of its constituents) are not necessarily preempted if they indirectly affect pipeline safety. *See, e.g., Tex. Midstream Gas Svcs., LLC v. City of Grand Prairie*, 608 F.3d 200, 212 (5th Cir. 2010) (holding a setback requirement for compressor stations was primarily motivated to preserve "neighborhood visual cohesion, avoiding eyesores or diminished property value"). In order that the regulations are not preempted by the PSA, the regulations must affect aesthetics or other non-safety police powers.

Id. at 212; *see also, e.g., Am. Energy Corp. v. Tex. E. Trans., LP*, 701 F. Supp. 2d 921, 931 (S.D. Ohio 2010) ("The PSA does not preempt Ohio property or tort law."). Regulations directly affecting reclamation, water crossings, cleanup, or other similar matters important to landowners that affect their environment would likely not be preempted by the PSA.

Pipelines associated with oil and gas within the County include the Exxon/Frontier Natural Gas Pipelines, CIG Natural Gas Pipelines, Lost Creek Natural Gas Pipeline, and the Sinclair Natural Gas Pipelines (BLM, 2008). For an interactive map of the County's oil and gas pipelines refer to the Interactive Oil and Gas Map of Wyoming located here.[34]

In 2019, the State of Wyoming proposed the Wyoming Pipeline Corridor Initiative to the BLM, which is a proposal to designate almost 2,00 miles of pipeline corridors across the state with approximately 1,105 miles of the proposed corridors on BLM managed lands. The purpose behind the pipeline corridor is to connect existing oil fields suitable for enhanced oil recovery with anthropogenic and natural carbon dioxide sources. The BLM released the Final Environmental Impact Statement in October 2020 for this project. The EIS can be found here.[35] (BLM, 2020)

Transmission Lines

Energy Gateway West

The Gateway West Project is a 230kV transmission line that crosses approximately 100 miles through Carbon County from the Shirley Basin to the Carbon and Sweetwater County line. The purpose of this project was to expand Rocky Mountain Power's existing transmission system to provide reliable transmission service, and to construct and place into service sufficient capacity to reliably deliver resources to network and native load customers. The transmission line crosses checkerboard land ownership with both private lands and federal lands managed by the BLM. The Board of County Commissioner (BOCC) of Carbon County approved the project in September 2018.

Energy Gateway South

The Gateway South Project is a single circuit, 500kV transmission line between Aeolus Substation and the Moffatt County, Colorado border. The Gateway South Transmission line will be generally co-located and off set from the existing Gateway West Transmission line. The project will consist of a 500kV alternating current electric transmission lines and associated substation facilities as part of the PacifiCorp Energy Vision 2020 Plan. When complete, the project will provide existing and new renewable energy sources to meet growing needs, ease transmission congestion, and improve the flow of electricity throughout the West. The project will cross private lands, state lands, and federal lands administered by the BLM and USFS within Wyoming, Colorado, and Utah. The Gateway South Project was approved by the BOCC, Carbon County, on September 1, 2020. (Resolution 2020-44)

TransWest Express Transmission Project

The TransWest Express (TWE) Project is part of a high voltage transmission system that will extend across four states and will include approximately 730 miles of transmission line and 3 terminals located in Wyoming, Utah, and Nevada. TWE will transmit electricity generated at the

Chokecherry Sierra Madre Wind (CCSM) Energy Facility and other sources. Although CCSM and TWE are independent projects, they will share facilities and access roads to limit new disturbance. The project includes all associated components and facilities that are necessary to generate electricity and deliver electricity to the transmission grid, including an interconnection with an existing 230kV line that will feed energy into the Wyoming grid as demand arises. Estimated construction on the project is 2020 or upon issuance of BLM notice to proceed. Approximately 55 miles of the TWE Project will run through Carbon County; beginning south of Rawlins and then proceeding west to the Sweetwater County line and then south, generally along with Carbon and Sweetwater County line. The transmission line will run through primarily checkboard lands including lands privately owned, state owned, and BLM managed. The Carbon County BOCC approved the TWE Project in November 2018.

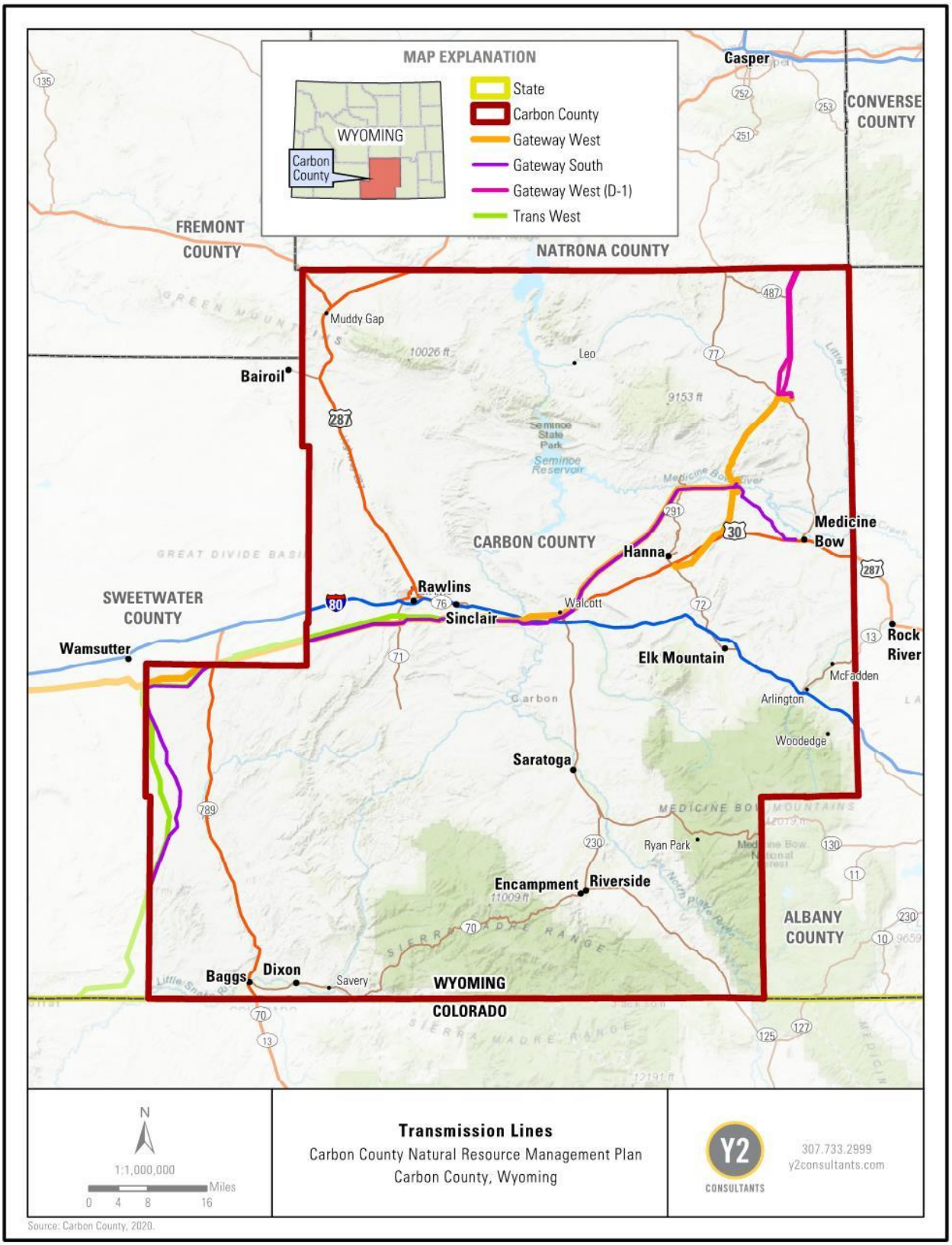

Figure 13. Energy transmission lines in Carbon County.

4.5.5.3 Resource Management Objectives (Transmission):

A. Carbon County supports and encourages energy corridors, development of pipelines, and development of transmission lines from all energy sources within the County while striving for a sustainable balance with other resources to achieve quality of life for County residents.
B. Reclamation is conducted in an efficient way that protects existing uses, utilizes best management practices and should consider the use of nonnative seeding where appropriate and beneficial for soil stability and conservation.
C. Pipelines use the most efficient route and avoid the use of eminent domain within the County.
D. Pipeline and transmission line development primarily utilize existing utility corridors and areas previously disturbed regardless of land ownership, while sensitive habitats and conflicting existing uses are avoided.

4.5.5.4 Priorities (Transmission):

1. Carbon County supports collocation of transmission lines, pipelines, etc. to reduce fragmentation across the landscape.
2. Future and existing energy corridor, pipeline, and transmission line infrastructure for the transmission of energy and/or materials in and through Carbon County should be developed and improved when it will not affect pre-existing uses or rights.
3. Carbon County supports efficient and timely decisions regarding energy corridors, transmission lines, and/or pipelines so long as it does not harm pre-existing uses or rights.
4. Carbon County encourages pipeline and transmission line development to be in the most appropriate route, avoiding sensitive habitats, the use of eminent domain, and conflicting existing and future planned uses, regardless of land ownership, with a preference to placement on federal lands.
5. Federal agencies should encourage reclamation to use best management practices instead of requiring restoration to as near the same condition as original. Consider nonnative seeding where appropriate and beneficial for soil stability and conservation.
6. Pipelines should avoid water crossings and placement in river systems. Should a pipeline cross water bodies, boring and other methods that would reduce disturbance to the water body or riverbed should be required.
7. All potentially hazardous materials best management practices shall be required to prevent water quality impairments from occurring.
8. Carbon County discourages the use of eminent domain for all pipeline and powerline projects.
9. Federal agencies should work with local agricultural producers, Conservation Districts, and Carbon County to ensure mitigation is done properly and locally.

4.6 AIR QUALITY

4.6.1 History, Custom, and Culture

Clean air in the County is important to citizens and visitors. Wildfires can create air quality issues in the summer and fall. Dust from unpaved roads can negatively impact air quality, particularly

during drought conditions. Clean air is key to people living in Carbon County and to those who visit the County. Increased occurrence of severe fires over the past decade have led to reduced air quality and various health issues across Wyoming.

4.6.2 Resource Assessment and Legal Framework

Under the Clean Air Act of 1970 (42 U.S.C. §7401 et seq.), the US Environmental Protection Agency (EPA) is responsible for setting and enforcing National Ambient Air Quality Standards (NAAQS). Standards were established for total suspended particulate matter, carbon monoxide, ozone, nitrogen dioxide, and sulfur dioxide. The EPA, working with states and tribes, identifies areas as meeting (attainment) or not meeting (nonattainment) the NAAQS. The Clean Air Act requires states to develop a plan for attainment of air quality standards in their state. These plans are called State Implementation Plans (SIPs). (O. EPA, 2014)

In Wyoming, local enforcement of many air pollutant regulations is delegated to the Wyoming Department of Environmental Quality (WDEQ) (R. 08 EPA, 2014). WDEQ's Air Quality Division has established standards for ambient air quality necessary to protect public health and welfare; ambient air refers to that portion of the atmosphere, external to buildings, to which the general public has access (WDEQ, 2018b). WDEQ has also established limits on the quantity, rate and concentration of emissions of various air pollutants from various sources including, but not limited to:

- Vehicle engines
- Construction/Demolition activities (asbestos)
- Handling and transport of materials
- Agricultural practices
- Fuel-burning equipment
- Oil and gas operations
- Manufacturing operations

The degradation of air quality in Carbon County comes from both natural and man-made sources:

- Wind-carried dust (especially during periods of drought)
- Wildfire emissions
- Emissions from the prescribed burning of vegetation
- Emissions from farming and agricultural operations
- Emissions from industrial operations
- Dust from unpaved roadway use

Air quality is important to the health, safety, and welfare of Carbon County's residents. Currently, Carbon County has good air quality with no nonattainment issues. Sulfur dioxide (SO_2) is one of a group of highly reactive gasses known as "oxides of sulfur," and are emitted into the air as result of fossil fuel combustion and other industrial processes. There is one WDEQ air quality monitoring station in Carbon County in the town of Sinclair. This station began operating in

December 2015 and the objective is to monitor air quality and meteorological data in a populated area near a large SO_2 source. (WDEQ, 2020)

Dust from surface disturbing activities is often another contributing factor to air quality degradation. The 2008 BLM Rawlins RMP defines surface disturbance as:

Any action created through mechanized or mechanical means that would cause soil mixing or result in alteration or removal of soil or vegetation and expose the mineral soil to erosive processes. Used in the literal context of actual, physical disturbance and movement or removal of the land surface and vegetation. Examples of surface disturbance include construction of well pads, pits, reservoirs, pipelines, and facilities (e.g., parking lot and tanks). (BLM, 2008)

4.6.3 Resource Management Objectives (Air Quality):

A. Clean air is vital to Carbon County and management actions are conducted to maintain clean air without expansion of regulations that would act as an impediment to economic development.
B. Beneficial uses, such as prescribed burning, wood burning for heat, historical agricultural practices, and other established activities within the custom and culture of Carbon County that may degrade air quality standards are allowed to continue.

4.6.4 Priorities (Air Quality):

1. Carbon County supports the promotion of clean air practices and limiting air pollution within the County.
2. Federal, state, and local agencies should work together to educate all stakeholders involved to develop best management practice concepts and plans to protect the air quality in Carbon County.
3. Federal agencies should implement best management practices and take aggressive efforts with forest management to decrease the size and impacts of wildfires within Carbon County.
4. Federal agencies should acknowledge that wood burning for heat is a "necessity of life" for the County's citizens and should be maintained as an acceptable activity.
5. Federal agencies should consider the local economic consequences when making management or enforcement decisions regarding clean air. If the negative impacts to the local economy outweigh the positive effects to local clean air, then the management, enforcement, or alternative should not be utilized.
6. Federal agencies should require dust mitigation plans and standards for all surface disturbing activities as defined in the 2008 Bureau of Land Management Rawlins Field Office Resource Management Plan.
7. Federal agencies should support natural forest regeneration where appropriate to accelerate carbon sequestration, but it should not be the only method considered.

4.7 CLIMATE CHANGE

4.7.1 History, Custom, and Culture

Carbon County relies heavily upon agriculture, tourism, and energy development to support the local economy. Climate change factors, including increased temperatures, reduced precipitation, and changes in airflow have the potential to drastically affect the economy of the County. Legislation and federal actions related to climate change have impacts on the agriculture, tourism, and energy industries that can in turn impact the economic stability of the County. Carbon County experiences a naturally high variability in temperature and precipitation from year to year and over time. Carbon County recognizes that there is a natural variability in climate and is likely the largest contributing factor to changes in climate with a minimal amount from human influences.

4.7.2 Resource Assessment and Legal Framework

Climate change has been defined as a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. Climates are defined by long-term patterns of temperature, humidity, atmospheric pressure, precipitation, and airflow generally over years, decades, and/or centuries.

Paleoclimatology, the study of past climates via ice cores, tree rings, and sediment cores has shown that climates vary naturally over time and are subject to the cyclical phenomena of El Niño-Southern Oscillation (ENSO), Pacific Decadal Oscillation (PDO), and North Atlantic Oscillation (NAO). These phenomena, among others, cause yearly variations in precipitation, and temperature.

Although Executive Order 13783 withdrew guidance on the consideration of the effects of climate change and greenhouse gas (GHG) emissions in favor of promoting energy independence and economic growth, federal agencies must still assess the effects of major federal actions on the environment. NEPA-compliant documents may include the following analyses of the proposed action regarding climate change: (1) the extent to which the proposed action and all reasonable alternative(s) contribute to climate change through GHG emissions; (2) the effect of a changing climate over the life of project on the proposed project including flooding considerations and changes in precipitation; and (3) implications of climate change on the proposed project including cumulative impacts to resource availability. (Exec. Order No. 13783, 3 C.F.R., 2017)

Federal agencies are required to consider direct, indirect, and cumulative effects when analyzing any proposed federal action and its environmental consequences. When assessing direct and indirect climate change effects, agencies should take account of the proposed action, including “connected” actions, subject to reasonable limits based on feasibility and practicality. In addition, emissions from activities that have a reasonable nexus to the federal action (e.g. cumulative actions), such as those activities that may be required either before or after the proposed action is implemented, must be analyzed. (National Environmental Policy Act 1969, 1969)

4.7.3 Resource Management Objectives (Climate Change):

A. Cooperation and open communication between the federal agencies and the County is achieved when assessing the effects of proposed federal actions within Carbon County.
B. Climate change analysis is conducted on a regional level that does not give deference to potential long-term effects of climate change compared to immediate harms that the decision may have to the community including economic impacts.

4.7.4 Priorities (Climate Change):

1. Encourage inclusion of additional climate change scientific data in all National Environmental Policy Act planning processes that meet the credible data criteria, even if not produced by a federal agency.
2. Climate change analysis should occur on a regional level; the region should be identified through consultation and coordination with Carbon County.
3. A full analysis of the impact each alternative and subsequent "decision" will have on the local economy should be conducted. If it is determined that the alternative will have significant negative impact on the local economy, the alternative/decision is not supported.
4. Regulation of greenhouse gases through climate change analysis is not supported.
5. Encourage acknowledgement of sustainable rangeland management having a positive effect on carbon sequestration.

CHAPTER 5: WATER RESOURCES

5.1 OVERVIEW

Healthy watersheds contain ecosystems that are in good health, have minimal weed infestations, functioning riparian areas, rangelands with a variety of vegetation, and valleys that support farming and urban developments. Healthy watersheds provide recreational opportunities for residents and visitors, serve cultural needs, and provide habitat for native plants, wildlife, and fisheries. The health of Carbon County's watersheds directly affects the current and future availability of quality water resources and water-dependent natural resources, as well as the ability of watersheds to adapt to climate variability, such as periods of drought or high rainfall and rain-on-snow events.

Carbon County's watersheds are diverse and dynamic. They consist of a variety of vegetation and topography, including uplands, floodplains, wetlands, channels, springs, lakes, and reservoirs. These watersheds continue to evolve under the influence of climate, floods, landslides, erosion, and human land use. The water resources of Carbon County are an integral function of the County's economy and the health of County residents and communities. Carbon County, and many surrounding areas in Wyoming, are headwater watersheds. Many of the waters within the County are important to municipalities, irrigation, wildlife, and other uses within the County and outside of the County further downstream. A successful management strategy for Carbon County's watersheds must consider how the various watershed components and uses interrelate and influence each other from ridgeline to stream, and across adjacent watersheds. Refer to Figure 14 and Figure 15 below for maps of the watersheds and major hydrologic features in Carbon County.

The largest hydrologic units, or Hydrologic Unit Code (HUC) 2 watersheds, span entire major river systems. Carbon County is located within HUC 2 Region 10 (Missouri River) and Region 14 (Upper Colorado River). These regions are subdivided into finer scale basins, water systems, and water ways with longer HUC designation codes (i.e., HUC 4 through HUC 12). Carbon County spans portions of the Greater Green River Basin (GGRB) and the Platte River Basin (PRB), which are HUC 4 units in their respective regions (USGS, n.d., 2020). Figure 14 depicts the HUC 10 watersheds located within the GGRB and PRB.

Water plans that span the County include the GGRB Plan, the PRB Plan, the Upper North Platte River Watershed Study, the Medicine Bow Watershed Study, the Sweetwater River Watershed Study, and the Little Snake River/ Vermillion Creek Watershed Study. These plans can be found on the WWDC Water Resources Data System Library webpage.[36] The protection of water resources within the County is a high priority for the County.

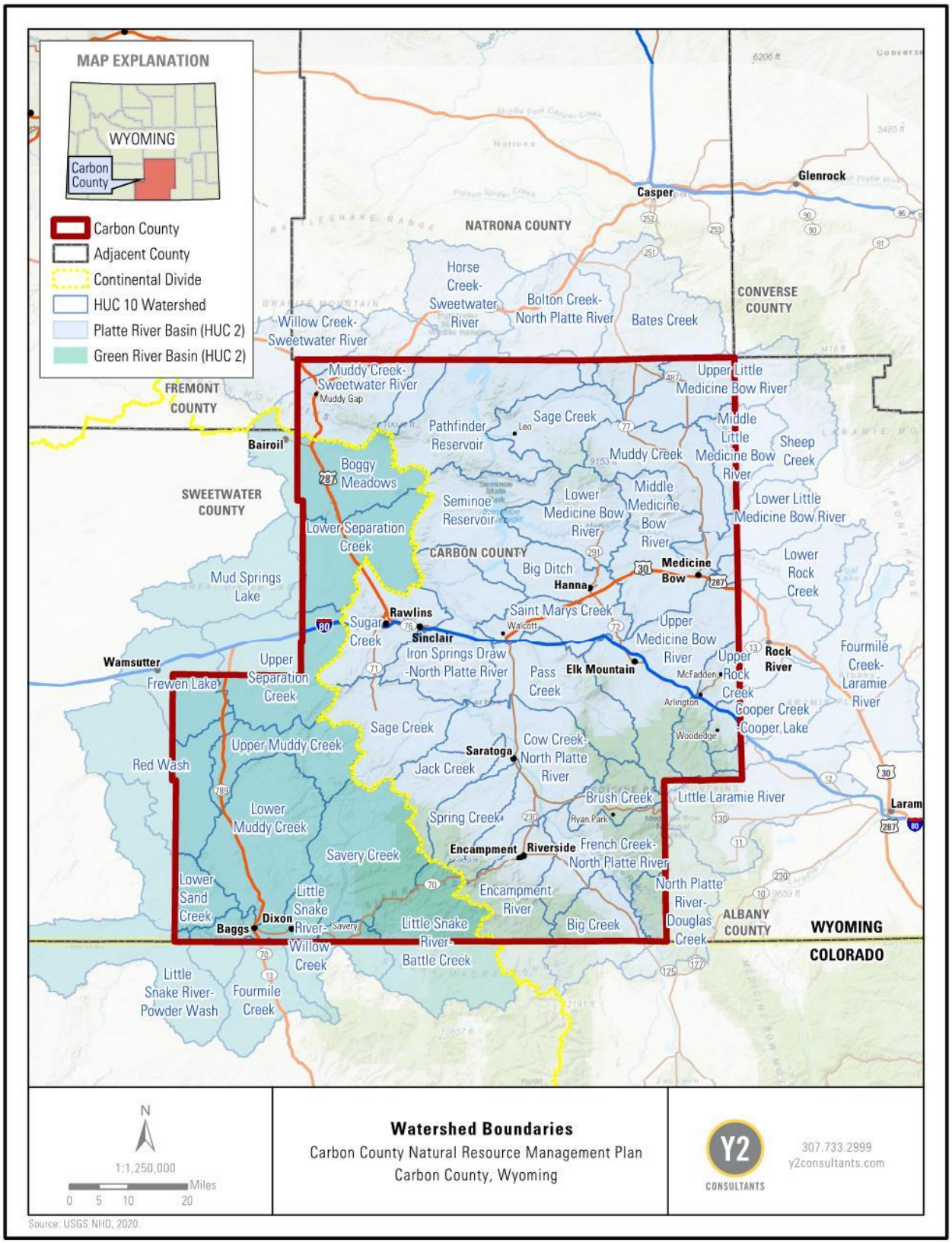

Figure 14. Watershed boundary map for Carbon County.

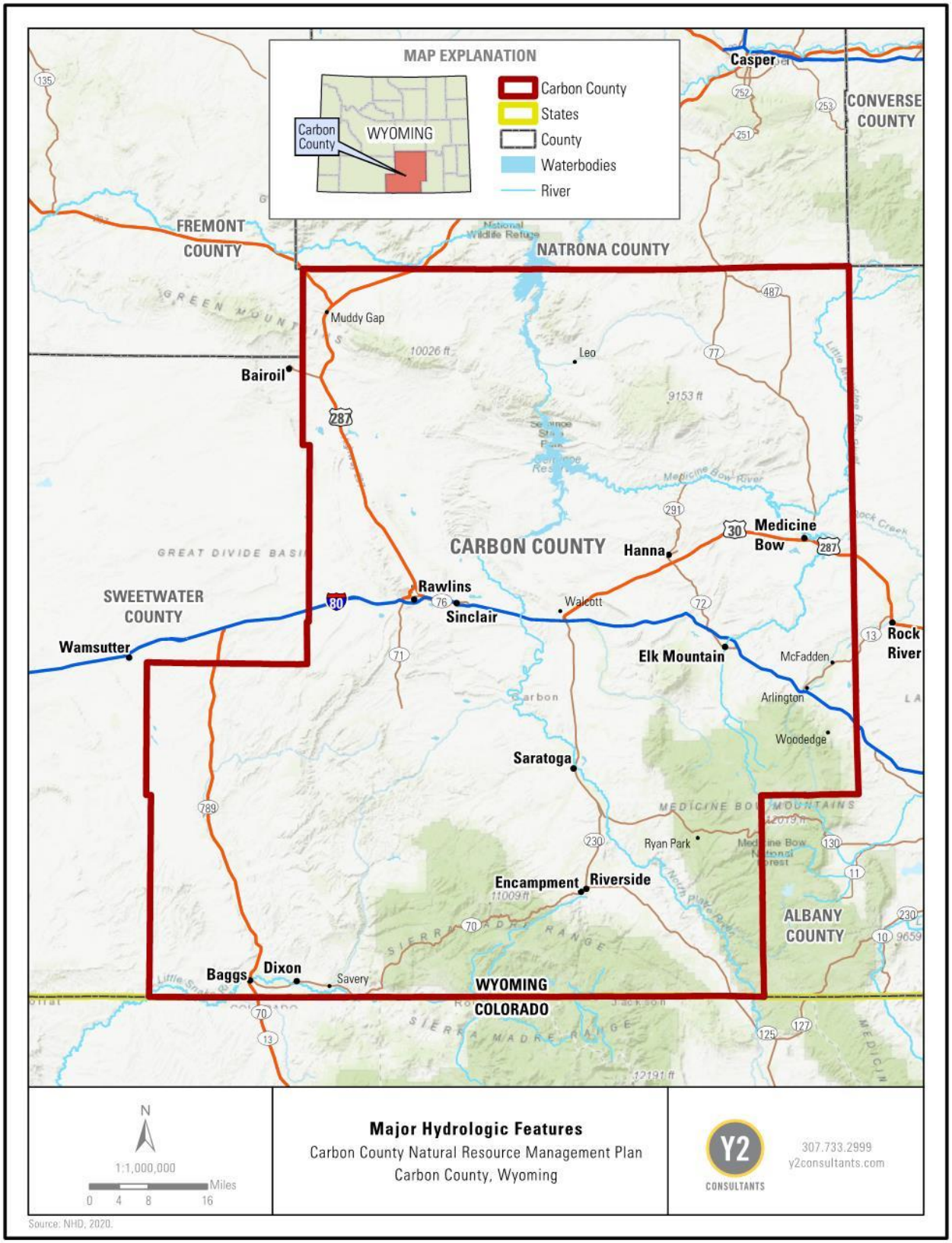

Figure 15. Major hydrologic features of Carbon County.

5.2 WATER USE

5.2.1 History, Custom, and Culture

Only 15% of the state of Wyoming has a positive water balance, where the average annual precipitation exceeds the annual evapotranspiration. Carbon County's surface water accessibility and health are integral to multiple industries, including livestock and crop production, recreation, and tourism. Surface waters are especially integral to forage irrigation and fisheries in Carbon County. The climatic characteristics of the state has shaped water law across Wyoming and driven the need for the development of water storage and irrigation infrastructure over the years.

Early settlement and development within Carbon County was focused along rivers and streams. These water resources have been important to historic cultural development such as agriculture, municipal use, and recreation including hunting and fishing. Irrigation development in Carbon County started in the 1850s and the earliest water right filings are recorded in the 1860s. The first surface water laws were enacted in 1875. In 1894, the Carey Act was passed to encourage settlement and irrigation development across western states. Over time, irrigation throughout the expanded across the lowlands and the development of reservoir storage rights began in the 1920s. By 1970, 90% of the water depletions in the GGRB were attributed to irrigation. Between 1986 and 1990 irrigation attributed water depletions had declined to 79% due to an increase in industrial development. Between the 2001 GGRB Water Plan and the 2010 update, there was a negligible change in water use attributed to irrigation while industrial depletions declined by 15%. There are approximately 150,000 acres of the irrigated acres within the 'Above Pathfinder Dam' subbasin within the Platte River Basin. About 88%, or 132,000 acres, are located within Carbon County. (States West Water Resources Corporation & WWDC, 2001; Tyrrell & States West Water Resources Corporation, n.d.; WWC Engineering et al., 2010; WWDC, 2006).

The development of dams and reservoirs began nearly as early as irrigation to allow for extended seasonal access to water. For additional information regarding the history of dam development in Carbon County refer to section 5.2.4 Dams and Reservoirs. Reservoirs in the County now provide water resources for agriculture, hydroelectric power, recreation, wildlife habitat, and tourism. Irrigation and water storage infrastructure shaped the early development of water use and will continue to be an important resource for the development of agriculture, tourism, and industry in the County. (States West Water Resources Corporation & WWDC, 2001; Tyrrell & States West Water Resources Corporation, n.d.; WWC Engineering et al., 2010; WWDC, 2006).

The rivers within Carbon County have an extensive history associated with the development of the County. The North Platte River drainage has been an important westward expansion of the U.S. As emigrants moved west, they followed the river to have grass and water available for livestock. Often settlers laid roots near the river to have continual water resources. Over time the rivers transitioned into transportation pathways to assist in the building of the railroad across the west. Loggers in the forested areas around Encampment would harvest logs to be used as railroad ties for the railroad tracks. To transport the logs in an efficient manner the loggers would float the logs down the Encampment River during high water. The Encampment River flows into the North Platte and eventually the logs were taken out of the river at Fort Steele where they were loaded on trains for shipment to a tie treatment plant in Laramie. Loggers would log year-

round but would hold the logs in the winter until the spring melt when they were able to float them down. Tie camps were located along various tributaries of the Encampment River.

The rivers and streams throughout the County have also provided recreational opportunities, including fishing, for many years. The North Platte River from the Colorado border to just north of Saratoga is a blue-ribbon fishery (>600 pounds of fish per mile) as is the section of the North Platte from just south of Seminoe Reservoir all the way north to the Pathfinder Reservoir and the County-line. Further information on water resources for fishing can be found in section 6.4 Fisheries.

5.2.2 Water Rights

5.2.2.A Resource Assessment and Legal Framework

Wyoming water laws and statutes are governed by Title 41.[37] By Wyoming law, all surface and groundwater belong to the State. The Wyoming State Engineers Office (WSEO) is responsible for management of these waters and protecting existing water rights and resources.

Wyoming is a Prior Appropriation Doctrine state, meaning that water rights are established by actual use of the water, and maintained by continued use and need (W.S. § 41-3-101). Wyoming prioritizes water uses as "preferred uses" and all other uses (W.S. § 41-3-102). Preferred uses include "rights for domestic and transportation purposes, steam power plants, and industrial purposes." *Id*. Preferred uses have the right of condemnation against all other water uses and those lesser preferred uses. *Id.* Wyoming ranks uses in the following order: (1) Water for drinking purposes for both man and beast; (2) water for municipal purposes; (3) Water for the use of steam engines and for general railway use, water for culinary, laundry, bathing, refrigerating (including the manufacture of ice), for steam and hot water heating plants, and steam power plants; and (4) industrial purposes. *Id*.

In Wyoming, a water right is a right to use the water of the state, when such use has been acquired by the beneficial application of water under the laws of the state relating thereto, and in conformity with the rules and regulations dependent thereon. Beneficial use shall be the basis, the measure and limit of the right to always use water. Thus, in Wyoming, a person must (1) obtain a permit; (2) demonstrate a beneficial use; and (3) use the water in conformity with the permit to have a valid water right (W.S. § 41-3-101). Wyoming case law also generally holds that water rights appurtenant to land and the means of conveyance of the water (i.e., ditches, pipes, and conduits) pass with the transfer of the land. *See Toltec Watershed Improvement Dist. V. Associated Enterprises, Inc.*, 829 P.2d 819 (Wyo. 1992); *Frank v. Hicks*, 35 P. 475 (Wyo. 1894). Wyoming also allows for temporary change in water use of a currently valid water right for up to two years with approval from the WSEO, so water right users may transfer their water rights for other uses on a temporary basis (W.S. § 41-3-110).

Although all surface and groundwater in Wyoming belongs to the state, water rights are considered a property right that can be conveyed or reserved in the same manner as real property. Thus, water rights are widely accepted as property of the holder and can be protected

under the 5th and 14th Amendments of the United States Constitution when taken through regulation. *See Klamath Irrigation Dist. v. United States*, 113 Fed. Cl. 688, 691 (2013).

Territorial water rights exist in Carbon County and may not be readily available via records through the WSEO but should be considered and researched when dealing with water rights within the County. The water in the Upper North Platte River Valley is over adjudicated due to existing water rights and water compacts.

Instream Flow

Instream flow refers to water flowing in streams. An instream flow water right refers to the legal means to protect water in streams for the benefit of fish based on the same laws used for other kinds of water rights. In 1986, legislation was passed that extended the same opportunity to manage water in stream channels for fish as had been allowed for uses of water out of the stream. Wyoming statute (W.S. 41-3-1001 to 41-3-1014) identifies instream flow as a beneficial use of water and requires the Wyoming Game and Fish Commission to identify opportunities to protect or restore flows.

Water is the most important part of the habitat for fish management and securing instream flow water rights is a critically important management practice. The Wyoming Game and Fish Department (WGFD) has filed instream flow water rights on several waters within Carbon County. Those stream segments that have been filed for in Carbon County can be found on the map provided here[38] along with additional information. Most instream flow filings have been on important recreational streams, as well as streams harboring habitat for and populations of Colorado River and Bonneville cutthroat trout. More recently, priorities have been on streams in the Yellowstone and Snake River cutthroat trout groups. (Robertson, 2011)

Cloud Seeding

Cloud seeding is a type of weather modification that aims to change the amount or type of precipitation that falls from clouds by dispersing substances into the air that serve as cloud condensation which alters the microphysical processes within the cloud. The usual intent is to increase precipitation. The Wyoming Water Development Office became interested in cloud seeding in the early 2000s and has spent more than ten years conducting extensive research on the science and effectiveness of the technology to help determine whether seeding over certain parts of the state would be a valuable and affordable investment. The Medicine Bow/Sierra Madre Mountain Ranges have been one of the study sites in the state. In the winter of 2018-2019, the cloud seeding study in this area was done strictly by aircraft. Further information on the cloud seeding program in Wyoming can be found here.[39]

Currently, there are no legal regulations or laws surrounding cloud seeding. The largest issue identified is if cloud seeding could possibly result in interstate compact issues. Cloud seeding is a water rights discussion for the fact that cloud seeding has the potential to take someone else's rainwater artificially which could disrupt their currently protected water rights and uses.

5.1.1.B Resource Management Objectives (Water Rights):

A. Wyoming water law and policy controls all water rights within the County and is supreme to any federal policy or regulation.
B. Beneficial uses of water as defined by Wyoming statues is protected and prioritized in all water management.
C. Federal agencies never acquire water rights outside of Wyoming water law.
D. No new interstate water compacts are developed without the County's involvement.
E. No new trans-basin diversions or interstate water transfers occur within the County. Carbon County water stays in Carbon County.
F. Federal agencies never use exactions to acquire water rights.

5.1.1.C Priorities (Water Rights):

1. Placing water rights in the name of any state or federal agency when the water right is applied for and proved upon by a private individual or corporation, or as the condition of any permit, is not supported.
2. Water rights shall not be acquired through exactions as a condition precedent of any permit.
3. Water right exactions should never be a condition for any right-of-way or ditch permit. It is the position of the County that in stream flow requirements are exactions.
4. Water rights should be recognized as a private property right that may be owned separately from federal land when allowed by Wyoming law.
5. Carbon County opposes over-reaching federal regulations on Wyoming waters; we support Wyoming control of Wyoming waters.
6. Carbon County opposes the use, sale, or lease by the State of any Wyoming basin water unless the water and storage need of the affected basin(s) have been met. Any sale or lease of water out of basin or out of state shall be mitigated by storage before the transaction is approved.
7. Carbon County supports policies and actions that will protect existing water rights and water uses within the County for long-term conservation and enhancement of our natural resources while contributing to the economic stability of the County and its residents.
8. Carbon County supports efforts to ensure Wyoming water law as it exists is adhered to in all cases.
9. Carbon County supports historic and customary beneficial water uses under Wyoming State Law to take precedence over all in-stream flow use designations.
10. Carbon County supports Wyoming State Water Law and the state's right to administer all water.
11. Carbon County is opposed to any federal government action which adversely affects the State of Wyoming's water rights and water law.
12. Federal agencies should work with local, state, and other federal agencies to encourage and support state control of water rights and to maintain opportunities for future water right allocations.
13. Federal agencies should work to see that all water rights are being utilized to their fullest extent.

14. Federal agencies should work with the County to educate and inform cooperators regarding Wyoming water laws.
15. Carbon County supports the State of Wyoming's prior appropriation doctrine for water rights allocation.
16. Carbon County supports protection of senior water right holders' allocations.
17. Water rights must be officially abandoned through Wyoming law. Federal agencies and interstate compact authorities shall unilaterally abandon water rights or impede the use a water right.
18. Carbon County should be included in discussions regarding cloud seeding within the County.
19. Cloud seeding outside Carbon County is discouraged when the use of cloud seeding could harm or bypass certain interstate water compact obligations.
20. Federal agencies should not allow cloud seeding outside of Carbon County as a method to induce inter-basin transfers of Carbon County water.

5.2.3 Irrigation and Related Infrastructure

5.2.3.A Resource Assessment and Legal Framework

As recently as 2017, over 3% of Carbon County's land area was irrigated acres (USDA, 2017; WLC Engineering, Surveying & Planning et al., 2010). There are approximately 330,408 acres of irrigated land across the GGRB. The Little Snake River subbasin contains 16,959 acres of irrigated land and has a permitted total storage for irrigation of 17,430 acre-feet. The eastern portion of the County intersects with the Platte River Basin and averaged about 132,000 acres of irrigated land in 2006. Across the Platte River Basin, the majority of irrigated acres produce hay, pasture grass, and alfalfa. (States West Water Resources Corporation & WWDC, 2001; WLC Engineering, Surveying & Planning et al., 2010; WWDC, 2006)

Irrigation influences the flow rates and timing of both perennial and ephemeral streams in the County. Return-flow from irrigation can maintain perennial flow in naturally ephemeral streams. During non-irrigation seasons both perennial and ephemeral streams in irrigated areas experience low flows. The use of reservoirs for retaining irrigation water can lower peak flow rates in systems downstream. This water retention can also extend how long spring and early summer runoff is held in the system before being released downstream. This can extend the season prior to low flow and increase low flow rates during the non-irrigation season for downstream systems. The result is peak and low flows that are more moderated; this decreased flow fluctuation can influence the ecology of downstream fisheries and habitat. (Bartos et al., 2006)

Additional information regarding irrigation acres, conveyance, and capacity can be found in the Wyoming Water Development Commission Irrigation Survey System Reports[40] (Wyoming Water Development Office, 2019).

5.2.3.B Resource Management Objectives (Irrigation and Related Infrastructure):

A. Irrigation and water systems are managed to ensure future access to irrigation water and to promote the health and longevity of Carbon County's water systems and supply.

B. Flood irrigation is an approved method of irrigation for agricultural meadows within Carbon County.
C. Water conveyance rights-of-way are guaranteed, and access is uninhibited for irrigation practices within Carbon County.
D. Carbon County water remains in Carbon County.
E. Carbon County is involved in any water resources action. Federal agencies never use exactions to acquire water rights.

5.1.2.C Priorities (Irrigation and Related Infrastructure):

1. Carbon County should be notified at the earliest time possible when interstate or intermountain projects are proposed or occur. The County plans to participate as a cooperating agency.
2. Support the development, improvement, and continued use of irrigation and related infrastructure within Carbon County.
3. Federal agencies should work with local, state, and other federal agencies on funding for water storage facilities within Carbon County.
4. Federal agencies should work with appropriate partners and agencies to promote the efficient delivery and use of irrigation water throughout Carbon County.
5. Federal agencies should support the development of downstream and off stream storage facilities that would allow excess spring runoff to be captured and used later in the growing season.
6. Federal agencies should encourage and allow consumptive water right owners to improve water quality and water-use efficiency to provide additional water for economic development and agriculture.
7. The importance of irrigation systems that make up a critical part of the water cycle within Carbon County should be recognized and protected.
8. Federal agencies should support the implementation of irrigation Best Management Practices.
9. Historical irrigation ditch rights-of-way should continue to be used and prtoected through federal lands whether those rights are permanent or require periodic renewal.
10. Any renewal of rights-of-way for irrigation ditches crossing federal lands should be done expeditiously with as little impact to the historical use.
11. In stream flow requirements should not be a precedent condition for renewal of irrigation ditch rights-of-way.
12. Irrigation ditches should never be considered a navigable water under the Clean Water Act. Carbon County supports the September 11, 2020 Waters of the United States definition as presented by the Environmental Protection Agency. Water rights shall not be acquired through exactions as a condition precedent of any permit.
13. Support the prohibition of water right exactions for right-of-way and ditch permits. It is the position of Carbon County that in stream flow requirements are exactions.
14. Federal agencies should support projects that create hydroelectric power projects within Carbon County.

5.2.4 Dams and Reservoirs

5.2.4.A Resource Assessment and Legal Framework

Dams and reservoirs are located across Carbon County and are used for various functions, including storage for irrigation, livestock/ wildlife water, recreation, industrial, municipal, flood control, and fish propagation. The Wyoming Water Development Office's (WWDO) Dam and Reservoir Planning Division works to promote dam and reservoir maintenance and improvement. Funding from the State Dam and Reservoir Division's account, Wyoming Water Development Account III, is available for the development of new reservoirs that are 2,000 acre-feet (AF) or larger, or the enlargement of existing reservoirs (minimum of 1,000 AF increased capacity). Funding is also available for Level I reconnaissance studies and Level II feasibility studies to identify possible water storage projects. (WWDC, n.d.)

The GGRB and PRB Water Plans evaluated all reservoirs considered 'major reservoirs' within the surface water assessments. Major reservoirs are defined as reservoirs with equal to or greater storage capacity than 500-acre feet. Below is a description of the major reservoirs within Carbon County. (States West Water Resources Corporation & WWDC, 2001; WWDC, 2006)

High Savery Reservoir

The High Savery Reservoir is located on the western side of the County in the GGRB. The reservoir is within the Little Snake Basin on Savery Creek. Maximum storage for this reservoir is 22,400 AF. The High Savery Reservoir was a state sponsored project to provide late-season irrigation water, recreation, environmental resources, and to mitigate the trans-basin diversion effects from Cheyenne projects. Permitting for the reservoir reserved 4,955 AF of the reservoir's storage for fish and wildlife use (States West Water Resources Corporation & WWDC, 2001). The BLM recognizes High Savery Reservoir as another management area and further description of management goals and objectives can be found in the 2008 Rawlins BLM RMP.[20]

Kortes Reservoir

Located in Black Canyon of the PRB, the Kortes Reservoir and dam were built in 1951 as part of the Pick-Sloan Missouri Basin Project. The total storage capacity of the reservoir is 4,640 AF. While the Kortes Reservoir is used for irrigation holding, flood control, and recreation, the primary benefit is hydroelectric power generation. (Hein, 2014)

Seminoe Reservoir

The Seminoe Reservoir is located on the North Platte River upstream of the Pathfinder Reservoir. Seminoe Reservoir is the first reservoir on the North Platte and therefore anything upstream from the reservoir is not regulated by a reservoir system for flood mitigation as areas downstream from the reservoir are. The Seminoe Reservoir and dam are used for hydroelectric power generation, flood control, and irrigation. Seminoe is a primary irrigation storage component of the Kendrick Project, this reservoir stores up to 1,026,360 AF. The Kendrick Project provides irrigation water to about 24,000 acres of land northwest of the North Platte River between Casper and Alcova. (Hein, 2014)

Pathfinder Reservoir

The Pathfinder Reservoir is located north of the Seminoe Reservoir on the North Platte River. The Pathfinder Dam is in Natrona County but much of the reservoir is located in Carbon County. The reservoir has a storage capacity of 1,016,000 AF. During the irrigation season, water is released, as required, including water flowing from Seminoe Reservoir to be diverted at Alcova Dam for irrigation on the Kendrick Project. During the non-irrigation season, some of the water in the reservoir is released to satisfy other water rights, enhance fish and wildlife, and to operate power plants downstream. Much of the Pathfinder Reservoir is included in the Pathfinder National Wildlife Refuge. (BOR, n.d.-b)

Hog Park Reservoir

Hog Park Reservoir is located on Hog Park Creek, a tributary of Encampment River, 13 miles southwest of Encampment. The Hog Park Dam is an earth fill dam with a rock spillway. The reservoir is permitted at 22,656 AF capacity. The Hog Park Reservoir is used for erosion and flood control, fish culture, industrial use, municipal use, recreation use, and irrigation. Hog Park Reservoir is one of the reservoirs that supplies water for the City of Cheyenne. (Roedel & 2020, 2020; WWDC, 2006)

Pierce Reservoir

Pierce Reservoir was constructed in 1912 and is located 18 miles east of Elk Mountain in a natural basin. The reservoir holds 3,205 AF and is primarily used for irrigation, stock water, and domestic water use. (WWDC, 2006)

Saratoga Reservoir

Saratoga Reservoir is located along the North Platte River just northeast of Saratoga. The Saratoga Reservoir holds 1,559 AF and is primarily used for municipal water, recreational uses, stock water, and fish culture. The reservoir is filled through the enlargement of the Saratoga Supply Ditch, which receives water from the North Platte River. (WWDC, 2006)

Turpin Park Reservoir

Turpin Park Reservoir is located on the channel of Turpin Creek in the Medicine Bow-Routt National Forest, 20 miles east of Saratoga. Turpin Park Reservoir has an available permitted capacity of 1,316 AF, used for irrigation, recreation, and stock purposes. (WWDC, 2006)

Sand Lake Reservoir

Sand Lake Reservoir is located on Deep Creek in the Medicine Bow National Forest, 27 miles east of Saratoga. The reservoir is permitted for irrigation, stock, domestic, and industrial uses with a 1,105 AF capacity. It is also heavily used for recreation.

Other General Reservoirs

There are many other small reservoirs throughout the county that provide stock water and recreational opportunities. These reservoirs can be found here.[41]

5.2.4.B Resource Management Objectives (Dams and Reservoirs):

A. Dams and reservoirs within Carbon County are well maintained, accessible, and functional.
B. Quality of all dams and reservoirs within Carbon County is preserved and water resources are developed responsibly in coordination with the County.
C. Water storage facilities are increased or developed where they are cost effective and provide an economic benefit to Carbon County.
D. The primary use of all reservoirs within Carbon County is maintained for the purpose for which they were originally intended.
E. Hydroelectricity projects including micro hydroelectricity projects within existing structures are developed within Carbon County where they may be useful and appropriate.
F. Carbon County is consulted regarding federal land management decisions that impact water quality; water yields and timing of those yields; impacts on facilities such as dams, reservoirs, delivery system, or monitoring facilities; and any other water-related concerns.

5.2.4.C Priorities (Dams and Reservoirs):

1. Carbon County supports the construction and/or expansion of water storage if a health and safety or economic benefit for the State and/or County can be realized.
2. Unless required in an interstate water compact or existing water agreement, water stored in Carbon County should be exclusively used within the State.
3. Federal agencies should recognize and consider primary and preexisting uses of water facilities in all decisions affecting such.
4. Federal agencies should support the recreational and consumptive use of water to support the local economy.
5. Federal agencies should support funding for dams and reservoirs within Carbon County on federal lands.
6. Carbon County is informed early of any potential decisions that may impact water use, yield, or development of dams, reservoirs, and other water storage methods and is coordinated with and given the opportunity to participate as a cooperating agency.
7. Support water development projects that increase water quantities for beneficial use within Carbon County, while conserving the traditional custom, culture, and economy of the area.
8. Federal agencies should support projects that create hydroelectric power projects within Carbon County.

5.2.5 Rivers and Streams

5.2.5.A Resource Assessment and Legal Framework

Wyoming has approximately 108,767 miles of rivers. Within Carbon County there are many perennial rivers and streams that provide water for municipal, agricultural, recreational, and industrial uses. Perennial streams originating from high mountain aquifers and snowpack are fed throughout the year and experience maximum discharge during the spring and early summer snowmelt. (National Wild and Scenic Rivers System, n.d.-b)

Rivers and streams in Carbon County are integral to many industries across the County. From agriculture uses such as irrigation and stock water, to industrial uses including mining, water access within the County is paramount to a thriving economy. Rivers and streams also provide water for municipal use that is important to the health and standard of living for County residents. In addition to these listed uses, healthy rivers and streams are necessary for functioning ecosystems and fishery and wildlife health.

Little Snake River

The Little Snake River is a tributary of the Yampa River and runs approximately 155 miles in southeastern Wyoming and northwestern Colorado. The headwaters rise near the continental divide in the Routt National Forest in northern Routt County, Colorado where the river is fed from high spring snowmelt. The two major tributaries to the Little Snake River within Carbon County are Savery Creek and Muddy Creek. The towns of Baggs and Dixon receive their primary water supply from the Little Snake River. The Little Snake River basin contains substantial agricultural development, making irrigation and agricultural water use from the Little Snake River important to the industry in the basin. The Little Snake River is generally not navigable except for during the high-water season.

The Little Snake River drainage is considered part of the Green River Basin. The Green River Basin includes the Henry's Fork, Vermillion Creek, and Little Snake River drainages and is roughly 17,100 square miles or approximately 16% of Wyoming's surface area. The Little Snake River falls within the Colorado River Compact which is described below.

Colorado River Compact

The Colorado River Compact of 1922 is an agreement among the states whose boundaries lie within the Colorado River Basin. The purpose of the agreement was to provide for the equitable division and apportionment of the use of the waters of the Colorado River System; to establish the relative importance of different beneficial uses of water, to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters, and the protection of life and property from floods. Under the compact, the water of the Colorado River was divided in half; with half going to the upper basin states of Colorado, Utah, Wyoming, New Mexico, and parts of Arizona, and half to the lower basin states of California, Arizona, and Nevada. The dividing line between the Upper and Lower Basins is at Lee Ferry Arizona. Ultimately, the Compact dictates that the Upper Basin cannot deplete the flow at Lee Ferry below 75 million acre-feet in any running 10-year period. (Water Education Colorado, 2015)

The Colorado River Compact specifically protects water rights predating the compact, stating, "Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact" (Colorado River Compact Article VIII). Thus, any perfected water rights in the Colorado River system that predate November 24, 1922, are not obligated to the Colorado River Compact and cannot be required to supply any shortage if a Lower Basin makes a call on the river. Additionally, the Upper Basin states of Wyoming, Colorado, New Mexico, Utah, and Arizona negotiated an Upper Colorado River Compact in 1948. The Upper Colorado River

Compact further allocates the water distributed between the Upper Colorado River Basin states with Wyoming being guaranteed a 14% allocation of Colorado River Compact Water (totalling approximately 1.04 maf). Upper Colorado River Compact Art. III (1948). The Compact also contains important (but so far unused) language relating to compact curtailment should the Upper Basin fail to meet its non-depletion obligation under the 1922 Compact. *See id.* at Art. IV.

Much has changed since the ratification of the Colorado River Compact and the Upper Colorado River Compact. The 2007 US Bureau of Reclamation Colorado River Interim Guidelines set forth the criteria as to when the Secretary of the Interior is to declare the Colorado River's water supply availability conditions for the Lower Division States and also set out and defined coordinated operations of Lake Powell and Lake Mead. The guidelines are in place through 2026. 2007 US Bureau of Reclamation Colorado River Interim Guidelines Executive Summary p. ES-2. The three conditions are normal, surplus, and shortage conditions. Under the Interim Guidelines, Lake Powell and Lake Mead's operations are coordinated. Releases are based on forecasted, year-end reservoir levels in Powell and Mead. Lake Powell is divided into four tiers. Each of these tiers dictate how much water is released from Lake Powell for storage into Lake Mead (and thereby fulfilling the required 7.5 maf obligation in the Colorado River Compact). Lake Mead is divided into a number of different tiers. At levels above 1,075 ft normal or surplus conditions are declared and Lake Mead is required to deliver at least 7.5 maf. The critical levels at Lake Mead are those levels below 1,075 ft, the level at which shortages are imposed on Lower Basin water users and 1,025` when a shortage condition is declared. Ultimately, the reason the Interim Guidelines are important to Upper Basin users is that higher levels of Lake Mead allow for Lake Powell to remain high and the Upper Basin water users are given a greater buffer for when drought conditions may make it more difficult to deliver water through Lee Ferry. (Falen Law Office, 2020)

Finally, in 2019, the Colorado River Basin States reached a dual drought contingency plan agreement based largely on the 2007 Interim Guidelines. The Upper Basin Drought Contingency Plan established a Demand Management Program that established 3,525 feet as the target operational level for Lake Powell. Lake Powell's operations will then be coordinated with other Upper Basin Reservoirs, including the Flaming Gorge, Aspinall, and Navajo Dams to protect Lake Powell's depth. In turn, the Lower Basin Drought Contingency Plan would require that the Lower Basin states would curtail their deliveries from Lake Mead when the lake reaches the levels specified in the 2007 Interim Guidelines. (Falen Law Office, 2020)

North Platte River

The North Platte River is the largest river in Carbon County and is a major tributary of the Platte River in Nebraska. The North Platte's headwaters are in Jackson County, Colorado and then flow into southeast Carbon County, through the town of Saratoga and north toward Casper. The North Platte and South Platte River join to form the Platte River in western Nebraska near the city of North Platte, Nebraska. The Platte River eventually flows to the Missouri River which joins the Mississippi River to flow to the Gulf of Mexico. The North Platte provides the major drainage for northern Colorado, eastern Wyoming, and western Nebraska. Because of this the North Platte River is part of the Platte River Recovery Implementation Program (described below).

There is an extensive reservoir system on the North Platte River as it flows north toward Casper. These reservoirs provide irrigation water to over 226,000 acres. The Pathfinder and Seminoe Reservoirs are the primary irrigation holding facilities in the County. Flowing north through the center of the County, this river provides agricultural and municipal resources as well as prime recreation opportunities. Along with these reservoirs the Miracle Mile, a five-and-a-half-mile prime angler reach between the Seminoe Reservoir and the Kortes Dam, are commonly used recreation areas. Important tributaries of the North Platte River include the Laramie River, Encampment River, Medicine Bow River, and Sweetwater River. (WWDC, 2006)

Platte River Recovery Implementation Program

In 1997, Colorado, Wyoming, Nebraska, and the Department of the Interior formed a unique partnership with the goal of developing a shared approach to managing the Platte River. The Platte River Recovery Implementation Program (PRRIP) formed out of this in 2007 and is focused on implementing this shared vision for creating and maintaining habitats on the Platte. The PRRIP is managed by a governance committee comprised of representatives from Colorado, Nebraska, and Wyoming, water users, environmental groups, BOR, and USFWS. The PRRIP utilizes federal and state provided financial resources, water and scientific monitoring, and research to support and protect four threatened and endangered species (Piping plover, Least tern, Whooping crane, and Pallid sturgeon) that inhabit areas of the Central and Lower Platte rivers in Nebraska while allowing for continued water and hydropower project operations in the Platte River basin. In December 2019, the U.S. Secretary of the Interior signed an amendment to the PRRIP Cooperative Agreement, along with the governors of Colorado, Nebraska, and Wyoming committing resources to extend the program through December 31, 2032. (Department of the Interior, 2019; Platte River Recovery Implementation Program, n.d.)

The Pathfinder Modification Project was completed in 2012 and was authorized by Appendix F to the Final Settlement Stipulation relating to the Nebraska v. Wyoming lawsuit, as approved by the U.S. Supreme Court. The BOR has a Wyoming water right to store 1,070,000 AF of water in the Pathfinder Reservoir for the benefit of the PRRIP. Over the years, approximately 53,493 AF of the storage capacity was lost to sediment and the modification project would recapture the storage space. The modification project was accomplished by raising the elevation of the existing spillway by approximately 2.4 feet with the installation of an ogee crest. The recaptured storage stores water under the existing 1904 storage right for Pathfinder Reservoir. The Pathfinder Modification Project was essential to Wyoming in order for the state to meet its obligations under the PRRIP and the Modified North Platte Decree. (U.S. Supreme Court, 2000)

Encampment River

The Encampment River flows north from Colorado into Wyoming through the Encampment River Wilderness and passes by the town of Encampment and through the town of Riverside until its confluence with the North Platte River just northeast of Riverside. A small segment of the Encampment River is managed for inclusion as a Wild and Scenic river.

Medicine Bow River

The Medicine Bow River is a tributary of the North Platte River. Its headwaters are in the Snowy Range and flow north through southeastern Carbon County. The river flows past Elk Mountain and then past the town of Medicine Bow where it is joined by its two largest tributaries Rock Creek and the Little Medicine Bow River. The Medicine Bow River joins the North Platte in the Seminoe Reservoir.

5.2.5.B Resource Management Objectives (Rivers and Streams):

A. Rivers and streams are managed to maintain water quality and to maintain proper ecologic function.
B. Rivers and streams are managed for municipal use, to control flooding, and for agricultural, recreational, and industrial use.
C. Rivers and streams are protected to allow continued historical uses that contribute to the custom and culture of Carbon County.
D. No agreements or new interstate water compacts increasing Carbon County's water obligations are agreed to.
E. Current uses, water compacts, and other water agreements and expectations are protected.

5.2.5.C Priorities (Rivers and Streams):

1. Carbon County does not support any new or increased "in-stream" flow requirements.
2. Agencies should support management of rivers and streams to meet existing designated "in-stream" flow and interstate water compact requirements.
3. Support continued use of rivers and streams by all users.
4. Carbon County should be consulted when any impact to rivers and streams are a potential outcome of a federal action or decision.
5. Support projects and policies which improve or maintain the current ecological function of rivers and streams within Carbon County.
6. Support the recreational and consumptive uses of water to support the local economy.
7. Carbon County does not support any new interstate water diversions, transfers, or obligations outside of those originally agreed to in the Colorado River Compact (and its associated agreements) and the Platte River Recovery Implementation Program Cooperative Agreement.
8. Carbon County requests coordination or involvement as a cooperating agency in any proposed amendments or discussions regarding the Platte River Recovery Implementation Program and associated Cooperative Agreement.
9. Rivers and streams within Carbon County should be managed in a holistic, ecosystem level approach rather than for a single species.
10. Carbon County should be consulted and coordinated with whenever federal agencies make waterway management decisions regarding endangered species.
11. Federal agencies should promote best management practices that maximize stream bank stability, habitat restoration, and riparian health.
12. Federal and state agencies should support stream restoration projects with specific goals for habitat improvement.

13. Federal and state agencies should support stream restoration projects with specific goals for habitat improvement.
14. Federal agencies should support stream restoration projects on public lands that will provide long-term benefits for healthy aquatic habitat and watershed health.

5.3 WATER QUALITY

5.3.1 History, Custom, and Culture

Water quality is essential to sustaining life and industry within Carbon County. The quality of water effects the health of County residents. In Wyoming, water quality is regulated by the WDEQ. The Conservation Districts are given specific statute authority for water conservation and other water responsibilities per W.S. § 11-16-122(b)(xvi). The headwaters for many streams lie within Carbon County and surface waters have far-reaching impacts both east and west of the Continental Divide.

5.3.2 Resource Assessment and Legal Framework

Clean Water Act

The Clean Water Act (CWA) is the federal regulatory mechanism that regulates surface water quality. The CWA gives the EPA and U.S. Army Corps of Engineers (USACE) regulatory jurisdiction over all "navigable waters" also known as "Waters of the United States or WOTUS." The CWA makes it illegal to discharge a pollutant from a point source into a navigable water unless a permit is obtained. The definitions surrounding what a "navigable water", or WOTUS has been a creature of controversy in the past several years and there is still some uncertainty as to what bodies of water constitute as WOTUS and what qualifies as a "point source." From the earliest rulemaking efforts following adoption of the CWA in 1972 to the agencies' most recent attempts to define WOTUS in 2015, the lack of a tangible statutory definition has generated hundreds of cases spanning dozens of courts to ascertain the span of the EPA's jurisdiction. *See* Federal Register Vol. 85, No. 77 22255 (April 21, 2020).

On September 11, 2020, the EPA published final CWA regulations that were intended to clarify some of the definitions and clearly set forth the jurisdictional limits of the CWA. The goal of the final regulations is to:

1) Include four simple categories of jurisdictional waters
    a. Territorial seas and navigable waters
    b. Tributaries of jurisdictional waters
    c. Lakes, ponds, and impoundments that contribute surface water flow to a jurisdictional water in a typical year
    d. Wetlands adjacent to non-wetland jurisdictional waters
2) Provide clear exclusions for many water features that traditionally have not been regulated
3) Defines terms in the regulatory text that have never been defined before.

The CWA regulations are currently being challenged in federal court in the Federal District of Northern California, Federal District of Colorado, and the Federal District of Virginia. However, as

of the writing of this plan, the regulation is effective in all states, except Colorado. Prior to the 2020 regulations, the regulations being followed were the 2015 Clean Water Rule: Definition of "Waters of the U.S." which can be found here.[42]

Surface and Ground Water Quality

Surface Water

Wyoming surface water quality standards (WDEQ, Water Quality Rules and Regulations, Chapter 1) are developed with in the sideboards of the CWA and the Wyoming Environmental Quality Act (WEQA). These standards include water quality criteria, antidegradation provisions, and designated surface water uses (WDEQ, 2018a). Policies for antidegradation were last updated in September 2013 and Surface Water Quality Standards were last updated in April 2018 and are reviewed triennially as per the requirements of the CWA (WDEQ, n.d.-c).

Surface water designated uses are assigned to Wyoming's surface waters through a hierarchical classification system. The uses that are protected on Wyoming waters include agriculture, fisheries, aquatic life other than fish, industry, drinking water, fish consumption, recreation, scenic value, and wildlife (Wyoming Water Quality Division, 2020). Designated uses assigned to surface waters and site-specific water quality criteria are revised on an ongoing basis. Changes to designated uses and site-specific criteria are based on a scientific evaluation, known as a use attainability analysis (UAA), considers public input, and is finalized through a formal determination by the Administrator of the WDEQ Water Quality Division (WQD) or formal adoption in Chapter 1. The UAA can be found here.[43] Recreational designated uses have a Categorial UAA for recreation to identify low flow channels in the state where swimming or similar water contact activities are not attainable. The final determinations for recreation designated use changes were made final on September 1, 2016 (WDEQ, n.d.-c).

Groundwater

The WQD Groundwater Program works to protect and preserve Wyoming's groundwater by permitting facilities to prevent contamination, investigating, and cleaning up known releases.

The WQD Groundwater Pollution Control (GPC) Program tracks potential impacts to Wyoming's groundwater through evaluation of activities permitted at federal, state, and local levels. The GPC Program assists federal agencies with the NEPA process on large projects such as the Moneta Divide and the Pinedale Anticline. This program assists private landowners with suspected contamination of their wells. The GPC Program evaluates the adequacy of water supply sources and wastewater collection and treatment facilities during subdivision applications to ensure groundwater will not be impacted. (WDEQ, n.d.-a)

The Supreme Court recently opined that groundwater can be a point source to transfer pollutants to Waters of the United States when the groundwater is a "functional equivalent of a direct discharge..." *County of Maui, Hawaii v. Hawaii Wildlife Fund,* 140 d. 1462, 1468 (2020). To determine whether groundwater is a functional equivalent of a direct discharge, the Supreme Court clarified that "distance and time" to surface water are major factors in determining if a

CWA permit is required for any groundwater discharges. *Id*. at 76-77. Thus, there can be some circumstances in which some groundwater discharges may require CWA permitting.

Impaired Waters

The CWA requires each state to submit a report to the Environmental Protection Agency (EPA) every two years that describes the status of its surface and ground waters. This report is known as the 305(b) Report, which includes an assessment of existing water quality in the state and an overview of past and proposed water pollution abatement efforts. Each state is also required to under Section 303(d) of the CWA and 40 CFR part 130 to submit a Section 303(d) report which is a list of waters that are not attaining water quality standards and are not expected to meet state water quality standards even after application of technology-based controls for point sources or other control requirements, such as BMPs for nonpoint sources of pollution. The 303(d) list is a subset of all the impaired waters listed in the comprehensive 305(b) report. Section 303(d) also requires that states develop a total maximum daily load (TMDL) for all waters on the 303(d) list. Waters must be prioritized for TMDL development based on the severity of each listing. Each state must submit a 303(d) list to EPA by April 1st of each even numbered year, which then EPA reviews and approves or disapproves the 303(d) list within 30 days of submittal (WDEQ, n.d.-d). The most current 305(b) and 303(d) reports can be found here.[44]

In Carbon County, there are several impaired waters within the Little Snake River Basin and the North Platte River Basin. Those listed segments can be found below in Table 4.

Table 4. Impaired water segments within Carbon County (information from Wyoming's 2020 Integrated 305(b) and 303(d) Report).

Waterbody	Location	Miles	Causes for Impairment	List Date	Impaired Use	Source
Roaring Fork Little Snake River	From the confluence with a tributary draining the Standard Mine downstream 1.8 miles to the confluence with an unnamed tributary	1.8	Copper	2014	Aquatic life other than fish; cold water fishery	Hardrock mining discharges (permitted)
Savery Creek	From the confluence with Little Sandstone Creek downstream to the confluence with the Little Snake River	13.7	Physical substrate habitat alterations	1998	Aquatic life other than fish; cold water fishery	Grazing in riparian or shoreline zones

West Fork Loco Creek	Entire West Fork Loco Creek watershed upstream from the confluence with Loco Creek	12.8	Nutrients; physical substrate habitat alterations; temperature	1998	Aquatic life other than fish; cold water fishery	Grazing in riparian or shoreline zones
Muddy Creek	From below the confluence with Youngs Draw upstream to the confluence with Deep Creek	7.7	Chloride; Selenium	2010	Aquatic life other than fish; non-game fish	Natural sources; source unknown
Little Medicine Bow River	From County Road 2E downstream 26.2 miles to the confluence with Sheep Creek	26.2	Sedimentation/siltation	2014	Aquatic life other than fish; cold water fishery	Surface mining

Subdivision Review

Subdivision reviews are governed by WDEQ Water Quality Rules and Regulations, Chapter 23 and Wyoming Statutes 18-5-301 to 315. The WQD Water & Wastewater Program (W&WP) works to ensure safe and adequate supplies of drinking water and the proper disposal of wastewater. Subdivision review requires that all WQD, W&WP, and Groundwater Pollution Control (GPC) standards are complied with during the review, for approval, and during construction of subdivisions. The Conservation Districts within Carbon County are mandated to review subdivision proposals within the unincorporated areas within the Conservation District boundaries. A subdivision review provides recommendations to planning and zoning staff, Carbon County Planning and Zoning Commission and Carbon County Commissioners of natural resource concerns specific to the development. The review is also an education tool for land developers and future homeowners and can provide information from other agencies including the Weed and Pest, Game and Fish, Office of Historic Preservation, and others. According to statute 18-5-306(b) a subdivision review should include soil suitability, erosion control, sedimentation, flooding concerns, and other issues that are a concern to the Conservation District (i.e. noxious weeds, small acreage grazing/livestock management, wildlife concerns). (Star Valley Conservation District & WDA, 2020; WDEQ, n.d.-b)

5.3.3 Resource Management Objectives (Water Quality):

A. Management practices that maintain or improve the listing status of waters are utilized.

B. Water quality management balances maintenance of water quality with opportunity cost of regulating business with the ultimate objective of protecting Carbon County's custom and culture within those water resources.
C. Carbon County and the Conservation Districts are informed and coordinated with regarding all water quality issues and proposed actions within the County.
D. Federal agencies, industries, and local governments form partnerships that focus on water quality.
E. A clear definition of point source and non-point source is created that is supported by Carbon County, conservation districts, federal agencies, and the State.
F. Federal agencies adopt and consistently use the September 11, 2020 Clean Water Act final rule defining Waters of the United States.

5.3.4 Priorities (Water Quality):

1. Federal agencies should require 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.
2. Federal agencies should require baseline water testing in all permits for development within the County.
3. Discharged water should be tested and the County should be made aware of those tests.
4. Federal agencies should support efforts to maintain or improve the quality of water within all watersheds in the County.
5. Federal agencies should encourage maintenance, protection, and enhancement of water quality in the County to sustain the beneficial uses and ecological health of the watershed.
6. Federal agencies should support efforts to improve any waters listed on the 303(d) Impaired Waters list to remove them from the list.
7. Only credible data that, at a minimum, meets the standards set forth in this Plan and meet the Federal Data Quality Act should be recognized when assessing water quality.
8. Federal and state agencies should promote best management practices designed to reduce point and non-point source pollution.
9. Federal agencies should promote best management practices that maximize stream bank stability, habitat restoration, and riparian health.
10. In conjunction with local, state, and federal planning partners, federal agencies should develop strategies to improve watershed conditions.
11. Federal and state agencies should support stream restoration projects with specific goals for habitat improvement.
12. Federal agencies should support and promote all waste cleanup program and projects.
13. Federal agencies should support stream restoration projects on public lands that will provide long-term benefits for healthy aquatic habitat and watershed health.
14. Federal agencies should participate in watershed studies and plans.
15. Federal agencies should coordinate with the County and Conservation Districts to protect the quality of water supplies of established users using best available science.
16. The County does not support an interpretation of the CWA that broadly views groundwater as a functional equivalent to a point source and only those occurrences

when a pollutant travels a small time and distance through groundwater to surface water should be considered for permitting under the CWA.

17. In following the Wyoming Data Trespass Act (Wyoming Statute § 6-3-414) water quality information obtained through trespass should not be used.
18. Federal agencies should implement the September 11, 2020 Waters of the U.S. rule in their decision.
19. Federal agencies should recognize the conservation districts' water quality expertise and encourage their continued involvement in any water quality issue that may arise in Carbon County.
20. Storm water should be managed to ensure the health, safety, and welfare of all residents within Carbon County.

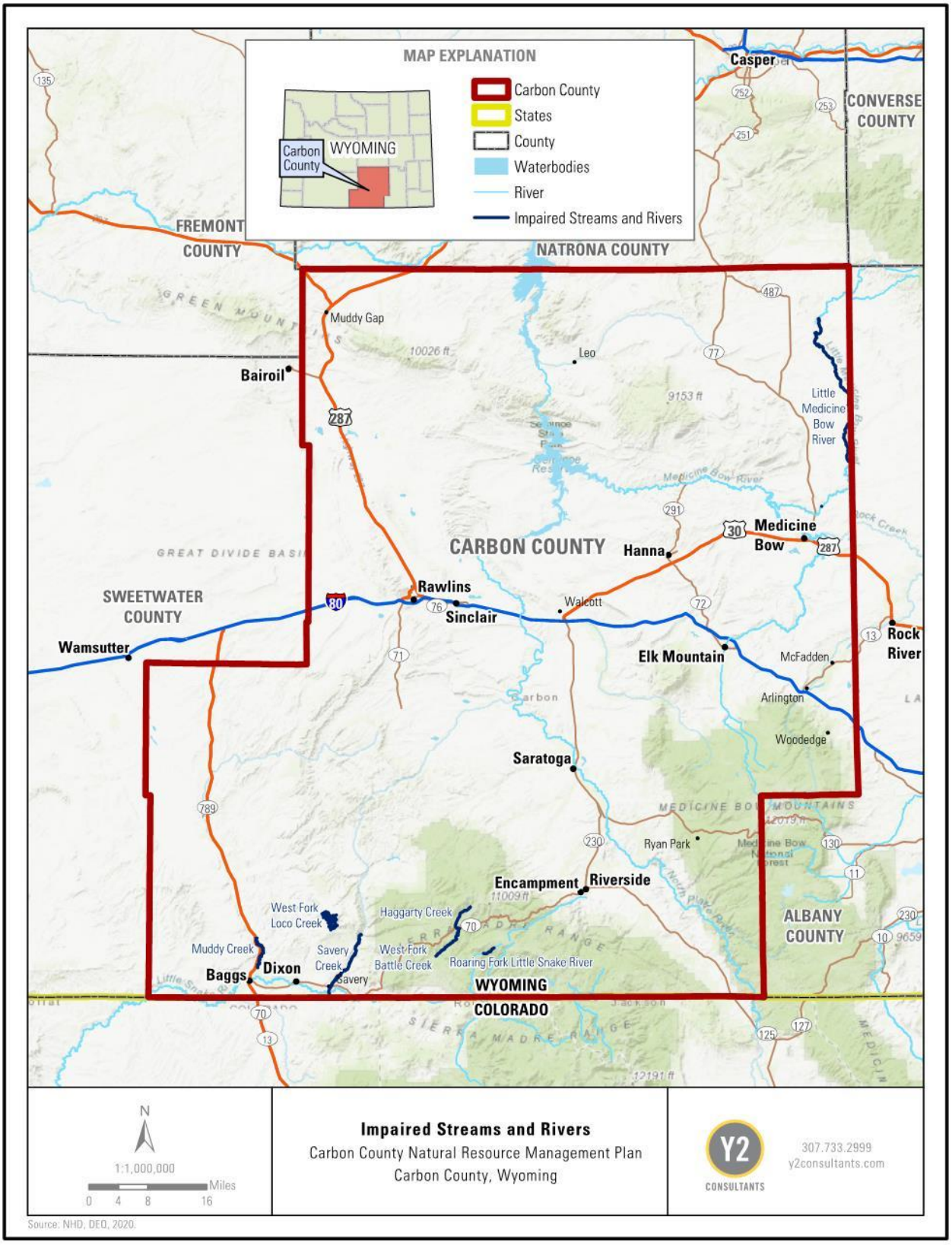

Figure 16. Impaired river and stream segments within Carbon County.

5.4 WATER INFLUENCE AREAS

5.4.1 History, Custom, and Culture

Riparian and wetlands are important for the ecological and water quality value they add to the environment and are an integral part of the health and resilience of water resources within Carbon County. Most of the settlements within the County were settled near water resources in the flood plain, riparian area, or wetland area to be close to water for life functions and industries including agriculture, energy, mining, and logging. Wetlands and riparian areas provide recreational value as well as ecological, social, and economic value. The most significant economic and social benefit of wetlands and riparian areas is flood control, but they also provide essential functions in filtering water, improving water quality, and providing habitat for waterfowl and other wildlife while also recharging aquifers and securing future water supplies.

5.4.2 Resource Assessment and Legal Framework

Riparian and wetland areas make up only 4% of lands within Wyoming. Since European settlement the total area of wetlands within Wyoming is estimated to have been reduced by 38% (Tessmann et al., 2018a). There are multiple anthropogenic processes that can harm riparian and wetland areas. A few examples of activities that can degrade these ecosystems and their ability to function properly are urban development along streams and on floodplains, diversion of water, improper timber harvest, and improper grazing practices (WDEQ, n.d.-e; WGFD, n.d.-c).

Based on the National Wetlands Inventory there are approximately 144,263 acres (2.8% land area) of wetlands within Carbon County, mostly around the rivers and streams throughout the County. The National Wetlands Inventory Map can be found here.[45] Wetlands and riparian systems serve an important role within the arid landscapes of Carbon County. These habitats enable many wildlife species to persist in environments that would otherwise support lower densities and diversity of wildlife. Wetlands provide critical habitat, breeding grounds, and sources of food for fish, birds, amphibians, and other organisms. Wetlands perform beneficial functions including stream flow stabilization, groundwater recharge , and water quality improvement (Tessmann et al., 2018a). Wetlands and riparian areas also provide a buffer between open water and upland sites, protect streambanks from erosion, filter runoff sediment and nutrients, and improve stream habitat through lowering stream temperatures and increasing oxygen levels.

The Little Snake River Wetland Complex, located just west of the Sierra Madre Mountains, is a great example of the importance of wetlands and their restoration/enhancement. The Muddy Creek Wetlands project is within this area and was an extensive 2,500-acre complex of constructed wetlands and restored riparian corridor in the middle of the sagebrush. The project was part of an effort to use the natural function of wetlands to reduce sediment and improve water quality in Muddy Creek, a portion of which was listed as an impaired water. (WGFD, n.d.-e)

Wetlands have been defined in different ways by numerous entities and agencies. However, the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protect Agency (EPA) jointly define wetlands as “Those area that are inundated or saturated by surface or groundwater at a

frequency and duration sufficient to support, and that do under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." This definition of wetlands is perhaps the most relevant to local land managers and planners because the USACE and EPA are agencies that have legal jurisdiction over wetlands, including those wetlands on private property.

Federally, only wetlands adjacent to WOTUS are considered "Waters of the U.S." and are protected under the CWA. The definition of wetlands protected under CWA have been specified further through the Supreme Court rulings in 1985 Riverside Bayview, 2003 SWANCC, and 2008 Rapanos (ASWM, n.d.-a, n.d.-b). The EPA and USACE published new CWA regulations on June 22, 2020, that were adopted on September 11, 2020, that attempt to clarify what wetlands fall within the jurisdiction of the CWA. Under these newly published rules, only those wetlands adjacent to non-wetland jurisdictional waters fall under the CWA.

The State of Wyoming has the Wyoming Wetlands Act (W.S. §§ 35-11-308 through 35-11-311) which was passed in 1991 and amended in 1994 which established a statewide wetland mitigation bank to facilitate mitigation of impacts to wetlands. Administration of the mitigation bank falls under the WDEQ with the WSEO administering and regulating use of water resources in Wyoming. The right to use water for domestic, municipal, agricultural, industrial, construction, or environmental purposes is based on a system of designated beneficial uses. Beneficial uses recognized to sustain and protect natural resources include wetlands, wildlife, environmental, and instream flow. Wetlands associated with irrigation are also directly affected by Wyoming water law.

U.S. Forest Service and Bureau of Land Management

The USFS and BLM are required to manage riparian-wetland areas in Proper Functioning Condition (PFC). PFC is the minimum state of resilience needed to withstand moderate flooding and make progress toward a desired condition that supports fish habitat, water quality, and wildlife needs. Riparian and wetland areas may be categorized as Non-Functioning (NF), Functioning At Risk (FAR), or PFC with upward or downward trend within a PFC assessment. (BLM, 2016d)

The BLM Wyoming Standards for Healthy Rangelands and Guidelines Assessments dedicate an entire standard to riparian and wetland health. The standard states that "riparian and wetland vegetation has structural, age, and species diversity characteristic of the stage of channel succession and is resilient and capable of recovering from natural and human disturbance in order to provide forage and cover, capture sediment, dissipate energy, and provide for ground water recharge." (BLM, 1997)

Riparian and wetland standards for the USFS lands within Carbon County state that "in the water influence zone next to perennial and intermittent streams, lakes, and wetlands, allow only those land treatments that maintain or improve long-term stream health and riparian ecosystem condition." Wetlands are included in riparian monitoring for the USFS because wetland complexes often occur in or adjacent to riparian complexes. Forest Service Handbook 2509.25[46]

discusses the watershed conservation practices for USFS Rocky Mountain Region (Region 2). (USFS, 2006, 2013b).

5.4.3 Resource Management Objectives (Water Influence Areas):

A. Wetlands and riparian areas are healthy and function properly while maintaining a balance with other resource uses.
B. A universal definition of wetlands is created and used by federal agencies, state agencies, and the County.
C. Regulation of wetlands is balanced where quality is protected but economic progress is not stifled.
D. Private landowners' rights are maintained regarding wetland jurisdictions. Federal agencies adopt and consistently use the September 11, 2020 Clean Water Act final rule defining Waters of the U.S.

5.4.3 Priorities (Water Influence Areas):

1. Federal agencies should coordinate any wetland project with the County and Conservation Districts.
2. Federal agencies should recognize the Conservation Districts in Carbon County (SER, Medicine Bow, and Little Snake River) as the expert on all water related decisions within the County.
3. Support the management, maintenance, protection, and restoration of wetland areas to proper functioning condition.
4. Support the use of responsible grazing and vegetation management as a tool to maintain and restore wetlands/riparian areas.
5. Federal agencies should manage riparian areas on public lands damaged by non-native species to decrease the impact of these species on the watershed, including water quality and to restore the areas to a proper functioning condition.
6. Support the use of credible data and scientific standards for wetland designation.
7. Carbon County should be notified of any planned Clean Water Act jurisdictional wetland designations within the County.
8. Carbon County does not support previous versions of "Waters of the U.S" rulings. Any definition of navigable water that includes ephemeral streams, irrigation ditches, manmade conveyances, bodies of water not connected to navigable waters, or anything not listed or defined in the September 11, 2020 Clean Water Act Regulations should not be recognized.
9. Carbon County does not support any Clean Water Act jurisdictional wetland designations for any wetlands not located immediately adjacent to a navigable water in the County.

CHAPTER 6: WILDLIFE RESOURCES

6.1 WILDLIFE MANAGEMENT AGENCIES

6.1.1 United States Fish and Wildlife Service

The United States Fish & Wildlife Service (USFWS) is the agency within the Department of the Interior dedicated to the management of fish, wildlife, and their habitats, and charged with enforcing federal wildlife laws, including the Endangered Species Act (ESA). In addition to managing threatened and endangered species, they manage migratory birds, restore significant fisheries, conserve and restore wildlife habitat including wetlands, and distribute money to state fish and wildlife agencies. They also manage the National Wildlife Refuge (NWR) System created by President Theodore Roosevelt in 1903. (Wilson, 2014)

There are eight administrative regions for USFWS and approximately 700 field offices across the country. Wyoming is in the Mountain Prairie Region which consists of eight states - Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. The regional office for the Mountain Prairie Region is in Denver, CO. The closest field office is in Cheyenne, WY.

National Wildlife Refuges

In 1903, President Theodore Roosevelt designated the first National Wildlife Refuge (NWR) by executive order. In 1966, the USFWS started administering the refuges. The USFWS administers 89.1 million acres of federal land in the US, of which 76.6 million are in Alaska (Federal Land Ownership, 2018). The mission of the National Wildlife Refuges is to administer these designated lands for the conservation, management, and if appropriate, restoration of fish, wildlife, and plant resources, and their habitats within the US for the benefit of present and future generations. A number of activities take place on refuges including hunting, fishing, ice fishing, bird-watching, hiking, bicycling, and water recreation (USFWS, 2018c). There are 7 National Wildlife Refuges totaling 86,681 acres in Wyoming, as of the 2018 Annual Lands Report (USFWS, 2018a). The Pathfinder National Wildlife Refuge has a small portion of lands within Carbon County, however most of the Pathfinder NWR is in Natrona County. A map of the Pathfinder NWR can be found here.[47]

The Pathfinder NWR was first established in 1909 and is comprised of 16,806 acres. The Refuge was established as an overlay refuge on BOR lands that resulted from the construction of the Pathfinder Dam. In 1936, Executive Order 7425 established the refuge "as a refuge and breeding ground for birds and other wildlife." The Refuge is managed jointly by the USFWS, BOR, WGFD, BLM, and Natrona County Parks. A MOU exists between the USFWS and BOR that specifies the management responsibilities of the USFWS while preserving the autonomy of the BOR to manage Pathfinder Dam and Reservoir. The Pathfinder NWR is managed as part of the Arapaho NWR Complex that includes one refuge in Colorado and four refuges in southern Wyoming. A NWR Complex is an administrative grouping of two or more refuges, wildlife management areas, or other refuge conservation areas that are primarily managed from a central office location. The Refuge Complex headquarters is in Walden, CO. Further information on the Pathfinder NWR can be found here.[48] (USFWS, 2014)

6.1.2 Wyoming Game and Fish Department

Wildlife in Wyoming are managed by the Wyoming Game and Fish Department (WGFD). Nearly a decade after Wyoming became a state in 1890, the legislature created the office of the State Game Warden in 1899. The Wyoming Game and Fish Commission was created in 1921 but did not receive the ability to actively manage Wyoming's game populations through opening and closing hunting until 1929. The Wyoming Game and Fish Department was created in 1973. Prior to this time, all Game and Fish personnel were employed by the Wyoming Game and Fish Commission. (WGFD, n.d.-a)

The Wyoming Game and Fish Commission (Commission) acts as the policy making board of the WGFD. The Commission is responsible for the direction and supervision of the Director of the WGFD. Through the relationships with the Director, department, and citizens, the Commission provides a flexible system of control, propagation, management, protection and regulation of all wildlife in Wyoming. WGFD's Commission is a board of seven citizens where not more than five can be from the same political party. The WGFD's mission is 'Conserving Wildlife, Serving People'. (WGFD, n.d.-b)

The WGFD established and manages crucial priority areas through the 2020 Statewide Wildlife Habitat Plan. The plan addresses three major goals: to conserve and protect crucial aquatic and terrestrial wildlife habitats, to restore aquatic and terrestrial wildlife habitats, and to conserve, enhance, and protect fish and wildlife migrations. The plan also lays out strategies for managing priority areas. (WGFD, 2020a)

Additionally, the WGFD also assists in producing the Wyoming Wetland Program Plan[49], building on the Wyoming Wetlands Conservation Strategy. The Plan developed a framework for prioritizing actions to conserve and improve wetlands across the state. (Tessmann et al., 2018b)

The WGFD utilizes a State Wildlife Action Plan (SWAP), revised in 2017, to provide a strategy for managing various wildlife groups including mammals, birds, reptiles, amphibians, fish, and mussels. This plan is not a legal document, a regulatory document, a recovery Plan under the Endangered Species Act, or a NEPA decision document (WGFD, 2017c). It is designed to complement existing and future planning and management programs. Wyoming's SWAP was partially funded by the State Wildlife Grants Program, which was created through federal legislation to provide federal funding to states to create a list of wildlife species that have the greatest conservation need. The state plan is built upon eight essential elements, identified by Congress and implemented by the state game agency, with an overall focus on "species of greatest conservation need". The essential elements are:

- Information on the distribution and abundance of species of wildlife including low and declining populations;
- Descriptions of locations and relative condition of key habitats and community types;
- Problems affecting species and priority research, or survey efforts needed;
- Conservation actions needed to conserve the identified species;
- Plans for monitoring species and the effectiveness of conservation actions;

- Plans for reviewing the strategy;
- Coordinating with federal, state, and local agencies and Tribal governments on the development and implementation of the strategy; and
- Involve broad public participation.

6.1.3 Bureau of Land Management

The BLM's Wildlife Program manages wildlife habitat to help ensure self-sustaining, abundant, and diverse populations of native and desired non-native wildlife on public lands and federal mineral estate. To carry this out, the BLM must formally identify priority species; BLM-sensitive species; and other species. BLM then considers applicable conservation measures for these species and their habitats as part of their land-use planning process.

3.1.4 U.S. Forest Service

The Medicine Bow National Forest provides important habitat to numerous wildlife species. The USFS is tasked with restoring wildlife habitats, conserving threatened and endangered species, maintaining wildlife habitat connectivity, and connecting people with nature through wildlife events and viewing activities.

The 2012 Planning rule direction (36 C.F.R. § 219) sets out the planning requirements for developing, amending, and revising land management plans for the National Forest System, as required by the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by NFMA. The regulations in 36 CFR 219.9 explain that the Forest Plan components must provide for the diversity of plant and animal communities and keep common native species common; contribute to the recovery of federally listed threatened and endangered species; conserve proposed and candidate species; and maintain a viable population of each species of conservation concern within the plan area. Previously the 1982 planning rule direction and used the terms Forester's Sensitive Species and Management Indicator Species, those terms are no longer applicable in the 2012 planning rule direction.

6.2 THREATENED, ENDANGERED, AND SENSITIVE SPECIES

6.2.1 History, Custom, and Culture

Endangered Species Act

USFWS administers the Endangered Species Preservation Act, passed by Congress in 1966, which provided limited protection for species listed as endangered. The Departments of the Interior, Agriculture, and Defense were to seek to protect listed species and to the extent possible, preserve the habitats of listed species. In 1969, Congress amended the Act to provide additional protection for species at risk of "worldwide extinction" by prohibiting their import and sale in the United States. This amendment called for an international meeting to discuss conservation of endangered species and changed the title of the act to the Endangered Species Conservation Act. In 1973, 80 nations met to sign the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Commission of the European Communities, 1986). As a follow-up, Congress passed the Endangered Species Act (ESA) of 1973. The ESA:

- Defined “endangered” and “threatened” species;
- Made plants and all invertebrates eligible for protection;
- Applied “take” prohibitions to all endangered animal species and allowed the prohibitions to apply to threatened animal species by special regulation; such “take” prohibitions also include “adverse modification” of critical habitat;
- Required federal agencies to use their authorities to conserve listed species and consult on “may affect” actions;
- Prohibited federal agencies from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or adversely modify its “critical habitat”;
- Made matching funds available to States with cooperative agreements;
- Provided funding authority for land acquisition for foreign species; and
- Implemented protection in the United States (USFWS, 1973).

The ESA was amended in 1978, 1982, and 1988. Funds are annually appropriated for the implementation of the ESA and have been since 1993.

Candidate species are “any species being considered for listing as an endangered or threatened species, but not yet the subject of a proposed rule” (50 C.F.R. § 424.02(b)).

USFWS is responsible for the identification of critical habitat. Critical habitat is a specific geographic area that contains features essential to the conservation and recovery of a listed species and may require special management or protection. Critical habitat can only include areas that qualify as “habitat.” *Weyerhaeuser Co. v. US Fish and Wildlife Service,* 139 S. Ct. 361, 368 (2018). Neither the ESA does not define “habitat.” *Id*. However, the USFWS recently passed regulations defining “habitat,” for the purpose of designating critical habitat only, as “the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species” (50 C.F.R. § 424.02). Thus, only those settings that currently contain the resources may be designated as critical habitat, and those settings that would require additional modification could not qualify as habitat. *See Id*.; 85 FR 81411. Land not currently occupied by an endangered species can only be designated as critical habitat when the Secretary of the Fish and Wildlife Service determines that the land is “essential for the conservation of the species” (16 USC 1532(5)(A)). “Essential for the conservation of the species” is also not defined in either the ESA or USFWS regulations. Although economic impacts are not considered during the species listing process, the economic impacts of a critical habitat designation must be analyzed in the designation process. The USFWS may choose to exclude any area from critical habitat if the agency determines that the benefits of such exclusion outweigh the benefits of designating the area unless such exclusion would result in the extinction of the species (16 U.S.C § 1533(b)(2)). A decision not to exclude critical habitat for economic reasons is reviewable by courts under an abuse of discretion standard. (*Weyerhaeuser*, 139 S. Ct. at 370)

On December 18, 2020, in response to the *Weyerhaeuser* Court’s decision allowing decisions not to exclude critical habitat to be reviewed under the Administrative Procedure Act, the Fish and Wildlife Service proposed rules regarding the exclusion of critical habitat (85 FR 82376). There are five major items developed in the new rule.

1. The rule gives local governments expert status when discussing the economic and other nonbiological local impacts of critical habitat designation within their jurisdiction.

2. The rule also reversed the USFWS's former policy and will allow federal land to be excluded from critical habitat designation.

3. The rule set a meaningful standard as to when critical habitat should be excluded.

4. The rule encourages the USFWS to exclude critical habitat for more than just economic consideration, including whether the critical habitat may harm community development or;

The rule also allows lands that have proven conservation agreements to be excluded from critical habitat. These agreements can even be agreements created by local governments or the state and not just the USFWS (50 C.F.R. § 17.90).

The ESA created several additional planning tools, including:

- Recovery plans (population and viability goals; define when delisting may be possible; what is required for delisting to begin);
- Reintroduction plans;
- Habitat conservation plans (define when "take" may occur, defines mitigation options);
- Conservation plans or agreements; and
- Candidate Conservation Agreements (CCA) and CCAs with Assurances (CCAA) (private landowner agreements for the protection of Candidate species that provide the landowner with protection if the species is listed) and Species of Concern (USFWS, 2018b).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16. U.S.C 668-668c) was enacted in 1940, with several amendments since, and prohibits anyone from "taking" bald or golden eagles, including their parts, nests, or eggs without a permit issued by the Secretary of the Interior (USFWS, 2018b).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) is a federal law that carries out the United States' commitment to four international conventions with Canada, Japan, Mexico, and Russia. Those conventions protect birds that migrate across international borders. The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests except as authorized under a valid permit (50 CFR 21.11). The USFWS published the 'Regulations Governing Take of Migratory Birds' in February of 2021, further defining the parameters of 'unlawful take'. The rule defines 'take' as 'to willfully pursue, hunt, shoot, wound, kill, trap, capture, or collect'. 'Take' of migratory birds no longer includes the incidental or accidental killing of migratory birds (USFWS, 2021). The MBTA also authorizes and directs the Secretary of Interior to determine if, and by what means, the take of migratory birds should be

allowed and to adopt suitable regulations permitting and governing take (i.e., hunting seasons for ducks and geese). (USFWS, 2020)

6.2.2 Resource Assessment and Legal Framework

Candidate, Threatened, and Endangered Species in Carbon County

Currently listed, threatened and endangered species can be found on the USFWS Environmental Conservation Online System (U.S. Fish and Wildlife Service, n.d.). At the writing of this report there are thirteen endangered or threatened species and no critical habitats identified for Carbon County. Those species are:

- Canada lynx (*Lynx canadensis*) – Threatened wherever found
- Least Tern (*Sterna antillarum*) – Endangered
- Piping Plover (*Charadrius medodus*) – Threatened
- Whooping Crane (*Grus americana*) – Endangered
- Yellow-billed Cuckoo (*Coccyzus americanus*) – Threatened
- Bonytail (*Gila elegans*) – Endangered
- Colorado Pikeminnow (*Ptychocheilus lucius*) – Endangered
- Humpback Chub (*Gila clypha*) – Endangered
- Pallid Sturgeon (*Scaphirhynchus albus*) – Endangered
- Razorback Sucker (*Xyraychen texanus*) – Endangered
- Blowout Penstemon (*Penstom haydenii*) – Endangered
- Ute Ladies'-tresses (*Spiranthes diluvialis*) – Threatened
- Western Prairie Fringed Orchid (*Platanthera praeclara*) – Threatened

As of the writing of this NRMP, there is no designated critical habitat for any of the above species in Carbon County. However, lynx habitat does occur on the Sierra Madre and Medicine Bow Mountains. Only a few lynx have ever been sighted on the Medicine Bow National Forest and it is not known whether these were naturally-dispersing animals or releases of domesticated animals held in captivity as pets or at fur farms. (USFS, 2003a)

Southern Rockies Lynx Management Direction

The Southern Rockies Lynx Management Direction Record of Decision (ROD) from 2008 amended the management plans for the Arapaho-Roosevelt, Medicine Bow, Routt, Pike-San Isabel, Rio Grande, San Juan, White River and Grand Mesa, Uncompahgre and Gunnison National Forests. The amendment focusses on the conservation of lynx habitat in the southern Rocky Mountains. The plan includes objectives and guidelines to maintain and restore lynx habitat as well as management activities that can influence habitat, such as vegetation management, fuels management, livestock grazing, anthropogenic use, and habitat linkage areas. (USDA FS, 2008)

Recovery Plans

Recovery plans for threatened and endangered species are one of the tools the USFWS utilizes to recover species. Without a recovery plan, management cannot focus on increasing the species population or habitat and cannot move closer to a potential delisting of the species. Recovery plans provide a road map with detailed site-specific management actions for private, Tribal,

federal, and state cooperation in conserving listed species and their habitats. A recovery plan provides guidance but is not a regulatory document.

Recovery plans often take a long time to complete and are often hard to adjust as new information is available. Due to this, the USFWS has revised its approach to recovery planning and implementation. Now, the recovery plan is part of a 3-part framework; it is informed by the Species Status Assessment and is implemented via the Recovery Implementation Strategy. Further information on the revised recovery planning and implementation can be found here.[50]

Sensitive Species

Wyoming Game and Fish Department

Wyoming's List of Species of Greatest Conservation Need (SGCN List) includes 229 total species including eighty birds, nine amphibians, twenty-four reptiles, fifty-one mammals, twenty-eight fish, eight crustaceans, and twenty-nine mollusks, each with a specific priority designation based on the essential elements listed above. (WGFD, 2017c)

The SGCN List is divided into three tiers: Tier 1 – highest priority, Tier 2 – moderate priority, and Tier 3 – lowest priority. The Wyoming Game and Fish Commission has six approved variables to evaluate the conservation priority of each species. These variables include: the Wyoming Game and Fish Department Native Species Status (NSS); Wyoming's contribution to the species' overall conservation; regulatory/monetary impacts of the species' listing under the Endangered Species Act; urgency of conservation action; ability to implement effective conservation actions; and the species' ecological or management role as keystone, indicator, or umbrella species. The consideration of these variables in the species' priority tier designations are made by WGFD biologists who have considerable knowledge about the species. Individual designations may be reviewed annually if warranted by changing circumstances or new data. State Wildlife Grant Program funds are appropriated annually by Congress. In the appropriation process, individual states are evaluated based on their population and total geographical area. From these evaluations, states receive their apportioned funding amounts. Federal grants cover up to 75% of planning grants and 65% of plan implementation grants. (USFWS, n.d.; WGFD, 2017c)

The WGFD updates the species on the Conservation Priority List in conjunction with the State Wildlife Action Plan. The Wyoming Species of Conservation Priority List can also be found on the WGFD website[51] (WGFD, 2017b, 2017a).

Bureau of Land Management

Special Status Species are designated by the BLM and include species that are federally listed or proposed for listing as threatened or endangered, candidate species, state protected and sensitive species, and other special-status species including federal and state "species of concern". The BLM designates special-status species where there is credible scientific evidence to document a threat to the continued viability of a species population. Moreover, special status species are typically designated as sensitive by a BLM state director in cooperation with state agencies that are responsible for managing the species. State natural heritage programs are

typically involved as well, where applicable. Species are usually those that fall in the following criteria:

- Could become endangered in or extirpated from a state or within a significant portion of its distribution;
- Are under status review by the USFWS;
- Are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution;
- At federal level, a listed, proposed, candidate, or state-listed status may become necessary;
- Typically have small and widely dispersed populations;
- Inhabit ecological refugia or other specialized or unique habitats; or
- Are state-listed but which may be better conserved through application of the BLM Sensitive Species Status. (Bureau of Land Management, 2015)

The Wyoming State BLM Office identifies 82 species as sensitive. These species can be found on the Wyoming state BLM sensitive species page[52]. (Bureau of Land Management, 2010)

U.S. Forest Service

The Rock Mountain Region of the USFS has 173 identified sensitive species. These species are included on the USFS Region 2 sensitive species webpage.[53] Management Indicator Species and Threatened, Endangered, Proposed, Candidate and Forest Service Region 2 Sensitive Species identified on the Medicine Bow-Routt National Forest can be found within the Medicine Bow LRMP.[54]

6.2.3 Resource Management Objectives (Threatened, Endangered, and Sensitive Species):

A. Threatened, Endangered, and Sensitive species are managed as a part of an ecosystem using credible data and in conjunction with multiple use mandates in coordination with Carbon County and other stakeholders.
B. The Wyoming Game and Fish Department is the primary agency responsible for managing all wildlife species in Wyoming not listed as threatened or endangered per the Endangered Species Act and are managed with consideration of the General Wildlife, Forest Management, and Special Designation policies in this plan.
C. Critical habitat designations are excluded in areas in which the harm to Carbon County outweigh the benefit of designating the habitat.
D. Critical habitat exclusion analysis is completed for all land within Carbon County during the Endangered Species Act listing process.
E. Critical habitat is only designated in those locations where the endangered species could currently survive.
F. Sub-species are not listed as threatened or endangered within Carbon County.
G. Immediate and expedited delisting of a species occurs when the benchmarks of the species recovery plan are met.

H. The U.S. Fish and Wildlife Service uses the Endangered and Threatened Wildlife and Plants; Regulations for Designating Critical Habitat published in December of 2020 for critical habitat definition.
I. The U.S. Fish and Wildlife Service uses the proposed rules for critical habitat exclusion as finalized in the December 2020 Endangered and Threatened Wildlife and Plants; Regulations for Designating Critical Habitat.

6.2.4 Priorities (Threatened, Endangered, and Sensitive Species):

1. Carbon County does not support listing of any species with insufficient, unsupported, or questionable data not meeting the minimum criteria for its listing or protection level.
2. Any species with insufficient, unsupported, or questionable data not meeting the minimum criteria for its listing or protection level should be delisted.
3. A robust and full critical habitat exclusion analysis of the local economic impacts should occur on all proposed critical habitat designations or species management plans, and the inclusion of Carbon County in this analysis, as required by the Endangered Species Act, including the transactional costs of Section 7 compliance.
4. Federal agencies should recognize Carbon County endangered species recovery plans and habitat preservation agreements when conducting critical habitat exclusion analyses.
5. Support cooperation between private landowners and federal agencies to reduce the risk of listing or the designation of critical habitat under the Endangered Species Act.
6. Any introduction or reintroduction of listed species into Carbon County should not occur unless the County consents to terms and conditions or standard operating criteria that avoid disrupting current land uses.
    a. Shall an agreement not be reached on the potential introduction or reintroduction, and the species is introduced anyway, the species being introduced should only be categorized as a non-essential or experimental population.
7. Federal agencies should support participation of Carbon County and other local governments as cooperating agencies in all decisions and proposed actions which affect the County regarding sensitive, candidate, threatened, or endangered species; the reintroduction or introduction of listed species; habitat conservation plans; conservation agreements or plans; designation of critical habitat, and development of recovery plans.
8. Federal agencies should develop recovery plans within 18 months of listing that include clear objectives to reach for delisting to occur.
9. Federal agencies should develop a recovery plan for species already listed within 18 months of this document.
10. Recovery plans should be approved and in place before management actions intended to increase the population are conducted.
11. For any species on the Endangered Species Act list, Carbon County should be apprised, at minimum, annually of the progress of population recovery objectives for each species.
12. Carbon County should be consulted as soon as objectives have been met for a listed species and steps need to be taken to begin immediate delisting.
13. Agencies should support the development of local solutions (e.g., habitat projects, habitat management plans, conservation plans, or candidate conservation agreements) to keep

a species from being listed under Endangered Species Act or as species of concern/species of special concern.

14. Agencies should assist in controlling zoonotic and vector borne diseases negatively impacting special status, candidate, or listed species before restricting other multiple uses that could be conflicting.
15. Federal agencies should support the continued use of existing valid permits and lease rights on lands with listed species.
16. Federal agencies should support private property rights on lands with Endangered Species Act listed species.
17. Carbon County supports Endangered Species Act threatened and endangered species listings that are based on clear, convincing, peer reviewed, credible scientific data.
18. The U.S. Fish and Wildlife Service (or the appropriate federal agency) 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 and changes in management implemented because of a special status species designation.
19. The U.S. Fish and Wildlife Service should immediately notify the local governments in Carbon County if critical habitat is being considered for any species within their jurisdictions.
20. Consultation and coordination shall occur with Carbon County regarding management plans, population objectives, and wildlife introductions, in the species of concern and sensitive species review process, or any other decision that may affect the economic viability of the communities within Carbon County.,
21. Support the use of credible data as information the Bureau of Land Management and U.S. Forest Service can use as a basis for a decision that a species shall be designated a "species of concern" or "sensitive" beyond criteria provided in their respective handbooks.
22. Support creating a unified (cross-agency) definition for "species of concern".

6.3 WILDLIFE

6.3.1 History, Custom, and Culture

Carbon County has diverse rangeland and forest habitats that host a variety of wildlife species important to the recreational industry of the region. Hunting is a cornerstone to the local custom and culture of the County, and the hunting tourism/guiding industry contribute to the County's economy. Carbon County has a rich history of hunting big game, small game, upland birds, predatory species, and migratory game birds. Wildlife viewing is also a popular activity for both visitors and residents of Carbon County.

Hunting and fishing are major economic drivers for Carbon County. In 2015, hunters and anglers spent a combined $26.7 million dollars ($19.9 million from hunters and $6.8 million from anglers). Hunters spent 92,000 days hunting and anglers spent 58,000 days fishing (Wyoming Wildlife Federation, 2015).

6.3.2 Resource Assessment and Legal Framework

Big Game

Carbon County has a diversity of habitat that hosts several large wildlife species that are important to the recreational industry of the region. Virtually all the County is habitat of importance to some life stage.

Bighorn Sheep

Bighorn sheep (*Ovis canadensis*) are documented as occurring in the County. Approximately 0.5% (24,896 acres) of the County is designated as crucial winter/yearlong habitat near Seminoe State Park and along the edge of the Sierra Madre Range near Encampment. There are 148,543 acres (3%) of spring/ summer/ fall habitat designated within the County, located in the Sierra Madre Range and the Medicine Bow Mountains in the southeast corner of the County. Approximately 82,456 acres (2%) of yearlong habitat is designated in the County spanning between Muddy Gap and the Seminoe State Park. Wyoming manages bighorn sheep according to the 2004 Wyoming State-wide Bighorn/Domestic Sheep Interaction Working Group Final Report and recommendations created per Wyoming Statute 11-19-604. See Figure 17 for mapped habitat designations.

Elk

Elk (*Cervus canadensis*) are found throughout most of the County. Elk are primarily grazers, or bulk foragers, though they will occasionally browse on willows and aspen. Most of the elk habitat within the County, 666,725 ac (or 13% of the area), is listed as spring/summer/fall habitat predominately in the mountain ranges along the southeast corner of the County. Winter and crucial winter habitat accounts for 16% of the County. Elk in the County winter on both public and private land. High densities of elk can pose a disease risk to livestock operations and can be destructive to winter feed reserves and crops. See Figure 18 for mapped habitat designations.

Moose

Moose (*Alces alces*) are found throughout much of Carbon County. Moose are considered primarily browsers but will forage on grasses and forbs as well. Moose inhabit more riparian and wetland areas where willows and water are readily available. Just over 20% (1,047,321 ac.) of the County is designated as winter/ yearlong habitat, spanning the southern portion of the County. . Spring/ summer/ fall habitat comprises just over 6% (307,912 ac.) of the County. See Figure 19 for mapped habitat designations for moose in Carbon County.

Mule Deer

Mule deer (*Odocoileus hemionus*) are found throughout all of Carbon County. Mule deer have readily adapted to the urban environment and have begun to encroach into developing areas within the County. Mule deer are considered primarily browsers but will use forbs as well. Mule deer will consume grass early in the season while the nutritive value is high, but senescent grasses do not meet their dietary requirements. Most of the County is designated as mule deer habitat. Nearly 39% (1,981,038 ac.) of the County is designated as winter yearlong mule deer habitat. Spring/ summer/ fall habitat comprises just over 23% (1,204,991 ac.) of the County. See Figure 20 for mapped habitat designations. In 2020, the Governor of Wyoming signed Executive Order

2020-1 which protected mule deer and antelope migration corridors in Wyoming. Two mule deer migration corridors were designated in Carbon County; the Baggs Mule Deer and Platte Valley Mule Deer Migration Corridors. Further information on the Executive Order and the Platte Valley and Baggs working groups can be found below.

Pronghorn

Pronghorn (*Antilocapra americana*) are common throughout the County. Pronghorn prefer the open shrublands that the southern portion of the county provides. They are intermediate foragers, eating grasses, forbs, and shrubs. Pronghorn use most of the County year-long at some level except for the developed areas and the upper elevations. Most of the County, outside of the mountain ranges, is designated as pronghorn habitat. Designated winter/yearlong range occupies about 35% (1,777,774 ac.) of the County, while spring/ summer/ fall range is 26% (1,360,838 ac.) of the County. See Figure 21 for mapped habitat designations. In 2020, the Governor of Wyoming signed Executive Order 2020-1 which protected mule deer and antelope migration corridors in Wyoming. To date there are no designated migration corridors for antelope in Carbon County. Further information on the Executive Order can be found below.

White-tailed deer

White-tailed deer (*Odocoileus virginianus*) prefer riparian habitats often associated with irrigated lands. Approximately 2.5% of the County (117,285 acres) provides yearlong habitat. Whitetails, like mule deer, are browsers, supplementing their diet with forbs and occasionally grass. In agricultural areas they will feed more on field and hay crops. There is some habitat overlap with mule deer. See Figure 22 for mapped habitat designations.

Wildlife Habitat Management Areas

The WGFD maintains approximately 450,000 acres of land under deed, lease, or by agreement for wildlife habitat management areas (WHMA). There are seven WHMAs within Carbon County (Table 3). The Rawlins BLM has set management goals and objectives for these areas which can be found in the 2008 Rawlins BLM RMP.

Table 5. Wildlife habitata management areas located in Carbon County.

WHMA	Acres
Red-Rim Daley	11,100
Jep Canyon	13,810
Upper Muddy Creek/Grizzly	59,477
Cow Butte/Wild Cow	49,750
Pennock Mountain	7,770
Wick-Beumee	280

State of Wyoming Migration Corridor Protections

In February 2020, Wyoming released the Wyoming Mule Deer and Antelope Migration Corridor Protection Executive Order 2020-1, outlining the State's strategy for managing migration corridors and habitats. The order designated three separate mule deer corridors and a process by which to designate additional corridors in the future. The executive order addresses surface

disturbance, state-permitting, and recreation activities within designated mule deer and pronghorn migration corridors, as well as the cooperation between WYDOT, other state agencies to minimize roadway collisions and facilitate big game movement across roadways. Executive Order 2020-1 encourages Counties to revise or update land use plans to be consistent with the State designated migration corridor protections. Executive Order 2020-1 restrictions do not apply to landowners on their private lands.

There are currently two designated corridors within Carbon County, the Platte Valley Mule Deer Migration Corridor and the Baggs Mule Deer Migration Corridor. The Platte Valley Mule Deer Migration Corridor Local Working Group started meeting in fall 2020 with the first public meeting in December 2020 to review the existing designation of the Platte Valley Mule Deer Migration corridor. The working group is tasked with reviewing the effectiveness of corridor designation on the migratory herd and evaluating the WGFD's Platte Valley Mule Deer Migration Corridor draft risk assessment report. The working group is also tasked with making recommendations about additional opportunities for conservation, along with examining the impacts of all restrictions on development and use of lands encompassed in the designated corridor. The group is led by the BOCC of Carbon County and consists of members from agriculture, industry, wildlife/conservation/hunting, and motorized recreation constituents. State and federal governmental entities are not members of the working group but may act in an advisory capacity and could include WGFD, other State of Wyoming agencies, USFS, BLM, and local elected officials (State of Wyoming, 2020). A similar working group was established for the Baggs Mule Deer Herd in 2014, with the last recorded meeting in May of 2018.

Chronic Wasting Disease (CWD)

Chronic Wasting Disease (CWD) has been a concern for ungulate populations in and surrounding Carbon County since the early 2000s. A 2016 CWD study in east-central Wyoming discovered that between 2003 and 2010, 32- 43% of all harvested deer were positive for CWD. The study also found that from 2003-2010 the whitetail deer populations declined 10% annually because of CWD related mortality, potentially leading to the loss of local populations within 50 years. The WGFD statewide 2020 CWD Management Plan outlines surveillance, monitoring, and management strategies at the local or herd unit level to better manage the prevalence of CWD in conjunction with current herd and population objectives in each herd unit. (Edmunds et al., 2016; WGFD, 2020c)

For additional information on the monitoring and management of CWD in Wyoming refer to the CWD management plan.[55]

Brucellosis

Brucellosis is a highly contagious bacterial disease that can occur in both wildlife, cattle, and humans. There are several *Brucella* species but *Brucella abortus* is the bacterium that infects elk, bison, and cattle. Infection affects the reproductive tract and in females results in abortion but can also affect the male reproductive tract. Bone or joint membranes can also be infected and result in lameness that may make animals more susceptible to predation. The most common route of transmission is orally through licking or ingestion. Carbon County does not fall within the

designated surveillance area for brucellosis in Wyoming, however it is something that the County should stay apprised of to protect the agricultural industry within the County. Further information about brucellosis can be found on the WGFD website.[56]

Hunting is an encouraged management tool to prevent the spread of wildlife diseases. In much of Carbon County elk numbers are over objective and hunting is one tool that allows reduction in numbers that could reduce disease and prevent overuse on critical winter ranges.

Greater Sage-Grouse

The Greater sage-grouse (GRSG) is a state-managed species that is dependent on sagebrush steppe ecosystems. These ecosystems are managed in partnership across the range of the GRSG by federal, state, and local authorities. Efforts to conserve the species and its habitat date back to the 1950s. Over the past two decades, state wildlife agencies, federal agencies, and many others in the range of the species have been collaborating to conserve GRSG and its habitat. BLM has broad responsibilities to manage federal lands and resources for the public benefit. Nearly half of GRSG habitat is managed by the BLM. Habitat is managed based on the designation of Priority Habitat or General Habitat. Priority Habitat spans areas that have a high probability of use or are more critical to populations and therefore are managed with higher priority and restrictions than general habitat. General habitat spans areas of isolated habitat with low use (USFS, 2016). Wyoming began GRSG management efforts in 2000, forming the Wyoming Sage-Grouse Working Group (WSGWG). In 2003, WGFD released the Wyoming Greater Sage-Grouse Conservation plan, and the 'core area' strategy for population and habitat management was released via executive order in 2008 (later updated in 2011, 2015, and 2019). Local working groups were established throughout the early 2000s to facilitate and implement conservation plans for the sage-grouse. There are eight local sage-grouse working groups in the state. The South-Central working group spans Carbon County. Further information on the projects and meetings for the local working groups can be found here.[57] (WGFD, 2020; UW Extension, 2016; WGFD, 2019)

In September 2015, the US Fish and Wildlife Service (USFWS) determined that the GRSG did not warrant listing under the ESA. In its "not warranted" determination, the USFWS based its decision in part on regulatory certainty from the conservation commitments and management actions in the BLM and USFS GRSG land use plan amendments (LUPAs) and revisions, as well as on other private, state, and federal conservation efforts. Since 2015 the BLM, in discussion with partners, recognized that several refinements and policy updates would help strengthen conservation efforts, while providing increased economic opportunity to local communities.

The Density and Disturbance Calculation Tool (DDCT), known as OneSteppe, is a sage-grouse habitat disturbance tracking spatial application operated by WGFD. OneSteppe calculates the average number of disturbances per square mile and the total amount of disturbance within the DDCT assessment area. Proposed disturbance activities within sage-grouse core areas must submit project footprints to the DDCT as a part of the permitting process. The OneSteppe application can be viewed here.[58] (WGFD, 2021)

In 2019, the Wyoming Governor's Office issued the most recent version of the Sage-Grouse Executive Order 2019-3. The Executive Order is the State of Wyoming's primary regulatory mechanism in Wyoming to protect Greater Sage-Grouse and its habitat. The order outlines procedures that seek to minimize disturbance and incentivize development outside of designated core population areas. The 2019 Executive Order can be found here.[59]

The BLM issued its Record of Decision for the Wyoming Greater Sage-Grouse Approved Resource Management Plan Amendment in March 2019 to update greater sage-grouse management. This document partially supersedes the 2015 Wyoming Greater Sage-Grouse Land Use Plan Amendment. The 2019 Plan Amendment is currently being litigated in the United States District Court for the District of Idaho and is being blocked from implementation under an injunction issued by that court.

The Forest Service developed standards and guidelines for sage-grouse conservation in 2015. After two years of monitoring amendments were developed; the new EIS spans Colorado, Idaho, Nevada, Utah, and Wyoming. The FEIS and Draft Record of Decision was released is the fall of 2019 and went thru an extensive objection resolution process. The final decision and resolution outcomes were released in August 2020. Monitoring reports on GRSG populations and habitat within USFS Region 4 are released annually. The FEIS was released is the fall of 2019. Following an objection resolution process, including a resolution meeting, the USFS released an objection response incorporating several edits to the Greater Sage-Grouse Plan Amendments. (U.S. Forest Service, 2020)

GRSG habitat or range spans most of the County. There are 2,195,978 acres of sage-grouse PHMA and 4,300,409 acres of GHMA designated within Carbon County. Refer to Figure 23 for a map of GRSG habitat and designations within the County.

6.3.3 Resource Management Objectives (Wildlife):

A. Wildlife and their habitat are managed sustainably using credible data. Management plans are developed in coordination with Carbon County and other stakeholders.
B. Species and habitat are not managed above their legal designation.
C. Ecosystem management is supported while single-species management is not.
D. Hunting, fishing, and outdoor recreation involving wildlife is a protected use.
E. Non-Endangered Species Act listed wildlife populations are exclusively managed by the Wyoming Game and Fish Department.
F. Sage-grouse are consistently managed in coordination with the State of Wyoming and Carbon County.

6.3.4 Priorities (Wildlife):

1. Support and promote best management practices to conserve healthy wildlife habitats and populations, for the benefit of both game and non-game wildlife species.
2. Support the use of Wyoming's Bighorn-Domestic Sheep Management Plan as the basis for all management decisions impacting the Bighorn / domestic sheep controversy.

3. Peer-reviewed science, and/or those data meeting the 'credible data' agency specifications, shall be used in the management of disease spread between wildlife and domestic species, with consultation and coordination of local government.
4. Federal agencies should promote wildlife conservation, sustainability of healthy wildlife habitat and populations, and their contributions to the local economy.
5. Carbon County supports State management of wildlife and management of wildlife and wildlife habitat on federal lands should reflect Wyoming Game and Fish Department policy priorities.
6. Support proactive management of candidate and sensitive species in coordination with other multiple use users in Carbon County to avoid further Endangered Species Act listing protections.
7. Federal agencies should support wildlife conservation and a robust public process to protect and enhance habitats that are important to the custom and culture of Carbon County and its residents.
8. Wildlife habitat should be one of the multiple-use considerations during any federal habitat disturbing activity.
9. Encourage cooperative efforts between federal agencies and the Wyoming Game and Fish Department on their respective projects to avoid or mitigate adverse impacts to wildlife species and habitats.
10. The County recognizes and supports the Wyoming Governor's Executive Order 2019-3[60] on Greater Sage-Grouse Core Area Protection in conserving greater sage-grouse and their habitats.
11. Carbon County should be coordinated with whenever there is proposed adjustments to core sage-grouse habitat boundaries or policies affecting said habitat.
12. Federal agencies should follow Carbon County Zoning Resolution Chapter 6.1.C limiting location of commercial scale wind or solar energy systems within sage-grouse core areas.
13. Carbon County supports mapped Greater Sage-Grouse priority habitat management areas and general habitat management areas that match state plans.
14. Carbon County supports the use of the Density Disturbance and Calculation Tool, known as OneSteppe.
15. Carbon County does not support the use of sagebrush focal areas for Greater Sage-Grouse habitat classification.
16. Carbon County supports the current U.S. Fish and Wildlife Service policy for issuing an Eagle Take Permit for Wind Energy Developers for no longer than five (5) years.
17. Carbon County does not support the U.S. Forest Service or Bureau of Land Management managing wildlife populations on public lands.
18. The U.S. Forest Service and Bureau of Land Management should focus on habitat management for species of importance identified by the State and only consult with and defer to the Wyoming Game and Fish Department for wildlife management.
19. Promote the critical role agricultural producers have in providing habitat to wildlife within Carbon County and encourage the use of livestock as a tool to improve wildlife habitat.
20. Support wildlife habitat improvement projects and tools with appropriate consultation and coordination including but not limited to grazing, plantings, water development, fire,

chemical application, wildlife friendly fencing, and other best management practices that improve the quality of riparian and upland habitats.

21. Support efforts of and partner with other government agencies, local cooperators, and other interested parties in the management, maintenance, and enhancement of wildlife habitat, emphasizing voluntary and incentive-based programs to support the coexistence of the current level of livestock grazing and current wildlife herd objectives.
22. Hunting, fishing, and outdoor recreation involving wildlife are important to the custom and culture of Carbon County and should be recognized as an important use.
23. Federal agencies should work with local agricultural producers, Conservation Districts, and Carbon County to ensure mitigation is done properly and locally.
24. Encourage state and federal wildlife agencies to continue surveillance for brucellosis in elk, chronic wasting disease in cervids, and any other disease that could have health or economic impacts on Carbon County citizens or their livelihoods.

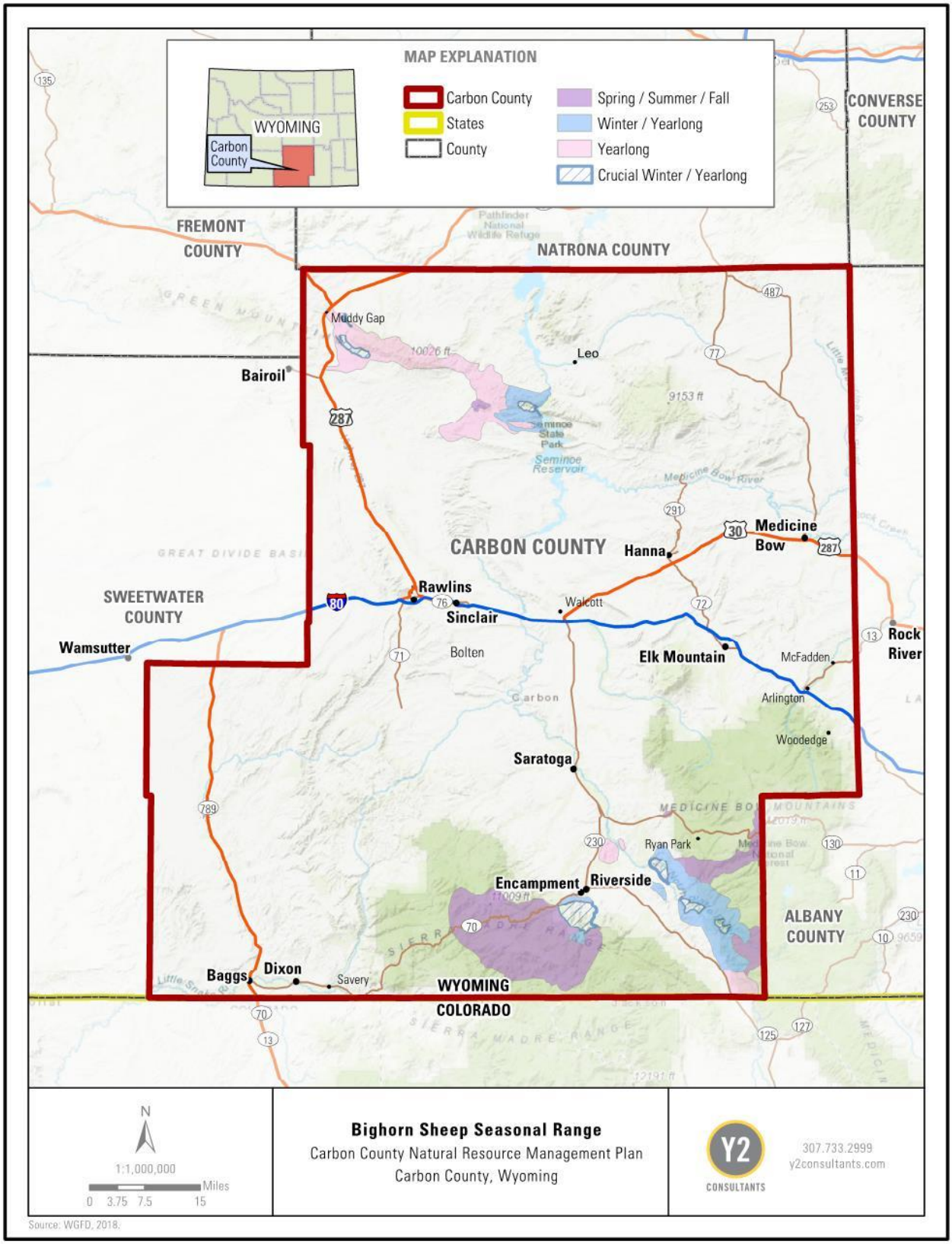

Figure 17. Bighorn sheep seasonal range mapped in Carbon County.

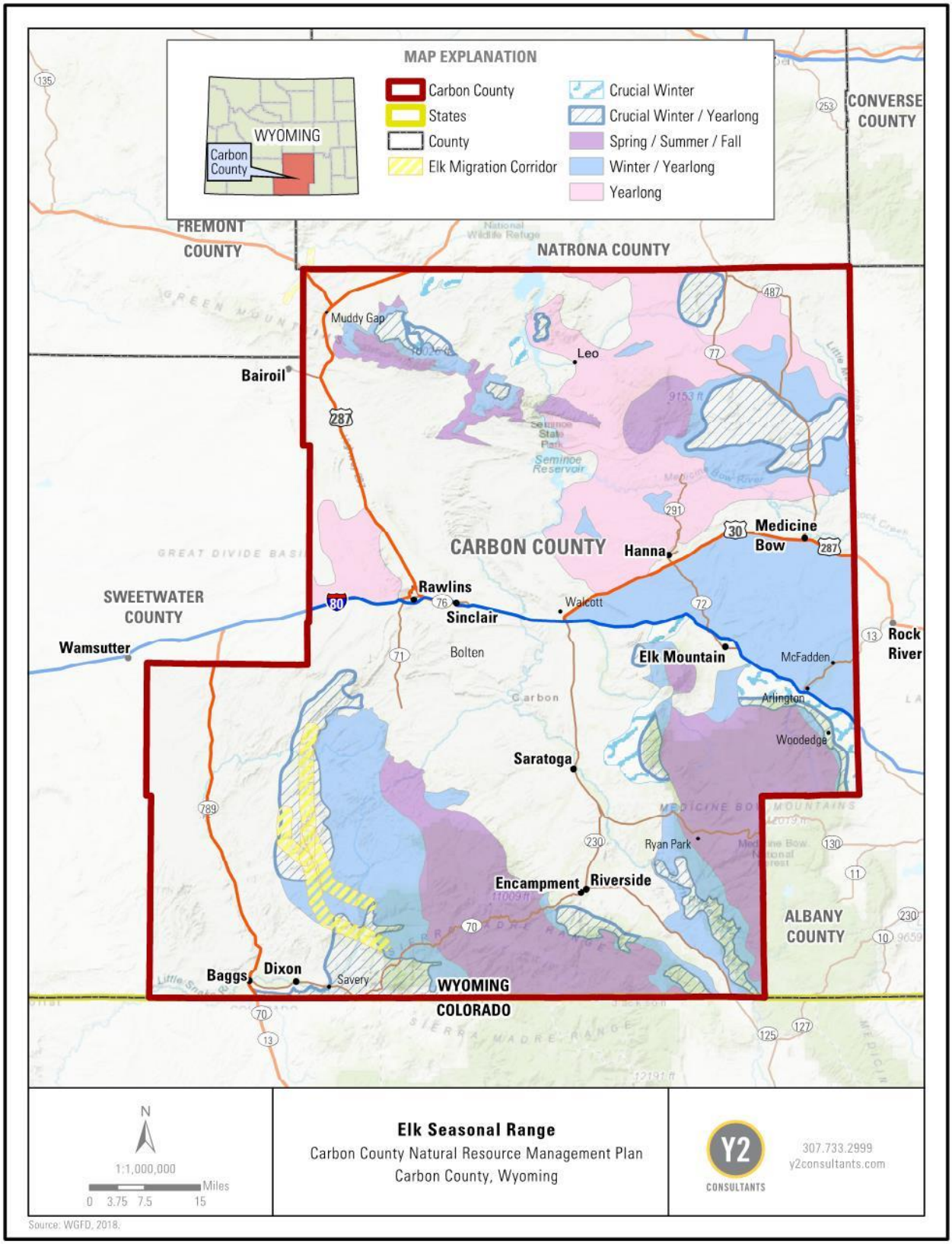

Figure 18. Elk seasonal range mapped in Carbon County.

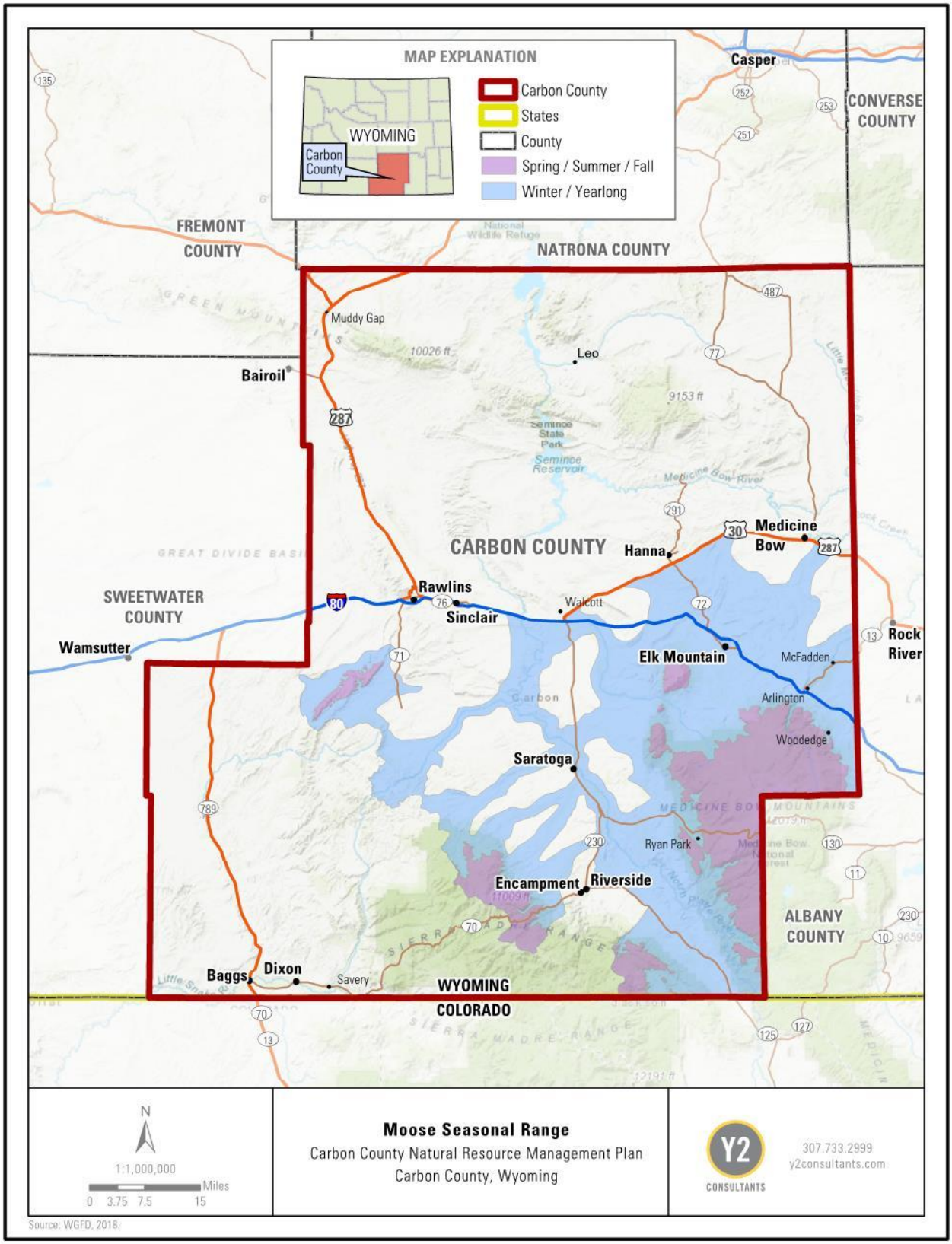

Figure 19. Moose seasonal range mapped in Carbon County.

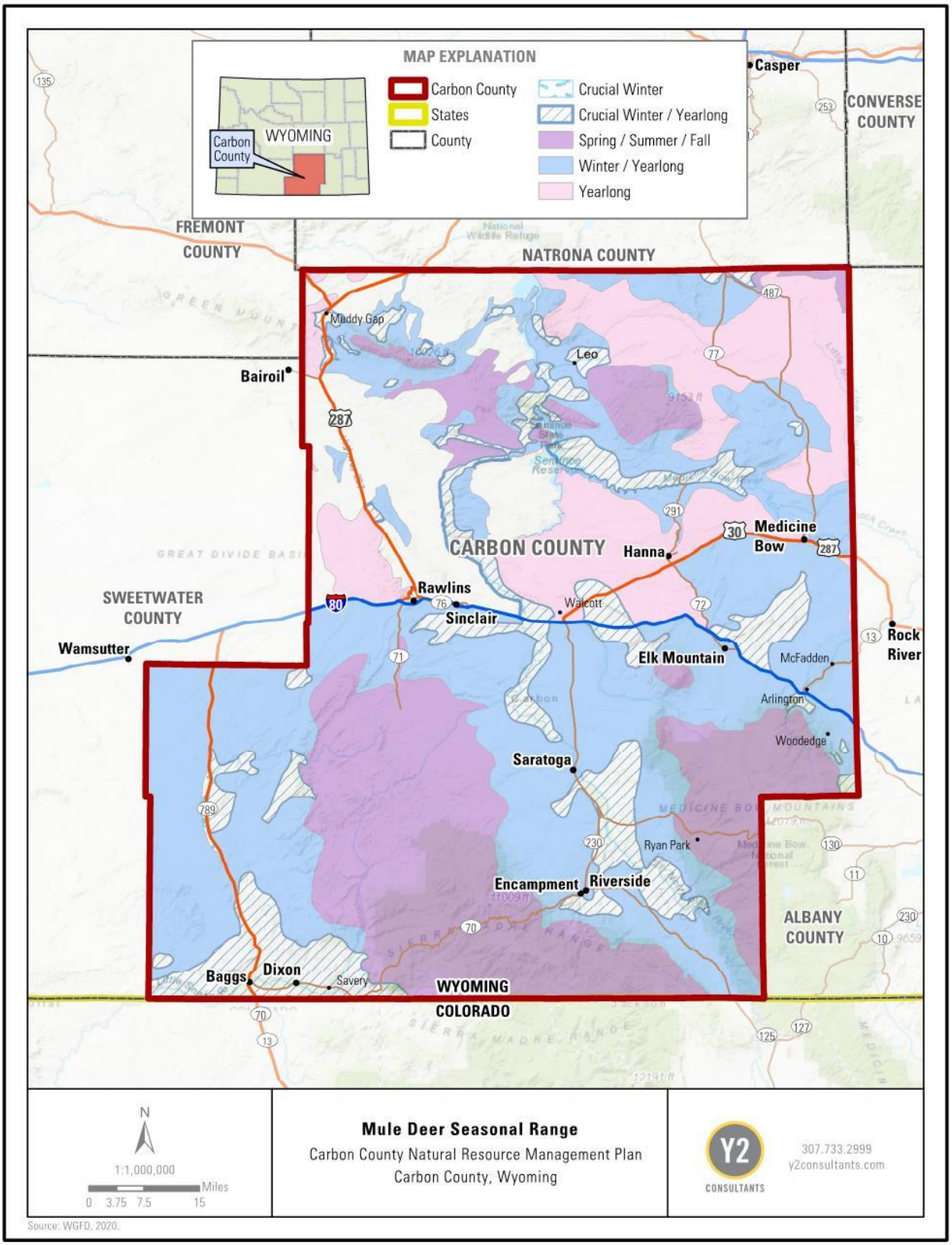

Figure 20. Mule deer seasonal range mapped in Carbon County.

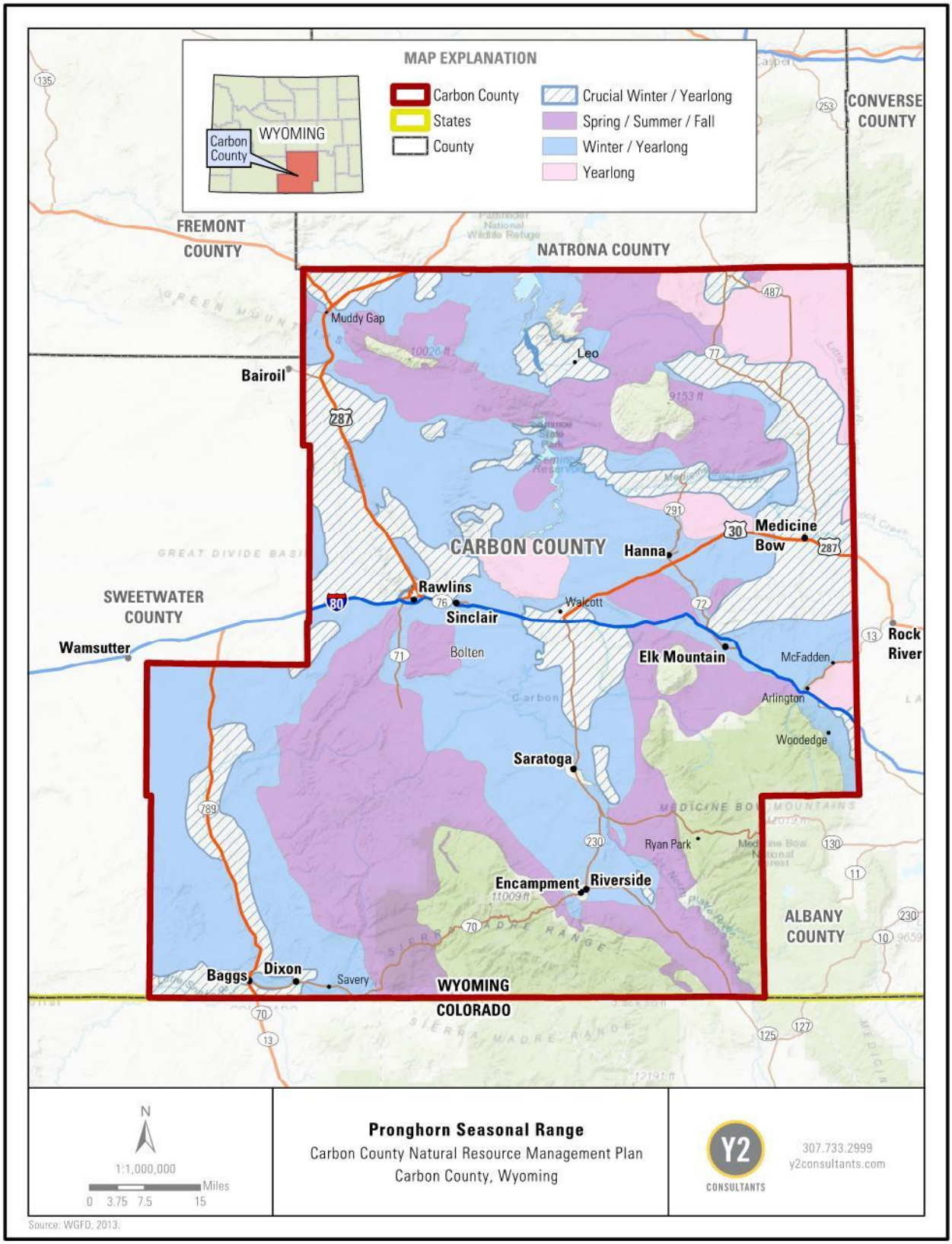

Figure 21. Pronghorn seasonal range mapped in Carbon County.

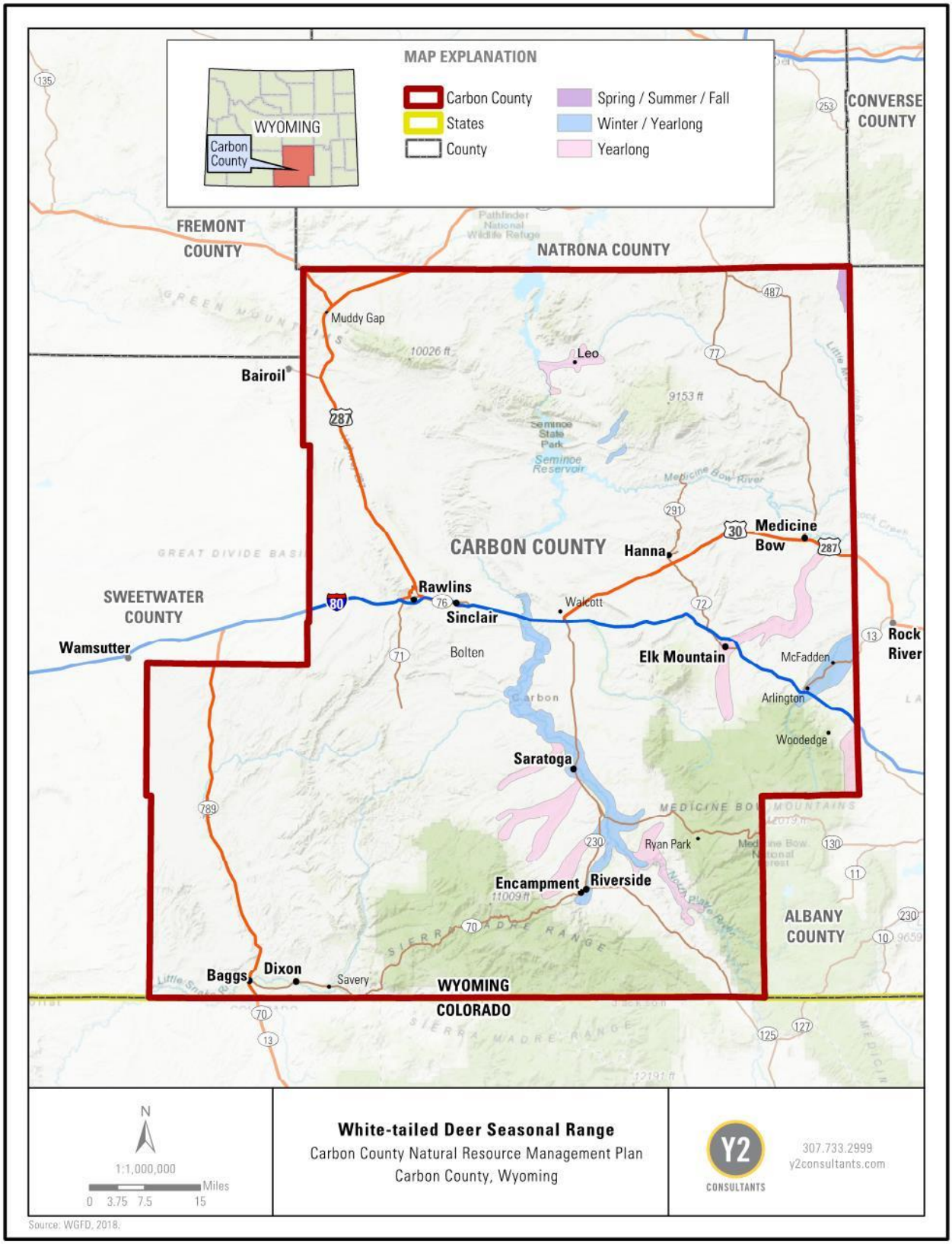

Figure 22. White-tailed deer seasonal range mapped in Carbon County.

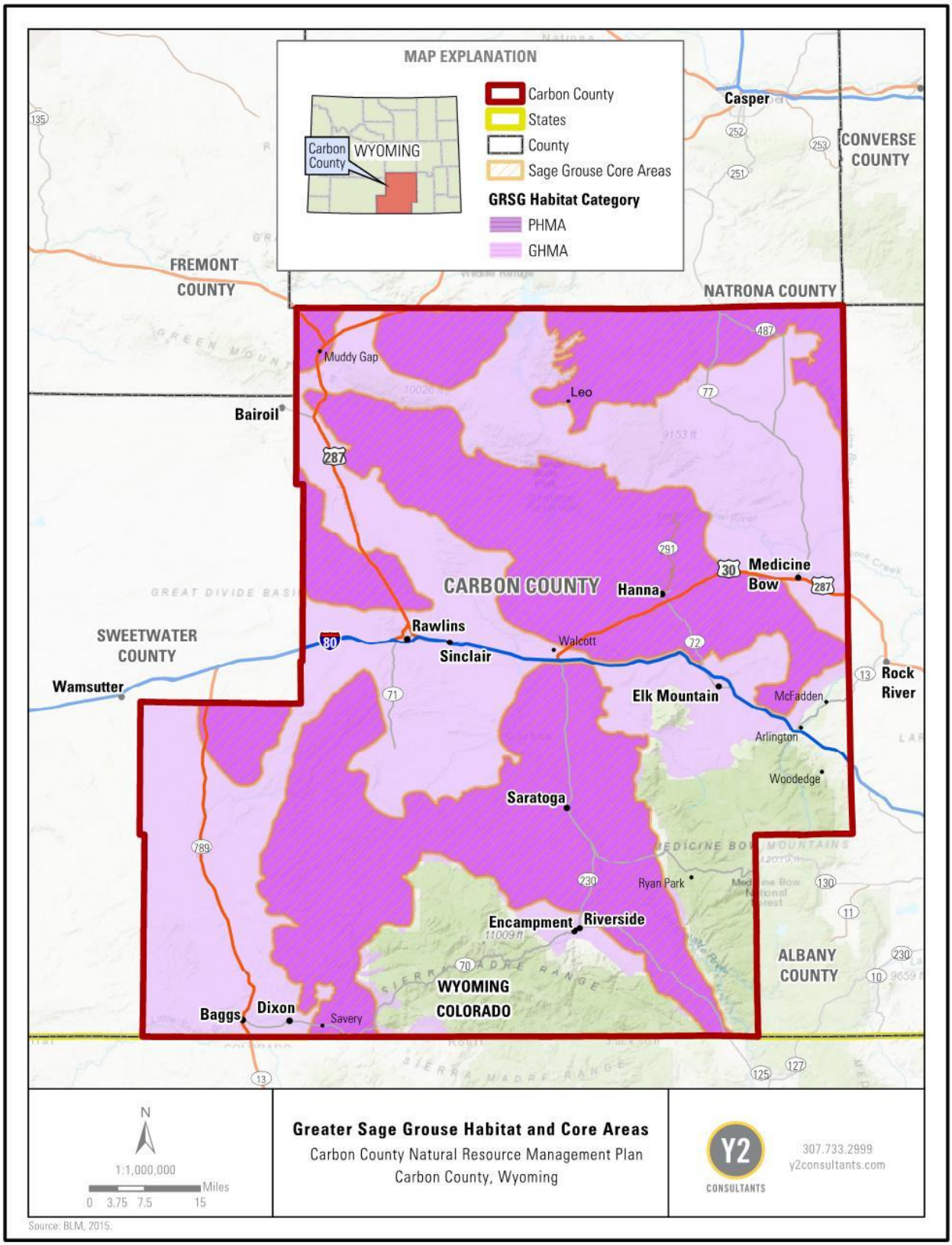

Figure 23. Greater Sage-Grouse core areas and habitat management area designations mapped in Carbon County.

6.4 FISHERIES

6.4.1 History, Custom and Culture

Fishing on the major rivers and streams have contributed to the custom and culture of Carbon County since the first Native Americans came to the area. Native Americans fished the rivers and streams to provide food particularly in the summer months. As settlers moved into the area they began fishing as well. Carbon County has long been a destination for recreationists and tourists who want to partake in its incredible fisheries. The inventor Thomas Edison visited the area on a hunting and fish trip in 1878. The Saratoga National Fish Hatchery opened in 1911 to stock various fish species both in Wyoming fisheries and fisheries throughout the country. (Carbon County Economic Development Corporation, 2016)

Fishing continues to support recreation and tourism in Carbon County and therefore proper management of the fisheries is extremely important to the County. The combination of healthy fisheries and public access throughout the County's reservoirs, lakes, and rivers provide diverse fishing opportunities that attract recreators. Healthy native fishery populations are also an indicator of watershed health. Fishing within the County varies from fly fishing trout species to sport fishing the reservoirs.

6.4.2 Resource Assessment and Legal Framework

Carbon County crosses two river basin regions, the Greater Green River Basin and the Platte River Basin. The southwestern corner of the County falls in the Little Snake River and Great Divide sub-basins within the Greater Green River Basin, and includes the Little Snake River, Muddy Creek, and Savery Creek and many smaller tributaries. The Platte River Basin covers most of the County including the Platte and Encampment Rivers and the associated expansive network of high mountain stream systems. Carbon County resides within the sub-basin designated 'Above the Pathfinder Dam'. The Pathfinder, Kortes, and Seminoe Reservoirs, as well as the 'Miracle Mile' are located in Carbon County within the Platte River Basin. (States West Water Resources Corporation & WWDC, 2001; WWDC, 2006)

In 2015 the state of Wyoming established multiple initiatives to protect and utilize water resources. The River Restoration initiative develops strategies, financial tools, and technical expertise to further stream restoration efforts across the state. The Collaborative Fish Passage Initiative takes a similar approach to further fish passage development and infrastructure while meeting water user's needs. Refer to the WGFD page here[61] for additional information surrounding these initiatives.

The WGFD manages and monitors fishing activity throughout the state. WGFD developed the current stream classification in 1961. The classification identifies and ranks the most important coldwater recreational fisheries (Saratoga-Encampment-Rawlins Conservation District, 2017). The State of Wyoming classifies trout streams into five separate designations listed below.

- Blue Ribbon – ≥ 600 pounds of sport fish per mile
- Red Ribbon - ≥ 300 and <600 pounds of sport fish per mile
- Yellow Ribbon - ≥50 and <300 pounds of sport fish per mile

- Green Ribbon - ≥1 and <50 pounds of sport fish per mile
- Orange Ribbon – Any cool/warm water game fish present

Within the Green River Basin, most of the rivers within Carbon County are yellow ribbon rivers. In the Platte River Basin, large stretches of the North Platte River within the County are designated as blue ribbon, greater than 600 pounds of sport fish present per mile. There are also stretches of red ribbon rivers along the North Platte River and across the southeastern corner of the County (WGFD, n.d.-d). The WGFD Fish Stream Classifications map can be found here.[62]

WFGD develops aquatic management plans for the state. The 2020 Statewide Wildlife Habitat Plan addresses three major goals: to conserve and protect crucial aquatic and terrestrial wildlife habitats, to restore aquatic and terrestrial wildlife habitats, and to conserve, enhance, and protect fish and wildlife migrations. The plan also lays out strategies for managing priority areas. (WGFD, 2020a)

Currently, WFGD has designated 64 Crucial Priority Areas for aquatic habitats throughout Wyoming. These areas are managed or protected to maintain viable and healthy populations of wildlife/fish. Within Carbon County these designations span the Medicine Bow- Routt National Forests in the southeast corner of the County, a swath west of Saratoga, multiple sections of the North Platte River, and the Pathfinder and Seminoe Reservoir areas. For more information on Priority Area designations throughout the state refer here.[63] (WGFD, 2015, 2020b)

Fishing areas throughout the Platte River Basin are well known and experience large amounts of recreation. The Miracle Mile, a 5.5 mile reach between the Pathfinder Reservoir and Kortes Dam on the North Platte River, is one such area that is an important fishery resource for the County. Common game fisheries in the County vary from trout species to walleye, bass, and channel catfish. The North Platte River fisheries are greatly influenced by the multiple dams present along the river (WWDC, 2006). Refer to Figure 15 for a map of the major rivers of Carbon County.

Table 6 provides the annual angler days for the 'Above Pathfinder Dam' sub-basin. For additional fishery resource information refer to the Greater Green River Basin and the Platte River Basin Water Plans. (WWDC, 2006)

Table 6. Annual angler days across the 'Above Pathfinder Dam' sub-basin. (WWDC, 2006)

Subbasin/tributary	Angler days/year
Kortes Reservoir, Miracle Mile, Pathfinder Reservoir	66,827
Seminoe Reservoir and Big Ditch drainage	33,200
North Platte River, CO State Line to I-80	18,547
Encampment River drainage	16,258
Lake, Cedar, Elk Hollow drainages	14,191
Upper Medicine Bow River drainage	10,465
Seminoe and Ferris Mountains	9,180
Lower Medicine Bow River drainage	5,879
Sweetwater River drainage	4,920

Jack and Spring Creeks	3,975
Beaver Creek and Big Creek drainages	3,292
Pass Creek drainage	3,062
Shirley Mountains	1,157

Saratoga Fish Hatchery

The Saratoga National Fish Hatchery, located just north of Saratoga, is managed, and operated by the U.S. Fish and Wildlife Service. The hatchery acted as an egg-production station for most of its operation. Established in 1911, the hatchery was not formally designated as a broodstock hatchery until 1966. The hatchery has produced multiple strains of brook, rainbow, brown, golden, and cutthroat trout. In 1984, the hatchery began working with the Great Lakes lake trout recovery program. Currently the hatchery provides cutthroat trout for the Wind River Reservation and maintains back-up rainbow trout broodstock for Eagle Lake. The hatchery maintains the goal to produce 2.2 million Lewis Lake lake trout eggs to the Great Lakes restoration program and 3 million Plymouth Rock brown trout eggs to other programs. The Saratoga Fish Hatchery is the first national hatchery to rear the endangered Wyoming toad (*Bufo baxteri*). The hatchery maintains a captive population for breeding and rearing for reintroduction. (USFWS, 2020b)

6.4.3 Resource Management Objectives (Fisheries):

A. Federal agencies promote actions that maintain or enhance functioning stream habitat, functioning riparian communities, functioning wetland habitats, and functioning upland communities to support watershed health.
B. Aquatic resources are managed for healthy and biodiverse fisheries that support recreation and tourism.
C. Aquatic invasive species are aggressively controlled through proactive management to prevent introduction.
D. Fishing and outdoor water recreation is promoted and protected.

6.4.4 Priorities (Fisheries):

1. All management plans that may impact aquatic resources should take a holistic approach and protect the overall health of natural resources.
2. Federal agencies should support fisheries habitat monitoring efforts and refine available fisheries habitat data.
3. Carbon County supports a requirement for water quality monitoring before, during, and after all projects that may have impacts on aquatic resources.
4. Promote in-channel improvements for fisheries without additional instream water rights or permitting requirements for instream flows.
5. Carbon County does not support converting water rights from agriculture use to instream flow use.
6. Support river restoration, fish passage, and aquatic/riparian area enhancement projects.
7. Encourage interagency and inter-government fisheries resource enhancement projects.
8. Support boat inspection locations for prevention of aquatic invasive species.

9. Federal agencies should recognize the conservation districts' water quality expertise and encourage their continued involvement in any water quality issue that may arise in the County.

6.5 PREDATOR MANAGEMENT

6.5.1 History, Custom, and Culture

Predatory wildlife is important to the ecology of an ecosystem and managing the balance between predators and prey can prove difficult. Predators can have negative impacts on livestock operations, wildlife populations, developing communities, and other agriculture operations. For these reasons, it is important to properly manage predators to ensure safe communities, livestock, and healthy functioning ecosystems.

During the settlement of the western states, predator management fluctuated from population decimation to protection and recovery. Predators were controlled on an individual basis until the early 1900s, when stockgrowers began asking for government assistance. The common mindset in the early 1900s was that 'the only good predator is a dead one'. However, by the 1960s, with the release of the Leopold Report, the importance of proper management of predators became known (deCalesta, n.d.). The common public mindset began to shift to the control of predators threatening stock operations and communities while allowing natural predator populations to exist (deCalesta, n.d.).

6.5.2 Resource Assessment and Legal Framework

The Animal and Plant Health Inspection Service (APHIS) is located within the U.S. Department of Agriculture and provides a Wildlife Damage Program and a Pests and Diseases Program. The Wildlife Damage Program researches and develops wildlife damage management methods and provides resources to the public (APHIS, n.d.). The Wyoming State Legislature have established and updated predator control statutes in Title 11, Chapter 6 since the 1990s. Article 3 defines predatory animals within the state as any coyote, jackrabbit, porcupine, raccoon, red fox, skunk or stray cat; and gray wolves except where they are designated as trophy game animals. The statutes provide for general provisions, district boards, and the Wyoming State Animal Damage Management Board. The district for the County is the Carbon County Predator Management District. Carbon County maintains the appointed Predator Management District Board (Carbon County, n.d.).Within the County, the Carbon County Predator Management District Board directly administers the predator management program.

There are a variety of predators and/or carnivores within the County that are not classified within the Wyoming predator statutes, those not classified under Title 11, Chapter 6 are often managed by WFGD. Predators are managed variably in accordance with their individual designations. Many common large predators are classified and managed as game animals, such as mountain lions and black bears, and some mid-sized predators are managed as furbearers, like the bobcat. Predators within the County may also be protected under ESA or MBTA, such as the raven and birds of prey. Predator population management is highly variable depending on the species and the population in question. An example of this is the gray wolf, which is managed as a predator except for the populations designated as game animals within the Wolf Trophy Game

Management Area. For more information on wolf management across Wyoming refer to WFGD's Wyoming Gray Wolf Management Plan.[64] In the fall of 2020 Colorado passed ballot initiative Proposition 114, directing Colorado Parks and Wildlife to develop a gray wolf introduction plan by the end of 2023. The initiative directs that the plan introduces wolves on designated lands west of the continental divide. Changes in population numbers and dynamics, including introductions, in surrounding areas could result in populations migrating into Carbon County (Colorado Parks and WIldlife, 2020).

Predator control within the County affects the economic stability of the livestock industry and the sport hunting/fishing industry. Predator control has been used to protect the health and safety of the public by reducing human-wildlife conflict and the spread of diseases commonly carried by predators. The more common predatory animals in Carbon County and the surrounding area include mountain lion and black bear (game animals), bobcat (furbearer), and birds of prey and corvids (variable classification per species); and coyote, fox, porcupine, skunk, and raccoon which are classified as predators. It is important to recognize that changes in wildlife population dynamics and management in surrounding areas are likely to influence wildlife populations and behavior within Carbon County.

6.5.3 Resource Management Objectives (Predator Management):

A. Predator populations are managed to maintain healthy ecological levels, while prioritizing reducing the occurrence of livestock depredation and the health and welfare of citizens of Carbon County.
B. Predator populations are monitored closely to prevent negative impacts on healthy wildlife populations.
C. Federal land managers follow Wyoming Game and Fish Department and Wyoming State Animal Damage Management Board predator polices.

6.5.4 Priorities (Predator Management):

1. Federal agencies should work with the Carbon County Predator Management District Board on predator issues, concerns, and control.
2. Support selective predator control as a valid method of attaining sustainability of the wildlife and domestic livestock populations.
3. Current predator control measures are supported on all lands within Carbon County and should not be restricted.
4. Support recognized proactive efforts such as aerial hunting, snares, and leg traps to control predator populations.
5. Predator species such as grizzly bears and wolves shall be deterred from migrating or re-locating to the County as they would impact the health, safety, and welfare of the people.
6. Carbon County support Wyoming Game and Fish Department's current Wyoming Gray Wolf Management Plan[64] (updated annually).
7. Any wolf found in Carbon County shall be classified as a predator.
8. Carbon County supports the delisting of grizzly bears from the Endangered Species Act and placed under management of Wyoming Game and Fish Department following Wyoming Grizzly Bear Management Plan.

9. Any grizzly bear found in Carbon County should be removed.
10. When addressing a decline in a sensitive species, predator control shall be employed prior to placing any restrictions on resource-based industries like livestock grazing.
11. Only when predation is determined to not be the cause of decline shall restrictions on the resource industries be considered prior to predator management.
12. Federal agencies should coordinate with Carbon County in the determination of any impact of the management of a predator species. This includes impacts on the economy, culture, custom and the health and safety of the residents of Carbon County.

CHAPTER 7: WILD HORSES AND ESTRAY LIVESTOCK

7.1 WILD HORSES AND ESTRAY LIVESTOCK

7.1.1 History, Custom, and Culture

Wild horses have always been a symbol of the West. Horses were first seen in the continental U.S. about 10,000 years ago but for unknown reasons became extinct. Current herds are descended from domestic horses, some of which were brought by the Spanish in the 15th and 16th centuries. Over this 500-year period, these hoses have adapted successfully to the Western range. Wild horses have occurred in Carbon County for several hundred years and likely descended from released ranch horses and possibly some European descendent horses. Wild horses have no natural predators and as a result, the population increases at a very high rate, generally about 20% per year with good years topping at 40%. When populations of wildlife, wild horses, and domestic livestock exceed the capabilities of their habitat, the environment begins to suffer and can lead over time to poor rangeland and overall decline in the health of wildlife, horses, and domestic livestock .(BLM, n.d.-b)

The Wild-Free Roaming Horses and Burros Act (WFRHBA) was passed by Congress in 1971 and declared wild horses and burros to be "living symbols of the historic and pioneer spirit of the West" (16 U.S.C. § 1331). The law requires the BLM and USFS to manage and protect herds in their jurisdiction in areas where wild horses and burros were found roaming in 1971. Under 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)). The 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). When the WFRHBA was passed, the BLM's population survey methods indicated a population of 17,300 wild horses and 8,045 burros, as compared to the 2020 estimated populations of 79,568 horses and 15,546 burros With an additional 47,845 horses and burros in 'off-range' holding facilities as of August 2020. (BLM, n.d.-b)

Herd Areas were designated in 1971 as places where wild horses and/or burros were found during the initial flights in 1971. Federal lands identified in 1971 but not managed for wild horses and burros are called Herd Areas (HAs). As additional surveys were done and data gathered, it was determined that some of these lands and animals were actually on private lands and/or were private animals. Areas with private animals that were 'claimed' during the claiming period were not carried forward as HAs. HAs were carried forward in land use plans and determinations were made as to whether or not to manage animals on these federal lands. Federal lands identified in 1971 but managed for wild horses and burros are called Herd Management Areas (HMAs). In HMAs, specific laws and regulations pertaining to the management of wild horses and burros are applied.

The removal of wild horses from public rangelands is carried out to ensure rangeland health in accordance with land-use plans that are developed in an open, public process. These land-use plans are how the BLM carries out its core mission, which is to manage the land for multiple uses

while protecting the land's resources. Livestock grazing on BLM-managed land has declined by about 29% (12.2 million Animal Unit Months (AUMs) to 8.7 million AUMs in Fiscal Year 2019) since 1971 when the WFRHBA was passed. (BLM, n.d.-b)

In 2003, the State of Wyoming and BLM entered into a Consent Decree to better manage the sixteen (16) Herd Management Areas (HMAs) in the state at AML. The State of Wyoming asserted that the estimated current wild horse population in Wyoming was 7,000 horses which was more than double the total wild horse population limit for Wyoming as established by the BLM. Both BLM and the State agreed on the AML for the 16 HMAs on the date of the Consent Decree. For those HMAs located in Carbon County, the AML was designated at 610-800 horses for the Adobe Town HMA, 170-300 for the Green Mountain HMA, and 125-175 for the Stewart Creek HMA. It was also agreed that AML only applied to HMAs and that AML in non-HMAs was to be zero. Terms of agreement under the decree were:

- No later than December 15, 2003, the BLM shall reduce the number of wild horses to AML in the following eight HMAs: **Adobe Town**, Great Divide Basin, Salt Wells, White Mountain, **Green Mountain**, Crooks Mountain, **Stewart Creek**, and Little Colorado. (Those in bold have portions located in Carbon County).
- No later than December 15, 2004, the BLM shall reduce the number of wild horses to AML in the remaining eight HMAs: Conant Creek, Lost Creek, Dishpan Butte, Antelope Hills, Muskrat Basin, Rock Creek, Fifteenmile Herd, and McCullough Peaks.
- No later than June 1, 2005, and no later than June 1 every three years thereafter, the BLM shall complete an inventory of the number of wild horses in the 16 HMAs in Wyoming and shall provide a written report of the results of each triennial inventory to the Governor of the State of Wyoming and Wyoming Attorney General no later than July 1 of the year in which the inventory is completed.
- No later than September 1, 2004, and no later than September 1 every three years thereafter, the BLM shall consult with the WGFD regarding the census technique or method to be used to count the wild horses in the next calendar year.
- If the BLM determines, based on the results of any inventory and on projected reproduction rates, that the wild horse population in any HMA or other area in Wyoming is likely to exceed AML in the following fiscal year, the BLM shall in its budget submission to the DOI for the next budget cycle include a request to reduce that HMA back to AML.
- The BLM shall pay all costs and expenses incurred in conducting each inventory required in Section 4 of the Consent Decree and they shall pay all costs and expense incurred in reducing the number of wild horses to AML as required in Section 2, 3, and 6 of this Consent Decree. (Wyoming District Court, 2003)

The Consent Decree was applicable for a period of ten years and in 2013 was terminated and has never since been renewed. During the ten years of the consent decree, HMAs were managed at AML and gathers were done in a timely manner. (Wyoming District Court, 2003)

The termination of the 2003 Consent Decree led the Rock Springs Grazing Association (RSGA) to file a lawsuit against the BLM to removed wild horses from private lands within the checkerboard

pattern of mixed land ownerships. In 2013, the RSGA and the BLM entered into a new Consent Decree (RGSA/BLM Consent Decree) which was a result of settlement discussions on the lawsuit. The conditions of the RSGA/BLM Consent Decree were that:

- The BLM agrees to gather and remove all wild horses from RSGA's private lands, including checkboard lands, by conducting gathers from RSGA lands within four herd management HMAs in 2013-2015, with a follow-up gather in 2016, if necessary. Those HMAs included Salt Wells Creek HMA, **Adobe Town HMA**, Great Divide Basin HMA, and White Mountain HMAs. (Bold HMA is in Carbon County)
- The BLM commits to gather excess wild horses in a timely manner upon determining that populations in the HMAs or checkboard lands are likely to exceed certain levels. If wild horse populations in the HMAs or checkerboard lands are likely to exceed agreed upon levels, the BLM shall adjust its annual work plan to remove all wild horses from checkboard lands within the respective area.
- The BLM commits to consider the use of all fertility control methods such as [contraceptive vaccine porcine zona pellucida] PZP and SpayVac and has the discretion to consider the spaying of mares and gelding of stallions, to achieve low end of the AML.
- The BLM commits to Submit a Federal Register Notice of Intent under NEPA within 180 days to consider the environmental effects of revising the respective resource management plans for the Rock Springs and Rawlins field offices (Wyoming District Court, 2013).

7.1.2 Resource Assessment and Legal Framework

Wild-Free Roaming Horses and Burros Act

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). The WFRHBA was specifically amended, then, to require "immediate" removal of excess horses. 16 U.S.C. § 1333(b)(2).

Once the inventory occurs and the AML has been set, if an overpopulation of wild horses exists, the BLM "shall immediately remove excess animals from the [public] range so as to achieve appropriate management levels (AMLs)." *See* 16 U.S.C. § 1333(b) (1) and (2) and 43 C.F.R. § 4720.1 ("Upon examination of current information and a determination by the authorized officer that an excess of wild horses … exists, the authorized officer shall remove the excess animals immediately…"). "Excess animals" are defined as those that must be removed in order to preserve and maintain a thriving natural ecological balance and to preserve the "multiple use relationships" in an area. *See* 16 U.S.C. § 1332 (f). As stated in another section of the WFRHBA, "[A]ll excess animals" must be removed by the BLM "so as to restore a thriving ecological balance to the range, and to protect the range from deterioration associated with overpopulation" to preserve and maintain the "multiple use relationship in that area." *See* 16 U.S.C. § 1333 (b)(2). When a determination is made that there is an "excess," action is immediately required because

the "endangered and rapidly deteriorating range cannot wait." *Blake v. Babbitt,* 837 F. Supp. 458, 459 (D. D.C. 1993).

According to the Tenth Circuit, the BLM must make two determinations before the BLM's duty to remove excess animals is triggered. *Wyoming v. United States Department of the Interior,* 839 F.3d 938 (10th Cir. 2016). The first determination is that an overpopulation exists on a given area of the public lands. *Id.* at 944. This is shown when an area exceeds its AMLs as discussed above. The second determination is that "action is necessary to remove excess animals." *Id.* If a determination has not been made by the agency that an action is necessary, then the agency does not have a duty to remove those excess horses. *Id.*

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 conservatively estimates the growth rate of the wild horse population to be 20 percent annually.

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

Wild horses have been problematic for federal land grazing permittees since the passage of the WFRHBA. Other multiple-use grazers are more easily be managed to protect the health of the rangeland resources. Livestock grazing is managed with stringent livestock numbers and limited time/season of grazing. Wildlife grazers are managed through hunting seasons and herd objectives. Wild horses are on the same range 365 days a year with numbers significantly higher than healthy rangelands can sustain but can be managed through gathers. However, in recent years, the BLM has been unsuccessful in completing gathers to reduce the numbers of wild horses on rangelands. Many HMAs are significantly over AML, causing harm to rangelands and negative impacts to other multiple uses and sustained yield as mandated by FLPMA. HMAs are not fenced, which also then allows horses to cause degradation on private and state lands too.

Herd Areas and Herd Management Areas

Wyoming BLM manages 16 wild horse herd management areas (HMAs) on nearly 5 million acres. The combined AML for all HMAs in the state is 3,725 animals. The BLM designates both Herd Areas (HAs) and HMAs. HMAs are the areas selected within each herd area that were evaluated by BLM to have adequate food, water, cover, and space to sustain healthy and diverse "wild" horse and burro populations over the long term and were calculated using geographical information system (GIS) (National Horse & Burro Rangeland Management Coalition, 2015). HMAs are lands under the supervision of the BLM that are managed for the primary but not exclusive benefit of free roaming wild horses and burros.

After the WFRHBA of 1971, there were seven HAs designated that have boundaries that lie within Carbon County. Those HAs are: Green Mountain, Stewart Creek/Chain Lakes, Bolten, Checkerboard South, Doty Mountain/Cherokee, Sand Creek East, and Sand Creek West. After further ground-truthing through resource planning efforts, there were only three HMAs

identified that are partially located within Carbon County (Figure 24) (BLM, n.d.-d.). These include the Adobe Town HMA, Green Mountain HMA, and the Stewart Creek HMA and are further described below.

Adobe Town HMA

The Adobe Town Herd Management Area (HMA) encompasses 478,875-acres in south central Wyoming. The HMA is in the southwest part of Carbon County on the western border with most of the HMA in Sweetwater County. The HMA is primarily composed of public land managed by the BLM with small amounts of private land inclusions. The Rawlins Field Office manages the Adobe Town HMA which has an AML range of 610-800 head. As of 2017, the estimated Adobe Town HMA population was 1,123 horses. A gather in the fall of 2017 reportedly lowered the population level to within AML. The 2019 HMA Statistics Report listed the population at 994 horses. (BLM, 2019a; Bureau of Land Management, 2016b, 2017)

The Adobe Town HMA is part of the April 2013 Consent Decree.

Green Mountain HMA

The Green Mountain HMA is part of the Red Desert Complex, managed jointly by the Rawlins and Lander Field Offices. The Green Mountain HMA spans 117,000 acres, just over 99,000 acres of which are public. A small portion of the HMA is located within the northwest corner of the County west of Muddy Gap. The Green Mountain HMA AML is set at 130-300 horses. The Red Desert Complex AML is 481-725 horses. The estimated Red Desert Complex population in 2018 was 3,500 horses. A gather in the fall of 2018 was set to remove up to 2,670 horses, 1,170 of which would be removed from the Green Mountain HMA. The gather successfully removed a cumulative 1,442 horses. While other HMAs in the Red Desert Complex remained above AML, the Green Mountain HMA population was within AML, estimated at 258 horses, in 2019. (BLM, 2016f, 2019a; Bureau of Land Management, 2018)

Stewart Creek HMA

The Stewart Creek HMA is in the northwest portion of Carbon County, south of Bairoil and northwest of Rawlins. Stewart Creek spans almost 168,000 acres and mostly encompasses BLM administered land. The AML for Stewart Creek is 125-175 horses. Stewart Creek is managed within the Red Desert Complex. In the 2018 gather, 2,670 horses were planned to be removed from the complex and 608 horses were planned to be removed from Stewart Creek HMA. Approximately half of the intended gather number were removed in the 2018 gather. As of 2019, the HMA population was 396 horses or 226% of AML. The Stewart Creek HMA was last at AML in 2013. (BLM, 2016g, 2019a; Bureau of Land Management, 2018)

U.S. Forest Service

There are no wild horse HAs or HMAs on USFS lands within the state of Wyoming.

Estray

In Title 11 Chapter 24 of Wyoming State Statute, estray is defined as “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." The entire Title 11 Chapter 24 Statute can be found here.[65]

7.1.3 Resource Management Objectives (Wild Horses):

A. Wild horses within Carbon County are managed for a viable, healthy herd resulting in the thriving natural ecological balance of other resources (including the standards and guidelines for rangeland health) and multiple-uses as required by the Wild Free-Roaming Horses and Burro Act of 1971.
B. Excess horses in herd management areas are gathered to reduce horse numbers to lower appropriate management level to reduce the frequency of gathers while maintaining a thriving natural ecological balance.
C. The Bureau of Land Management will declare that a gathering is necessary when wild horses are above appropriate management levels.
D. Current herd management areas are not expanded and additional herd management areas will not be created in Carbon County.
E. Any estray livestock from public or private lands are immediately gathered and removed per Wyoming Statutes §§11-24-101 *et seq*.
F. No long-term holding facilities are placed on public lands within Carbon County.
G. The Bureau of Land Management will notify and consult with Carbon County whenever there is a proposal to either expand wild horses onto private land or create any wild horse-related holding facility.
H. The Bureau of Land Management complies with the conditions of the Rock Springs Grazing Association/Bureau of Land Management Consent Decree.

7.1.4 Priorities (Wild Horses):

1. Any equine animal released from private individuals, tribes, or neighboring lands onto public lands after 1971 shall be considered as estray and be removed.
2. The Bureau of Land Management should not propose any enlargement or expansion of the current herd management areas boundaries nor the designation of any additional new herd management areas or herd areas.
3. Federal agencies should complete an inventory of wild horses on each herd management area at least every two years.
4. The Bureau of Land Management should use all means given to them under the Wild-Free Roaming Horses and Burros Act including short-and long-term fertility control, gathering, adoption, and destruction.
5. The Bureau of Land Management should encourage the creation of public education programs through the extension service to inform the public at large about the need to maintain healthy ecosystems and the differences between livestock, wild horse, and wildlife needs and impacts.
6. Support rulemaking to give the Bureau of Land Management (BLM), and those who adopt wild horses, additional options for the disposal of wild horses to allow BLM to meet their existing statutory requirements.

7. Any reduction in herd management area size shall be completed with a proportional reduction in appropriate management level.
8. If livestock grazing animal unit months (AUMs) are temporarily reduced due to excess wild horses, once excess horses are removed, livestock grazing AUMs should be reinstated as soon as resources recover.
9. The Bureau of Land Management should not reduce cattle or sheep animal unit months in managing for rangeland health in allotments within any herd management area unless horses are at or below the low range of the appropriate management level for the herd management area.
10. When active use animal unit months (AUMs) are reduced in a grazing allotment due to drought or other resource condition, proportional reduction of horses should be implemented in conjunction with cattle/sheep AUM reductions.
11. When a herd management area exceeds its appropriate management level, the Bureau of Land Management should take the appropriate action to decide that overpopulation exists in the herd management area and within 60 days of discovery, determine that action is necessary to remove excess animals.
12. The Bureau of Land Management should perform a gather within 6-months of declaring that a gather is needed.
13. Carbon County should be consulted if a proposal is made for long-term holding facilities for horses within the County.
14. Carbon County believes that wild horses on private lands are estray horses and if found on public lands outside the boundaries of a herd management area they should be recognized as estray.

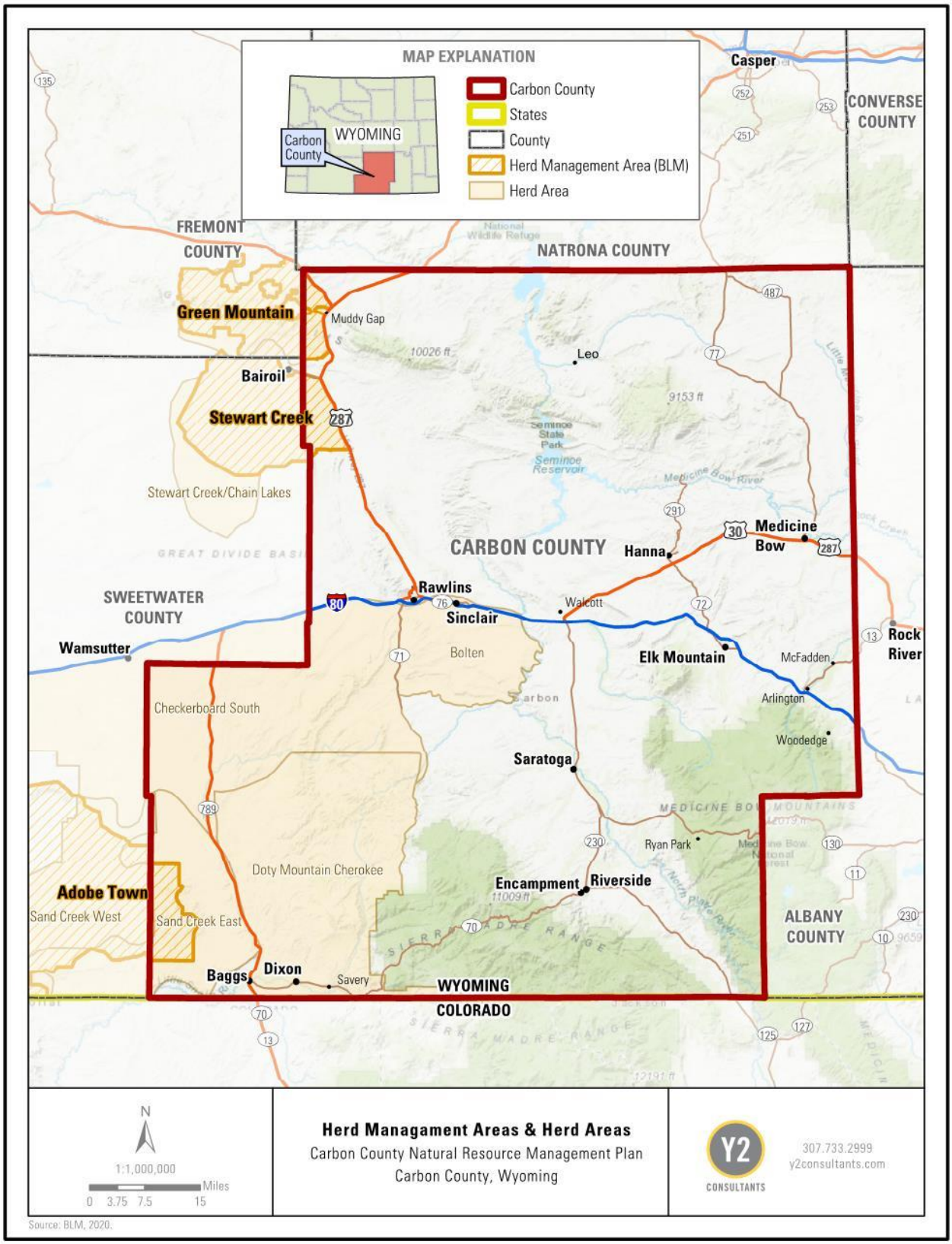

Figure 24. Herd Areas (HAs) and Herd Management Areas (HMAs) within Carbon County.

CHAPTER 8: SOCIOECONOMICS AND SOCIETY

8.1 TOURISM AND RECREATION ON PUBLIC LANDS

8.1.1 History, Custom, and Culture

Tourism and recreation on public lands in Carbon County are a significant contributor to the custom, culture, and economy of the area. Visitors travel to Carbon County to experience the peace, solitude, and quiet of the rivers, mountains, and deserts that make the County unique. Nowhere else will recreationalists and tourists find a diversity of landscapes and wide-open spaces to explore pristine mountains, beautiful deserts, blue ribbon rivers, mineral hot springs pools, and trails including the Continental Divide Trail. In the early days of Carbon County, recreation and tourism revolved around activities such as hunting and fishing. Snow activities such as cross-country skiing, snowshoeing, and snowmobiling have been long time activities within the County.

Overtime, the tourism and recreation has remained centered around outdoor activities but has changed some in the County. Guest ranches, resorts, outfitters, and guides are now popular tourism attractions. Some agricultural operations have diversified to include recreation and tourism including outfitting. The use of motorized vehicles like off-highway vehicles (OHVs) for recreational use has significantly increased over the last several decades both for use as transportation to get to other recreational activities and as a recreational activity itself. Hunting and fishing are still highly sought-after opportunities within the County and bring people both from other parts of Wyoming and states.

8.1.2 Resource Assessment and Legal Framework

Carbon County is a tourism destination with 10 historical museums and numerous historic sites, three public golf courses (Rawlins, Saratoga, Sinclair), guest ranches and hunting lodges, wildlife viewing opportunities, and authentic Western adventure. The Carbon County Tourism Board has put together a brochure that puts together two-to-three-day adventures around the different communities in the County that tourists can follow to obtain the full experience each of these places has to offer. The brochure can be found here.[66]

Tourism is extremely important to the local economy. In 2019, tourism in Carbon County employed approximately 1,530 people and brought approximately $10.6 million in state and local tax revenue ($4.6 million local, $6 million state). On average in 2019, an overnight visitor to the County spends $181 per day and $356 per trip and spends two nights. In 2017, approximately 761,000 people overnighted in Carbon County with that number increasing to 830,000 in 2018 (a 9.1% annual percent change), and 870,000 in 2019 (a 4.9% annual percent change). (Wyoming Office of Tourism, 2019)

Carbon County's landscape is a recreational haven. Amenities such as a bounty of wildlife, beautiful forests, and high-elevation deserts offer year-round outdoor recreational opportunities and are essential to our way of life. Recreation, both motorized and non-motorized, is a critical economic drawing point for the County. Recreational opportunities on public lands within Carbon County include numerous activities throughout all the four seasons. Popular summer activities

include hiking, mountain biking, fishing, wildlife viewing, boating, rafting, camping, bird watching, backpacking, rock climbing, horseback riding, and kayaking. Winter activities in the County include snowmobiling, cross-country skiing, snowshoeing, and even the occasional ski-joring.

Still one of the most sought-after activities throughout the County is hunting and fishing. Hunting occurs for species such as elk, mule deer, pronghorn, moose, black bear, mountain lion, sage-grouse, other grouse species, and other small game. Fishing occurs on most if not all the rivers, streams, and lakes within the County in some form. Many public access areas have been developed on private lands, in partnership with WGFD, to provide people the opportunity to fish the river or put their boats in to float and/or fish the river. In 2017, visitors spent over $170.6 million while visiting Carbon County (Dean Runyan Associates, 2018). Hunting and fishing are major economic drivers for Carbon County. In 2015, hunters and anglers spent a combined $26.7 million dollars ($19.9 million from hunters and $6.8 million from anglers). Hunters spent 92,000 days hunting and anglers spent 58,000 days fishing. (Wyoming Wildlife Federation, 2015)There are 65 different trails in Carbon County that span a total of 551 miles, that people can either drive, ride, and/or hike. The most well-known of these trails is the Continental Divide Trail (CDT) which spans from the Mexico border all the way to the Canadian border following the Continental Divide. Many recreationalists hike segments of the trail on day trips or short backpacking trips. Some are more adventurous and attempt to hike the entire 3,100-mile trail. The City of Rawlins has been designated as a gateway community on the CDT and the town of Encampment is soon to be designated as a gateway community as well. These gateway towns highlight the trail and provide a known place for trail users to obtain supplies and amenities.

The use of OHVs is a common form of recreation across the County. The use of OHVs increased 42% between 2001 and 2007 and has continued to increase since then. Between 1999 and 2001 Wyoming recorded the highest rates of OHV recreation in the country (Cordell et al., 2008). The increased use of such vehicles can bring in additional recreational revenue to the County but can also incur additional costs to public land managers for trail maintenance and to the County for increased emergency management services and potential search and rescue services. Motorized vehicle (including OHVs, ATVs, and ORVs) use on public lands present unique challenges for management, including additional maintenance, increased fire potential, resource degradation, and trail user designations and management.

Camping is an extremely popular activity within the County particularly during the spring, summer, and fall months. There are numerous campgrounds in Carbon County managed by a variety of federal and state agencies. Dispersed camping is also very popular and without any registration, makes it difficult to quantify the benefits or impacts. The list of developed campgrounds in the County can be found below in Table 7.

Table 7. Developed campgrounds within Carbon County.

Campground Name	Managed By	Closest Town
Battle Creek Campground	USFS	Encampment
Bennett Peak Campground	BLM	Riverside
Bottle Creek Campground	USFS	Encampment

Bow River Campground	USFS	Elk Mountain
Corral Creek Recreation Site	BLM	Riverside
Deep Creek Campground	USFS	Arlington
Dugway Campground	BLM	Rawlins
Encampment River Campground	BLM	Encampment
French Creek Campground	USFS	Saratoga
Hog Park Campground	USFS	Encampment
Jack Creek Campground	USFS	Saratoga
Lazy Acres Campground	Private	Riverside
Lincoln Park Campground	USFS	Saratoga
Lost Creek Campground	USFS	Encampment
No BS RV Park	Private	Elk Mountain
Pike Pole/Pickaroon Campground	USFS	Albany
Prior Flat Campground	BLM	Medicine Bow
Rawlins KOA Journey	Private	Rawlins
Red Desert Rose Campground	Private	Rawlins
Ryan Park Campground	USFS	Saratoga
Saratoga Lake Campground	Town of Saratoga	Saratoga
Seminoe State Park Campgrounds	Wyoming State Parks	Sinclair
Silver Lake Campground	USFS	Saratoga
Six Mile Gap Campground	USFS	Encampment
South Brush Creek Campground	USFS	Saratoga
Teton Reservoir BLM Campground	BLM	Rawlins
Western Hills Campground & RV Park	Private	Rawlins

8.1.3 Resource Management Objectives (Tourism and Recreation):

A. Recreational resources are managed to promote access and availability to the public for both tourism and recreational uses while balancing sustainable resource health and taking other industries and uses into consideration.
B. Access to public lands for tourism and recreation is continued.
C. Recreational and tourism opportunities are promoted year-round within Carbon County.
D. Carbon County is coordinated with regarding the conversion or creation of access roads and timber roads into recreational use or the closing or decommissioning of any road.

8.1.4 Priorities (Tourism and Recreation):

1. Promote responsible tourism and recreation through signage that explains the historical significance of areas, sites, and roads.
2. Federal agencies should coordinate with the County Chamber of Commerce, Carbon County Visitors Council and Carbon County Economic Development Corporation to promote tourism and recreation within Carbon County.
3. Support and encourage a year-round multiple use management approach on federal lands as a means of continuing and enhancing recreation opportunities within Carbon County, so long as there is no negative impact to the County's mineral and agricultural industries.

4. Recreational activities recognized and supported by federal agencies should include facilities that are accessible to the public.
5. Support lawful motorized off-road access.
6. Support and maintain trails for non-motorized recreational activities (i.e., mountain biking, horseback riding, cross-country skiing) on public lands.
7. Federal agencies should notify Carbon County of any developed and/or dispersed campsite closures with an explanation for the closure and a timeline for reopening.
8. Support a funding mechanism from off-highway vehicles for improved enforcement and emergency response efforts.
9. Special recreation permit renewals and proposals by federal agencies shall be coordinated with Carbon County, as required by federal agency mandates.
10. Carbon County should be notified and given an opportunity to be a cooperating agency for all special recreation permit approvals and renewals.
11. Federal and state agencies should coordinate with Carbon County regarding fees for public land use areas within the County.

8.2 LAW ENFORCEMENT AND EMERGENCY RESPONSE

8.2.1 History, Custom, and Culture

Law enforcement and emergency response has been a necessity in Carbon County since its establishment. As emigrants were headed west through the area, hostility from the native people gave rise to several attacks which lead to the building of Fork Halleck in 1862, where it served as a base for soldiers to protect settlers journeying along the Overland Trail. In 1868, Fort Steele was established to protect the advancing transcontinental railroad where it crossed the North Platte River. (Van Pelt, 2014)

In the late 1870s and 1880s, criminal activity and justice became great concerns of the residents of Carbon County as two deputies, Robert Widdoefield and Tip Vincent, were murdered near Elk Mountain while tracking down outlaws that attempted to rob a train near Medicine Bow. In 1886, the Territorial Legislature appropriate $75,000 for the building of a state penitentiary in Rawlins. The original Wyoming Frontier Prison was opened in 1901 and operated until 1981 when the "new" Wyoming State Penitentiary was opened. During its history, the Wyoming Frontier Prison incarcerated 13,500 people. (Van Pelt, 2014)

Cattle rustling was common during the early history of Carbon County. Some ranchers started to take the law into their own hands as they became frustrated with the lack of court convictions for cattle rustlers. To this day, the Wyoming Livestock Board is responsible for law enforcement of cattle rustling throughout the State and partners with the Carbon County Sheriff's Department to aid in cases that transcend county and state boundaries. (Van Pelt, 2014)

8.2.2 Resource Assessment and Legal Framework

Law Enforcement

Law enforcement is critically important to the citizens of Carbon County. Law enforcement in Carbon County includes actions on both public and private lands. Public lands within Carbon

County are subject to law enforcement coordination when issues related to natural resource management and public lands arise, such as livestock theft or search and rescue operations. State law enforcement officials operating in Carbon County include Wyoming Highway Patrol, Wyoming Livestock Board, Wyoming Game and Fish Department Game Wardens, Wyoming Department of Criminal Investigation, and State Park Rangers. Federal law enforcement officials operating in Carbon County include BLM, USFWS, USFS, U.S. Marshals, and the EPA. As the use of public lands has increased, so has the need for law enforcement and coordination of federal law enforcement agents with the County Sheriff. The Carbon County Sheriff's Office has MOUs with both the BLM and USFS to clearly lay out the roles, responsibilities, and coordination of these federal agencies with the County in law enforcement situations.

The Property Clause of the United States Constitution sets out the jurisdictional powers of state, local, and federal law enforcement officers on federal lands. Generally, federal lands have either proprietary or concurrent jurisdiction, meaning that local law enforcement is either the exclusive law enforcement agency in the area or that both local law enforcement and federal agency law enforcement share jurisdiction together to enforce laws on federal lands. Other federal lands, such as post offices or military bases have exclusive jurisdiction, and only the federal government may enforce federal laws within those areas (United States Constitution Article IV, Section 3, Clause 2). The Assimilative Crimes Act allows federal law enforcement agencies who lack an appropriate federal charge to use an appropriate state law in federal court whenever necessary 18 U.S.C. § 13.

FLPMA gives the BLM authority to retain BLM law enforcement officers who enforce federal law within BLM jurisdiction. Those officers have the authority to enforce federal laws, but do not have the authority to enforce state laws without written authorization from the local law enforcement agency in charge. FLPMA and the BLM's regulations specifically gives BLM law enforcement officers traditional police powers such as enforcing federal laws, carrying firearms, serving search warrants, making arrests with or without a warrant and conducting searches of places or people with or without a warrant in accordance with applicable laws and seizing evidence. (BLM, n.d.-a)

NFMA gives the USFS similar law enforcement authority as the BLM. USFS law enforcement officers also have the authority to enforce federal laws and regulations within the national forests, but not state laws. Many of the USFS law enforcement regulations can be found in 36 C.F.R. Part 261. Their primary responsibility is "the protection of natural resources, protection of Forest Service employees and the protection of visitors." (USFS, n.d.-a)

The Wyoming Livestock Board (WLSB) is responsible for the protection of livestock interests in the State from disease and theft. Seven members are appointed by the Governor and approved by the Senate for six-year terms. The State is divided into "appointment districts" as set by the Legislature. The Livestock Board Law Enforcement have several benefits that help with law enforcement regarding livestock in the County. These include:

- They are livestock law specialist;
- They can conduct case work across county lines;

- They collaborate with other states livestock investigators ;
- They partner with county Sheriff Departments on cases; and
- They provide training for other state law enforcement agencies.

There are five game warden regions within Carbon County: West Rawlins, East Rawlins, Baggs, Medicine Bow, Elk Mountain, and Saratoga. Game wardens enforce State statutes and Wyoming Game and Fish Commission regulations covering big game, game birds, waterfowl, trophy game, furbearers, small game, fish, nongame species, and watercraft. Game wardens can assist local and federal law enforcement as needed particularly during times of emergency such as wildfire evacuation.

Emergency Management

Natural Disasters

When a natural disaster is declared, the Federal Government, led by the Federal Emergency Management Agency (FEMA), responds at the request of and in support of States, Tribes, Territories, Insular Areas, and local jurisdictions impacted by a disaster. FEMA coordinates the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from natural disasters (Federal Register, n.d.).

In 2019, the Wyoming Region 3 (Albany and Carbon counties) Hazard Mitigation Plan[67] was updated. The plan assesses risk potential for different hazards including avalanche, drought, earthquake, flooding, geologic, severe thunderstorms (hail, lightning), tornado, wildland fire, wind/windblown deposits, winter storm/blizzards, communicable and infectious disease, dam failure, hazardous material release, and terrorism. The plan also ranks communities for each identified hazard. The ranking for each community within the County can be found in the Hazard Mitigation Plan[67] on page 48. Building inventory and assets along with critical facilities are also discussed in the plan. The plan also provides a mitigation strategy for these identified hazards. The 2019 mitigation goals are: (Albany & Carbon County Emergency Management & Wyoming Office of Homeland Security, 2019)

a. Reduce the potential for injury and loss of life from natural and human-caused disasters.
b. Minimize the potential for economic losses from natural and human-caused disasters.
c. Reduce the impact of natural and human-caused disasters on critical infrastructure, communication system, and facilities.
d. Reduce the impact of natural and human-caused disasters on private property.
e. Increase public outreach to raise awareness of hazard mitigation and potential funding sources.

The Hazard Mitigation Plan is updated every three years and updates to the plan can be found on the Carbon County Website.[68]

Search and Rescue

Search and Rescue (SAR) is defined as the employment, coordination, and utilization of available resources and personnel in relieving distress, preserving life, and removing survivors from the site of a disaster, emergency, or hazard to safety in case of lost, stranded, entrapped, or injured

people. The Wyoming Office of Homeland Security serves as the account manager for SAR programs and operates using guidance from W.S. 19, Chapter 13, Article 3 and the Wyoming Search and Rescue Council. The Wyoming Search and Rescue Council was established to assist Wyoming sheriffs, who are charged by state statute to conduct SAR operations. Council members are appointed by the governor.

The Carbon County SAR serves all of Carbon County and often works alongside Albany, Sweetwater and other adjacent county responders. A map of the most recent SAR missions within Carbon County can be found here.[69]

Fire

Wildland fire within Carbon County is discussed in Section 3.4 along with the details of the Carbon County Community Wildfire Protection Plan (CWPP). The purpose of the CWPP is to identify at-risk communities, prioritize these communities based on fire risk, and make recommendations for reducing the chances of unplanned fire threatening these communities. The Carbon County Hazard Mitigation Plan also discusses fire management within the County and is further described above in the natural disasters sectionCarbon County has a county fire warden and there are 10 fire departments throughout the County. There are four fire districts within the County that determine the fire response.

- Baggs Volunteer Fire Department
- Elk Mountain Volunteer Fire Department
- Encampment Riverside Volunteer Fire Department
- Hanna Fire Department
- Carbon County Fire Department
- Rawlins Fire Department
- Carbon County Fire Department Ryan Park Division
- Saratoga Volunteer Fire Department
- Sinclair Refinery Volunteer Fire Department
- Sinclair Volunteer Fire Department

Floodplains

Flood and floodplain management are important to the safety, economy, and ecological health of Carbon County. Flooding is a significant natural hazard within the state of Wyoming and can cause significant damage. From 1905 to 2015, there have been an estimated $1.46 billion in damages across the state from flood damage (University of Wyoming, n.d.). Between 1960 and 2015 Carbon County experienced 5 flood events which incurred $47,739 in property damage. Carbon County is categorized as 'Medium Risk' for flooding in the Wyoming State Mitigation Plan and all communities except Dixon and Sinclair are categorized as high risk in the 2019 Region 3 Hazard Mitigation Plan (Wyoming Office of Homeland Security, n.d.).

Carbon County along with the towns of Baggs, Dixon, Elk Mountain, Medicine Bow, City of Rawlins, Riverside, and Saratoga all participate and comply with the National Flood Insurance Program (NFIP) through enforcement of existing floodplain management requirements.

Communities that participate in NFIP, and implement the floodplain management regulations are eligible for the FEMA Community Assistance Program – State Support Services (CAP-SSE) (FEMA, n.d.-a)). The CAP-SSE provides support and funding for strategic planning, ordinance assistance, technical assistance, mapping coordination, state program and agency coordination assistance, and general outreach and training (FEMA, n.d.-a). Where CAP-SSE provides general preparedness funding, planning, and management, the Risk Mapping and Assessment Planning (Risk MAP) projects develop high quality maps and data to assess the factors contributing to increased risk of flooding in an area, and then develops plans to reduce risk (FEMA, n.d.-d). All communities in the County have been participating in the Risk MAP process and there are currently active Risk MAP projects within the County (FEMA, n.d.-c). For more information on flood hazard mapping within Carbon County refer to FEMA's National Flood Hazard Layer[70] (NFHL) viewer (FEMA, n.d.-b).

8.2.3 Resource Management Objectives (Law Enforcement and Emergency Response):

A. Public lands are managed for orderly use in coordination with the Carbon County Sheriff's office.
B. The Carbon County Sheriff is the primary law enforcement official in Carbon County.
C. All law enforcement activities in Carbon County are directed by the Carbon County Sheriff, the lead law enforcement officer in the County.
D. State and federal agencies notify the Carbon County Sheriff regarding crimes on the lands they manage, respectively.
E. Federal agencies cooperate with and notify the sheriff of all investigative or prosecutorial activities.
F. A Memoradum of Understanding is created between all federal agencies and the Carbon County Sheriff Department for law enforcement actions on federal lands.
G. Emergency response regarding flooding is coordinated with the Carbon County Emergency Response Coordinator.
H. Carbon County is coordinated with designating federal flood plains.
I. Natural disaster (i.e., tornadoes, severe winter storms, floods, etc.) management and response is coordinated with Carbon County.
J. Carbon County is the lead on fires that occur within the County consistent with the annual Memoradum of Understanding.
K. Carbon County is the lead for search and rescue efforts in accordance to Wyoming Statutes §§ 19-13-301, 19-13-302, and 19-13-304 and seach and rescueefforts are unimpeded on all lands within Carbon County.

8.2.4 Priorities (Law Enforcement and Emergency Response):

1. All federal and state law enforcement actions within Carbon County shall be coordinated through the Carbon County Sheriff 's Office.
2. All federal agencies should be aware of and make use of the Carbon County Hazard Mitigation Plan.
3. The Carbon County Sheriff's Office and County Emergency Management Coordinator shall be notified immediately when there is a life-threatening situation, criminal act, project

structure failure, resource contamination, natural phenomenon (landslide, flood and fire), and/or cultural resource site disturbance on public lands.

4. Federal agencies should coordinate all communication equipment with local and State law enforcement and emergency management.
5. Federal agencies should coordinate response and efforts to emergency situations with local and State law enforcement and emergency management.
6. The Wyoming Livestock Board will be notified of any livestock-related issue or investigation within Carbon County. The Wyoming Livestock Board's assistance will be requested as necessary with the Carbon County Sheriff serving as the lead.
7. Encourage all new law enforcement officers within Carbon County to participate in professional development/education opportunities offered by the Wyoming Livestock Board on Wyoming's livestock laws.
8. Law enforcement should protect the rights of the citizens of Carbon County.
9. Law enforcement should protect the health, safety, and welfare of the citizens of Carbon County.
10. Maintain adequate planning for the ability to provide law enforcement, emergency fire, rescue, and other services to visitors on public lands.
11. Use inter-local and inter-agency agreements to provide planning and funding of emergency services on public lands.
12. Support projects and encourage policies which manage storm water, run-off, and flooding on public lands.
13. Carbon County should be consulted where flooding and storm water run-off could impact or endanger the County and its citizens.
14. Federal agencies should support the development of communication technologies (i.e., cell phone towers, internet, etc.) on public lands to ensure communications are available during natural disaster events.
15. Federal agencies shall coordinate with Carbon County should a natural disaster occur within the County.

8.3 ECONOMIC AND SOCIOECONOMIC CONSIDERATIONS

8.3.1 History, Custom, and Culture

Natural and mineral resources have and continue to be important economic factors in Carbon County. Agriculture has been a main driver for the economy since early history of the County. Livestock continue to be raised in the county but are not the major economic drivers they once were. Some agricultural operations have shifted to more diverse operations that include guest ranches and outfitters. The County has and continues to be a haven for hunters, fisherman, and others who enjoy outdoor activities. (Van Pelt, 2014).

The timber industry once was a large economic driver for the County as timber was harvested for the railroad and transported down the river to make it easier to access. The timber industry has decreased significantly in more recent years, however the sawmill in Saratoga, Saratoga Forest Management, remains open and a large employer to that community. The sawmill provides lumber products and wood by-products.

Carbon County has experienced periodic ups and downs of its local economy, caused in part by the local and regional impact of energy development. The local economy has a few stabilizing influences such as employment opportunities created by the Wyoming State Penitentiary, the presence of a major east-west Interstate, and the continued operation of the Union Pacific Railroad. At the same time, the County tends to lag behind state trends in household income, per capita income, and average wages. (WLC Engineering, Surveying & Planning et al., 2010).

8.3.2 Resource Assessment and Legal Framework

The economy of Carbon County relies on access to public lands and resources. In 2017, the total market value of livestock and crops sales was $73,241,000. Livestock made up approximately 92% ($67 million). There were 345 farms totaling 2.8 million acres with the average farm size being 8,150 acres. Eighty-nine percent of the farms in the County were family farms. Approximately 95,767 cattle and calves were in the County, 1,811 horses, 185 hogs, 681 meat chickens/layers/pullets, and 294 goats (these do not account for seasonal use of public land). Cattle and calves accounted for $64.6 million of the total $67 million in livestock sales. (USDA, 2017).

The Agriculture Census data does not adequately reflect the reliance to access on federal lands for these agricultural operations. There are significant limitations to try to create in excess $67 million in revenue from the private lands in the County. The 2.1 million acres of BLM and 626,963 acres of USFS lands are necessary for the continuation of agriculture in Carbon County.

Carbon County is one of the top counties in the nation for the most natural gas wells drilled from 1980 to 2008. Most of these 2,530 wells are located west of Rawlins, northwest of Baggs, and in the southwest near the Carbon-Sweetwater county border. The developments have brought many jobs to the County and substantial revenues. However, due to the nature of the eb and flow of the energy industry, this leads to many temporary jobs that fluctuate as energy prices fluctuate. The Sinclair Oil refinery continues its operations today and remains one of the top employers in the County employing approximately 580 people in 2019.

Hunting, fishing, wildlife viewing, and outdoor recreation have always been a key part of Carbon County as described above in Section 8.1 TOURISM AND RECREATION ON PUBLIC LANDS Recent studies have shown that hunters, anglers, and wildlife viewers spend an estimated $788 million in Wyoming, with the total economic importance up to $1 billion in business activity. Wildlife-related activities account for an estimated 9,600 jobs in Wyoming with a total labor income of $262 million. In Carbon County, hunters directly contributed around $19 million.

Summary of Employment

From 1970 to 2018, population in Carbon County grew from 13,485 to 14,971 people, an 11% increase. In this same time employment grew from 7,179 to 9,815, a 37% increase and personal income grew from $393.2 million to $889.6 million, a 126% increase (Figure 25, Figure 26, and Figure 27) (Headwaters Economics, 2020b).

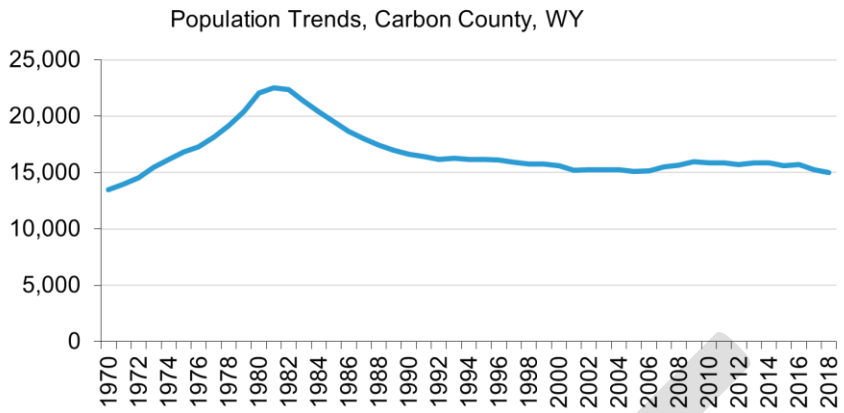

Figure 25. Population trends in Carbon County. (Headwaters Economics, 2020b)

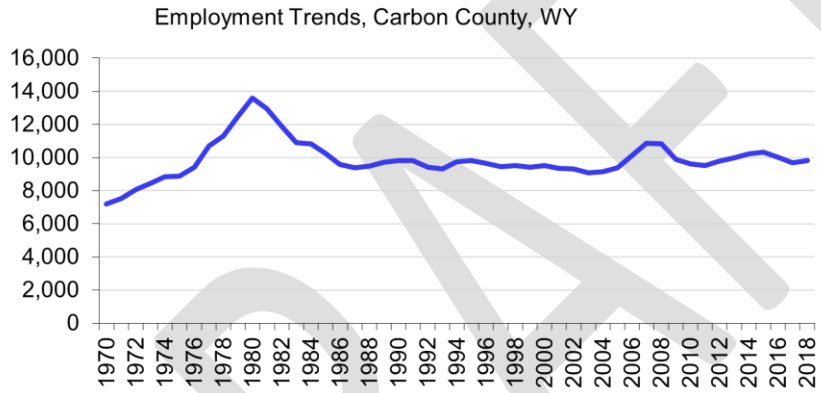

Figure 26. Employment trends in Carbon County. (Headwaters Economics, 2020b)

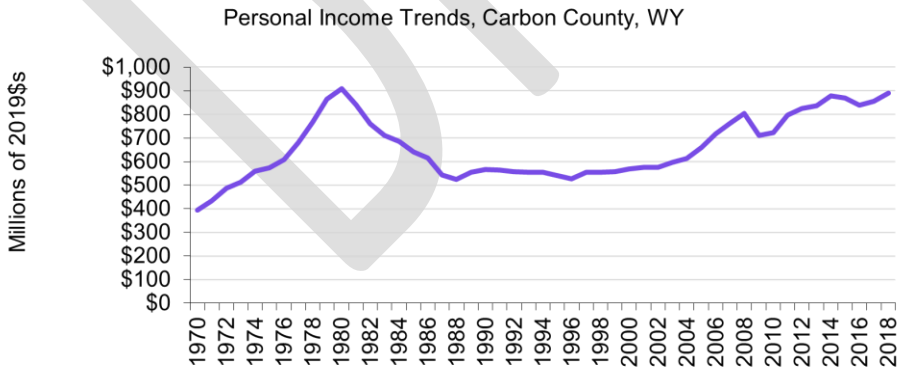

Figure 27. Personal income trends in Carbon County. (Headwaters Economics, 2020b)

Employment by Industry (2000 – 2018)

Employment data are categorized using two different systems. From 1970-2000, the Standard Industrial Classification (SIC) was used. Since 2001, industry-level data have been organized using the North American Industrial Classification System (NAICS).

From 1970 – 2000, the three industry sectors that added the most new jobs were services, government and retail trade (Figure 28) (Headwaters Economics, 2020b).

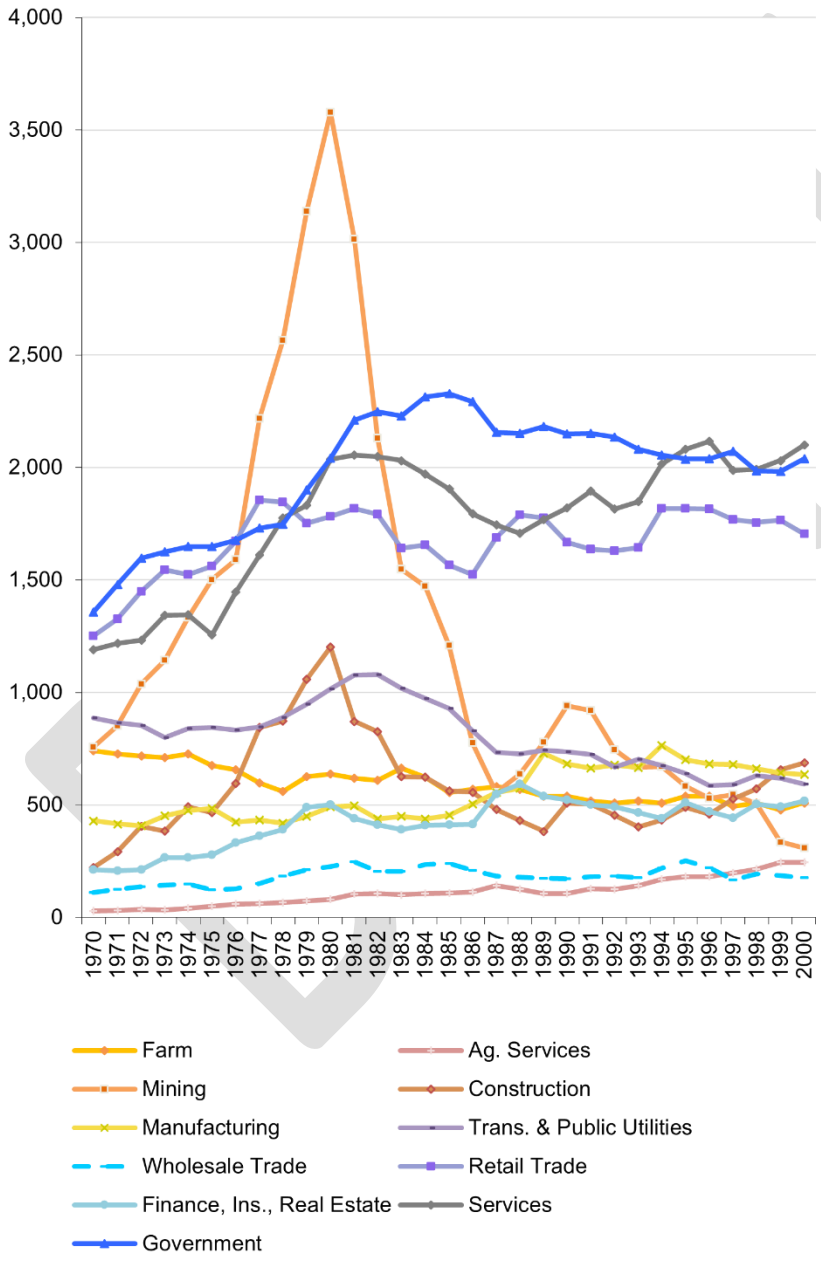

Figure 28. Employment by Industry in Carbon County from 1970-2000. (Headwaters Economics, 2020b)

From 2001 to 2018, total employment increased from 9,339 jobs to 9,815 jobs. Non-services related jobs (e.g., farming, mining, and construction) increased 5% from 2,075 to 2,172. Service-related industries (e.g., transportation and warehousing, utilities, retail) increased 9% from 5,062 to 5,495. Since 2001, the three industry sectors that added the most new jobs were accommodation and food services, finance and insurance, and real estate/rental/leasing. (Figure 29) (Headwaters Economics, 2020b)

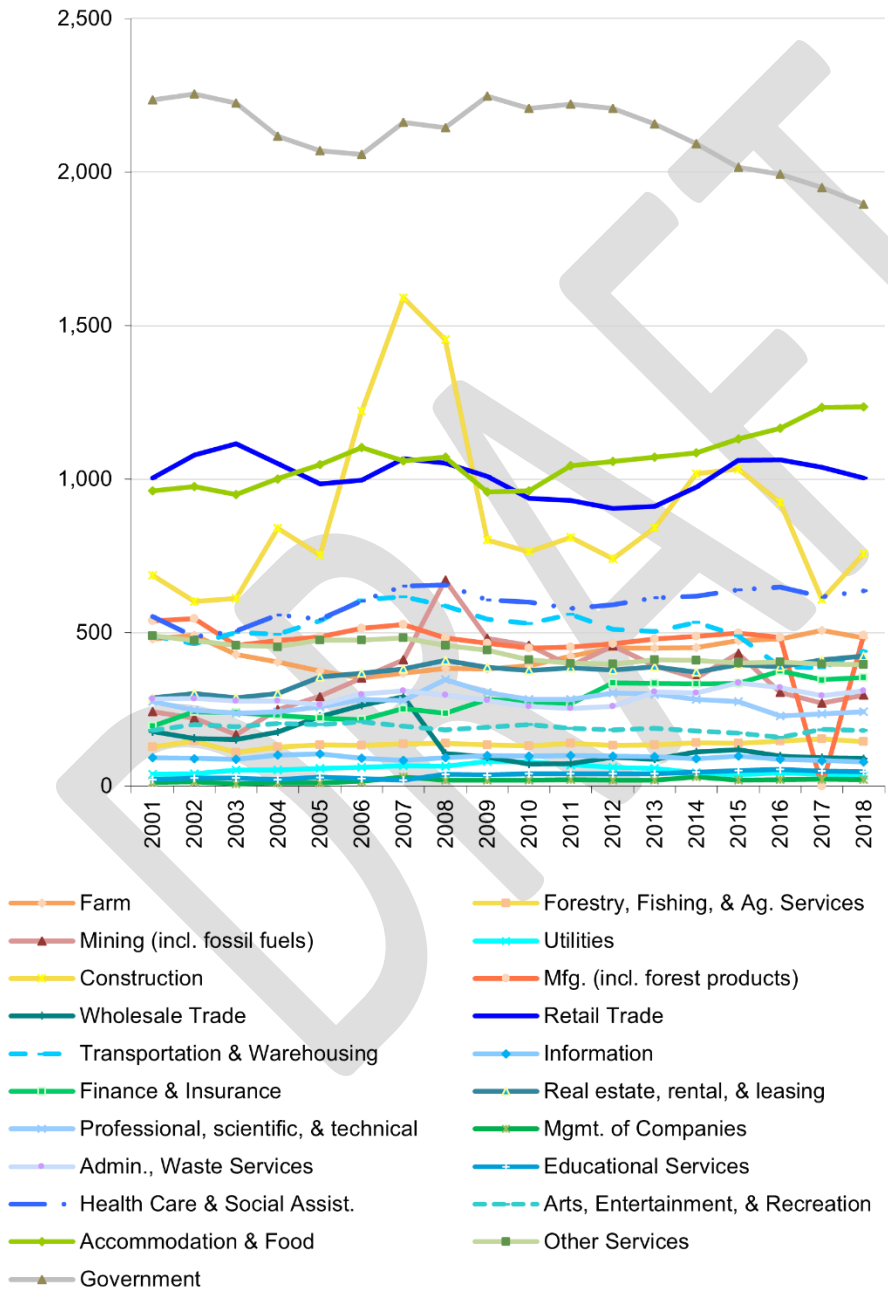

Figure 29. Employment by Industry in Carbon County from 2001-2018. (Headwaters Economics, 2020b)

Earnings by Industry (2000 – 2018)

From 1970 to 2000, the three industry sectors that added the most earnings to Carbon County were government, services, and finance/insurance/real estate (Figure 30). (Headwaters Economics, 2020b)

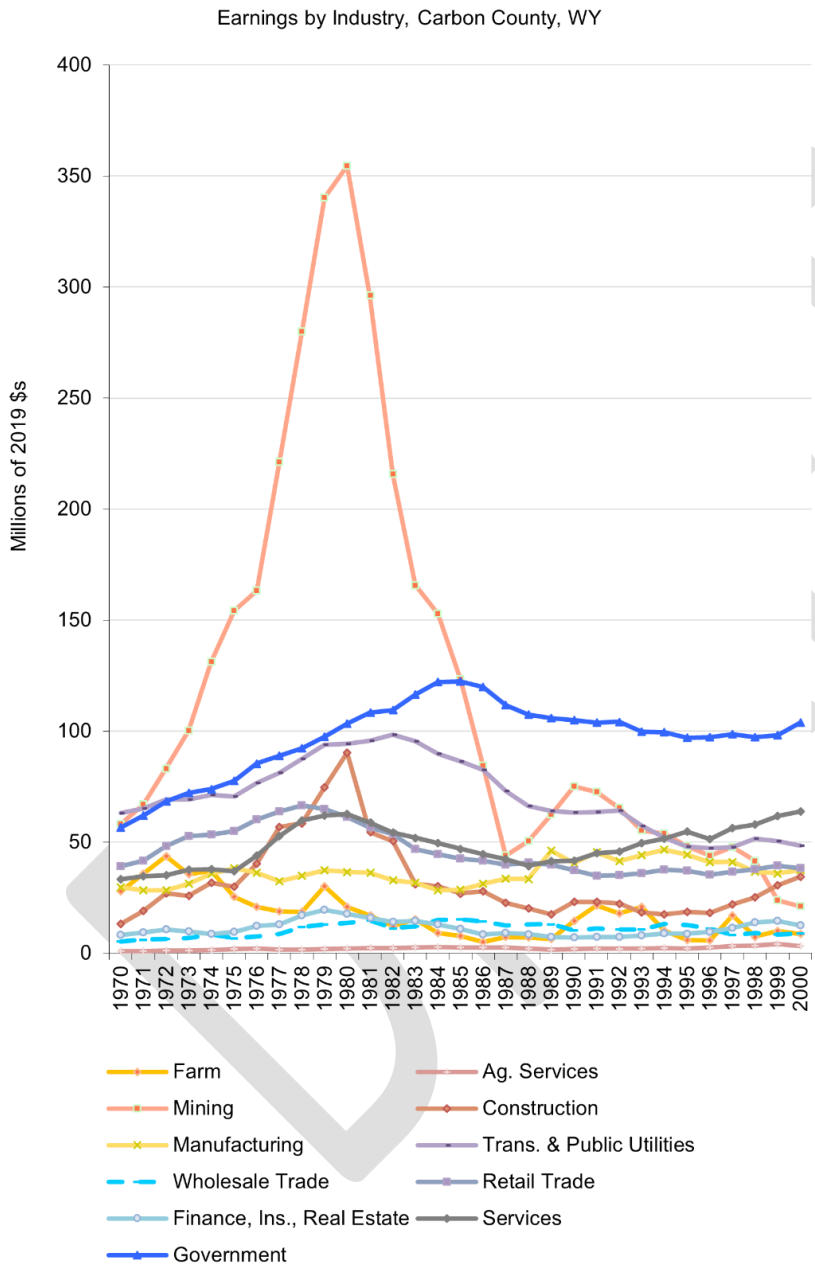

Figure 30. Earnings by Industry for Carbon County from 1970-2000. (Headwaters Economics, 2020b)

From 2001 through 2018, earnings in non-services related industries grew from $104.5 million to $148.0 million, a 42% increase. Earnings in services related industries grew from $166.3 million to $28.5 million, a 37% increase. In 2018, the three industry sectors with the largest earnings

were accommodation and food services, health care and social assistance, and government (Figure 31). (Headwaters Economics, 2020b)

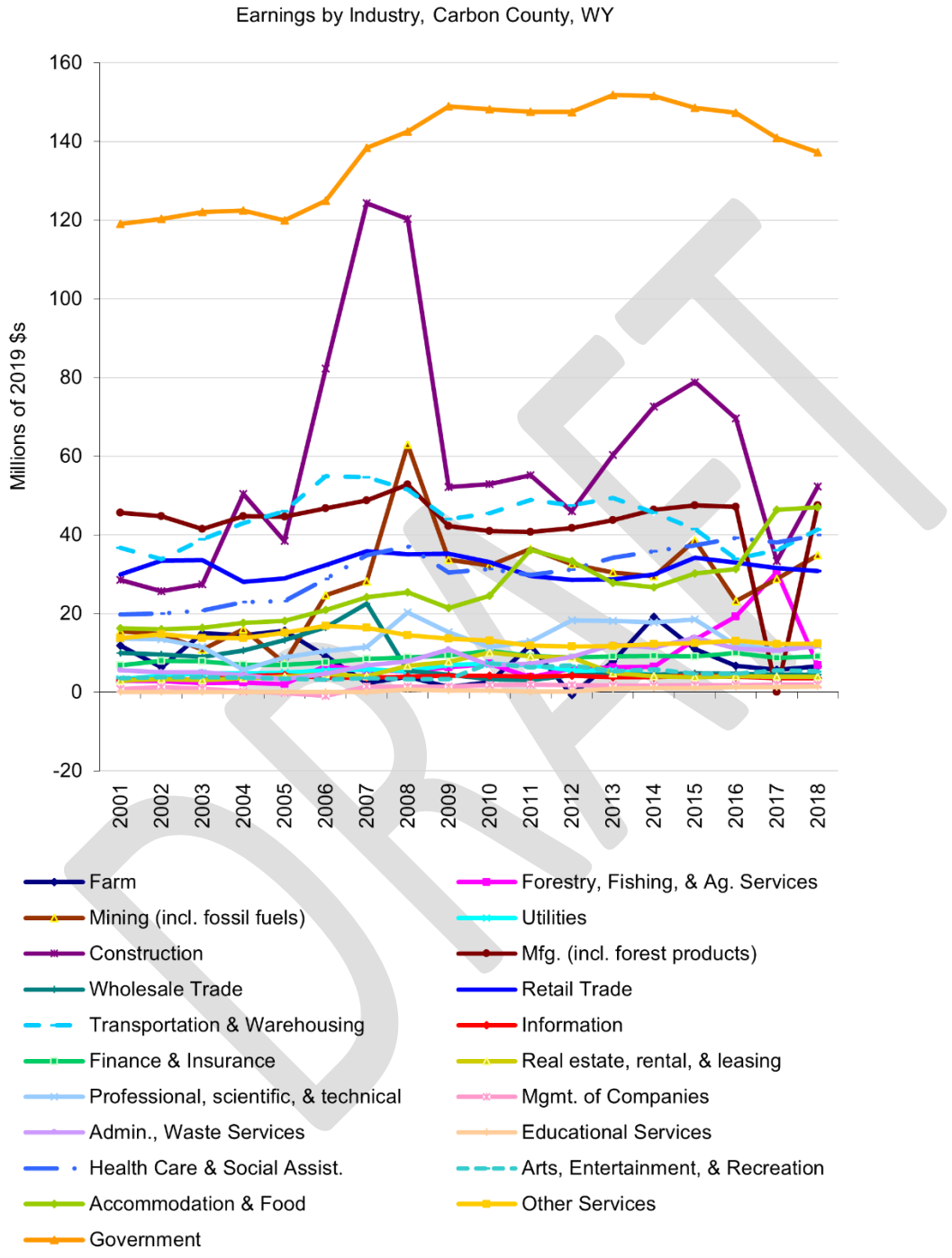

Figure 31. Earnings by Industry in Carbon County from 2001-2018. (Headwaters Economics, 2020b)

Employment and Wages by Industry (2019)

In 2019, 7,032 jobs had an average wage of $49,886. Non-services related jobs paid the highest ($79,761) and services related jobs paid the lowest ($33,908). Trade, transportation, and utilities jobs employed the largest number of people (3,281) and the federal government employed the smallest (1,830 jobs) (Figure 32 and Figure 33). (Headwaters Economics, 2020b)

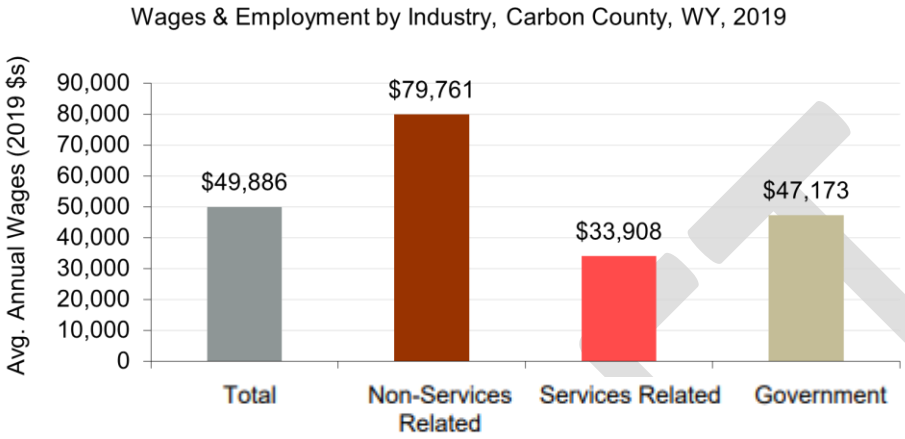

Figure 32. Wages and employment by industry for Carbon County in 2019. (Headwaters Economics, 2020b)

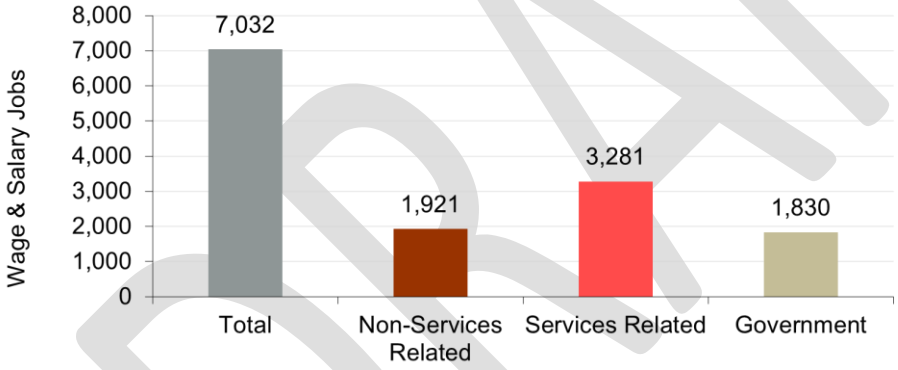

Figure 33. Wages and salary jobs for Carbon County in 2019. (Headwaters Economics, 2020b)

Employment Changes During Recessions (1976 – February 2020)

Five national recessions occurred between 1976 and 2010 and the most recent is occurring in 2020. From 1976 to February 2020, employment grew from 6,177 to 7,606 jobs, a 23% increase (Figure 34). (Headwaters Economics, 2020b)

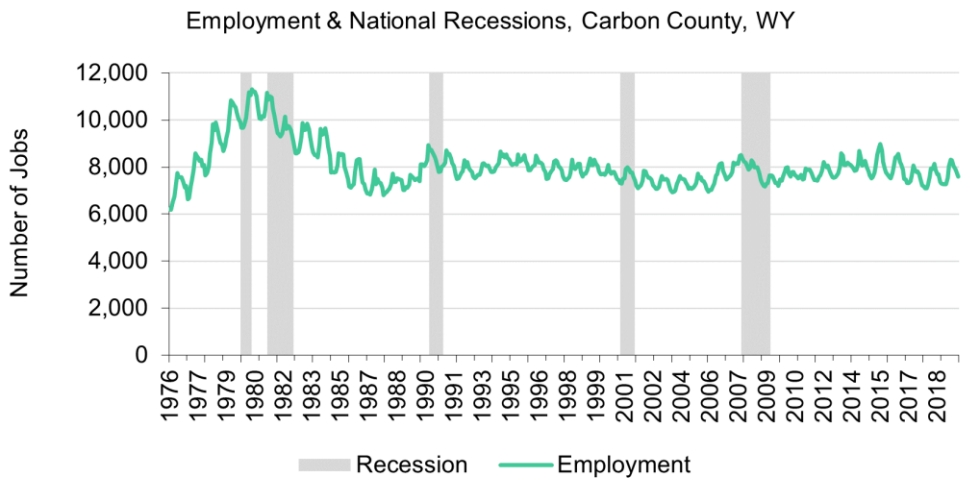

Figure 34. Employment trends during National Recessions for Carbon County. (Headwaters Economics, 2020b)

Unemployment (1990-2019)

Since 1990, the annual unemployment rate ranged from a low of 3.3% in 2019 to a high of 6.7% in 2010 (annual 2020 data is not yet available). The lowest monthly unemployment rate was August of 2019 at 2.5% and the highest monthly unemployment rate was May of 2020. (Figure 35) (Headwaters Economics, 2020b).

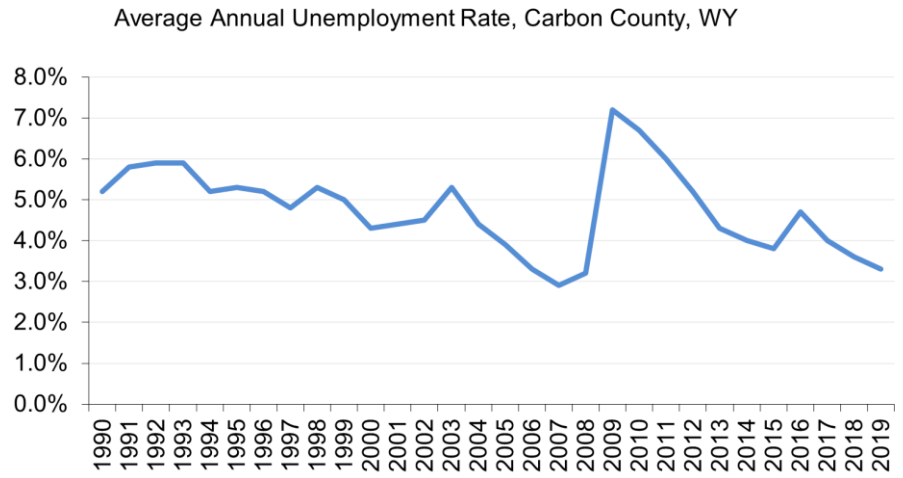

Figure 35. Average annual unemployment for Carbon County. (Headwaters Economics, 2020b)

National Environmental Policy Act

NEPA can play a crucial role in the economic and socio-economic well-being of a community. NEPA applies to "every major Federal action significantly affecting the quality of the human environment" (42 U.S.C. § 4332(1)(C)). The courts have interpreted this to generally mean that

every time the federal government decides for almost any action that may have an environmental impact, NEPA compliance is required. Some courts have even required agencies to follow NEPA when the agency spends a small amount of money on a project or program that they are not the lead agency. *See e.g., Citizens Alert Regarding the Environment v. United States Environmental Protection Agency*, 259 F.Supp.2d 9, 20 (D.D.C. 2003). On July 16, 2020, the Council on Environmental Quality issued a final rule in the Federal Register finalizing major regulation reforms to NEPA, including updated rules trying to clarify what is a "major federal action."

On July 15, 2020 the Council on Environmental Quality announced major regulation reforms to NEPA, including new rules trying to clarify what is a "major federal action." *See* 85 F.R. 43304 (July 16, 2020). The CEQ regulations define a "Major Federal Action" as "an activity or decision subject to Federal control and responsibility." 40 C.F.R. § 1508.1(q). However, those activities and decisions are limited to those decisions that are discretionary or in which the federal government has sufficient control and responsibility over the outcome of the project. *See id*. This means that those projects that the government has a minor role are not included. Further, minor actions that do not typically do not have a significant effect on the human environment (such as allowing certain range improvements on a grazing allotment) are categorically exempt from NEPA. 40 C.F.R. § 1508.1(d).

NEPA requires that agencies undertake an environmental analysis to determine whether a federal action has the potential to cause significant environmental effects. If a proposed major federal action is determined to significantly affect the quality of the human environment, federal agencies are required to prepare an Environmental Impact Statement (EIS). The regulatory requirements for an EIS are more detailed and rigorous than the requirements for an Environmental Assessment (EA). NEPA does not mandate results or substantive outcomes. Instead, NEPA's purpose is to "provide for informed decision making and foster excellent action." 40 C.F.R. § 1500.1(a). Thus, NEPA ultimately does not require a specific result, but should be utilized to ensure that federal agencies "conduct environmental reviews in a coordinated, consistent, predictable, and timely manner, and to reduce unnecessary burdens and delay." *Id*. at (b). Therefore, for an agency to be NEPA compliant, they need to make timely and coordinated decisions that are based on informed decision-making.

One of the greatest economic harms for a local community is the typical several year delay of an important project due to NEPA. Since 2010, the average EIS completion time was approximately 4.5 years and averaged more than 600 pages. Even more disturbing, over a quarter of the EISs during that time span took more than 6 years to complete (Council on Environmental Quality, 2010). CEQ regulations now require that EAs not exceed 75 pages and one year to complete unless a senior agency official of the lead agency approves a longer period in writing and establishes a new time and page limit. 40 C.F.R. § 1501.5, 1501.10. Similarly, CEQ regulations now require that EISs not exceed 150 pages (300 for proposals of unusual scope or complexity) and two years to complete, unless a senior agency official of the lead agency approves a longer period in writing and establishes a new time and page limit (40 C.F.R. § 1502.7).

To increase efficiency in the NEPA process, agencies are supposed to include cooperating agencies at the earliest time practicable to participate. Additionally, agencies are supposed to eliminate duplication of efforts by cooperating with local governments and form (1) joint planning processes; (2) joint environmental research and studies; (3) joint public hearings; (4) joint environmental assessments. 40 C.F.R. § 1506.2(b). Further, agencies, unless specifically prohibited by law, allow local governments to be joint lead agencies in certain NEPA decisions and cooperate in fulfilling local government requirements that may not conflict with federal law. *Id*. at (c).

Environmental Justice

In February of 1994, Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" was signed and directed each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, polices, and activities on minority populations and low-income populations" including tribal populations. Environmental justice mitigation measures must be outlined or analyzed in EA, Findings of no significant impact (FONSIs), EISs, and RODs. (EPA, 2015)

8.3.3 Resource Management Objectives (Economics and Socioeconomics):

A. Carbon County has a strong and diverse tax base.
B. Carbon County has low unemployment and residents are self-sufficient.
C. Carbon County retains and preserves quality jobs.
D. Carbon County is business-friendly and supports improved education, training, and advancing employment opportunities for people who choose to work in Carbon County.
E. Federal agencies abide by the July 16, 2020 National Environmental Policy Act Guideline Standards.
F. Federal agencies consider Carbon County's socioeconomic and economic viability in all federal decisions.
G. The socioeconomic and economic viability of Carbon County should be protected and enhanced.
H. Carbon County is consulted and coordinated with whenever an enforcement or management decision will impact the economy, tax base, or employment within the County.
I. Federal agencies acknowledge Carbon County as an expert regarding the economic and social impacts of decisions and coordinate early with the County as a cooperating agency.

8.3.4 Priorities (Economics and Socioeconomics):

1. Carbon County should be consulted and coordinated withat the earliest time possible for any proposed action, change of existing activities, newly permitted activities, or changes in regulations that may affect the economic basis of the County.
2. Carbon County needs to be consulted by agencies or governmental entities setting any regulations or any proposed action to ascertain and more fully analyze the impacts to the individual communities and County.

3. Carbon County is an expert regarding the economic and social impacts of a decision and should be given the opportunity to be a cooperating agency and join the interdisciplinary team whenever a decision could impact the socioeconomic viability of the County.
4. Support continued access to natural resources development/use on federal lands to maintain economically viable communities in Carbon County.
5. Support "no net loss" in CarbonCounty economic base due to federal agency decisions.
6. Include Carbon County in all discussions regarding mitigation if necessary, to protect the economic base of the County.
7. Support the analysis of social and economic factors at the lowest possible level, such as on a County-wide basis in addition to consideration on a state-wide or national scale.
8. Promote the economic and socioeconomic growth of Carbon County.
9. Promote consultation and coordination between federal agencies and Carbon County regarding any issues and activities on public land that affect or influence the economic and socioeconomic viability of the County.
10. Local, state, and federal agency plans, or management recommendations shall include an appropriately detailed socio-economic impact description that addresses the effects on Carbon County natural resources, economies, and health and welfare of Carbon County citizens.
11. Carbon County supports impact assistance opportunities and funding (i.e., sewer, water, fire, law enforcement, emergency, natural resource mitigation etc.) as early in the industrial development process as possible.
12. Subject experts should complete socioeconomic analyses for proposed projects; the experts should be familiar with and focus on the County's unique history, culture, economy and resources.
13. Socioeconomic analyses should include a description of existing social, demographic and economic conditions; the analytical methodologies used; and the impacts to topics including (but not limited to) population, employment, income levels, industry activity, housing, community services, utility services, schools, fiscal impacts to Carbon County and local jurisdictions, public revenues and expenses, transportation, and quality of life.
14. Federal agencies should promote multiple uses the that will increase the economic diversity of Carbon County and promote efforts to efficiently analyze and approve the permitting process for those uses.
15. Carbon County supports the July 16, 2020 Council on Environmental Quality National Environmental Policy Act regulations which states that Environmental Impact Statements should be completed within 1 year from the issuance of a Notice of Intent and 150 pages or less excluding appendices and should follow the proposals developed by each federal agency for timelines and page limits for Environmental Assessments.
16. Payment in lieu of taxes funds and other federal funding mechanisms should be used to offset any loss in tax income resulting from land exchanges or purchases from federal agencies.
17. A full analysis of the impact each alternative and subsequent "decision" will have on the local economy should be conducted. If it is determined that the alternative will have significant negative impact on the local economy, the alternative/decision is not supported.

CHAPTER 9: AGRICULTURE

9.1 AGRICULTURAL PRODUCTION

9.1.1 History, Custom, and Culture

In the 1880s, sheep and cattle ranches began to establish in Carbon County. Sheep ranches especially were well known near Rawlins and many sheep ranchers ran their herds on the ranges of the Red Desert and the Great Divide Basin. Cattle ranches now greatly outnumber sheep operations within the County due to decreased demand for wool and meat from sheep and higher demand for beef. (Van Pelt, 2014) Ranching and agriculture are vital to the custom and culture of Carbon County and are still vital economic industries within the County. The cowboy way of life is often reflected in communities throughout the County with family, hard work, and community being core values.

Agricultural lands contribute to the County's landscape and scenic beauty, provide wildlife habitat, and offer recreational opportunities for residents and visitors alike for hunting, fishing, snowmobiling and other tourism-related activities. The agricultural industry has traditionally been viewed strictly as a commodity producer of food and fiber. Farmers and ranchers can also produce a variety of non-commodity ecosystem services for which markets do not exist. Such services may be valued by society, but direct payments and markets are not available yet for their value.

Agriculture also provides another important product – open space. Open space offers landscapes, lifestyles, and wildlife habitats that are highly valued in Wyoming. Open space is particularly important because it determines the character of the land surrounding our communities. Out of economic necessity, most agricultural operations in the West cover large areas, and thus agriculture contributes substantially to maintaining open spaces on private ranch and farmlands. Agriculture open space in the County contributes to many ecosystem goods and services. (Taylor, 2003)

Ecosystem goods and services include regulation functions, habitat functions, provisioning functions, and information functions. They produce the many life-sustaining benefits we receive from nature—clean air and water, fertile soil for agriculture production, pollination, climate regulation, water supply, waste treatment, recreation, biodiversity, cultural information, and flood control. These ecosystem services are important to environmental and human health and well-being, yet they are limited and often taken for granted. Farmers and ranchers constitute the largest group of natural resource managers in the world. (FAO, 2007)

Agriculture is an invaluable source of employment, affordable food, raw materials, open space to the County, and makes immeasurable contributions to ecosystem services. Among Carbon County's top industries, agriculture cash receipts total nearly one billion dollars annually. Agriculture also provides numerous opportunities for environmental stewardship to benefit local ecosystems while serving as key component of the County's sustainable economy. (WLC Engineering, Surveying & Planning et al., 2010)

9.1.2 Resource Assessment and Legal Framework

Agricultural land and its operation are primarily responsible for the economic and social well-being of the County, and an important conservation strategy. The 2017 Carbon County Census of Agriculture ranked Carbon County as seventh in the state for value of all agricultural products sold. The County ranks fifth in the state for market value of livestock products, landing in third for value of cattle and calves, fifth in aquaculture, and ninth for hogs and pigs. Most of the revenue from cropland comes from hay and pastureland production. According to the 2017 census 96% of cropland market value was designated as hay and other crops. In 2012 there were 2,069,008 acres of pastureland, including permanent pasture and rangeland (2,029,679 acres) and pastured crop and woodland. (United States Department of Agriculture National Agricultural Statistics Service et al., 2014; USDA, 2017)

In 2012, the market value of agriculture products in Carbon County totaled $78,578,000. The estimated market value of agricultural land was $4,187,090 for the County. The 2017 market value for livestock products was $67,079,000 and for crop products was $6,162,000. In 2017 there were 5,811,832 acres of farmland in the County. Between 2012 and 2017, the number of farms increased by 8% and the average farm size increased by 10%, resulting in a 18% increase for farmland in the County. During this time while the market value of products sold declined, the total farm production expenses dropped 20% and the net cash farm income increased 223%. Agriculture is a major source of revenue and employment for Carbon County. (United States Department of Agriculture National Agricultural Statistics Service et al., 2014; USDA, 2017)

Irrigated agricultural lands rely on the distribution of water from streams, rivers, and reservoirs through canals and pipelines. Some or all of these may reside on or pass through federal and/or state lands where permitting issues are triggered for maintenance and expansion. According to the U.S. Census of Agriculture, Carbon County had 187,434 acres of irrigated land, or 7% of the total farmland in the County (United States Department of Agriculture National Agricultural Statistics Service et al., 2014). Flood irrigation is a common practice in the County and is important to agriculture operations, as well as for maintaining cool water return flows late in the summer and creating artificial wetlands (Saratoga-Encampment-Rawlins Conservation District, 2017). This makes the retention and proper management of water rights a priority for irrigation and agricultural operations across Carbon County. Refer to the Irrigation and Water Rights sections above for more information. (United States Department of Agriculture National Agricultural Statistics Service et al., 2014; USDA, 2017)

Right to Farm Law

Right to farm laws have been enacted in all fifty states. These laws seek to protect qualifying farmers and ranchers from nuisance lawsuits filed by individuals who move into a rural area where normal farming operations exist, and who later use nuisance actions to attempt to stop those ongoing operations. Wyoming's right to farm law is known as the "Wyoming Right to Farm and Ranch Act."

The basis for these policy statements in this NRMP is to carry out the state law mandate to protect agricultural practices through the 'Right-to-Farm' statutes as listed below.

To protect agriculture as a vital part of the economy of Wyoming, the rights of farmers and ranchers to engage in farm or ranch operations shall be forever guaranteed in this state. (W.S. 11-44-104(a)) (National Agricultural Law Center, n.d.)

9.1.3 Resource Management Objectives (Agricultural Production):

A. Agricultural production is maintained as a viable and important component of the economy, custom, and culture of Carbon County.
B. Federal actions affecting agriculture are made in consultation with Carbon County.
C. Ranching and agriculture is retained as the preferred land uses in rural areas within Carbon County.
D. The agriculture custom and culture - value opportunities, resources, and communities are preserved
E. Agricultural operations on private and state lands neighboring federal lands are protected from impacts of the results of federal actions, decisions, and regulations.

9.1.4 Priorities (Agricultural Production):

1. Support all plans and policies that promote increasing the stability and expansion of agriculture (directly or indirectly), as well as encouraging innovative techniques that improve the efficiency of agriculture production.
2. Federal agencies should analyze the impacts between federal land holdings and existing private operations during any National Environmental Policy analysis.
3. Federal agencies should work with local agricultural producers, Conservation Districts, and Carbon County to ensure mitigation is done properly and locally.
4. Support federal agencies in quickly processing permits on federal lands for the construction, maintenance, or expansion of irrigation distribution systems to private lands, and allowing maintenance where those rights already exist through a range improvement agreement.
5. Federal agency actions shall be consistent with Right to Farm laws, to the extent applicable. Right to Farm laws shall be considered when coordinating on federal land use decisions.
6. Support production agriculture and the conscientious use of natural resources to sustain agricultural enterprises.
7. Any agricultural property damage, crop loss, or livestock injury/loss caused by an escaped prescribed burn, unsuccessful fire suppression efforts, or damage caused by government agency action, resulting in economic loss in Carbon County shall be considered justification for economic compensation and restoration by the responsible agency to the impacted property owner at current market values.
8. Promote the use of watershed best management practices (BMPs) by federal agencies to mitigate water pollution from heavy erosion and sedimentation from public lands and permitted projects on public lands, and to work with local conservation districts in accomplishing these BMPs.
9. Support and expand appropriate and good grazing practices on federal lands.
10. Encourage agricultural operations within Carbon County and promote their sustainability.

11. In conjunction with ranch owners/managers, local, state and federal planning partners, develop economically sustainable strategies to maintain working ranches.
12. Federal planning-level and project-level National Environmental Policy Act documents will properly characterize and analyze the area, recognizing the benefit of ecosystem services provided by working ranches to adjacent or nearby public lands.

9.2 LIVESTOCK AND GRAZING

9.2.1 History, Custom, and Culture

The vegetation in Carbon County has evolved under grazing and periodic fire since the beginning of time. Grazing in the region began to shape the modern vegetation we see today around 18,000 years ago in the Pleistocene. These grazers included ancient muskox, pronghorn, Pleistocene big horn sheep, ancient bison, camels, prehistoric horses as well as mammoths. Additionally, there were predators such as wolves, American cheetahs, American lions, wolverines, short-faced bears, and eventually humans who used fire to manage grazing. (Martin & Gilbert, 1978; US National Park Service, 2015)

Eventually these species were replaced by the wildlife we know today. Wildlife, wildfire, and early humans continued to shape the vegetation across the state. In the late 1600s to mid-1700s, Native Americans obtained the modern horse from the Spanish and became pasture managers as well as wildlife managers, manipulating the vegetation and animal populations. Fire was an integral part of vegetation management and helped form the ecosystems of today.

Livestock grazing has been a major industry in Carbon County since early settlement. It continues to be a vital part of the custom and culture of the County as well as a critical economic driver. The most efficient operations use a combination of private and federal lands. Historically, ranchers across Wyoming have grazed animals on open ranges and mountains on federal and state lands during summer months and moved the stock to private lands during the winter months where livestock can be fed hay produced from the irrigated pastures. Such operations are some of the most efficient, sustainable and economically productive for producing livestock. Permitted grazing on public lands is a critical piece of livestock operations in Carbon County. The intermingled BLM and private lands allow ranching to continue in the County. With less than 40% of the total land in the County under private ownership, access to public lands is critical to the continued ability to maintain the ranching community and the viability of the County.

The contribution of the ranching industry to the County goes beyond the critical economic livestock sales. Studies in similar counties have shown ranchers tend to spend most of their dollars in the County they reside in on fuel, food, supplies, and equipment. A thriving agriculture industry helps maintain local economies. (Miller & Heaton, 2015)

9.2.2 Resource Assessment and Legal Framework

There are 369 BLM and 44 USFS grazing allotments in Carbon County encompassing approximately 3.8 million acres and 661,034 acres respectively (Figure 35). Much of the federal land in the County is laid out in a checkerboard pattern of alternating sections of private and federal land or intermixed with private and state lands. When federal land management policies

are enacted they influence the management of the associated private land. There are many management challenges that accompany the checkerboard federal and private lands, including access, land use, water rights, and grazing rights (Saratoga-Encampment-Rawlins Conservation District, 2017). Private lands that are encompassed in a grazing allotment have restrictions for use just like the federally managed land. Grazing management on public lands can vary greatly depending on special designations. Special designations such as wilderness, wilderness study areas (WSA), and national forests allow grazing. While grazing is not permitted on national parks or monuments. Refer to Section 3.3 Special Designation and Management Areas for additional information regarding special designation areas.

With the federal agencies managing most of the rangeland in the County, ranchers must rely on obtaining federal grazing leases. A large part of the vegetation in the County is lower producing sagebrush areas while many of the forested leases are highly productive but with limited forage available due to dead and downed timber causing accessibility issues for livestock and wildlife. Low-productivity rangelands makes for a narrow profit margin. When agencies make a management decision without considering the economic impact on a rancher or a group of ranchers, operations and the community can be impacted. When federal agencies reduce permitted livestock numbers for any operator, their entire operation is impacted, especially economically. Any reduction in livestock on federal lands directly affects the economy and culture of Carbon County.

Reduction in livestock numbers on federal lands can be a result of natural factors, including wildfire and drought. The primary factors in determining livestock grazing capacity on public land is the availability of the resources. Proper grazing management is an important tool for management of rangeland resources, and can be used to mitigate invasive species impact, wildfire impact, and can improve rangeland health. In addition to the widescale reduction of fuels that grazing can induce, the BLM has also shown success in using targeted grazing as a management tool to slow down and stop range fires, as well as reduce the size of fires in grazed areas. (Idaho Rangeland Resource Commission, 2016)

Livestock grazing, irrigated farming and other intensive agriculture practices are integral to this County's ability to remain viable with a diverse and sustainable economy. Ranching and agricultural operations maintain open space and large landscapes to support multiple uses.

Taylor Grazing Act

The Taylor Grazing Act (TGA) of 1934 (43 U.S.C. 315) established the Grazing Service, which eventually became known as the BLM. Local BLM grazing advisory boards created an adjudication process to determine where, when, and what type of livestock grazing could occur on public rangelands. To receive an allotment through this process, the stockman had to have (1) "commensurate base property" on which he could graze his livestock when they were not using the federal lands, (2) have an economically viable livestock operation, and (3) be members of the local community and support the local stability of the community. 43 U.S.C. § 315b. The TGA gives individuals the right to apply for grazing permits on federal lands based upon the ownership of qualified base property. 43 U.S.C. § 315(b). The purpose of the TGA is "to stabilize, preserve,

and protect the use of public lands for livestock grazing purposes…" *Barton v. United States*, 609 F.2d 977 (10th Cir. 1979). As the court in *Public Lands Council v. Babbitt*, explained, "Congress enacted the [TGA], establishing a threefold legislative goal to regulate the occupancy and use of the federal lands, to preserve the land and its resources from injury due to overgrazing, and 'to provide for the orderly use, improvement, and development of the range" (154 F.3d 1160, 1161 (10th Cir. 1998)). Once a grazing district is established, grazing must occur on the land. *See generally, Mountain States Legal Foundation v. Andrus*, 499 F.Supp. 383 (D. Wyo. 1980) (holding that the intent of FLPMA was to limit the ability of the Secretary of the Interior to remove large tracts of public land from the operation of the public land laws). Further, Congress intended that once the Secretary established a grazing district under the TGA, the primary use of that land should be grazing (*Public Lands Council v. Babbitt*, 167 F.3d 1287, 1308 (10th Cir. 1999) *aff'd on other grounds*, 529 US 728 (2000)). The Secretary can modify the boundaries of a grazing district, but unless land is removed from designation as grazing, or the TGA designation is terminated, the Secretary must use it for grazing (43 U.S.C. § 315).

When modifying the boundaries of a grazing district or terminating the TGA designation of an allotment, the Secretary must classify the land as no longer "chiefly valuable for grazing." May 13, 2003, Solicitor's Memorandum to the Assistant Secretaries for Policy, Management and Budget, Land and Minerals Management and the Director, Bureau of Land Management, clarifying the Solicitor's Memorandum M-37008 (issued October 4, 2002). Thus, a permittee may relinquish a permit but, barring the Secretary determining that there is a better use for the land through land use planning, the forage attached to the permit must be available for grazing. Thus, except upon the showing that the land is no longer "chiefly valuable for grazing," the Secretary does not have discretion to bar grazing within a grazing district and must therefore review applications for grazing permits and make a final decision in a timely fashion when they are filed.

Wyoming Standards for Healthy Rangelands

According to the Department of the Interior's final rule for grazing administration, effective August 21, 1995, the Wyoming Bureau of Land Management (BLM) State Director is responsible for the development of standards for healthy rangelands and guidelines for livestock grazing management on 18 million acres of Wyoming's public rangelands. The development and application of these standards and guidelines are to achieve the four fundamentals of rangeland health outlined in the grazing regulations (43 CFR § 4180.1). Those four fundamentals are: (1) watersheds are functioning properly; (2) water, nutrients, and energy are cycling properly; (3) water quality meets State standards; and (4) habitat for special status species is protected. (BLM, 1997)

Standards address the health, productivity, and sustainability of the BLM administered public rangelands and represent the minimum acceptable conditions for the public rangelands. The standards apply to all resource uses on public lands. Their application will be determined as use-specific guidelines are developed. Standards are synonymous with goals and are observed on a landscape scale. They describe healthy rangelands rather than important rangeland byproducts. The achievement of a standard is determined by observing, measuring, and monitoring appropriate indicators. An indicator is a component of a system whose characteristics (e.g.,

presence, absence, quantity, and distribution) can be observed, measured, or monitored based on sound scientific principles (BLM, 1997). Guidelines provide for, and guide the development and implementation of, reasonable, responsible, and cost-effective management practices at the grazing allotment and watershed level. The guidelines in this document apply specifically to livestock grazing management practices on the BLM administered public lands. (BLM, 1997)

These management practices will either maintain existing desirable conditions or move rangelands toward statewide standards within reasonable timeframes. Appropriate guidelines will ensure that the resultant management practices 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, like standards, apply statewide. (BLM, 1997)

Implementation of the Wyoming standards and guidelines will generally be done in the following manner: Grazing allotments or groups of allotments in a watershed will be reviewed based on the BLM's current allotment categorization and prioritization process. (BLM, 1997)

Allotments with existing management plans and high-priority allotments will be reviewed first. Lower priority allotments will be reviewed as time allows or when it becomes necessary for BLM to review the permit/lease for other reasons such as permit/lease transfers, permittee/lessee requests for change in use, etc. The permittees and interested publics will be notified when allotments are scheduled for review and encouraged to participate in the review.

The review will first determine if an allotment meets each of the six standards. If it does, no further action will be necessary. If any of the standards aren't being met, then rationale explaining the contributing factors will be prepared. If livestock grazing practices are found to be among the contributing factors, corrective actions consistent with the guidelines will be developed and implemented before the next grazing season in accordance with 43 CFR 4180. If a lack of data prohibits the reviewers from determining if a standard is being met, then a strategy will be developed to acquire the data in a timely manner. (BLM, 1997)

On a continuing basis, the Standards for Healthy Rangelands will direct on-the-ground management on the public lands. They will serve to focus the on-going development and implementation of activity plans toward the maintenance or the attainment of healthy rangelands. (BLM, 1997)

Quantifiable resource objectives and specific management practices to maintain or achieve the standards will be developed at the local BLM District and Resource Area levels and will consider all reasonable and practical options available to achieve desired results on a watershed or grazing allotment scale. The objectives shall be reflected in site-specific activity or implementation plans as well as in livestock grazing permits/leases for the public lands. These objectives and practices may be developed formally or informally through mechanisms available and suited to local needs (such as Coordinated Resource Management (CRM) efforts). (BLM, 1997)

The development and implementation of standards and guidelines will enable on-the-ground management of the public rangelands to maintain a clear and responsible focus on both the health of the land and its dependent natural and human communities. This development and implementation will ensure that any mechanisms currently being employed or that may be developed in the future will maintain a consistent focus on these essential concerns. This development and implementation will also enable immediate attention to be brought to bear on existing resource concerns. (BLM, 1997)

Grazing Flexibility

Flexibility for grazing is allowed under 43 CFR § 4130.3-2 (f) which states "Provision for livestock grazing temporarily to be delayed, discontinued or modified to allow for the reproduction, establishment, or restoration of vigor of plants, provide for the improvement of riparian areas to achieve proper functioning condition or for the protection of other rangeland resources and values consistent with objectives of applicable land use plans, or to prevent compaction of wet soils, such as where delay of spring turnout is required because of weather conditions or lack of plant growth". Grazing flexibility is conducted through individual grazing permits and coordination with the local permitting authority.

The BLM recently implemented an initiative known as Outcome-Based Grazing Authorizations (OBGAs). The initiative is designed to offer a more collaborative approach between the BLM and its partners within the livestock grazing community when issuing grazing authorizations. The purpose behind OBGAs is to improve BLM's management of grazing on public lands by offering livestock operators greater flexibility to respond more readily to changing on-the-ground conditions, such as drought or wildfire. This will better ensure their ability to manage ranching operations that are economically sustainable while also providing healthy rangelands and high-quality wildlife habitat. Decreasing the response time to changing field conditions is one of the primary goals of the demonstration project. The program highlights BLM's commitment to partnerships, vital to managing sustainable, working public lands.

The flexibility outcome-based grazing provides is to support:

- Enhanced partnerships for managing livestock grazing;
- Implement grazing based on conservation performance and ecological outcomes rather than hardline metrics;
- Improvement, management and/or protection of public lands within a grazing allotment or specified geographic area; and,
- Continued achievement or attainment of positive economic and social outcomes.

As part of the initial implementation program, eleven ranches across the west were selected as pilot projects for OBGAs. The projects on these specific ranches are being used to share experience and demonstrate or develop best practices to be considered in other BLM grazing permit renewals. As part of the process, the pilot projects developed goals and objectives as part of their permit (often including goals and objectives for ecological, social, and economic aspects of the operation). A monitoring plan was also required for the pilot projects that laid out short-

term and long-term monitoring objectives to capture the results of the increased flexibility. Range improvements were also identified as part of the OBGA pilot projects to help with the ability to become more flexible on the different operations. Several of the pilot projects are into the implementation phase, while several others are still working through the NEPA process for approved grazing permits. The information acquired through these pilot projects will allow for recommendations for regulatory modifications that could better provide for the ability to issue OBGAs that maximize and normalize the use of flexibility to address changing conditions. The BLM and its partners will not only share the responsibility for reaching the mutual objectives of this project but also for monitoring its success.

Range Improvements

BLM Range Improvements

All range improvements on BLM lands must be authorized by the agency. There are two options for authorization: A Cooperative Range Improvement Agreement or a Range Improvement Permit. The Cooperative Range Improvement Agreement identifies how the costs of labor, materials, and maintenance are divided between the agency and the permittee. Range Improvement Funds can be used for labor, materials, and final survey and design of projects to improve rangelands. The Range Improvement Permit requires the permittee or lessee to provide full funding for construction and maintenance of the improvement. NEPA analysis is not required for normal repair and maintenance of range improvements that are listed on a term grazing permit; permission of the authorized officer is also not required. However, for reconstruction of a range improvement or construction of new improvements, NEPA analysis and a decision by the authorized officer is required. Range improvements such as water developments benefit wildlife in addition to livestock. (43 C.F.R. Part 4100)

USFS Range Improvements

All range improvements on USFS lands must be authorized by the agency. The USFS allows structural improvements (e.g., fencing) and non-structural improvements (e.g., change in management practices). Any requirements for permittee construction or development of range improvements are identified in the grazing permit with credits for improvements (if any) to be allowed toward the annual grazing fee. It is a common practice for the USFS to furnish materials and the permittee to provide labor for structural improvements. If significant costs are expected, the permittee can assume responsibility for the improvement (maintenance) but the USFS generally holds title to the improvement. Should the improvement not be adequately maintained, the USFS can take action against the permittee for non-compliance with their grazing permit. Range Betterment Funds are available for planning and building rangeland improvements. (USFS, 2005)

9.2.3 Resource Management Objectives (Livestock Grazing):

A. Livestock grazing is maintained as a viable major component of the economy, custom, and culture of the County.
B. Wyoming Standards for Healthy Rangelands are used as the basis for administering livestock grazing on Bureau of Land Management and U.S. Forest Service managed lands.
C. Range improvement projects are approved in a timely manner.

D. Conservation Districts are consulted early in the scoping process whenever a proposed decision will impact grazing, local agriculture producers, or the economy.
E. Federal lands within Carbon County are managed for multiple-use and sustained yields, which includes continued grazing as intended by Congress in the passage of the Taylor Grazing Act, Federal Land Policy and Management Act, Multiple Use-Sustained Yield Act, and the National Forest Management Act.
F. Federal decisions affecting grazing use best available scientific information and with localized baseline and monitoring data given heavier weight than regional, state, or national data.
G. Support the use of grazing flexibility and outcome-based grazing for all grazing permit renewals and allotment decisions where appropriate.
H. The full amount of animal units months on Bureau of Land Management and U.S. Forest Service lands within Carbon County are available.

9.2.4 Priorities (Livestock and Grazing):

1. Federal agencies should recognize the Society for Range Management as the professional organization for rangeland management expertise.
2. Carbon County supports the Wyoming Data Trespass Act (W.S. § 40-27-101) and any data collected through trespass should not be considered.
3. Any allotments that have been turned back to a federal agency should be reissued within 1-year in coordination with the County and local conservation districts.
4. Livestock grazing management decisions shall be made based on the best available scientific information that is applicable to the rangeland resources in Carbon County. The scientific information and credible data used will be consistent with standards of the Data Quality Act.
5. Livestock grazing management plans should incorporate goals and objectives that maintain the health, safety, and general welfare of Carbon County's agricultural interests culturally and economically.
6. Support livestock grazing on all federally owned and operated lands as an integral part of habitat management.
7. Federal agencies should utilize adaptive and flexible grazing management practices and include them in term permits to allow for management practices that will decrease fuel loads on the landscape, particularly in areas with heavy grass understory.
8. When a grazing allotment is in non-use, it shall be made readily available for other permittees to utilize. If there is a resource concern on that allotment, the grazing plan should acknowledge the concern and utilize the livestock as a tool to help in recovery if feasible. If the allotment is in non-use and the range is in good condition, the grazing plan must fully utilize all adjudicated grazing animal unit months.
9. Range improvements should not be considered a major federal action and therefore not require National Environmental Policy Act and also fit within a categorical exclusion. Proposed range improvements should be approved in six months or less.

10. The individual that files for an improvement/development permit on Bureau of Land Management shall be allowed to manage the resource and the permit shall be in their name if it is approved.
11. The individual that files for an improvement/development permit on United States Forest Service should be allowed to manage the resource and the permit should be in their name if it is approved.
12. Support creation of adaptive grazing management plans that allow permittees to respond to changes in resource conditions. These plans should include focused monitoring, triggers and responses, and alternative management actions.
13. The reduction of domestic livestock grazing animal unit months to provide additional forage for another species or strictly for conservation purposes is not supported.
14. The reduction of domestic livestock grazing animal unit months for the benefit of another "multiple-use" is not supported.
15. Animal unit months on federal lands shall not be reduced unless a documented resource condition indicates a need for temporary reduction to improve rangeland condition as determined by a Wyoming Standards for Healthy Rangelands and Guidelines Assessment.
16. Any reduction in animal unit months (AUMs) should include a plan to reinstate AUMs when the resource condition has been addressed.
17. Fully processing all term grazing permit renewals in a timely manner is a priority of the citizens of Carbon County.
18. All federal and state land management agencies shall use the most current ecological site descriptions developed by the Natural Resource Conservation Service as they become available for all livestock grazing management decisions.
19. When evaluating an alternative and decision, federal agencies should analyze impacts to neighboring private and state grazing operations.
20. Support consultation, cooperation, and collaborative efforts to ensure that overall rangeland health is being maintained through monitoring and implementation of well-designed livestock grazing management plans on all public land allotments.
21. Carbon County recommends no loss of adjudicated preferential grazing rights, including but not limited to, active and suspended animal unit months of state and federal lands while maintaining and improving the resource.
22. Carbon County supports proper and appropriate livestock grazing practices as a tool for the sound management of private, state, and federal lands.
23. Carbon County supports the use of cooperative monitoring Memorandums of Understanding so that private or consultant data can be collected and approved by the land management agency if the land management agency is unable to collect data or the supplementary data would prove beneficial.
24. Support reclamation of disturbed range and pastureland sites using best available practices, which may include the seeding of non-native species depending on the circumstance where appropriate and beneficial for soil and land conservation.
25. Support proper grazing practices and stocking rates to help improve watershed conditions in rangeland settings.
26. Support use of all adjudicated a animal unit months (AUMs) on federally managed

lands and support increased AUMs when warranted.

27. Any allotment not formally removed from grazing with the Secretarial classifications as no longer "chiefly valuable for grazing" shall be used for grazing.
28. Support continued use of livestock grazing in Wilderness Areas, Wilderness Study Areas, and all special use designation areas.
29. Support the continuation or reinstatement of prior existing grazing lease rights in Wilderness areas and wilderness study areas as required by Federal Land Policy and Management Act.
30. Support continuation of all currently grazed federal lands regardless of future special lands designations.
31. Federal agencies National Environmental Policy Act analysis should acknowledge and recognize that proper livestock grazing management is a beneficial habitat management tool.
32. Encourage Bureau of Land Management grazing permit renewals to incorporate increased grazing flexibility while maintaining the condition of the range to Wyoming Standards for Healthy Rangelands.
33. Support Bureau of Land Management grazing permit renewals to use outcome-based grazing authorizations where appropriate.
34. Support and expand appropriate and proper grazing practices on federal lands outlined in the Taylor Grazing Act and setforth in local agency Resource Management Plans.

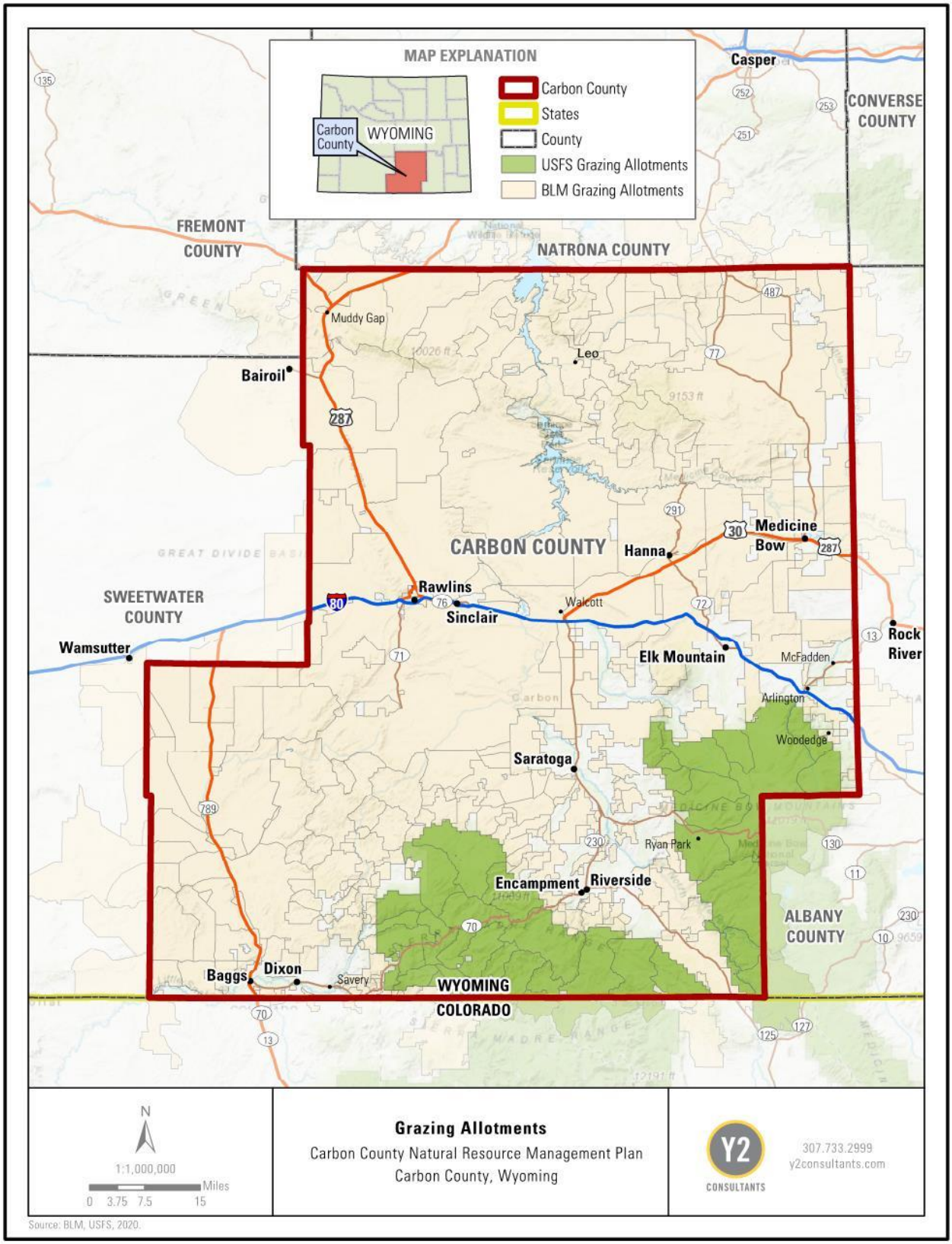

Figure 36. Carbon County grazing allotments (2020).

9.3 NOXIOUS WEEDS/INVASIVE SPECIES/PESTS

9.3.1 History, Custom, and Culture

Carbon County has traditionally practiced weed and pest control to increase the productivity of the various lands within the County and to promote the health, safety, and general welfare of the residents of the County. To do so, a fundamental goal of weed and pest management has been to hold each of the various property owners and managers in the County responsible for the control of the weeds and pests on their land.

Carbon County, by and through the Carbon County Weed and Pest (CCWP), has cooperative agreements and memorandums of understandings with the state and federal agencies. Various programs are being directed to weed and pest management; including, but not limited to the National Undesirable Plant Management Act (7 U.S.C. § 2814).

9.3.2 Resource Assessment and Legal Framework

Invasive species and pest management is defined as the ability to control species and pests (plant and animal) that interfere with management objectives. An invasive species can be a native or non-native species that is occurring where it is not wanted, in unwanted numbers that may result in negative economic impacts. Species that are native to an area can act as an invasive when growing rapidly within, or taking over, an ecosystem or environment that they do not belong. The term Noxious Weed is a legal term indicating that by law the species must be controlled. Failure to comply with the Noxious Weed laws may result in legal action. Ongoing programs to identify locations of all noxious weeds and pests and initiate management and/or eradication efforts will continue. State law provides for cooperation with the federal agencies in controlling noxious weeds and pests on all federally managed lands. Current control tactics include but are not limited to: education (plant identification, life cycles, mapping infestations, etc.); prevention (cleaning equipment, buying quality seed, rangeland management, early detection and control, etc.); mechanical and physical controls (burning, mowing, cultivation, rotating land uses, establishment of desirable competitive plants, etc.); biological (grazing, parasites, pathogens, etc.); chemical (herbicides, weed oils, plant growth regulators, etc.); law enforcement (remedial requirements, hearings, etc.); training (private and commercial applicator training and certification, etc.); rodent control (minimize disease threats and control losses); and Board of County Commissioners actions (emergency declarations, budgeting, public meetings, etc.) (Wyoming Weed and Pest Council, n.d.). Cooperative agreements and legal actions, if warranted, may be utilized to assure protection of vital land resources from noxious weed and pest occupation or invasion.

The Wyoming Weed and Pest Act of 1973, as enacted by the legislature of Wyoming, establishes the guidelines for creating Weed and Pest Control Districts and the regulations which govern the districts. Within the Act, the composition of districts is defined at W.S. § 11-5-103:

> *All land within the boundaries of Wyoming including all Federal, State, private and municipally owned lands, is hereby included in the weed and pest districts within the County in which the land is located.*

The act also specifically defines which weeds and pests are designated as weeds and pests in W.S. § 11-5-102. The Weed and Pest Act of 1973 in W.S. § 11-5-109 also spells out enforcement provisions which could result in heavy fines if persons are convicted.

> *A landowner who is responsible for an infestation and fails or refuses to perform the remedial requirements for the control of the weed or pest [...] may be fined. [...] Any person accused under this act is entitled to a trial by jury.* (W.S. §11-5-109e)

Funding for a long-term strategy implementing weed and pest control tactics has been lacking. Various state and federal agencies support weed and pest management by utilizing funds from discretionary or general fund sources. This only secures short-term funding for specific weed and pest infestations that generally last no more than one season. In recent years drought conditions have led state and federal agencies to focus funds on fighting and protecting against wildfires rather than weed and pest management.

CCWP is working to suppress and eradicate all federally designated, state designated, and Carbon County declared weeds and pests. CCWP also manages programs for hay and gravel weed-free certifications, chemical cost share, equipment rental, mosquito abatement, bio control, spray days, and Early Detection and Rapid Response (EDRR). Additionally, CCWP is pursuing efforts to educate the public about invasive species and pests that are a threat to Carbon County. (CCWP, 2019b)

The declared noxious weed species for Carbon County are:

- Wyeth Lupine (*Lupinus wyethii*)
- Halogeton (*Halogeton glomeratus*)
- Geyer Larkspur (*Delphinium geyeri*)
- Common Cocklebur (*Xanthium strumarium*)
- Prickly Pear (*Opuntia* spp.)
- Mosquito (*Culicidae* family) (CCWP, 2019a)

The current federal noxious weeds list is maintained on the USDA Plants Database[71] (NRCS, 2019).

While not listed as a noxious species in the state due to its widespread distribution, cheatgrass (*Bromus tectorum*) and other annual bromes lumped under this common name are a serious threat in the County. This annual grass has reduced the productivity of native range plants and accelerated fire cycles within the County. While widespread control of the species is impossible, all efforts should be made to minimize its potential to take new footholds. Juniper encroachment is also of concern within the County as juniper are expanding into the sagebrush ecosystem. This can reduce important sagebrush habitat for species such as sage-grouse and mule deer. To a lesser extent, sagebrush encroaches into riparian areas and can alter riparian ecosystems too.

In addition to these plants, aquatic plants like hydrilla (*Hydrilla verticillata*), Eurasian watermilfoil (*Myriopyllum spicatum*), curly pondweed (*Potamogeton crispus*) and didymo (rock snot)

(*Didymosphenia geminate*) are of concern. Several animal species are also of concern such as aquatic invasive species like zebra and quagga mussels (*Dreissena polymorpha, Dreissena bugensis*), New Zealand mudsnail (*Potamopyrgus antipodarum*), Asian carp (*Cyprinus* spp.) and rusty crayfish (*Orconectes rusticus*). Almost all of these species can have a negative impact on irrigation structures if they become established and they can clog up or break down irrigation structures (ISAC, 2016). White pine blister rust (*Cronartium ribicola*), pine borers (*Dendroctonus* spp.), and spruce bud worms (*Choristoneura* spp.) can also be problem invaders in the forested regions of the County. Several agricultural pests exist that can negatively impact the agricultural regions of the County.

U.S. Forest Service

The USFS has a National Strategic Framework for Invasive Species Management[72] that provides broad and consistent strategic direction across all USFS Deputy Areas and agency programs. It also describes how the National and Regional Invasive Species Issue Teams will coordinate activities with the USFS and with Federal, State, and local partners. It lays out the framework for prevention, detection, control and management, and restoration and rehabilitation on USFS lands. (USFS, 2013a)

Bureau of Land Management

The BLM has a Record of Decision (ROD) for a Final Programmatic EIS for National Vegetation Treatments using Aminopyralid, Fluroxypyr, and Rimsulfuron on BLM lands[73] completed in 2016 and tiers to the 2007 Final Programmatic EIS for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States.[74] The BLM keep the National Invasive Species Information Management System (NISIMS) database which provides a comprehensive tool for managers to use to standardize collection of invasive species and treatment data. The database can be found here.[75]

The BLM also recognizes the PlayCleanGo Campaign which is an educational outreach program with the goal to protect valuable natural resources while encouraging the public to enjoy the great outdoors. PlayCleanGo promotes awareness, understanding, and cooperation by providing a clear call to action to be informed, attentive, and accountable for stopping the spread of all invasive species. (NAISMA, n.d.)

9.3.3 Resource Management Objectives (Noxious Weeds/Invasive Species/Pests):

A. Noxious and invasive species are managed, in coordination with the County, in a sustainable and effective manner that uses credible data addressing biology and ecology of the pest and system.
B. Federal agency projects include actions for the prevention, early identification, detection, and aggressive treatments for noxious and invasive species throughout the County.
C. Federal agencies coordinate and communicate all invasive, noxious, pest, or weed management actions with the Carbon County Weed & Pest.
D. Carbon County Weed and Pest is consulted on all federal projects' weed management plans.

9.3.4 Priorities (Noxious Weeds/Invasive Species/Pests):

1. Federal agencies should identify that invasive species can be native or nonnative plants, animals, aquatic species, or insects.
2. Federal agencies should support and encourage control efforts to be focused on the control of all federal, state, and Carbon County declared weeds and pests.
3. Carbon County requires coordination with other local, state, and federal agencies to allow Weed and Pest Control District road access across state and federal lands to access infestations on public and private lands, as is required for the suppression of invasive species and pests.
4. Federal agencies should support and encourage cooperative efforts with state, other federal, and private landowners/managers to enhance efficient cooperative weed and pest management efforts countywide as required by agency mandates; coordinated with, and primarily managed by, the Carbon County Weed and Pest Control District.
5. All property owners/managers, including state, federal, and private owners/managers within Carbon County, shall be responsible for controlling invasive species and pests on their property to minimize movement onto adjacent lands to the extent required by federal law and the Wyoming Weed and Pest Act.
6. Federal agencies should encourage prescribed grazing to control invasive, noxious, and nuisance plant species.
7. Federal agencies should support habitat enhancement projects that have a defined and funded weed control and monitoring plan for the anticipated life of the enhancement.
8. Support the federal agencies' development of an environmental analysis to expand weed and pest control options.
9. Encourage implementation of federal and local Weed Management Plans, including mapping of all noxious weed populations and pest populations.
10. Support federal monitoring efforts to accurately identify the extent of noxious weed infestations, and the identification of dispersal mechanisms where possible.
11. Support the prevention and management of aquatic nuisance species (i.e., zebra mussels, quagga mussels) and other invasive species on all waters within Carbon County.
12. Support education programs for public and private land users regarding all possible vectors of weed spread.
13. Support preparation and compliance with a plan including ensuring adequate funding to control noxious weeds on federal lands.
14. Support the use of aerial devices (i.e., drones, fixed wing, helicopters and other aircraft) for weed monitoring and control where feasible.
15. Support herbicide use in wilderness and wilderness study areas.
16. 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.
17. Encourage all federal actions to include 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.
18. Encourage the federal agencies to develop or incorporate an invasive and noxious

species list that corresponds with State of Wyoming and Carbon County including prairie dogs.

19. Invasive, noxious, and pest species as listed by the State of Wyoming should be managed to maintain the Wyoming Standards for Healthy Rangeland.

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APPENDICES

APPENDIX A: WEBSITE LINKS IN DOCUMENT

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APPENDIX B: STEERING COMMITTEE

Member	Affiliation
Travis Moore	Carbon County Commissioner
Joe Parsons	SER Conservation District
Leanne Correll	SER Conservation District
Dan Mika	SER Conservation District
Joan McGraw	Medicine-Bow Conservation District
Shanon Sims	Medicine-Bow Conservation District
Dawn Arnell	Little Snake River Conservation District
Trent Arnell	Little Snake River Conservation District
Marlin Johnson	Carbon County Planning Director
Sarah Brugger	Carbon County Planner/GIS Specialist
Kristy Rowan	Deputy Zoning Administrator
Sidney Fox	Carbon County Planner (retired in June 2020)

APPENDIX C: PUBLIC COMMENTS RECEIVED

NOTE: Public comments received during the public comment period will be placed here.